

ETSI TS 132 584 V10.0.0 (2011-04)

Technical Specification

**Universal Mobile Telecommunications System (UMTS);
Telecommunication management;
Home Node B (HNB) Operations, Administration,
Maintenance and Provisioning (OAM&P);
XML definitions for Type 1 interface
HNB to HNB Management System (HMS)
(3GPP TS 32.584 version 10.0.0 Release 10)**



Reference

RTS/TSGS-0532584va00

Keywords

UMTS

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

http://portal.etsi.org/chaicor/ETSI_support.asp

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2011.
All rights reserved.

DECTTM, **PLUGTESTS**TM, **UMTS**TM, **TIPHON**TM, the TIPHON logo and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.

3GPPTM is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

LTETM is a Trade Mark of ETSI currently being registered

for the benefit of its Members and of the 3GPP Organizational Partners.

GSM[®] and the GSM logo are Trade Marks registered and owned by the GSM Association.

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://webapp.etsi.org/IPR/home.asp>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

Contents

| | |
|---|-----------|
| Intellectual Property Rights | 2 |
| Foreword..... | 2 |
| Foreword..... | 4 |
| Introduction | 4 |
| 1 Scope | 5 |
| 2 References | 5 |
| 3 Definitions and abbreviations..... | 6 |
| 3.1 Definitions | 6 |
| 3.2 Abbreviations | 6 |
| 4 CM data format definition..... | 6 |
| 4.1 File content description | 6 |
| 4.2 XML schema based CM data file format definition..... | 8 |
| 4.2.1 CM data file XML diagram | 8 |
| 4.2.2 CM data file XML schema | 10 |
| 4.2.3 CM data file XML header..... | 21 |
| 5 PM data format definition | 21 |
| 5.1 Mapping table..... | 21 |
| 5.2 XML schema based PM data file format definition | 23 |
| 5.2.1 PM data file XML diagram..... | 23 |
| 5.2.2 PM data file XML schema..... | 23 |
| 5.2.2 PM data file XML header | 23 |
| Annex A (informative): Examples..... | 24 |
| A.1 XML schema based CM data file..... | 24 |
| A.2 XML schema based PM data file | 24 |
| Annex B (informative): Void | 25 |
| Annex C (informative): Change history | 26 |
| History | 27 |

Foreword

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

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

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

- 32.581: "Telecommunications management; Home Node B (HNB) Operations, Administration, Maintenance and Provisioning (OAM&P); Concepts and requirements for Type 1 interface HNB to HNB Management System (HMS)"
- 32.582: "Telecommunications management; Home Node B (HNB) Operations, Administration, Maintenance and Provisioning (OAM&P); Information model for Type 1 interface HNB to HNB Management System (HMS)"
- 32.583: "Telecommunications management; Home Node B (HNB) Operations, Administration, Maintenance and Provisioning (OAM&P); Procedure flows for Type 1 interface HNB to HNB Management System (HMS)"
- 32.584: "Telecommunications management; Home Node B (HNB) Operations, Administration, Maintenance and Provisioning (OAM&P); XML definitions for Type 1 interface HNB to HNB Management System (HMS)"

1 Scope

The present document describes the data format for Configuration Management and Performance Management for Home Node B (HNB). The XML definitions captured in this document shall be met via Type 1 interface between HNB and HNB Management System (HMS).

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 TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".
- [3] 3GPP TS 32.102: "Telecommunication management; Architecture".
- [4] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".
- [5] Void.
- [6] 3GPP TR R3.020, Home (e)NodeB
- [7] TR-069 Amendment 2, CPE WAN Management Protocol v1.1, Broadband Forum
- [8] 3GPP TS 32.435: "Telecommunication management; Performance measurement: eXtensible Markup Language (XML) file format definition"
- [9] 3GPP TS 32.582: "Telecommunications management; Home Node B (HNB) Operations, Administration, Maintenance and Provisioning (OAM&P); Information model for Type 1 interface HNB to HNB Management System (HMS)"
- [10] W3C REC-xml-20001006: "Extensible Markup Language (XML) 1.0 (Second Edition)".
- [11] W3C REC-xmlschema-0-20010502: "XML Schema Part 0: Primer".
- [12] W3C REC-xmlschema-1-20010502: "XML Schema Part 1: Structures".
- [13] W3C REC-xmlschema-2-20010502: "XML Schema Part 2: Datatypes".
- [14] W3C REC-xml-names-19990114: "Namespaces in XML".
- [15] TR-157 Amendment 1 'Component Objects for CWMP', Broadband Forum.
- [16] TR-098 Amendment 2, "Internet Gateway Device Data Model for TR-069", Broadband Forum
- [17] 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP); Network Resource Model (NRM)".
- [18] 3GPP TS 32.772: 'Telecommunication management; Home Node B (HNB) Subsystem (HNS); Integration Reference Point (IRP); Information Service (IS)'

- [19] 3GPP TS 22.220: 'Service requirements for Home Node B (HNB) and Home eNode B (HeNB)'
 [20] 3GPP TS 32.432: 'Telecommunication management; Performance measurement: File format definition'

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

Home NodeB, 3G Home NodeB: These terms, their derivations and abbreviations are used synonymously throughout this document.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

| | |
|-------|--|
| DM | Domain Manager |
| EM | Element Manager |
| FFS | For Further Study |
| HNB | Home Node B |
| HMS | HNB Management System |
| IP | Internet Protocol |
| LTE | Long Term Evolution |
| MME | Mobile Management Entity |
| NGMN | Next Generation Mobile Networks |
| PnP | Plug and Play |
| SAE | System Architecture Evolution |
| SON | Self-Organising Networks |
| TBD | To Be Discussed |
| UMTS | Universal Mobile Telecommunications System |
| UTRAN | UMTS Radio Access Network |

4 CM data format definition

This clause describes the format of Configuration Management data.

4.1 File content description

Table 4.1 lists all the file content items, provides an explanation of the individual items, and maps the file content items to those used in the XML schema based file format definitions. XML tag attributes are useful where data values bind tightly to its parent element. They have been used where appropriate.

Table 4.1 File Content Description and Mapping of File Content Items to XML tags

| File Content Item | XML schema based XML tag | Description |
|----------------------|--------------------------|--|
| configDataCollection | configDataFile | This is the top-level tag, which identifies the file as a collection of config data. The file content is made up of a header ("configFileHeader"), the collection of configuration items ("configData"), and a configfile footer ("configFileFooter"). |

| File Content Item | XML schema based XML tag | Description |
|---------------------|---------------------------------|---|
| configFileHeader | fileHeader | This is the configuration data file header to be inserted in each file. It includes a version indicator, the sender name, and vendor name of the sending network node. |
| configData | configData | The "configData" construct represents the sequence of zero or more configuration parameter items contained in the file. Each "configData" element contains the name of the NE ("nEId") and the list of parameters to be created, modified or deleted which pertaining to that NE. The "configData" consists of DeviceData, DiagnosticsData, and FAPServiceData. |
| configFileFooter | fileFooter | The configuration data file footer to be inserted in each file. It includes a time stamp, which refers to the time when the file is closed for sending to the NE. |
| fileFormatVersion | fileHeader fileFormatVersion | This parameter identifies the file format version applied by the sender. The format version defined in the present document shall be the abridged number and version of this 3GPP document (see below). The abridged number and version of a 3GPP document is constructed from its version specific full reference "3GPP [...] (yyyy-mm)" by: <ul style="list-style-type: none"> - removing the leading "3GPP TS" - removing everything including and after the version third digit, representing editorial only changes, together with its preceding dot character - from the resulting string, removing leading and trailing white space, replacing every multi character white space by a single space character and changing the case of all characters to uppercase. e.g. "32.584 V8.0" |
| senderName | fileHeader senderName | If this is a downloaded file from HMS to HNB, then this attribute shall hold the DN of HMS whose name hierarchy is defined section 6.2.1 of TS 32.772 [18]. Example: "DC=a1.companyNN.com,SubNetwork=1,ManagementNode=6,HMSFunction=H3WT2" If this is an uploaded file from HNB to HMS, then this attribute shall hold the DN of HNB. See Note 1 of Table 5.1.. See TS 32.300 [4] for definition of DN. |
| vendorName | fileHeader vendorName | The "vendorName" identifies the vendor of the equipment that provided the measurement file. The string may be empty (i.e. string size =0) if the "vendorName" is not configured in the sender. For the XML schema based XML format, XML attribute specification "vendorName" may be absent in case the "vendorName" is not configured in the sender. |
| neld | managedElement | The unique identification of the NE in the system. It includes the user name ("nEUserName"), the distinguished name ("nEDistinguishedName") and the software version ("nESoftwareVersion") of the NE. |
| neUserName | managedElement userLabel | This is the user definable name ("userLabel") defined for the NE in 3GPP TS 32.622 [17]. The string may be empty (i.e. string size =0) if the "nEUserName" is not configured in the CM applications. For the XML schema based XML format, XML attribute specification "userLabel" may be absent in case the "nEUserName" is not configured in the CM applications. |
| neDistinguishedName | managedElement localDn | This attribute shall hold the DN of HNB. See Note 1 of Table 5.1. See TS 32.300 [4] for definition of DN. |

| File Content Item | XML schema based XML tag | Description |
|--------------------|---|--|
| neSoftwareVersion | managedElement swVersion | This is the software version ("swVersion") defined for the NE in 3GPP TS 32.622 [17]. This is an optional parameter which allows post-processing systems to take care of vendor specific measurements modified between software versions. For the XML schema based XML format, XML attribute specification "swVersion" may be absent in case the "nESoftwareVersion" is not configured in the CM applications. |
| Modifier | configData modifier | This element is present if the HMS is required to inform the NE whether the parameter information should be used to create, update or delete an specific object instance on the HNB.. If not present the NE will assume the modification action is update |
| HNBDDataParameters | configData DeviceInfo configData ManagementServer configData Time FAPService DNPref FAPService FAPControl FAPService AccessMgmt FAPService CellConfig FAPService Transport FAPService REM FAPService GPS | These elements are present if the HMS requires to modify the specific configuration parameters The XML file format definitions implement the configuration structure and parameter definitions defined in broadband forum 3GPP TS 32.582 [9] and TR-098 Amendment 2 [16]. |
| timestamp | fileFooter dateTime | |

A vendor MAY extend the standardized parameter list with vendor-specific parameters and objects. Vendor-specific parameters and objects MAY be defined either in a separate naming hierarchy or within the standardized naming hierarchy of the XML File Format.

The name of a vendor-specific parameter or object not contained within another vendor-specific object MUST have the following form to align with the Vendor Specific Parameter Definition of TR-098 Amendment 2 [16].

- X_<VENDOR>_VendorSpecificName

4.2 XML schema based CM data file format definition

4.2.1 CM data file XML diagram

Figure 4.1 describes the XML element structure of the CM data file.

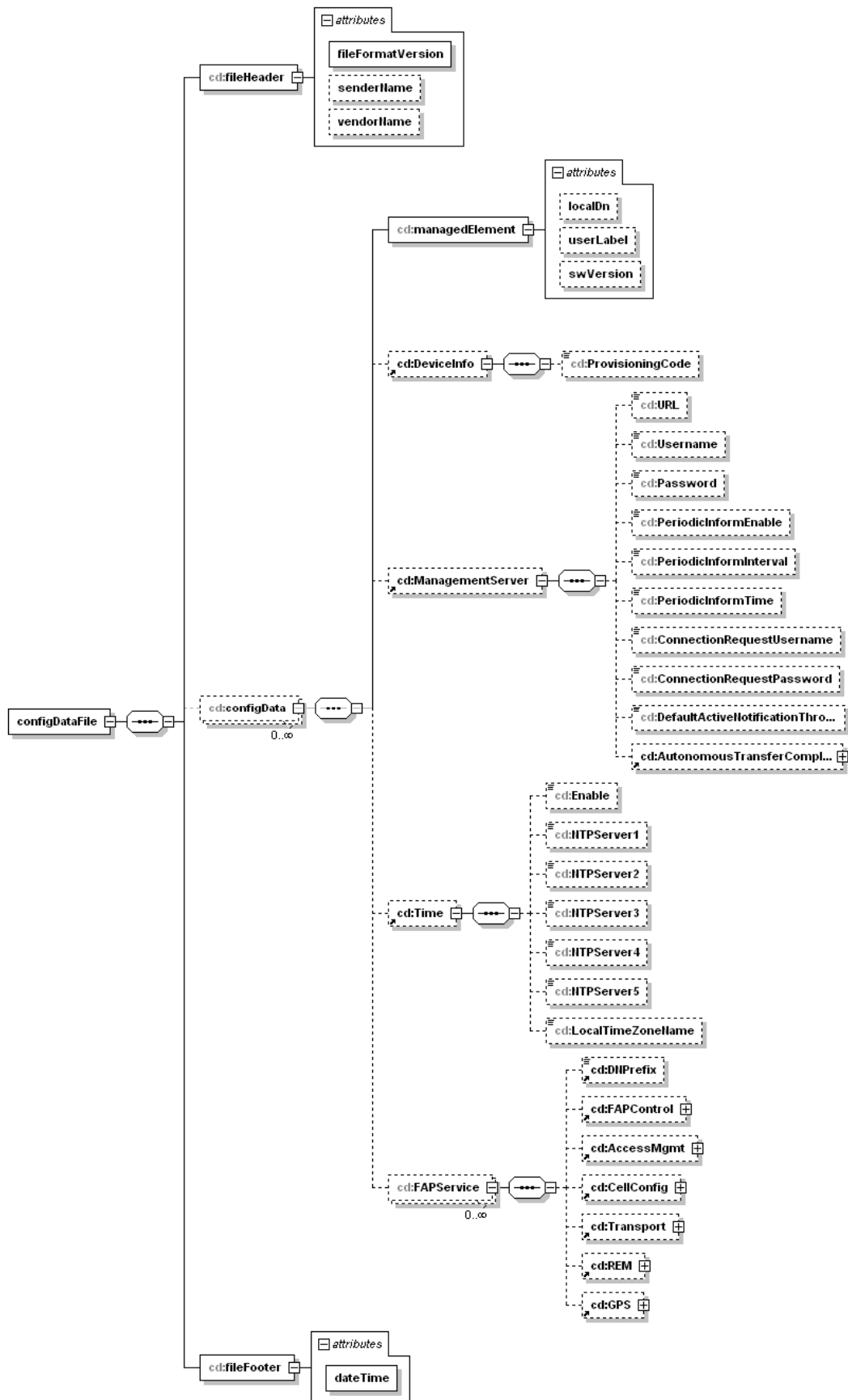


Figure 4.1: XML diagram of the configuration data file

4.2.2 CM data file XML schema

The following XML schema configData.xsd is the schema for CM data XML files:

```
<?xml version="1.0" encoding="UTF-8"?>

<!--
  3GPP TS 32.584 Configuration Data XML file format definition
  data file XML schema
  configData.xsd
-->
<schema xmlns:cd="http://www.3gpp.org/ftp/specs/archive/32_series/32.584#configData"
  xmlns="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.584#configData"
  elementFormDefault="qualified">
  <!-- Config data XML elements -->
  <element name="AccessMode">
    <simpleType>
      <restriction base="string">
        <enumeration value="Open Access"/>
        <enumeration value="Closed Access"/>
        <enumeration value="Hybrid Access"/>
      </restriction>
    </simpleType>
  </element>
  <element name="BandIndicator">
    <simpleType>
      <restriction base="string">
        <enumeration value="GSM 850"/>
        <enumeration value="GSM 900"/>
        <enumeration value="DCS 1800"/>
        <enumeration value="PCS 1900"/>
      </restriction>
    </simpleType>
  </element>
  <element name="InServiceHandling">
    <simpleType>
      <restriction base="string">
        <enumeration value="Immediate"/>
        <enumeration value="Delayed"/>
      </restriction>
    </simpleType>
  </element>
  <element name="MeasurementQuantity-Inter">
    <simpleType>
      <restriction base="string">
        <enumeration value="CPICH Ec/No"/>
        <enumeration value="CPICH RSCP"/>
      </restriction>
    </simpleType>
  </element>
  <element name="MeasurementQuantity-Intra">
    <simpleType>
      <restriction base="string">
        <enumeration value="CPICH Ec/No"/>
        <enumeration value="CPICH RSCP"/>
        <enumeration value="Pathloss"/>
      </restriction>
    </simpleType>
  </element>
  <element name="Modifier">
    <simpleType>
      <restriction base="string">
        <enumeration value="create"/>
        <enumeration value="delete"/>
        <enumeration value="update"/>
      </restriction>
    </simpleType>
  </element>
  <element name="NonCSGUEAccessDecision">
    <simpleType>
      <restriction base="string">
        <enumeration value="Local"/>
        <enumeration value="Query FAP-GW"/>
        <enumeration value="By Core"/>
      </restriction>
    </simpleType>
  </element>
</schema>
```

```
</element>
<element name="NonHCSTCRMax">
  <simpleType>
    <restriction base="string">
      <enumeration value="not used"/>
      <enumeration value="30"/>
      <enumeration value="60"/>
      <enumeration value="120"/>
      <enumeration value="180"/>
      <enumeration value="240"/>
    </restriction>
  </simpleType>
</element>
<element name="NonHCSTCRMaxHyst">
  <simpleType>
    <restriction base="string">
      <enumeration value="not used"/>
      <enumeration value="10"/>
      <enumeration value="20"/>
      <enumeration value="30"/>
      <enumeration value="40"/>
      <enumeration value="50"/>
      <enumeration value="60"/>
      <enumeration value="70"/>
    </restriction>
  </simpleType>
</element>
<element name="NumberOfPSCs">
  <simpleType>
    <restriction base="string">
      <enumeration value="5"/>
      <enumeration value="10"/>
      <enumeration value="15"/>
      <enumeration value="20"/>
      <enumeration value="30"/>
      <enumeration value="40"/>
      <enumeration value="50"/>
      <enumeration value="64"/>
      <enumeration value="80"/>
      <enumeration value="120"/>
      <enumeration value="160"/>
      <enumeration value="256"/>
      <enumeration value="alltherest"/>
      <enumeration value="spare3"/>
      <enumeration value="spare2"/>
      <enumeration value="spare1"/>
    </restriction>
  </simpleType>
</element>
<element name="PLMNTType">
  <simpleType>
    <restriction base="string">
      <enumeration value="GSM-MAP"/>
      <enumeration value="ANSI-41"/>
    </restriction>
  </simpleType>
</element>
<element name="QualityMeasureCPICH">
  <simpleType>
    <restriction base="string">
      <enumeration value="Ec/No"/>
      <enumeration value="RSCP"/>
    </restriction>
  </simpleType>
</element>
<element name="TCRMax">
  <simpleType>
    <restriction base="string">
      <enumeration value="not used"/>
      <enumeration value="30"/>
      <enumeration value="60"/>
      <enumeration value="120"/>
      <enumeration value="180"/>
      <enumeration value="240"/>
    </restriction>
  </simpleType>
</element>
<element name="TCRMaxHyst">
```

```

    <simpleType>
      <restriction base="string">
        <enumeration value="not used"/>
        <enumeration value="10"/>
        <enumeration value="20"/>
        <enumeration value="30"/>
        <enumeration value="40"/>
        <enumeration value="50"/>
        <enumeration value="60"/>
        <enumeration value="70"/>
      </restriction>
    </simpleType>
  </element>
  <element name="TransferTypeFilter">
    <simpleType>
      <restriction base="string">
        <enumeration value="Upload"/>
        <enumeration value="Download"/>
        <enumeration value="Both"/>
      </restriction>
    </simpleType>
  </element>
  <element name="DeviceInfo">
    <complexType>
      <sequence>
        <element name="ProvisioningCode" type="string" minOccurs="0"/>
      </sequence>
    </complexType>
  </element>
  <element name="AutonomousTransferCompletePolicy">
    <complexType>
      <sequence>
        <element name="Enable" type="boolean" minOccurs="0"/>
        <element ref="cd:TransferTypeFilter" minOccurs="0"/>
        <element name="FileTypeFilter" type="string" minOccurs="0"/>
      </sequence>
    </complexType>
  </element>
  <element name="ManagementServer">
    <complexType>
      <sequence>
        <element name="URL" type="string" minOccurs="0"/>
        <element name="Username" type="string" minOccurs="0"/>
        <element name="Password" type="string" minOccurs="0"/>
        <element name="PeriodicInformEnable" type="boolean" minOccurs="0"/>
        <element name="PeriodicInformInterval" type="unsignedInt" minOccurs="0"/>
        <element name="PeriodicInformTime" type="dateTime" minOccurs="0"/>
        <element name="ConnectionRequestUsername" type="string" minOccurs="0"/>
        <element name="ConnectionRequestPassword" type="string" minOccurs="0"/>
        <element name="DefaultActiveNotificationThrottle" type="unsignedInt" minOccurs="0"/>
        <element ref="cd:AutonomousTransferCompletePolicy" minOccurs="0"/>
      </sequence>
    </complexType>
  </element>
  <element name="Time">
    <complexType>
      <sequence>
        <element name="Enable" type="boolean" minOccurs="0"/>
        <element name="NTPServer1" type="string" minOccurs="0"/>
        <element name="NTPServer2" type="string" minOccurs="0"/>
        <element name="NTPServer3" type="string" minOccurs="0"/>
        <element name="NTPServer4" type="string" minOccurs="0"/>
        <element name="NTPServer5" type="string" minOccurs="0"/>
        <element name="LocalTimeZoneName" type="string" minOccurs="0"/>
      </sequence>
    </complexType>
  </element>
  <element name="DNPrefix" type="string"/>
  <element name="Gateway">
    <complexType>
      <sequence>
        <element name="SecGWServer1" type="string" minOccurs="0"/>
        <element name="SecGWServer2" type="string" minOccurs="0"/>
        <element name="SecGWServer3" type="string" minOccurs="0"/>
        <element name="FAPGWServer1" type="string" minOccurs="0"/>
        <element name="FAPGWServer2" type="string" minOccurs="0"/>
        <element name="FAPGWServer3" type="string" minOccurs="0"/>
        <element name="FAPGWPort" type="unsignedInt" minOccurs="0"/>
      </sequence>
    </complexType>
  </element>

```

```

    </sequence>
  </complexType>
</element>
<element name="SelfConfig">
  <complexType>
    <sequence>
      <element name="UARFCNSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="PrimaryScramblingCodeSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="MaxFAPTxPowerSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="PCPICHPowerSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="MaxULTxPowerSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="LACRACURASelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="NeighborListSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="CellReSelectionSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="IntraFreqMeasSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="InterFreqMeasSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="InterRATMeasSelfConfigEnable" type="boolean" minOccurs="0"/>
      <element name="UEInternalMeasConfigEnable" type="boolean" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="UMTS">
  <complexType>
    <sequence>
      <element ref="cd:SelfConfig" minOccurs="0"/>
      <element ref="cd:Gateway" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="AdminState" type="boolean"/>
<element name="SelfConfigEvents" type="string"/>
<element name="EnclosureTamperingDetected" type="boolean"/>
<element name="FAPControl">
  <complexType>
    <sequence>
      <element ref="cd:AdminState" minOccurs="0"/>
      <element ref="cd:SelfConfigEvents" minOccurs="0"/>
      <element ref="cd:EnclosureTamperingDetected" minOccurs="0"/>
      <element ref="cd:UMTS" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="CSGMembershipDeterminedLocally" type="boolean"/>
<element name="HNBName" type="string"/>
<element name="HomeZoneName">
  <simpleType>
    <restriction base="string">
      <maxLength value="48"/>
    </restriction>
  </simpleType>
</element>
<element name="MaxConcurrentCSGUsers" type="integer"/>
<element name="CSGID" type="unsignedInt"/>
<element name="AccessControlList" type="string"/>
<element name="MemberDetail">
  <complexType>
    <sequence>
      <element ref="cd:Modifier" minOccurs="0"/>
      <element name="Enable" type="boolean" minOccurs="0"/>
      <element name="IMSI" type="string" minOccurs="0"/>
      <element name="MSISDN" type="string" minOccurs="0"/>
      <element name="MembershipExpires" type="dateTime" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="AccessMgmt">
  <complexType>
    <sequence>
      <element ref="cd:AccessMode" minOccurs="0"/>
      <element ref="cd:NonCSGUEAccessDecision" minOccurs="0"/>
      <element ref="cd:CSGMembershipDeterminedLocally" minOccurs="0"/>
      <element ref="cd:HNBName" minOccurs="0"/>
      <element ref="cd:HomeZoneName" minOccurs="0"/>
      <element ref="cd:MaxConcurrentCSGUsers" minOccurs="0"/>
      <element ref="cd:CSGID" minOccurs="0"/>
      <element ref="cd:AccessControlList" minOccurs="0"/>
      <element ref="cd:MemberDetail" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="cd:LocalIPAccess" minOccurs="0"/>
    </sequence>
  </complexType>
</element>

```

```

    </sequence>
  </complexType>
</element>
<element name="CN">
  <complexType>
    <sequence>
      <element ref="cd:PLMNType" minOccurs="0"/>
      <element name="PLMNID" type="string" minOccurs="0"/>
      <element name="EquivPLMNID" type="string" minOccurs="0"/>
      <element name="SAC" type="unsignedInt" minOccurs="0"/>
      <element name="LACRAC" type="string" minOccurs="0"/>
      <element name="CSDomain" minOccurs="0">
        <complexType>
          <sequence>
            <element name="T3212" type="unsignedInt" minOccurs="0"/>
            <element name="IMSIAttachDetachEnable" type="boolean" minOccurs="0"/>
          </sequence>
        </complexType>
      </element>
      <element name="PSDomain" minOccurs="0">
        <complexType>
          <sequence>
            <element name="NetworkModeOperationCombined" type="boolean"
minOccurs="0"/>
          </sequence>
        </complexType>
      </element>
    </sequence>
  </complexType>
</element>
</sequence>
</complexType>
</element>
<element name="CSG">
  <complexType>
    <sequence>
      <element name="UARFCNDLList" type="string" minOccurs="0"/>
      <element name="CSGPSCSplitInfo" minOccurs="0">
        <complexType>
          <sequence>
            <element name="StartPSCRange1Coefficient" type="unsignedInt"
minOccurs="0"/>
            <element ref="cd:NumberOfPSCs" minOccurs="0"/>
            <element name="PSCRange2Offset" type="unsignedInt" minOccurs="0"/>
          </sequence>
        </complexType>
      </element>
    </sequence>
  </complexType>
</element>
<element name="CellSelection">
  <complexType>
    <sequence>
      <element ref="cd:QualityMeasureCPICH" minOccurs="0"/>
      <element name="QqualMin" type="integer" minOccurs="0"/>
      <element name="QqualMinOffset" type="unsignedInt" minOccurs="0"/>
      <element name="QRxLevMin" type="integer" minOccurs="0"/>
      <element name="DeltaQRxLevMin" type="integer" minOccurs="0"/>
      <element name="QRxLevMinOffset" type="unsignedInt" minOccurs="0"/>
      <element name="QHyst1s" type="unsignedInt" minOccurs="0"/>
      <element name="QHyst2s" type="unsignedInt" minOccurs="0"/>
      <element name="TReselections" type="unsignedInt" minOccurs="0"/>
      <element name="SIntrasearch" type="integer" minOccurs="0"/>
      <element name="SIntersearch" type="integer" minOccurs="0"/>
      <element name="SSearchHCS" type="integer" minOccurs="0"/>
      <element name="SSearchRAT" type="integer" minOccurs="0"/>
      <element name="SHCSRAT" type="integer" minOccurs="0"/>
      <element name="SLimitSearchRAT" type="integer" minOccurs="0"/>
      <element ref="cd:NonHCSTCRMax" minOccurs="0"/>
      <element name="NonHCNSCR" type="unsignedInt" minOccurs="0"/>
      <element ref="cd:NonHCSTCRMaxHyst" minOccurs="0"/>
      <element name="QHCS" type="unsignedInt" minOccurs="0"/>
      <element name="UseOfHCS" type="boolean" minOccurs="0"/>
      <element name="HCSPrio" type="unsignedInt" minOccurs="0"/>
      <element ref="cd:TCRMax" minOccurs="0"/>
      <element name="NCR" type="unsignedInt" minOccurs="0"/>
      <element ref="cd:TCRMaxHyst" minOccurs="0"/>
      <element name="UETxPwrMaxRACH" type="integer" minOccurs="0"/>
    </sequence>
  </complexType>
</element>

```

```

<element name="RRCTimers">
  <complexType>
    <sequence>
      <element name="T300" type="unsignedInt" minOccurs="0"/>
      <element name="T301" type="unsignedInt" minOccurs="0"/>
      <element name="T302" type="unsignedInt" minOccurs="0"/>
      <element name="T304" type="unsignedInt" minOccurs="0"/>
      <element name="T305" type="unsignedInt" minOccurs="0"/>
      <element name="T307" type="unsignedInt" minOccurs="0"/>
      <element name="T308" type="unsignedInt" minOccurs="0"/>
      <element name="T309" type="unsignedInt" minOccurs="0"/>
      <element name="T310" type="unsignedInt" minOccurs="0"/>
      <element name="T311" type="unsignedInt" minOccurs="0"/>
      <element name="T312" type="unsignedInt" minOccurs="0"/>
      <element name="T313" type="unsignedInt" minOccurs="0"/>
      <element name="T314" type="unsignedInt" minOccurs="0"/>
      <element name="T315" type="unsignedInt" minOccurs="0"/>
      <element name="T316" type="unsignedInt" minOccurs="0"/>
      <element name="T317" type="unsignedInt" minOccurs="0"/>
      <element name="N300" type="unsignedInt" minOccurs="0"/>
      <element name="N301" type="unsignedInt" minOccurs="0"/>
      <element name="N302" type="unsignedInt" minOccurs="0"/>
      <element name="N304" type="unsignedInt" minOccurs="0"/>
      <element name="N310" type="unsignedInt" minOccurs="0"/>
      <element name="N312" type="unsignedInt" minOccurs="0"/>
      <element name="N313" type="unsignedInt" minOccurs="0"/>
      <element name="N315" type="unsignedInt" minOccurs="0"/>
      <element name="WaitTime" type="unsignedInt" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="DRX">
  <complexType>
    <sequence>
      <element name="DRXCycleLengthCoefficientCS" type="unsignedInt" minOccurs="0"/>
      <element name="DRXCycleLengthCoefficientPS" type="unsignedInt" minOccurs="0"/>
      <element name="UTRANDRXCycleLengthCoefficient" type="unsignedInt" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="PowerControl">
  <complexType>
    <sequence>
      <element name="ConstantValue" type="integer" minOccurs="0"/>
      <element name="PowerRampStepUp" type="unsignedInt" minOccurs="0"/>
      <element name="PreambleRetransMax" type="unsignedInt" minOccurs="0"/>
      <element name="PersistenceScaleFactor" type="unsignedInt" minOccurs="0"/>
      <element name="MMax" type="unsignedInt" minOccurs="0"/>
      <element name="NB01Min" type="unsignedInt" minOccurs="0"/>
      <element name="NB01Max" type="unsignedInt" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="CellRestriction">
  <complexType>
    <sequence>
      <element name="CellBarred" type="boolean" minOccurs="0"/>
      <element name="IntraFreqCellReselectionIndicator" type="boolean" minOccurs="0"/>
      <element name="TBarred" type="unsignedInt" minOccurs="0"/>
      <element name="AccessClassBarredListCS" type="string" minOccurs="0"/>
      <element name="AccessClassBarredListPS" type="string" minOccurs="0"/>
      <element name="CellReservedForOperatorUse" type="boolean" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="IntraFreqMeas">
  <complexType>
    <sequence>
      <element ref="cd:MeasurementQuantity-Intra" minOccurs="0"/>
      <element name="FilterCoefficient" type="unsignedInt" minOccurs="0"/>
      <element name="IntraFrequencyEventIdentity" type="string" minOccurs="0"/>
      <element name="TriggeringCondition2Event1a" type="string" minOccurs="0"/>
      <element name="TriggeringCondition1Event1b" type="string" minOccurs="0"/>
      <element name="TriggeringCondition2Event1e" type="string" minOccurs="0"/>
      <element name="TriggeringCondition1Event1f" type="string" minOccurs="0"/>
      <element name="ReportingRangeEvent1a" type="unsignedInt" minOccurs="0"/>
      <element name="ReportingRangeEvent1b" type="unsignedInt" minOccurs="0"/>
      <element name="WeightingFactorEvent1a" type="unsignedInt" minOccurs="0"/>
    </sequence>
  </complexType>
</element>

```



```

        <element name="WeightingFactorEvent1b" type="unsignedInt" minOccurs="0"/>
        <element name="ReportDeactivationThresholdEvent1a" type="unsignedInt"
minOccurs="0"/>
        <element name="ReportingAmountEvent1a" type="integer" minOccurs="0"/>
        <element name="ReportingAmountEvent1c" type="integer" minOccurs="0"/>
        <element name="ReportingIntervalEvent1a" type="unsignedInt" minOccurs="0"/>
        <element name="ReportingIntervalEvent1c" type="unsignedInt" minOccurs="0"/>
        <element name="HysteresisEvent1a" type="unsignedInt" minOccurs="0"/>
        <element name="HysteresisEvent1b" type="unsignedInt" minOccurs="0"/>
        <element name="HysteresisEvent1c" type="unsignedInt" minOccurs="0"/>
        <element name="HysteresisEvent1e" type="unsignedInt" minOccurs="0"/>
        <element name="HysteresisEvent1f" type="unsignedInt" minOccurs="0"/>
        <element name="TimeToTriggerEvent1a" type="unsignedInt" minOccurs="0"/>
        <element name="TimeToTriggerEvent1b" type="unsignedInt" minOccurs="0"/>
        <element name="TimeToTriggerEvent1c" type="unsignedInt" minOccurs="0"/>
        <element name="TimeToTriggerEvent1e" type="unsignedInt" minOccurs="0"/>
        <element name="TimeToTriggerEvent1f" type="unsignedInt" minOccurs="0"/>
        <element name="ThresholdUsedFrequencyEvent1e" type="integer" minOccurs="0"/>
        <element name="ThresholdUsedFrequencyEvent1f" type="integer" minOccurs="0"/>
        <element name="ReplacementActivationThresholdEvent1c" type="unsignedInt"
minOccurs="0"/>
    </sequence>
</complexType>
</element>
<element name="InterFreqMeas">
    <complexType>
        <sequence>
            <element ref="cd:MeasurementQuantity-Inter" minOccurs="0"/>
            <element name="FilterCoefficient" type="unsignedInt" minOccurs="0"/>
            <element name="InterFrequencyEventIdentity" type="string" minOccurs="0"/>
            <element name="WeightingFactorEvent2a" type="unsignedInt" minOccurs="0"/>
            <element name="WeightingFactorEvent2b" type="unsignedInt" minOccurs="0"/>
            <element name="WeightingFactorEvent2d" type="unsignedInt" minOccurs="0"/>
            <element name="WeightingFactorEvent2f" type="unsignedInt" minOccurs="0"/>
            <element name="HysteresisEvent2a" type="unsignedInt" minOccurs="0"/>
            <element name="HysteresisEvent2b" type="unsignedInt" minOccurs="0"/>
            <element name="HysteresisEvent2d" type="unsignedInt" minOccurs="0"/>
            <element name="HysteresisEvent2f" type="unsignedInt" minOccurs="0"/>
            <element name="TimeToTriggerEvent2a" type="unsignedInt" minOccurs="0"/>
            <element name="TimeToTriggerEvent2b" type="unsignedInt" minOccurs="0"/>
            <element name="TimeToTriggerEvent2d" type="unsignedInt" minOccurs="0"/>
            <element name="TimeToTriggerEvent2f" type="unsignedInt" minOccurs="0"/>
            <element name="ThresholdUsedFrequencyEvent2b" type="integer" minOccurs="0"/>
            <element name="ThresholdUsedFrequencyEvent2d" type="integer" minOccurs="0"/>
            <element name="ThresholdUsedFrequencyEvent2f" type="integer" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="InterRATMeas">
    <complexType>
        <sequence>
            <element name="GSMFilterCoefficient" type="unsignedInt" minOccurs="0"/>
            <element name="BSICVerificationRequired" type="boolean" minOccurs="0"/>
            <element name="WeightingFactor" type="unsignedInt" minOccurs="0"/>
            <element name="Hysteresis" type="unsignedInt" minOccurs="0"/>
            <element name="TimeToTrigger" type="unsignedInt" minOccurs="0"/>
            <element name="ThresholdOwnSystem" type="integer" minOccurs="0"/>
            <element name="ThresholdOtherSystem" type="integer" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="UEInternalMeas">
    <complexType>
        <sequence>
            <element name="FilterCoefficient" type="unsignedInt" minOccurs="0"/>
            <element name="UETxPwrThresholdEvent6a" type="integer" minOccurs="0"/>
            <element name="TimeToTriggerEvent6a" type="unsignedInt" minOccurs="0"/>
            <element name="UETxPwrThresholdEvent6b" type="integer" minOccurs="0"/>
            <element name="TimeToTriggerEvent6b" type="unsignedInt" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="RF">
    <complexType>
        <sequence>
            <element name="UARFCNDL" type="string" minOccurs="0"/>
            <element name="UARFCNDLToProtect" type="string" minOccurs="0"/>
            <element name="PrimaryScramblingCode" type="string" minOccurs="0"/>
        </sequence>
    </complexType>
</element>

```

```

    <element name="MaxFAPTxPower" type="string" minOccurs="0"/>
    <element name="MaxULTxPower" type="string" minOccurs="0"/>
    <element name="PCPICHPower" type="string" minOccurs="0"/>
    <element name="PowerOffsetPilotDPDCH" type="unsignedInt" minOccurs="0"/>
    <element name="FAPCoverageTarget" type="unsignedInt" minOccurs="0"/>
    <element name="PSCHPower" type="integer" minOccurs="0"/>
    <element name="SSCHPower" type="integer" minOccurs="0"/>
    <element name="PICHPower" type="integer" minOccurs="0"/>
    <element name="PCHPower" type="integer" minOccurs="0"/>
    <element name="FACHPower" type="integer" minOccurs="0"/>
    <element name="BCHPower" type="integer" minOccurs="0"/>
    <element name="AICHPower" type="integer" minOccurs="0"/>
    <element name="CTCHAllocationPeriod" type="unsignedInt" minOccurs="0"/>
    <element name="CBSFrameOffset" type="unsignedInt" minOccurs="0"/>
    <element name="MaxTTI" type="unsignedInt" minOccurs="0"/>
  </sequence>
</complexType>
</element>
<element name="IntraFreqCell">
  <complexType>
    <sequence>
      <element ref="cd:Modifier" minOccurs="0"/>
      <element name="Enable" type="boolean" minOccurs="0"/>
      <element name="MustInclude" type="boolean" minOccurs="0"/>
      <element name="PLMNID" type="string" minOccurs="0"/>
      <element name="RNCID" type="unsignedInt" minOccurs="0"/>
      <element name="CID" type="unsignedInt" minOccurs="0"/>
      <element name="LAC" type="unsignedInt" minOccurs="0"/>
      <element name="RAC" type="unsignedInt" minOccurs="0"/>
      <element name="URA" type="unsignedInt" minOccurs="0"/>
      <element name="PCPICHScramblingCode" type="unsignedInt" minOccurs="0"/>
      <element name="PCPICHTxPower" type="integer" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="InterFreqCell">
  <complexType>
    <sequence>
      <element ref="cd:Modifier" minOccurs="0"/>
      <element name="Enable" type="boolean" minOccurs="0"/>
      <element name="MustInclude" type="boolean" minOccurs="0"/>
      <element name="PLMNID" type="string" minOccurs="0"/>
      <element name="RNCID" type="unsignedInt" minOccurs="0"/>
      <element name="CID" type="unsignedInt" minOccurs="0"/>
      <element name="LAC" type="unsignedInt" minOccurs="0"/>
      <element name="RAC" type="unsignedInt" minOccurs="0"/>
      <element name="URA" type="unsignedInt" minOccurs="0"/>
      <element name="UARFCNUL" type="unsignedInt" minOccurs="0"/>
      <element name="UARFCNDL" type="unsignedInt" minOccurs="0"/>
      <element name="PCPICHScramblingCode" type="unsignedInt" minOccurs="0"/>
      <element name="PCPICHTxPower" type="integer" minOccurs="0"/>
    </sequence>
  </complexType>
</element>
<element name="InterRATCell">
  <complexType>
    <sequence>
      <element name="GSM" minOccurs="0" maxOccurs="unbounded">
        <complexType>
          <sequence>
            <element ref="cd:Modifier" minOccurs="0"/>
            <element name="Enable" type="boolean" minOccurs="0"/>
            <element name="MustInclude" type="boolean" minOccurs="0"/>
            <element name="PLMNID" type="string" minOccurs="0"/>
            <element name="LAC" type="unsignedInt" minOccurs="0"/>
            <element name="BSIC" type="unsignedInt" minOccurs="0"/>
            <element name="CI" type="unsignedInt" minOccurs="0"/>
            <element ref="cd:BandIndicator" minOccurs="0"/>
            <element name="BCCHARFCN" type="unsignedInt" minOccurs="0"/>
          </sequence>
        </complexType>
      </element>
    </sequence>
  </complexType>
</element>
<element name="NeighborList">
  <complexType>
    <sequence>

```

```

        <element ref="cd:IntraFreqCell" minOccurs="0" maxOccurs="unbounded"/>
        <element ref="cd:InterFreqCell" minOccurs="0" maxOccurs="unbounded"/>
        <element ref="cd:InterRATCell" minOccurs="0"/>
    </sequence>
</complexType>
</element>
<element name="FDDFAP">
    <complexType>
        <sequence>
            <element name="HSFlag" type="boolean" minOccurs="0"/>
            <element name="HSEnable" type="boolean" minOccurs="0"/>
            <element name="NumOfHSPDSCCHs" type="unsignedInt" minOccurs="0"/>
            <element name="NumOfHSSCCHs" type="unsignedInt" minOccurs="0"/>
            <element ref="cd:CellSelection" minOccurs="0"/>
            <element ref="cd:RRCTimers" minOccurs="0"/>
            <element ref="cd:DRX" minOccurs="0"/>
            <element ref="cd:PowerControl" minOccurs="0"/>
            <element ref="cd:CellRestriction" minOccurs="0"/>
            <element ref="cd:IntraFreqMeas" minOccurs="0"/>
            <element ref="cd:InterFreqMeas" minOccurs="0"/>
            <element ref="cd:InterRATMeas" minOccurs="0"/>
            <element ref="cd:UEInternalMeas" minOccurs="0"/>
            <element ref="cd:RF" minOccurs="0"/>
            <element ref="cd:NeighborList" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="RAN">
    <complexType>
        <sequence>
            <element name="URAList" type="string" minOccurs="0"/>
            <element name="RNCID" type="unsignedInt" minOccurs="0"/>
            <element name="CellID" type="unsignedInt" minOccurs="0"/>
            <element name="HNBIDRealm" type="string" minOccurs="0"/>
            <element name="TRatC" type="unsignedInt" minOccurs="0"/>
            <element name="TRafC" type="unsignedInt" minOccurs="0"/>
            <element name="NRafC" type="unsignedInt" minOccurs="0"/>
            <element name="TigOR" type="unsignedInt" minOccurs="0"/>
            <element name="TinTR" type="unsignedInt" minOccurs="0"/>
            <element name="TDataFwd" type="unsignedInt" minOccurs="0"/>
            <element name="TRelocPrep" type="unsignedInt" minOccurs="0"/>
            <element name="TRelocOverall" type="unsignedInt" minOccurs="0"/>
            <element ref="cd:CSG" minOccurs="0"/>
            <element ref="cd:FDDFAP" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="CellConfig">
    <complexType>
        <sequence>
            <element name="UMTS" minOccurs="0">
                <complexType>
                    <sequence>
                        <element ref="cd:CN" minOccurs="0"/>
                        <element ref="cd:RAN" minOccurs="0"/>
                    </sequence>
                </complexType>
            </element>
        </sequence>
    </complexType>
</element>
<element name="SCTP">
    <complexType>
        <sequence>
            <element name="Enable" type="boolean" minOccurs="0"/>
            <element name="HBInterval" type="unsignedInt" minOccurs="0"/>
            <element name="MaxAssociationRetransmits" type="unsignedInt" minOccurs="0"/>
            <element name="MaxInitRetransmits" type="unsignedInt" minOccurs="0"/>
            <element name="MaxPathRetransmits" type="unsignedInt" minOccurs="0"/>
            <element name="RTOInitial" type="unsignedInt" minOccurs="0"/>
            <element name="RTOMax" type="unsignedInt" minOccurs="0"/>
            <element name="RTOMin" type="unsignedInt" minOccurs="0"/>
            <element name="ValCookieLife" type="unsignedInt" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="RealTime">
    <complexType>

```

```

        <sequence>
          <element name="RTCPEnable" type="boolean" minOccurs="0"/>
        </sequence>
      </complexType>
    </element>
    <element name="Packet">
      <complexType>
        <sequence>
          <element name="EchoInterval" type="unsignedInt" minOccurs="0"/>
        </sequence>
      </complexType>
    </element>
    <element name="Tunnel">
      <complexType>
        <sequence>
          <element name="VirtualInterface" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <sequence>
                <element name="Enable" type="boolean" minOccurs="0"/>
                <element ref="cd:Modifier" minOccurs="0"/>
                <element name="CryptoProfile" type="string" minOccurs="0"/>
                <element name="DSCPMarkPolicy" type="integer" minOccurs="0"/>
              </sequence>
            </complexType>
          </element>
        </sequence>
      </complexType>
    </element>
    <element name="Security">
      <complexType>
        <sequence>
          <element name="Secret" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <sequence>
                <element name="Enable" type="boolean" minOccurs="0"/>
              </sequence>
            </complexType>
          </element>
          <element name="Pkey" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <sequence>
                <element name="Enable" type="boolean" minOccurs="0"/>
              </sequence>
            </complexType>
          </element>
          <element name="CryptoProfile" minOccurs="0" maxOccurs="unbounded">
            <complexType>
              <sequence>
                <element ref="cd:Modifier" minOccurs="0"/>
                <element name="Enable" type="boolean" minOccurs="0"/>
                <element name="AuthMethod" type="string"/>
                <element name="MaxChildSA" type="unsignedInt" minOccurs="0"/>
                <element name="IKEEncrypt" type="string"/>
                <element name="IKEPRF" type="string"/>
                <element name="IKEIntegrity" type="string"/>
                <element name="IKEDH" type="string"/>
                <element name="ESPEncrypt" type="string"/>
                <element name="ESPIntegrity" type="string"/>
                <element name="IPsecWindowSize" type="unsignedInt" minOccurs="0"/>
                <element name="IKEReplayLifetime" type="unsignedInt" minOccurs="0"/>
                <element name="IPsecRekeyLifetimeByte" type="unsignedInt"
minOccurs="0"/>
                <element name="IPsecRekeyLifetimeTime" type="unsignedInt"
minOccurs="0"/>
                <element name="DPDTimer" type="unsignedInt" minOccurs="0"/>
                <element name="NATKeepaliveTimer" type="unsignedInt" minOccurs="0"/>
              </sequence>
            </complexType>
          </element>
        </sequence>
      </complexType>
    </element>
    <element name="Transport">
      <complexType>
        <sequence>
          <element ref="cd:SCTP" minOccurs="0"/>
          <element ref="cd:RealTime" minOccurs="0"/>
          <element ref="cd:Packet" minOccurs="0"/>
        </sequence>
      </complexType>
    </element>

```

```

        <element ref="cd:Tunnel" minOccurs="0"/>
        <element ref="cd:Security" minOccurs="0"/>
    </sequence>
</complexType>
</element>
<element name="WCDMAFDD">
    <complexType>
        <sequence>
            <element ref="cd:InServiceHandling" minOccurs="0"/>
            <element name="ScanOnBoot" type="boolean" minOccurs="0"/>
            <element name="ScanPeriodically" type="boolean" minOccurs="0"/>
            <element name="PeriodicInterval" type="unsignedInt" minOccurs="0"/>
            <element name="PeriodicTime" type="dateTime" minOccurs="0"/>
            <element name="REMPLMNList" type="string" minOccurs="0"/>
            <element name="REMBandList" type="string" minOccurs="0"/>
            <element name="UARFCNDLLList" type="string" minOccurs="0"/>
            <element name="ScanTimeout" type="unsignedInt" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="GSM">
    <complexType>
        <sequence>
            <element ref="cd:InServiceHandling" minOccurs="0"/>
            <element name="ScanOnBoot" type="boolean" minOccurs="0"/>
            <element name="ScanPeriodically" type="boolean" minOccurs="0"/>
            <element name="PeriodicInterval" type="unsignedInt" minOccurs="0"/>
            <element name="PeriodicTime" type="dateTime" minOccurs="0"/>
            <element name="REMPLMNList" type="string" minOccurs="0"/>
            <element name="REMBandList" type="string" minOccurs="0"/>
            <element name="ARFCNList" type="string" minOccurs="0"/>
            <element name="ScanTimeout" type="unsignedInt" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="REM">
    <complexType>
        <sequence>
            <element ref="cd:WCDMAFDD" minOccurs="0"/>
            <element ref="cd:GSM" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<element name="GPS">
    <complexType>
        <sequence>
            <element name="ScanOnBoot" type="boolean" minOccurs="0"/>
            <element name="ScanPeriodically" type="boolean" minOccurs="0"/>
            <element name="PeriodicInterval" type="unsignedInt" minOccurs="0"/>
            <element name="PeriodicTime" type="dateTime" minOccurs="0"/>
            <element name="ContinuousGPS" type="boolean" minOccurs="0"/>
            <element name="ScanTimeout" type="unsignedInt" minOccurs="0"/>
        </sequence>
    </complexType>
</element>
<!-- Configuration data file root XML element -->
<element name="configDataFile">
    <complexType>
        <sequence>
            <element name="fileHeader">
                <complexType>
                    <attribute name="fileFormatVersion" type="string" use="required"/>
                    <attribute name="senderName" type="string" use="optional"/>
                    <attribute name="vendorName" type="string" use="optional"/>
                </complexType>
            </element>
            <element name="configData" minOccurs="0" maxOccurs="unbounded">
                <complexType>
                    <sequence>
                        <element name="managedElement">
                            <complexType>
                                <attribute name="localDn" type="string" use="optional"/>
                                <attribute name="userLabel" type="string" use="optional"/>
                                <attribute name="swVersion" type="string" use="optional"/>
                            </complexType>
                        </element>
                        <element ref="cd:DeviceInfo" minOccurs="0"/>
                        <element ref="cd:ManagementServer" minOccurs="0"/>
                    </sequence>
                </complexType>
            </element>
        </sequence>
    </complexType>
</element>

```

```

        <element ref="cd:Time" minOccurs="0"/>
        <element name="FAPService" minOccurs="0" maxOccurs="unbounded">
          <complexType>
            <sequence>
              <element ref="cd:DNPrefix" minOccurs="0"/>
              <element ref="cd:FAPControl" minOccurs="0"/>
              <element ref="cd:AccessMgmt" minOccurs="0"/>
              <element ref="cd:CellConfig" minOccurs="0"/>
              <element ref="cd:Transport" minOccurs="0"/>
              <element ref="cd:REM" minOccurs="0"/>
              <element ref="cd:GPS" minOccurs="0"/>
            </sequence>
          </complexType>
        </element>
      </sequence>
    </complexType>
  </element>
  <element name="fileFooter">
    <complexType>
      <attribute name="dateTime" type="dateTime" use="required"/>
    </complexType>
  </element>
</sequence>
</complexType>
</element>
</schema>

```

4.2.3 CM data file XML header

The following header shall be used in actual XML CM data files:

```

<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="configData.xsl"?>
<ConfigDataFile
  xmlns=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.584#configData"
>

```

5 PM data format definition

5.1 Mapping table

Table 5.1 maps the PM file content items in the 3GPP TS 32.582 [9] document to those used in the XML schema based file format definitions. XML tag attributes are useful where data values bind tightly to its parent element. They have been used where appropriate.

Table 5.1 Mapping of File Content Items to XML tags

| File Content Item | XML schema based XML tag | Description |
|--------------------|--|--|
| measDataCollection | measCollecFile | |
| measFileHeader | fileHeader | |
| measData | measData | |
| measFileFooter | fileFooter | |
| fileFormatVersion | fileHeader fileFormatVersion | |
| senderName | fileHeader dnPrefix and fileSender localDn | This attribute shall hold the DN of HNB. See Note 1. See TS 32.300 [4] for definition of DN. |
| senderType | fileSender elementType | For the XML schema based XML format, XML attribute specification "elementType" may be absent in case the "senderType" is not configured in the sender. |

| File Content Item | XML schema based XML tag | Description |
|--|--|---|
| vendorName | fileHeader vendorName | For the XML schema based XML format, XML attribute specification "vendorName" may be absent in case the "vendorName" is not configured in the sender. |
| collectionBeginTime | measCollec beginTime | 3GPP TS 32.582 [9] clause 6.3.2.1 Period Statistics "ReportStartTime" |
| neld | managedElement | |
| neUserName | managedElement userLabel | For the XML schema based XML format, XML attribute specification "userLabel" may be absent in case the "neUserName" is not configured in the CM applications. Not used in HNB PM file |
| neDistinguishedName | fileHeader dnPrefix and managedElement localDn | This attribute shall hold the DN of HNB. See Note 1. See TS 32.300 [4] for definition of DN. |
| neSoftwareVersion | managedElement swVersion | For the XML schema based XML format, XML attribute specification "swVersion" may be absent in case the "neSoftwareVersion" is not configured in the CM applications. Not used in HNB PM file |
| measInfo | measInfo | |
| measInfold | measInfold | |
| measTimeStamp | granPeriod endTime | Calculated from the 3GPP TS 32.582 [9] clause 6.3.2.1 Period Statistics "ReportStartTime" + accumulation of the 3GPP TS 32.582 [9] clause 6.3.2.1 Period Statistics "SampleSeconds" |
| jobId | Job jobId | Not used in HNB PM file |
| granularityPeriod | granPeriod duration | For the XML schema based XML format, the value of XML attribute specification "duration" shall use the truncated representation "PTnS" (see [13]). 3GPP TS 32.582 [9] clause 6.3.2.1 Period Statistics "SampleInterval" |
| reportingPeriod | repPeriod duration | For the XML schema based XML format, the value of XML attribute specification "duration" shall use the truncated representation "PTnS" (see [13]). 3GPP TS 32.582 [9] clause 6.3.1.1 Period Upload Interval |
| measTypes | measTypes or measType | For the XML schema based XML format, depending on sender's choice for optional positioning presence, either XML element "measTypes" or XML elements "measType" will be used. 3GPP TS 32.582 [9] clause 6.3.2.2 Period Statistics Reference |
| measValues | measValue | |
| measObjInstId | measValue measObjLdn | Identifier of the Managed Object (see TS 32.432 [20].) |
| measResults | measResults or R | For the XML schema based XML format, depending on sender's choice for optional positioning presence, either XML element "measResults" or XML elements "r" will be used. Broadband Forum data object PeriodicStatistics.SampleSet.{i}.Parameter.{j}.Values (see TR-157 Amendment 1 [15]) |
| suspectFlag | Suspect | Not used in HNB PM file |
| timeStamp | measCollec endTime | 3GPP TS 32.582 [9] clause 6.3.2.1 Period Statistics ReportEndTime |
| There is no corresponding File Content Item. | measType p | An optional positioning XML attribute specification of XML element "measType" (XML schema based), used to identify a measurement type for the purpose of correlation to a result. The value of this XML attribute specification is expected to be a non-zero, non-negative integer value that is unique for each instance of XML element "measType" that is contained within the measurement data collection file. Not used in HNB PM file |
| There is no corresponding File Content Item. | r p | An optional positioning XML attribute specification of XML element "r", used to correlate a result to a measurement type. The value of this XML attribute specification should match the value of XML attribute specification "p" of the corresponding XML element "measType" (XML schema based). Not used in HNB PM file |

NOTE: There are two forms of naming for HNB. Implementation can choose to use one of the two.

1. The full DN: The name hierarchy is defined by TS 32.772 [18]. DN Prefix may or may not be present. The value for the 'id' for HNB is a string and is the HNB Identifier or HNB Name (see Annex C Table C.1 of TS 22.220 [19]).

Example 1: "DC=a1.companyNN.com,SubNetwork=1,ManagementNode=6,HMSFunction=99,HNB=abc1234"

2. There is no name hierarchy. It is a string and it is the value of the HNB Identifier or HNB Name (see Annex C Table C.1 of TS 22.220 [19]).

Example 2: "abc1234"

The representation of all timestamps in PM files shall follow the representations allowed by the ISO 8601 [abc].

The precise format for timestamp representation shall be determined by the technology used for encoding the PM file (e.g. XML DTD, XML Schema). The choice of technology should ensure that this representation is derived from ISO 8601 [abc]. Based on the representation used, the timestamp shall refer to either UTC time or local time or local time with offset from UTC.

5.2 XML schema based PM data file format definition

5.2.1 PM data file XML diagram

For the purposes of the present document XML diagram in TS 32.435 [8] section 4.2.1 applies.

5.2.2 PM data file XML schema

For the purposes of the present document XML schema in TS 32.435 [8] section 4.2.2 applies.

5.2.2 PM data file XML header

For the purposes of the present document XML header in TS 32.435 [8] section 4.2.3 applies.

Annex A (informative): Examples

A.1 XML schema based CM data file

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="ConfigData.xsl"?>
<configDataFile xmlns="http://www.3gpp.org/ftp/specs/archive/32_series/32.584# onfigData"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.3gpp.org/ftp/specs/archive/32_series/32.584#configData"
http://www.3gpp.org/ftp/specs/archive/32_series/32.584#configData">
  <fileHeader fileFormatVersion="32.584 V1.0" vendorName="Company NN" >
    </fileHeader>
  <configData>
    <managedElement localDn="SubNetwork=CountryNN,MeContext=MEC-Gbg-1,ManagedElement=RNC-Gbg-1"
userLabel="RNC Telecomville"/>
    <DeviceInfo>
      <ProvisioningCode>0101</ProvisioningCode>
    </DeviceInfo>
  </configData>
  <fileFooter dateTime="2000-03-01T14:15:00+02:00">
    </fileFooter>
</configDataFile>
```

A.2 XML schema based PM data file

For the purposes of the present document the examples in TS 32.435 [8] Annex A apply.

Annex B (informative):
Void

Annex C (informative): Change history

| Change history | | | | | | | |
|----------------|-------|-----------|-----|-----|--|-------|--------|
| Date | TSG # | TSG Doc. | CR | Rev | Subject/Comment | Old | New |
| 2009-06 | SA#44 | SP-090302 | -- | -- | Presentation for information and approval | 1.0.0 | 8.0.0 |
| 2009-09 | SA#45 | SP-090534 | | | Correct global modifier of XML file for CM to instance specific modifier | 8.0.0 | 8.1.0 |
| | | | 001 | - | | | |
| 2009-09 | SA#45 | SP-090534 | | | Correct FAPService.{i}.Transport.Security.Secret.{j}. object definitions | 8.0.0 | 8.1.0 |
| | | | 002 | - | | | |
| 2009-09 | SA#45 | SP-090539 | 003 | - | Change CM file per contribution to BBF | 8.0.0 | 8.1.0 |
| 2009-12 | SA-46 | SP-090719 | 004 | -- | Discontinuation of the maintenance of WSDL/XML schema folders | 8.1.0 | 9.0.0 |
| 2010-03 | SA#47 | SP-100035 | 005 | -- | Update references to BBF TR-157 | 9.0.0 | 9.1.0 |
| 2010-03 | SA#47 | SP-100035 | 006 | -- | The element definition of 'Home Zone name' modification | 9.0.0 | 9.1.0 |
| 2010-09 | SA#49 | SP-100488 | 007 | -- | Clarify the description of attributes using Distinguished Name | 9.1.0 | 9.2.0 |
| 2011-03 | SA#51 | SP-110099 | 008 | -- | Add LIPA access management XML element | 9.2.0 | 10.0.0 |

History

| Document history | | |
|-------------------------|------------|-------------|
| V10.0.0 | April 2011 | Publication |
| | | |
| | | |
| | | |
| | | |