ETSI TS 132 644 V5.2.0 (2003-09)

Technical Specification

**Universal Mobile Telecommunications System (UMTS);
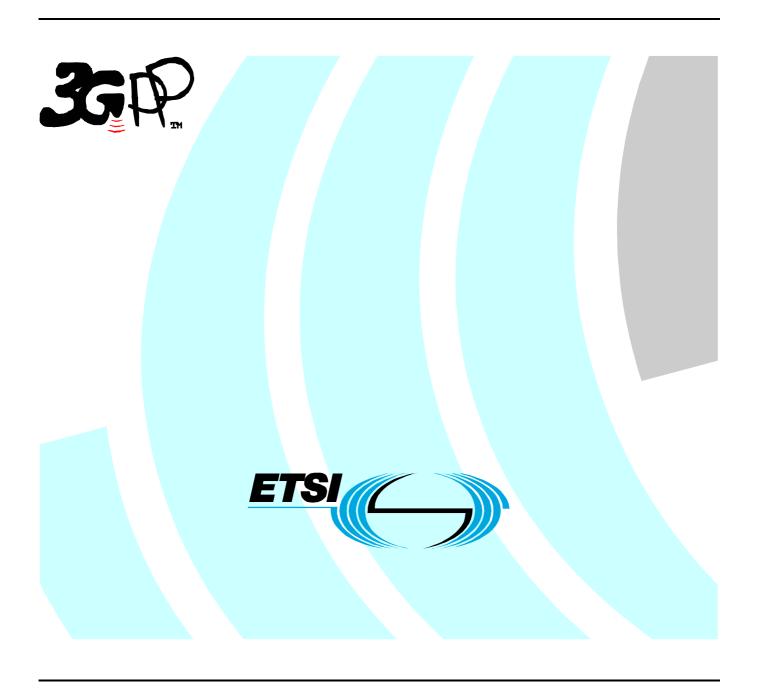Telecommunication management;
Configuration Management (CM);
UTRAN network resources Integration Reference Point (IRP):
Common Management Information Protocol (CMIP)
solution set
(3GPP TS 32.644 version 5.2.0 Release 5)**

Reference
RTS/TSGS-0532644v520

Keywords
UMTS

ETSI

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Sous-Préfecture de Grasse (06) N° 7803/88

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

[10]   3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

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 [10] and 3GPP TS 32.642 [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
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 [4] 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 [4]. 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   nodeB2iubLink

```
nodeB2iubLink ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-644TypeModule.GeneralObjectPointer;
    MATCHES FOR
        EQUALITY;
```

```
   BEHAVIOUR
      nodeB2iubLinkBehaviour;
REGISTERED AS {ts32-644Attribute 29};

nodeB2iubLinkBehaviour 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 void

5.4.7 void

5.4.8 void

5.4.9 void

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
Sep 2003	S_21	SP-030420	004	--	Correction of wrong attribute name	5.1.0	5.2.0

History

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