



**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 17.0.0 Release 17)**

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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 - APE 7112B
Association à but non lucratif enregistrée à la
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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)"
[ETSI TS 132 584 V17.0.0 \(2022-04\)](https://standards.iteh.ai/catalog/standards/sist/b7a30d80-b63a-4678-9a12-ccad42c601bd/etsi-ts-132-584-v17-0-0-2022-04)
- 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)"
<https://standards.iteh.ai/catalog/standards/sist/b7a30d80-b63a-4678-9a12-ccad42c601bd/etsi-ts-132-584-v17-0-0-2022-04>
- 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").
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.

File Content Item	XML schema based XML tag	Description
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.
nEId	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 DNPrefix 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.

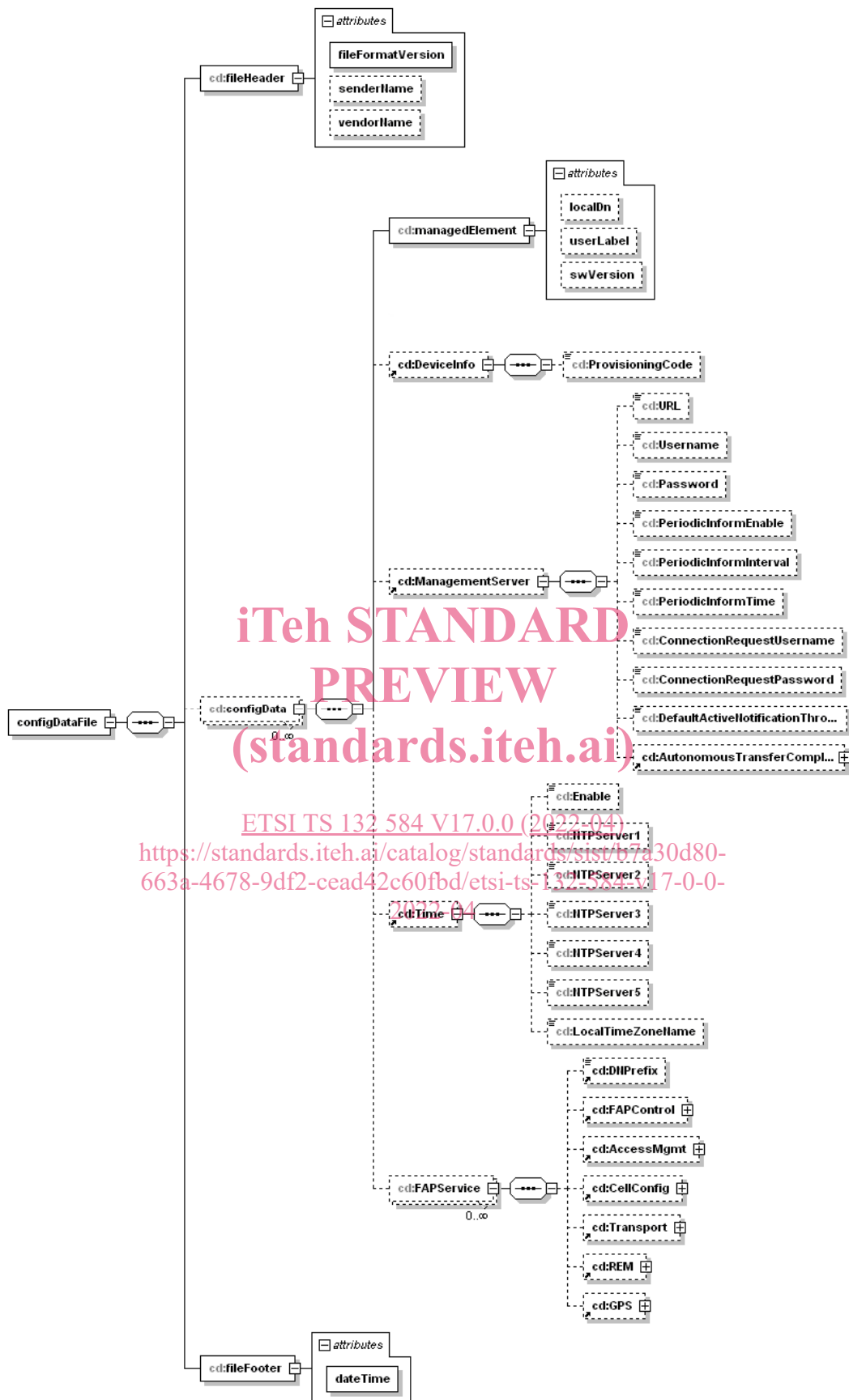


Figure 4.1: XML diagram of the configuration data file

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="PCS 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>
```