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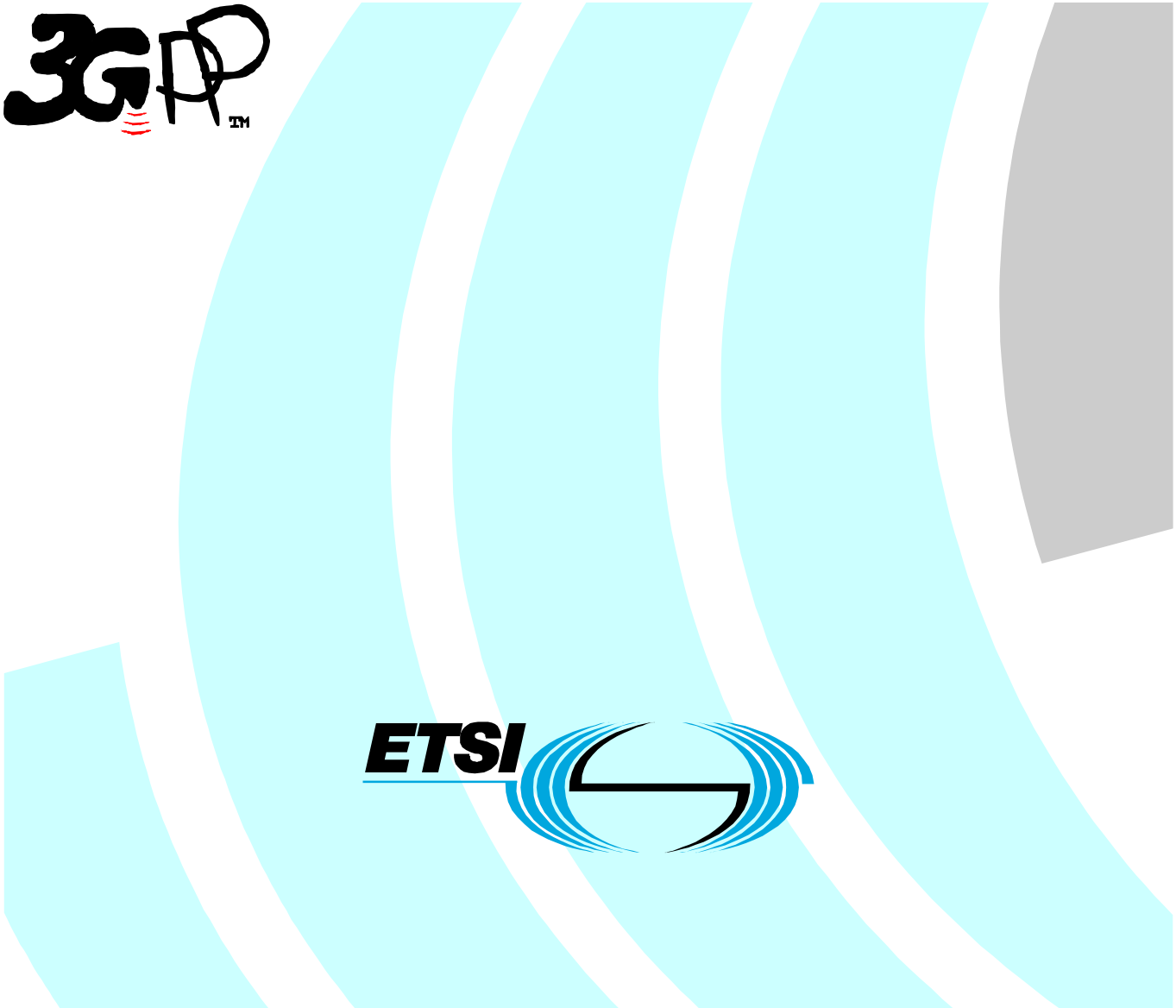
Technical Specification

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 5.4.0 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 [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 V5.3.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 clause 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	utranCellR54
IubLink	iubLink
UtranRelation	utranRelation
ExternalUtranCell	externalUtranCell

4.2.2 Mapping of Information Object Class Attributes

This clause 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 Rec. 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 Rec. 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 Rec. 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
uraList	uraList	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 Rec. 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,
      "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 {ts32-644ObjectClass 1};
```

5.1.2 utranCell

Void.

5.1.3 utranRelation

```
utranRelation MANAGED OBJECT CLASS
   DERIVED FROM
      "Recommendation X.721: 1992":top;
   CHARACTERIZED BY
      utranRelationBasicPackage,
      utranRelationAssociationPackage;
   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 {ts32-644ObjectClass 3};
```

5.1.4 externalUtranCell

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

5.1.5 iubLink

```
iubLink MANAGED OBJECT CLASS
   DERIVED FROM
      "3GPP TS 32.624 Release 5": managedFunction;
   CHARACTERIZED BY
      iubLinkBasicPackage,
      iubLinkAssociationPackage,
      "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 {ts32-644ObjectClass 5};
```

5.1.6 nodeBFunction

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

5.1.7 utranCellR54

```
utranCellR54 MANAGED OBJECT CLASS
   DERIVED FROM
      "3GPP TS 32.624 Release 5": managedFunction;
   CHARACTERIZED BY
      utranCellBasicPackage,
      utranCellHandoverPackageR54,
      utranCellAssociationPackage,
      "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 the operationalState attribute.";
REGISTERED AS {ts32-644ObjectClass 7};
```

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

Void.

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.";
```

5.2.13 utranCellHandoverPackageR54

```
utranCellHandoverPackageR54 PACKAGE
   BEHAVIOUR
      utranCellHandoverPackageR54Behaviour;
   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,
      uraList                      GET-REPLACE;
REGISTERED AS {ts32-644Package 13};

utranCellHandoverPackageR54Behaviour BEHAVIOUR
DEFINED AS
   "This package contains all new attributes defined for UTRAN handover management.
    These attributes are introduced in R4.";
```

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

Void.

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.";
```

5.3.30 uraList

```
uraList ATTRIBUTE
   WITH ATTRIBUTE SYNTAX
      TS32-644TypeModule.UraList;
   MATCHES FOR
      EQUALITY;
   BEHAVIOUR
      uraListBehaviour;
REGISTERED AS {ts32-644Attribute 30};

uraListBehaviour BEHAVIOUR
DEFINED AS
   "List of UTRAN Registration Area, URA (Ref. 3 GPP TS 25.331)";
```

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

Void.

5.4.4 utranRelation - utranCell

Void.

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 vsDataContainer - rncFunction

Void.

5.4.7 vsDataContainer - nodeBFunction

Void.

5.4.8 vsDataContainer - utranCell

Void.

5.4.9 vsDataContainer - utranRelation

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.";
```

5.4.11 gsmRelation - utranCell

Void.

5.4.12 utranCellR54 - rncFunction

```
utranCellR54-rncFunction NAME BINDING
   SUBORDINATE OBJECT CLASS
      utranCellR54;
   NAMED BY SUPERIOR OBJECT CLASS
      rncFunction;
   WITH ATTRIBUTE
      utranCellId;
   BEHAVIOUR
      utranCellR54-rncFunctionBehaviour;
   CREATE
      WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE
      ONLY-IF-NO-CONTAINED-OBJECTS;
```

```
REGISTERED AS {ts32-644NameBinding 12};

utranCellR54-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.";
```

5.4.13 utranRelation - utranCellR54

```
utranRelation-utranCellR54 NAME BINDING
   SUBORDINATE OBJECT CLASS
      utranRelation;
   NAMED BY SUPERIOR OBJECT CLASS
      utranCellR54;
   WITH ATTRIBUTE
      utranRelationId;
   BEHAVIOUR
      utranRelation-utranCellR54Behaviour;
   CREATE
      WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE
      ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-644NameBinding 13};

utranRelation-utranCellR54Behaviour 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.";
```

5.4.14 gsmRelation - utranCellR54

```
gsmRelation-utranCellR54 NAME BINDING
   SUBORDINATE OBJECT CLASS
      "3GPP TS 32.654 Release 5": gsmRelation;
   NAMED BY SUPERIOR OBJECT CLASS
      utranCellR54;
   WITH ATTRIBUTE
      "3GPP TS 32.654 Release 5": gsmRelationId;
   BEHAVIOUR
      gsmRelation-utranCellR54Behaviour;
   CREATE
      WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
   DELETE
      ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-644NameBinding 14};

gsmRelation-utranCellR54Behaviour 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

UraList ::= SET OF 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
Dec 2003	S_22	SP-030646	009	--	Correction of the number of possible URAs from 1 to 8	5.2.0	5.3.0
Dec 2003	S_22	SP-030642	010	--	Add notifications to functional objects - Align with 32.642 (IS)	5.2.0	5.3.0
Mar 2004	S_23	SP-040132	011	--	Correction of OIDs of the MOCs, packages and attributes affected by the change from ura to uraList	5.3.0	5.4.0

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
V5.4.0	March 2004	Publication