# ETSI TS 132 645 V7.4.0 (2008-04)

Technical Specification

Universal Mobile Telecommunications System (UMTS);

**Telecommunication management;** 

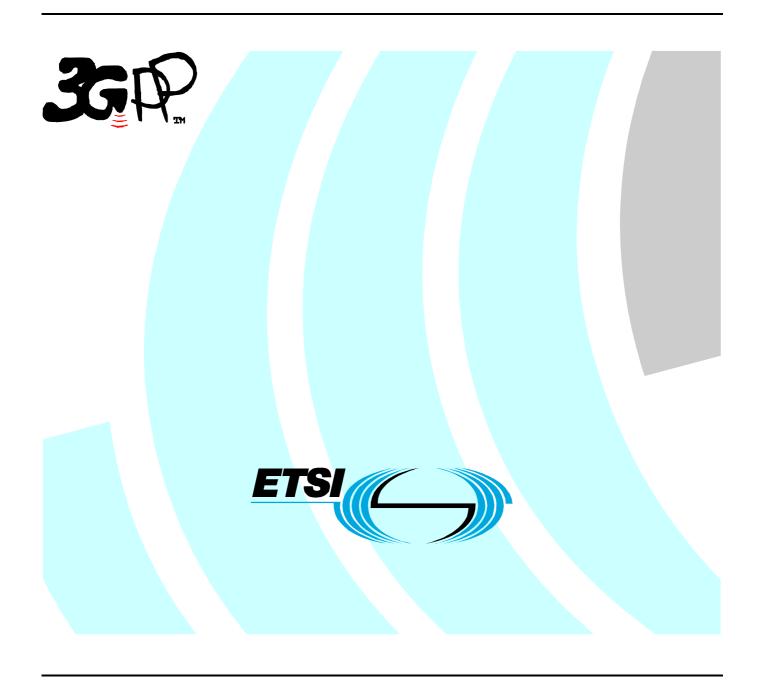
**Configuration Management (CM);** 

**UTRAN** network resources Integration Reference Point (IRP):

**Bulk CM eXtensible Markup Language (XML)** 

file format definition

(3GPP TS 32.645 version 7.4.0 Release 7)



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#### **Foreword**

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#### Introduction

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

| 32.641: | Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Requirements  |
|---------|---|
| 32.642: | Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Network Resource Model (NRM)  |
| 32.643: | Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS) |
| 32.645: | Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition     |

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

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

#### 1 Scope

The present document provides the NRM-specific part related to the UTRAN Network Resources IRP NRM [1] of the XML file format definition for the Bulk Configuration Management IRP IS [2].

The main part of this XML file format definition is provided by 3GPP TS 32.615 [3].

Bulk CM XML file formats are based on XML [4], XML Schema [5] [6] [7] and XML Namespace [8] standards.

This File Format Definition specification is related to 3GPP TS 32.642 V7.4.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 32.642: "Telecommunication management; Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Network Resource Models (NRM)".
   [2] 3GPP TS 32.612: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP); Information Service (IS)".
- [3] 3GPP TS 32.615: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP); eXtensible Markup Language (XML) file format definition".
- [4] W3C REC-xml-20001006: "Extensible Markup Language (XML) 1.0 (Second Edition)".
- [5] W3C REC-xmlschema-0-20010502: "XML Schema Part 0: Primer".
- [6] W3C REC-xmlschema-1-20010502: "XML Schema Part 1: Structures".
- [7] W3C REC-xmlschema-2-20010502: "XML Schema Part 2: Datatypes".
- [8] W3C REC-xml-names-19990114: "Namespaces in XML".

#### 3 Definitions and abbreviations

#### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

XML file: file containing an XML document

XML document: composed of the succession of an optional XML declaration followed by a root XML element

NOTE: See [4]; in the scope of the present document.

XML declaration: it specifies the version of XML being used

NOTE: See [4].

**XML element:** has a type, is identified by a name, may have a set of XML attribute specifications and is either composed of the succession of an XML start-tag followed by the XML content of the XML element followed by an XML end-tag, or composed simply of an XML empty-element tag; each XML element may contain other XML elements

NOTE: See [4].

**empty XML element:** having an empty XML content; an empty XML element still possibly has a set of XML attribute specifications; an empty XML element is either composed of the succession of an XML start-tag directly followed by an XML end-tag, or composed simply of an XML empty-element tag

NOTE: See [4].

**XML content (of an XML element):** empty if the XML element is simply composed of an XML empty-element tag; otherwise the part, possibly empty, of the XML element between its XML start-tag and its XML end-tag

**XML start-tag:** the beginning of a non-empty XML element is marked by an XML start-tag containing the name and the set of XML attribute specifications of the XML element

NOTE: See [4].

XML end-tag: the end of a non-empty XML element is marked by an XML end-tag containing the name of the XML element

NOTE: See [4].

**XML empty-element tag:** composed simply of an empty-element tag containing the name and the set of XML attribute specifications of the XML element

NOTE: See [4].

XML attribute specification: has a name and a value

NOTE: See [4].

**DTD:** defines structure and content constraints to be respected by an XML document to be valid with regard to this DTD

NOTE: See [4].

XML schema: more powerful than a DTD, an XML schema defines structure and content constraints to be respected by an XML document to conform with this XML schema; through the use of XML namespaces several XML schemas can be used together by a single XML document; an XML schema is itself also an XML document that shall conform with the XML schema for XML schemas

NOTE: See [5], [6] and [7].

**XML namespace:** enables qualifying element and attribute names used in XML documents by associating them with namespaces identified by different XML schemas

NOTE: See [8], in the scope of the present document.

**XML complex type:** defined in an XML schema; cannot be directly used in an XML document; can be the concrete type or the derivation base type for an XML element type or for another XML complex type; ultimately defines constraints for an XML element on its XML attribute specifications and/or its XML content

NOTE: See [5], [6] and [7].

**XML element type:** declared by an XML schema; can be directly used in an XML document; as the concrete type of an XML element, directly or indirectly defines constraints on its XML attribute specifications and/or its XML content; can also be the concrete type or the derivation base type for another XML element type

NOTE: See [5], [6] and [7].

#### 3.2 Abbreviations

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

CM Configuration Management
DTD Document Type Definition
EDGE Enhanced Data for GSM Evolution
GERAN GSM/EDGE Radio Access Network
GSM Global System for Mobile communication

IRP Integration Reference Point
IS Information Service
NRM Network Resource Model

UMTS Universal Mobile Telecommunications System UTRAN Universal Terrestrial Radio Access Network

XML eXtensible Markup Language

#### 4 Structure and content of configuration data XML files

The overall description of the file format of configuration data XML files is provided by 3GPP TS 32.615 [3].

Annex A of the present document defines the NRM-specific XML schema utranNrm.xsd for the UTRAN Network Resources IRP NRM defined in 3GPP TS 32.642 [1].

XML schema utranNrm.xsd explicitly declares NRM-specific XML element types for the related NRM.

The definition of those NRM-specific XML element types complies with the generic mapping rules defined in 3GPP TS 32.615 [3].

# Annex A (normative): Configuration data file NRM-specific XML schema (file name "utranNrm.xsd")

The following XML schema utranNrm.xsd is the NRM-specific schema for the UTRAN Network Resources IRP NRM defined in 3GPP TS 32.642 [1]:

The following XML schema utranNrm.xsd is the NRM-specific schema for the UTRAN Network Resources IRP NRM defined in 3GPP TS 32.642 [1]:

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
  3GPP TS 32.645 UTRAN Network Resources IRP
  Bulk CM Configuration data file NRM-specific XML schema
 utranNrm.xsd
<schema
  targetNamespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.645#utranNrm"
 elementFormDefault="qualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
"http://www.3gpp.org/ftp/specs/archive/32_series/32.645#utranNrm"
"http://www.3gpp.org/ftp/specs/archive/32_series/32.655#geranNrm"
"http://www.3gpp.org/ftp/specs/archive/32 series/32.675#stateManagementIRP"
  <import</pre>
   namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
  <import</pre>
   namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.655#geranNrm"
  <import</pre>
   namespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.675#stateManagementIRP"
  <!-- UTRAN Network Resources IRP NRM attribute related XML types -->
  <simpleType name="localCellId">
    <restriction base="integer">
     <minInclusive value="0"/>
      <maxInclusive value="268435455"/>
    </restriction>
  </simpleType>
  <simpleType name="cId">
    <restriction base="integer">
      <minInclusive value="0"/>
      <maxInclusive value="65535"/>
    </restriction>
  </simpleType>
  <simpleType name="uarfcnAnyMode">
    <restriction base="integer">
      <minInclusive value="0"/>
      <maxInclusive value="16383"/>
    </restriction>
  </simpleType>
  <simpleType name="primaryScramblingCode">
    <restriction base="integer">
```

```
<minInclusive value="0"/>
    <maxInclusive value="511"/>
  </restriction>
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  <restriction base="decimal">
    <fractionDigits value="1"/>
    <minInclusive value="-10"/>
    <maxInclusive value="+50"/>
  </restriction>
</simpleType>
<simpleType name="maximumTransmissionPower">
  <restriction base="decimal">
    <fractionDigits value="1"/>
    <minInclusive value="0"/>
    <maxInclusive value="50"/>
  </restriction>
</simpleType>
<simpleType name="primarySchPower">
  <restriction base="decimal">
    <fractionDigits value="1"/>
    <minInclusive value="-35"/>
    <maxInclusive value="+15"/>
  </restriction>
</simpleType>
<simpleType name="secondarySchPower">
  <restriction base="decimal">
    <fractionDigits value="1"/>
    <minInclusive value="-35"/>
    <maxInclusive value="+15"/>
  </restriction>
</simpleType>
<simpleType name="bchPower">
  <restriction base="decimal">
    <fractionDigits value="1"/>
    <minInclusive value="-35"/>
    <maxInclusive value="+15"/>
  </restriction>
</simpleType>
<simpleType name="aichPower">
  <restriction base="decimal">
    <fractionDigits value="1"/>
    <minInclusive value="-22"/>
    <maxInclusive value="+5"/>
  </restriction>
</simpleType>
<simpleType name="fpachPower">
  <restriction base="decimal">
    <fractionDigits value="1"/>
    <minInclusive value="-150"/>
    <maxInclusive value="+400"/>
  </restriction>
</simpleType>
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    <fractionDigits value="1"/>
    <minInclusive value="-10"/>
    <maxInclusive value="+5"/>
  </restriction>
</simpleType>
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    <fractionDigits value="1"/>
    <minInclusive value="-350"/>
    <maxInclusive value="+150"/>
  </restriction>
</simpleType>
<simpleType name="fachPower">
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    <fractionDigits value="1"/>
    <minInclusive value="-350"/>
```

```
<maxInclusive value="+150"/>
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<union>
  <simpleType>
  <restriction base="integer">
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    <maxInclusive value="65533"/>
   </restriction>
  </simpleType>
  <simpleType>
   <restriction base="integer">
    <minInclusive value="65535"/>
    <maxInclusive value="65535"/>
   </restriction>
  </simpleType>
 </union>
</simpleType>
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  <restriction base="integer">
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    <maxInclusive value="255"/>
  </restriction>
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  <restriction base="integer">
    <minInclusive value="0"/>
    <maxInclusive value="65535"/>
  </restriction>
</simpleType>
<complexType name="uraList">
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    <element name="ura" maxOccurs="8">
      <simpleType>
        <restriction base="integer">
          <minInclusive value="0"/>
          <maxInclusive value="65535"/>
        </restriction>
      </simpleType>
    </element>
  </sequence>
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    <enumeration value="FDDMode"/>
    <enumeration value="3-84McpsTDDMode"/>
    <enumeration value="1-28McpsTDDMode"/>
  </restriction>
</simpleType>
<simpleType name="cellParameterId">
  <restriction base="integer">
    <minInclusive value="0"/>
    <maxInclusive value="127"/>
  </restriction>
</simpleType>
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  <restriction base="decimal">
    <fractionDigits value="1"/>
    <minInclusive value="-15"/>
    <maxInclusive value="+40"/>
  </restriction>
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  <restriction base="decimal">
    <fractionDigits value="1"/>
    <minInclusive value="-15"/>
    <maxInclusive value="+40"/>
  </restriction>
</simpleType>
```

```
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    <fractionDigits value="1"/>
    <minInclusive value="-35"/>
    <maxInclusive value="+15"/>
  </restriction>
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    <element name="timeSlot" maxOccurs="15">
      <complexType>
        <all>
          <element name="timeSlotId" minOccurs="1">
            <simpleType>
              <restriction base="integer">
                <minInclusive value="0"/>
                <maxInclusive value="14"/>
              </restriction>
            </simpleType>
          </element>
          <element name="timeSlotDirection" minOccurs="1">
            <simpleType>
              <restriction base="string">
                <enumeration value="UL"/>
                <enumeration value="DL"/>
              </restriction>
            </simpleType>
          </element>
          <element name="timeSlotStatus" minOccurs="1">
            <simpleType>
              <restriction base="string">
                <enumeration value="Active"/>
                <enumeration value="Not-Active"/>
              </restriction>
            </simpleType>
          </element>
        </all>
      </complexType>
    </element>
  </sequence>
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  <restriction base="short">
    <minInclusive value="0"/>
    <maxInclusive value="3600"/>
  </restriction>
</simpleType>
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  <restriction base="string">
    <maxLength value="80"/>
  </restriction>
</simpleType>
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  <restriction base="short">
    <minInclusive value="0"/>
    <maxInclusive value="360"/>
  </restriction>
</simpleType>
<simpleType name="restrictionStateIndicator">
  <restriction base="string">
    <enumeration value="cellReservedForOperatorUse"/>
    <enumeration value="cellAccessible"/>
   </restriction>
</simpleType>
<simpleType name="dpcModeChangeSupport">
  <restriction base="string">
    <enumeration value="dpcModeChangeSupported"/>
    <enumeration value="dpcModeChangeNotSupported"/>
  </restriction>
</simpleType>
<simpleType name="sttdSupport">
  <restriction base="string">
    <enumeration value="active"/>
```

```
<enumeration value="inactive"/>
   </restriction>
</simpleType>
<simpleType name="burstType">
 <restriction base="string">
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    <enumeration value="type2"/>
    <enumeration value="type3"/>
  </restriction>
</simpleType>
<simpleType name="closedLoopMode1">
  <restriction base="string">
    <enumeration value="closedLoopMode1Supported"/>
    <enumeration value="closedLoopMode1NotSupported"/>
  </restriction>
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    <maxInclusive value="255"/>
  </restriction>
</simpleType>
<simpleType name="cellIndividualOffset">
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    <minInclusive value="-10"/>
    <maxInclusive value="10"/>
  </restriction>
</simpleType>
<simpleType name="hcsPrio">
  <restriction base="integer">
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    <maxInclusive value="7"/>
  </restriction>
</simpleType>
<simpleType name="maximumAllowedUlTxPower">
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<simpleType name="qrxlevMin">
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    <maxInclusive value="-25"/>
  </restriction>
</simpleType>
<simpleType name="deltaQrxlevmin">
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    <minInclusive value="-4"/>
    <maxInclusive value="-2"/>
  </restriction>
</simpleType>
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  <restriction base="integer">
    <minInclusive value="0"/>
    <maxInclusive value="99"/>
  </restriction>
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  <restriction base="integer">
    <minInclusive value="0"/>
    <maxInclusive value="60"/>
  </restriction>
</simpleType>
<simpleType name="referenceTimeDifferenceToCell">
  <restriction base="integer">
   </restriction>
</simpleType>
```

```
<simpleType name="readSFNIndicator">
  <restriction base="string">
    <enumeration value="TRUE"/>
    <enumeration value="FALSE"/>
  </restriction>
</simpleType>
<complexType name="snaList">
      <sequence>
          <element name="snac" maxOccurs="65535">
              <simpleType>
                  <restriction base="integer">
                      <minInclusive value="1"/>
                      <maxInclusive value="65536"/>
                  </restriction>
              </simpleType>
          </element>
      </sequence>
  </complexType>
  <complexType name="snaInformation">
      <sequence>
          <element name="mcc">
              <simpleType>
                  <restriction base="integer">
                      <minInclusive value="0"/>
                      <maxInclusive value="999"/>
                  </restriction>
              </simpleType>
          </element>
          <element name="mnc">
              <simpleType>
                  <restriction base="integer">
                      <enumeration value="0"/>
                      <enumeration value="999"/>
                  </restriction>
              </simpleType>
          </element>
          <element name="snaList" type="un:snaList"/>
      </sequence>
  </complexType>
<simpleType name="qqualMin">
  <restriction base="integer">
    <minInclusive value="-24"/>
    <maxInclusive value="0"/>
  </restriction>
</simpleType>
<simpleType name="temporaryOffset1">
  <restriction base="integer">
    <minInclusive value="3"/>
    <maxInclusive value="21"/>
  </restriction>
</simpleType>
<simpleType name="temporaryOffset2">
  <restriction base="integer">
    <minInclusive value="2"/>
    <maxInclusive value="12"/>
  </restriction>
</simpleType>
 <simpleType name="txDiversityIndicator">
  <restriction base="string">
    <enumeration value="none"/>
    <enumeration value="PrimaryCpichBroadcastFrom2Antennas"/>
    <enumeration value="SttdAppliedToPrimaryCCPCH"/>
    <enumeration value="TstdAppliedToPrimarySchAndSecondarySch"/>
  </restriction>
 </simpleType>
   <complexType name="cellCapabilityContainerFDD">
    <complexContent>
      <extension base="xn:NrmClass">
          <element name="attributes" minOccurs="0">
            <complexType>
```

```
<a115
                  <element name="Flexible Hard Split Support Indicator" minOccurs="0"/>
                  <element name="Delayed_Activation_Support_Indicator" minOccurs="0"/>
                  <element name="HS_DSCH_Support_Indicator" minOccurs="0"/>
                  <element name="DSCH Support Indicator" minOccurs="0"/>
                  <element name="F DPCH Support Indicator" minOccurs="0"/>
                  <element name="E_DCH_Support_Indicator" minOccurs="0"/>
<element name="E_DCH_TTI2ms_Support_Indicator" minOccurs="0"/>
                  <element name="E_DCH_2sf2_and_all_inferior_SFs_Support_Indicator" minOccurs="0"/>
                  <element name="E_DCH_2sf4_and_all_inferior_SFs_Support_Indicator" minOccurs="0"/>
<element name="E_DCH_sf4_and_all_inferior_SFs_Support_Indicator" minOccurs="0"/>
<element name="E_DCH_sf8_and_all_inferior_SFs_Support_Indicator" minOccurs="0"/>
<element name="E_DCH_sf8_and_all_inferior_SFs_Support_Indicator" minOccurs="0"/>
                  <element name="E_DCH_HARQ_IR_Combining_Support_Indicator" minOccurs="0"/>
                  <element name="E DCH HARQ Chase Combining Support Indicator" minOccurs="0"/>
                </all>
              </complexType>
           </element>
           <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="xn:VsDataContainer"/>
           </choice>
         </sequence>
       </extension>
    </complexContent>
  </complexType>
 <simpleType name="sctdIndicator">
  <restriction base="string">
    <enumeration value="active"/>
    <enumeration value="inactive"/>
  </restriction>
</simpleType>
<simpleType name="dpchConstantValue">
  <restriction base="integer">
    <minInclusive value="-10"/>
    <maxInclusive value="10"/>
  </restriction>
</simpleType>
  <complexType name="cellCapabilityContainerTDD">
   <complexContent>
       <extension base="xn:NrmClass">
         <sequence>
           <element name="attributes" minOccurs="0">
             <complexType>
                <all>
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                  <element name="DSCH Support Indicator" minOccurs="0"/>
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           </choice>
         </sequence>
       </extension>
    </complexContent>
  </complexType>
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  <restriction base="string">
    <enumeration value="active"/>
    <enumeration value="inactive"/>
  </restriction>
</simpleType>
<simpleType name="timeSlotLCR">
  <restriction base="integer">
    <minInclusive value="0"/>
    <maxInclusive value="6"/>
  </restriction>
</simpleType>
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  <restriction base="integer">
    <minInclusive value="0"/>
    <maxInclusive value="14"/>
```

```
</restriction>
</simpleType>
<simpleType name="schTimeSlot">
  <restriction base="integer">
   <minInclusive value="0"/>
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  </restriction>
</simpleType>
 <simpleType name="syncCase">
  <restriction base="string">
    <enumeration value="SCH and PCCPCH allocated in a single TS"/>
    <enumeration value="SCH and PCCPCH allocated in two TS, TS#k and TS#k+8"/>
  </restriction>
</simpleType>
<simpleType name="hsFlag">
  <restriction base="integer">
    <minInclusive value="0"/>
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  </restriction>
</simpleType>
<simpleType name="hsEnable">
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    <minInclusive value="0"/>
    <maxInclusive value="1"/>
  </restriction>
</simpleType>
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  <restriction base="integer">
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    <maxInclusive value="95"/>
  </restriction>
</simpleType>
<simpleType name="numOfHsscchs">
  <restriction base="integer">
   <minInclusive value="1"/>
    <maxInclusive value="32"/>
  </restriction>
</simpleType>
  <simpleType name="tmaFunctionFlag">
      <restriction base="unsignedShort">
          <minInclusive value="0"/>
          <maxInclusive value="1"/>
      </restriction>
  </simpleType>
  <simpleType name="tmaStateFlag">
      <restriction base="unsignedShort">
         <minInclusive value="0"/>
          <maxInclusive value="1"/>
      </restriction>
  </simpleType>
  <simpleType name="fourOctets">
      <restriction base="hexBinary">
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  </simpleType>
  <simpleType name="eightOctets">
      <restriction base="hexBinary">
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                        <restriction base="integer">
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                          <maxInclusive value="6"/>
                        </restriction>
                      </simpleType>
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                    <element name="timeSlotDirection" minOccurs="1">
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                        <restriction base="string">
                          <enumeration value="UL"/>
                          <enumeration value="DL"/>
                        </restriction>
                      </simpleType>
                    </element>
                    <element name="timeSlotStatus" minOccurs="1">
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                        <restriction base="string">
                          <enumeration value="Active"/>
                          <enumeration value="Not-Active"/>
                        </restriction>
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                  </all>
                </complexType>
              </element>
            </sequence>
          </complexType>
        </all>
      </complexType>
    </element>
  </sequence>
</complexType>
<!-- UTRAN Network Resources IRP NRM class associated XML elements -->
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      -
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                <element name="mcc" type="string" minOccurs="0"/>
                <element name="mnc" type="string" minOccurs="0"/>
                <element name="rncId" type="string" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="un:UtranCellFDD"/>
            <element ref="un:UtranCellTDD"/>
            <element ref="un:UtranCellTDDLcr"/>
            <element ref="un:UtranCellTDDHcr"/>
            <element ref="un:IubLink"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
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 name="NodeBFunction"
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    <complexContent>
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                   <element name="nodeBFunctionIubLink" type="string" minOccurs="0"/>
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             </element>
             <choice minOccurs="0" maxOccurs="unbounded">
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             </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
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                   <element
                     name="localCellId"
                     type="un:localCellId"
                     minOccurs="0"
                   />
                   <element
                     name="maximumTransmissionPower"
                     type="un:maximumTransmissionPower"
                     minOccurs="0"
                   />
                   <element name="cellMode" type="un:cellMode" minOccurs="0"/>
<element
                     name="pichPower"
                     type="un:pichPower"
                     minOccurs="0"
                   />
<element
                     name="pchPower"
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                     minOccurs="0"
                   />
                 <element
                    name="fachPower"
                     type="un:fachPower"
                     minOccurs="0"
                   />
                   <element name="lac" type="un:lac" minOccurs="0"/>
<element name="rac" type="un:rac" minOccurs="0"/>
                   <element name="sac" type="un:sac" minOccurs="0"/>
                   <element name="uraList" type="un:uraList" minOccurs="0"/>
                <element name="utranCellIubLink" type="xn:dn" minOccurs="0"/>
<element name="retAntennaFunctionList" type="xn:dnList" minOccurs="0"/>
                   <element name="tmaFunctionList" type="xn:dnList" minOccurs="0"/>
                      name="operationalState"
                      type="sm:operationalStateType"
                      minOccurs="0"
                   />
                   <element name="hsFlag" type="un:hsFlag" minOccurs="0"/>
                   <element name="hsEnable" type="un:hsEnable" minOccurs="0"/>
                   <element name="numOfHspdschs" type="un:numOfHspdschs" minOccurs="0"/>
```

```
<element name="numOfHsscchs" type="un:numOfHsscchs" minOccurs="0"/>
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                           minOccurs="0"/>
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                  <element name="maximumAllowedUlTxPower" type="un:maximumAllowedUlTxPower"</pre>
                           minOccurs="0"/>
                  <element name="snaInformation" type="un:snaInformation" minOccurs="0"/>
                  <element name="qrxlevMin" type="un:qrxlevMin" minOccurs="0"/>
                  <element name="deltaQrxlevmin" type="un:deltaQrxlevmin" minOccurs="0"/>
                  <element name="qhcs" type="un:qhcs" minOccurs="0"/>
                  <element name="penaltyTime" type="un:penaltyTime" minOccurs="0"/>
                  <element name="referenceTimeDifferenceToCell"</pre>
                           type="un:referenceTimeDifferenceToCell" minOccurs="0"/>
                  <element name="readSFNIndicator" type="un:readSFNIndicator" minOccurs="0"/>
                  <element name="restrictionStateIndicator" type="un:restrictionStateIndicator"</pre>
                           minOccurs="0"/>
                  <element name="dpcModechangeSupportIndicator" type="un:dpcModeChangeSupport"</pre>
                           minOccurs="0"/>
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            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
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              <element ref="gn:GsmRelation"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
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    <complexType>
      <complexContent>
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          <seguence>
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              <complexType>
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                  <element name="uarfcnDl" type="un:uarfcnAnyMode" minOccurs="0"/>
                  <element name="primaryScramblingCode" type="un:primaryScramblingCode"</pre>
                           minOccurs="0"/>
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                  <element name="primarySchPower" type="un:primarySchPower" minOccurs="0"/>
                  <element name="secondarySchPower" type="un:secondarySchPower" minOccurs="0"/>
                  <element name="bchPower" type="un:bchPower" minOccurs="0"/>
                  <element name="aichPower" type="un:aichPower" minOccurs="0"/>
                  <element name="qqualMin" type="un:qqualMin" minOccurs="0"/>
                  <element name="cellCapabilityContainerFDD" type="un:cellCapabilityContainerFDD"</pre>
                                minOccurs="0"/>
                  <element name="txDiversityIndicator" type="un:txDiversityIndicator"</pre>
                               minOccurs="0"/>
                  <element name="temporaryOffset1" type="un:temporaryOffset1" minOccurs="0"/>
                  <element name="temporaryOffset2" type="un:temporaryOffset2" minOccurs="0"/>
                  <element name="sttdSupportIndicator" type="un:sttdSupport" minOccurs="0"/>
                  <element name="closedLoopModelSupportIndicator" type="un:closedLoopMode1"</pre>
                           minOccurs="0"/>
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              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
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            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
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      <complexContent>
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```
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                  <element name="primaryCcpchPower" type="un:primaryCcpchPower" minOccurs="0"/>
                  <element name="timeSlotList" type="un:timeSlotList" minOccurs="0"/>
                  <element name="cellCapabilityContainerTDD" type="un:cellCapabilityContainerTDD"</pre>
                            minOccurs="0"/>
                  <element name="sctdIndicator" type="un:sctdIndicator" minOccurs="0"/>
                  <element name="dpchConstantValue" type="un:dpchConstantValue" minOccurs="0"/>
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            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
<element name="UtranCellTDDLcr">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
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                  <element name="fpachPower" type="un:fpachPower" minOccurs="0"/>
                  <element name="dwPchPower" type="un:dwPchPower" minOccurs="0"/>
                  <element name="tstdIndicator" type="un:tstdIndicator" minOccurs="0"/>
                  <element name="timeSlotLCR" type="un:timeSlotLCR" minOccurs="0"/>
                 </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
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          </sequence>
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      </complexContent>
    </complexType>
  </element>
<element name="UtranCellTDDHcr">
    <complexType>
      <complexContent>
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                  <element name="temporaryOffset1" type="un:temporaryOffset1" minOccurs="0"/>
                  <element name="syncCase" type="un:syncCase" minOccurs="0"/>
                  <element name="timeSlotForSch" type="un:timeSlotForSch" minOccurs="0"/>
                  <element name="schTimeSlot" type="un:schTimeSlot" minOccurs="0"/>
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          </sequence>
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      </complexContent>
    </complexType>
  </element>
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                <element name="iubLinkUtranCell" type="xn:dnList" minOccurs="0"/>
                <element name="iubLinkATMChannelTerminationPoint" type="xn:dn" minOccurs="0"/>
                <element name="iubLinkNodeBFunction" type="xn:dn" minOccurs="0"/>
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            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
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    </complexContent>
  </complexType>
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          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
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<element name="mcc" type="string" minOccurs="0"/>
                <element name="mnc" type="string" minOccurs="0"/>
                <element name="rncId" type="string" minOccurs="0"/>
                <element name="cellMode" type="un:cellMode" minOccurs="0"/>
                <element name="lac" type="un:lac" minOccurs="0"/>
                <element name="rac" type="un:rac" minOccurs="0"/>
                <element name="controllingRnc" type="xn:dn" minOccurs="0"/>
                <element name="hsFlag" type="un:hsFlag" minOccurs="0"/>
                <element name="frameOffset" type="un:frameOffset" minOccurs="0"/>
                <element name="cellIndividualOffset" type="un:cellIndividualOffset"</pre>
                         minOccurs="0"/>
                <element name="hcsPrio" type="un:hcsPrio" minOccurs="0"/>
                <element name="maximumAllowedUlTxPower" type="un:maximumAllowedUlTxPower"</pre>
                         minOccurs="0"/>
                <element name="snaInformation" type="un:snaInformation" minOccurs="0"/>
                <element name="qrxlevMin" type="un:qrxlevMin" minOccurs="0"/>
                <element name="deltaQrxlevmin" type="un:deltaQrxlevmin" minOccurs="0"/>
                <element name="qhcs" type="un:qhcs" minOccurs="0"/>
                <element name="penaltyTime" type="un:penaltyTime" minOccurs="0"/>
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                          type="un:referenceTimeDifferenceToCell" minOccurs="0"/>
```

```
<element name="readSFNIndicator" type="un:readSFNIndicator" minOccurs="0"/>
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                           minOccurs="0"/>
                  <element name="dpcModeChangeSupportIndicator" type="un:dpcModeChangeSupport"</pre>
                           minOccurs="0"/>
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            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
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            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
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    substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass"
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        -
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                  <element name="uarfcnDl" type="un:uarfcnAnyMode" minOccurs="0"/>
                  <element name="primaryScramblingCode" type="un:primaryScramblingCode"</pre>
                           minOccurs="0"/>
                  <element name="primaryCpichPower" type="un:primaryCpichPower" minOccurs="0"/>
                  <element name="aichPower" type="un:aichPower" minOccurs="0"/>
                  <element name="qqualMin" type="un:qqualMin" minOccurs="0"/>
                  <element name="cellCapabilityContainerFDD" type="un:cellCapabilityContainerFDD"</pre>
                           minOccurs="0"/>
                  <element name="txDiversityIndicator" type="un:txDiversityIndicator"</pre>
                           minOccurs="0"/>
                  <element name="temporaryOffset1" type="un:temporaryOffset1" minOccurs="0"/>
                  <element name="temporaryOffset2" type="un:temporaryOffset2" minOccurs="0"/>
                  <element name="sttdSupportIndicator" type="un:sttdSupport" minOccurs="0"/>
                  <element name="closedLoopMode1SupportIndicator" type="un:closedLoopMode1"</pre>
                           minOccurs="0"/>
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                  <element name="timeSlotList" type="un:timeSlotList" minOccurs="0"/>
                  <element name="cellCapabilityContainerTDD" type="un:cellCapabilityContainerTDD"</pre>
minOccurs="0"/>
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```

```
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 substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass"
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            <complexType>
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                <element name="syncCase" type="un:syncCase" minOccurs="0"/>
                <element name="timeSlotForSch" type="un:timeSlotForSch" minOccurs="0"/>
                <element name="schTimeSlot" type="un:schTimeSlot" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
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 substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass"
 <complexType>
    <complexContent>
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            <complexType>
              <all>
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                <element name="timeSlotLCR" type="un:timeSlotLCR" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
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          </choice>
        </sequence>
      </extension>
    </complexContent>
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 name="AntennaFunction"
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    <complexContent>
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        <sequence>
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            <complexType>
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<element name="maxTiltValue" type="un:angleValue" minOccurs="0"/>
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                   <element name="baseElevation" type="integer" minOccurs="0"/>
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                   <element name="longitude" type="decimal" minOccurs="0"/>
                   <element name="maxAzimuthValue" type="un:angleValue" minOccurs="0"/>
                   <element name="minAzimuthValue" type="un:angleValue" minOccurs="0"/>
                   <element name="horizBeamwidth" type="un:angleValue" minOccurs="0"/>
<element name="vertBeamwidth" type="un:angleValue" minOccurs="0"/>
                   <element name="patternLabel" type="string" minOccurs="0"/>
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             </element>
             <choice minOccurs="0" maxOccurs="unbounded">
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             </choice>
          </sequence>
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      </complexContent>
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    substitutionGroup="xn:SubNetworkOptionallyContainedNrmClass"
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                   <element name="mnc" type="string" minOccurs="0"/>
                   <element name="rncId" type="string" minOccurs="0"/>
                   <element name="controlledCellList" type="xn:dnList" minOccurs="0"/>
                 </all>
               </complexType>
             </element>
             <choice minOccurs="0" maxOccurs="unbounded">
               <element ref="un:ExternalUtranCellFDD"/>
               <element ref="un:ExternalUtranCellTDD"/>
               <element ref="un:ExternalUtranCellTDDHcr"/>
               <element ref="un:ExternalUtranCellTDDLcr"/>
               <element ref="xn:VsDataContainer"/>
             </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>
  <element
  name="TmaFunction"
   substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
   <complexType>
     <complexContent>
       <extension base="xn:NrmClass">
         <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                 <!--element name="tmaFunctionId" minOccurs="0"/-->
                  <element name="userLabel" type="string"/>
<element name="tmaSubunitNumber" type="short" minOccurs="0"/>
                  <element name="tmaStateFlag" type="un:tmaStateFlag" minOccurs="0"/>
                  <element name="tmaFunctionFlag" type="un:tmaFunctionFlag" minOccurs="0"/>
                  <element name="tmaMinGain" type="short" minOccurs="0"/>
                  <element name="tmaMaxGain" type="short" minOccurs="0"/>
                  <element name="tmaResolution" type="short" minOccurs="0"/>
<element name="tmaGainFigure" type="short" minOccurs="0"/>
                  <element name="tmaNumberOfSubunits" type="short" minOccurs="0"/>
                  <element name="tmaNumberOfNonLinearGainValues" type="short" minOccurs="0"/>
```

```
<element name="tmaNonLinearGainValue" type="short" minOccurs="0"/>
                 <element name="tmaUtranCellList" type="xn:dnList" minOccurs="0"/>
                 <element name="tmaAdditionalDataFieldNumber" type="short"/>
                 <element name="tmaAntennaModelNumber" type="string"/>
<element name="tmaAntennaSerialNumber" type="string"/>
                 <element name="tmaAntennaOperatingBands" type="short"/>
                 <element name="tmaBeamwidthForEachOpBandInBandOrder" type="un:eightOctets"/>
                 <element name="tmaGainForEachOpBandInBandOrder" type="un:fourOctets"/>
                 <element name="tmaInstallationDate" type="string"/>
                 <element name="tmaInstallersId" type="string"/>
                 <element name="tmaBaseStationId" type="string"/>
                 <element name="tmaSectorId" type="string"/>
                 <element name="tmaAntennaBearing" type="short"/>
                 <element name="tmaInstalledMechanicalTilt" type="short"/>
                 <element name="tmaSubunitType" type="short"/>
                 <element name="tmaSubunitRxFrequencyBand" type="un:fourOctets"/>
                 <element name="tmaSubunitTxFrequencyBand" type="un:fourOctets"/>
                 <element name="tmaMaxSupportedGain" type="short"/>
                 <element name="tmaMinSupportedGain" type="short"/>
                 <element name="tmaGainResolution" type="short"/>
               </all>
             </complexType>
           </element>
           <choice minOccurs="0" maxOccurs="unbounded">
             <element ref="xn:VsDataContainer"/>
           </choice>
         </sequence>
       </extension>
     </complexContent>
   </complexType>
 </element>
</schema>
```

# Annex B (informative): XML schema electronic files

The electronic files corresponding to the normative XML schemas defined in the present document are available in native form in the following archive:

http://www.3gpp.org/ftp/specs/archive/32\_series/32.645/schema/32645-740-XMLSchema.zip

## Annex C (informative): Change history

|          | Change history |           |      |     |  |     |       |       |  |
|----------|----------------|-----------|------|-----|--|-----|-------|-------|--|
| Date     | TSG#           | TSG Doc.  | CR   | Rev | Subject/Comment  | Cat | Old   | New   |  |
| Jun 2006 | SA_32          | SP-060259 | 0027 | -   | Add configuration parameters for radio channel power - Align with 32.642   | В   | 6.7.0 | 7.0.0 |  |
| Sep 2006 | SA_33          | SP-060537 | 0029 |     | Correct the usage of dnList type for iubLinkUtranCell & controlledCellList   | Α   | 7.0.0 | 7.1.0 |  |
| Mar 2007 |                |           |      |     | Delete reference to the 32.304 CMIP SS. Reason: SA#35 endorsed the SA5 decision to not propagate the CMIP Solution Sets to Rel-7 (TS 32.3x4, TS 32.4x4, TS 32.6x4) |     | 7.1.0 | 7.1.1 |  |
| Jun 2007 | SA_36          | SP-070282 | 0030 |     | Add control and configuration of Tower Mounted Amplifiers - Align with RAN3 25.466   | В   | 7.1.1 | 7.2.0 |  |
| Jun 2007 | SA_36          | SP-070276 | 0031 |     | Add missing monitoring of cell neighbourship relations over ltf-p2p - Align with 32.642  | F   | 7.1.1 | 7.2.0 |  |
| Dec 2007 | SA_38          | SP-070730 | 0033 | 1   | R7 CR 32.645-720 Add Missing userLabel Attribute   | Α   | 7.2.0 | 7.3.0 |  |
| Dec 2007 | SA_38          | SP-070732 | 0034 |     | Syntax changes to XML schema element TmaFunction in order to prevent XML compilation errors  | F   | 7.2.0 | 7.3.0 |  |
| Mar 2008 | SP-39          | SP-080058 | 0035 |     | Add missing multi-frequency attributes for 1.28Mcps TDD - Align with 32.642  | F   | 7.3.0 | 7.4.0 |  |

### History

| Document history |              |             |  |  |  |
|------------------|--------------|-------------|--|--|--|
| V7.1.1           | March 2007   | Publication |  |  |  |
| V7.2.0           | June 2007    | Publication |  |  |  |
| V7.3.0           | January 2008 | Publication |  |  |  |
| V7.4.0           | April 2008   | Publication |  |  |  |
|                  |              |             |  |  |  |