

# ETSI TS 132 436 V19.0.0 (2025-10)



**Digital cellular telecommunications system (Phase 2+) (GSM);  
Universal Mobile Telecommunications System (UMTS);  
LTE;  
Telecommunication management;  
Performance measurement: Abstract Syntax Notation 1  
(ASN.1) file format definition  
(3GPP TS 32.436 version 19.0.0 Release 19)**



---

**Reference**RTS/TSGS-0532436vj00

---

---

**Keywords**GSM,LTE,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 - APE 7112B  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° w061004871

---

**Important notice**

The present document can be downloaded from the  
[ETSI Search & Browse Standards application](#).

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format on [ETSI deliver repository](#).

Users should be aware that the present document may be revised or have its status changed,  
this information is available in the [Milestones listing](#).

If you find errors in the present document, please send your comments to  
the relevant service listed under [Committee Support Staff](#).

If you find a security vulnerability in the present document, please report it through our  
[Coordinated Vulnerability Disclosure \(CVD\)](#) program.

---

**Notice of disclaimer & limitation of liability**

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

---

**Copyright Notification**

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2025.  
All rights reserved.

---

# Intellectual Property Rights

## Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are 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 IPR online database](#).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, 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.

## Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

**DECT™**, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™**, **LTE™** and **5G™** logo are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

---

# Legal Notice

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. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 3GPP and ETSI identities can be found at [3GPP to ETSI numbering cross-referencing](#).

---

# Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

# Contents

|                                                                              |           |
|------------------------------------------------------------------------------|-----------|
| Intellectual Property Rights .....                                           | 2         |
| Legal Notice .....                                                           | 2         |
| Modal verbs terminology.....                                                 | 2         |
| Foreword.....                                                                | 4         |
| Introduction .....                                                           | 4         |
| 1     Scope .....                                                            | 5         |
| 2     References .....                                                       | 5         |
| 3     Definitions and abbreviations.....                                     | 5         |
| 3.1       Definitions .....                                                  | 5         |
| 3.2       Abbreviations .....                                                | 6         |
| 4     Mapping .....                                                          | 6         |
| 5     ASN.1 file format definition .....                                     | 7         |
| <b>Annex A (informative): Example of ASN.1 Measurement Report File .....</b> | <b>9</b>  |
| <b>Annex B (informative): Change history .....</b>                           | <b>10</b> |
| History .....                                                                | 11        |

---

# Foreword

This Technical Specification has been produced by the 3<sup>rd</sup> 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 3<sup>rd</sup> Generation Partnership Project: Technical Specification Group Services and System Aspects; Telecommunication management, as identified below:

TS 32.432: "Performance measurement; File format definition";

TS 32.435: "Performance measurement; eXtensible Markup Language (XML) file format definition";

**TS 32.436: "Performance measurement; Abstract Syntax Notation 1 (ASN.1) file format definition".**

The present document is part of a set of specifications, which describe the requirements and information model necessary for the standardised Operation, Administration and Maintenance (OA&M) of a multi-vendor 3G PLMN.

During the lifetime of a PLMN, its logical and physical configuration will undergo changes of varying degrees and frequencies in order to optimise the utilisation of the network resources. These changes will be executed through network configuration management activities and/or network engineering, see 3GPP TS 32.600 [4].

Many of the activities involved in the daily operation and future network planning of a PLMN network require data on which to base decisions. This data refers to the load carried by the network and the grade of service offered. In order to produce this data performance measurements are executed in the NEs, which comprise the network. The data can then be transferred to an external system, e.g. an Operations System (OS) in TMN terminology, for further evaluation. The purpose of the present document and the other related 3GPP TSs listed above is to describe the mechanisms involved in the collection of the data.

---

# 1 Scope

The present document defines the ASN.1 file format definition for performance measurement results collection whose semantics is defined in 3GPP TS 32.432 [5].

---

## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".
  - [2] 3GPP TS 32.102: "Telecommunication management; Architecture".
  - [3] 3GPP TS 32.401: "Telecommunication management; Performance Management (PM); Concept and requirements".
  - [4] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".
  - [5] 3GPP TS 32.432: "Performance Measurement: File format definition".
  - [6] ITU-T Recommendation X.680: "Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation".
- 

## 3 Definitions and abbreviations

### 3.1 Definitions

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

**network Element Manager (EM):** provides a package of end-user functions for management of a set of closely related types of Network Elements. These functions can be divided into two main categories:

- Element Management Functions for management of Network Elements on an individual basis. These are basically the same functions as supported by the corresponding local terminals.
- Sub-Network Management Functions that are related to a network model for a set of Network Elements constituting a clearly defined sub-network, which may include relations between the Network Elements. This model enables additional functions on the sub-network level (typically in the areas of network topology presentation, alarm correlation, service impact analysis and circuit provisioning).

**Network Manager (NM):** provides a package of end-user functions with the responsibility for the management of a network, mainly as supported by the EM(s) but it may also involve direct access to the Network Elements. All communication with the network is based on open and well-standardised interfaces supporting management of multi-vendor and multi-technology Network Elements.

**Operations System (OS):** generic management system, independent of its location level within the management hierarchy.

## 3.2 Abbreviations

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

|       |                                         |
|-------|-----------------------------------------|
| 3G    | 3 <sup>rd</sup> Generation              |
| ASN.1 | Abstract Syntax Notation 1              |
| BER   | Basic Encoding Rules                    |
| EM    | Element Manager                         |
| GSM   | Global System for Mobile communications |
| IRP   | Integration Reference Point             |
| NE    | Network Element                         |
| NM    | Network Manager                         |
| PM    | Performance Management                  |

## 4 Mapping

Table 4.1 maps the file content items in the 3GPP TS 32.432 [5] to those used in the ASN.1 (see [6]) file format definitions.

**Table 4.1 Mapping of File Content Items to ASN.1 types**

| File Content Item   | ASN.1 Type          | Description                                                                                                     |
|---------------------|---------------------|-----------------------------------------------------------------------------------------------------------------|
| measDataCollection  | MeasDataCollection  |                                                                                                                 |
| measFileHeader      | MeasFileHeader      |                                                                                                                 |
| measData            | MeasData            |                                                                                                                 |
| measFileFooter      | MeasFileFooter      |                                                                                                                 |
| fileFormatVersion   | FileFormatVersion   |                                                                                                                 |
| senderName          | SenderName          | For ASN.1 format, the string may be empty (i.e. string size =0) in case the DN is not configured in the sender. |
| senderType          | SenderType          |                                                                                                                 |
| vendorName          | VendorName          |                                                                                                                 |
| collectionBeginTime | CollectionBeginTime |                                                                                                                 |
| neId                | NEId                |                                                                                                                 |
| neUserName          | NEUserName          |                                                                                                                 |
| neDistinguishedName | NEDistinguishedName |                                                                                                                 |
| neSoftwareVersion   | NESoftwareVersion   |                                                                                                                 |
| measInfo            | MeasInfo            |                                                                                                                 |
| measInfold          | MeasInfold          |                                                                                                                 |
| measTimeStamp       | MeasTimeStamp       |                                                                                                                 |
| jobId               | JobId               |                                                                                                                 |
| granularityPeriod   | GranularityPeriod   |                                                                                                                 |
| reportingPeriod     | ReportingPeriod     |                                                                                                                 |
| measTypes           | MeasTypes           |                                                                                                                 |
| measValues          | MeasValues          |                                                                                                                 |
| measObjInstId       | MeasObjInstId       |                                                                                                                 |
| measResults         | MeasResults         |                                                                                                                 |
| suspectFlag         | SuspectFlag         |                                                                                                                 |
| timeStamp           | TimeStamp           | ASN.1 GeneralizedTime format.                                                                                   |

## 5 ASN.1 file format definition

The ASN.1 file format definitions implement the measurement result structure and parameters defined in clauses 5.2 and 5.3 of 3GPP TS 32.401 [3].

For ASN.1 formatted files, BER encoding rules shall apply. Embedded comments are integral parts of the standard format; i.e. any implementation-claiming conformance to this annex shall also conform to the comments.

PM-File-Description

DEFINITIONS AUTOMATIC TAGS ::= BEGIN

MeasDataCollection ::= SEQUENCE

```
{
  measFileHeader      MeasFileHeader,
  measData             SEQUENCE OF MeasData,
  measFileFooter      MeasFileFooter
}
```

MeasFileHeader ::= SEQUENCE

```
{
  fileFormatVersion      PrintableString (SIZE (0..15)),
  senderName             PrintableString (SIZE (0..400)),
  senderType             SenderType,
  vendorName             PrintableString (SIZE (0..32)),
  collectionBeginTime    Timestamp,
  ...
}
```

-- The sole purpose of the ellipsis notation used in the file header is to facilitate inter-release compatibility, vendor specific additions are not allowed in implementations claiming conformance to the TS. However, it is acknowledged that this feature does enable the use of non-standard extensions to the file header without loosing compatibility to the file format specified in the present document.

SenderType ::= PrintableString (SIZE (0..8))

Timestamp ::= GeneralizedTime

MeasData ::= SEQUENCE

```
{
  nEid                NEId,
  measInfo            SEQUENCE OF MeasInfo
}
```

NEId ::= SEQUENCE

```
{
  nUserName                PrintableString (SIZE (0..64)),
  nEDistinguishedName      PrintableString (SIZE (0..400)),
  nSoftwareVersion         PrintableString (SIZE (0..64)) OPTIONAL
}
```

MeasInfo ::= SEQUENCE

```
{
  measTimeStamp            Timestamp,
  granularityPeriod        INTEGER,
  measTypes                SEQUENCE OF MeasType,
  measValues              SEQUENCE OF MeasValue
  reportingPeriod          INTEGER OPTIONAL,
  jobId                   INTEGER OPTIONAL,
  measInfoId              PrintableString (SIZE (0..64)) OPTIONAL,
}
```

MeasType ::= PrintableString (SIZE (1..64))

MeasValue ::= SEQUENCE

```
{
  measObjInstId          MeasObjInstId,
  measResults            SEQUENCE OF MeasResult,
  suspectFlag            BOOLEAN DEFAULT FALSE
}
```

MeasObjInstId ::= PrintableString (SIZE (0..400))

-- The size of the concatenated measObjInstId and neDistinguishedName must not exceed 400.

MeasResult ::= CHOICE

```
{
```

```
        iValue  INTEGER,  
        rValue  REAL,  
        noValue NULL,  
        ...  
    }
```

-- Normal values are INTEGERS and REALs. The NULL value is reserved to indicate that the measurement item is not applicable or could not be retrieved for the object instance. The sole purpose of the ellipsis notation used in the MeasResult choice is to facilitate inter-release compatibility in case the choice needs to be extended in future releases.

```
MeasFileFooter ::= TimeStamp
```

```
END
```

## Annex A (informative): Example of ASN.1 Measurement Report File

For readability, a kind of pseudo ASN.1 was used instead of the BER encoding.

```

MeasDataCollection ::= {
  measFileHeader {
    fileFormatVersion ::= "32.436 V6.1",
    senderName ::=
      "DC=a1.companyNN.com,SubNetwork=1,IRPAgent=1,SubNetwork=CountryNN,MeContext=MEC-Gbg-
      1,ManagedElement=RNC-Gbg-1",
    senderType ::= "RNC",
    vendorName ::= "Company NN",
    collectionBeginTime ::= 20000301140000
  },
  measData {
    nEid {
      nEUserName ::= "RNC Telecomville",
      nEDistinguishedName ::=
        "DC=a1.companyNN.com,SubNetwork=1,IRPAgent=1,SubNetwork=CountryNN,MeContext=MEC-Gbg-
        1,ManagedElement=RNC-Gbg-1",
      nESoftwareVersion ::= "2.1"
    },
    measInfo {
      measInfoId ::= Category A
      measTimeStamp ::= 20000301141430,
      jobId ::= "1231",
      granularityPeriod ::= 900,
      reportingPeriod ::= 1800,
      measTypes {
        "attTCHSeizures",
        "succTCHSeizures",
        "attImmediateAssignProcs",
        "succImmediateAssignProcs"
      },
      measValues {
        {
          measObjInstId ::= "RncFunction=RF-1,UtranCell=Gbg-997",
          measResults {
            iValue ::= 234,
            iValue ::= 345,
            iValue ::= 567,
            iValue ::= 789
          },
          suspectFlag ::= FALSE
        },
        {
          measObjInstId ::= "RncFunction=RF-1,UtranCell=Gbg-998",
          measResults {
            iValue ::= 890,
            iValue ::= 901,
            iValue ::= 123,
            iValue ::= 234
          },
          suspectFlag ::= FALSE
        },
        {
          measObjInstId ::= "RncFunction=RF-1,UtranCell=Gbg-999",
          measResults {
            iValue ::= 456,
            iValue ::= 567,
            iValue ::= 678,
            iValue ::= 789
          },
          suspectFlag ::= TRUE
        }
      }
    }
  },
  measFileFooter ::= 20000301141500
}

```

## Annex B (informative): Change history

| Change history |       |           |      |     |                                                                             |     |        |        |
|----------------|-------|-----------|------|-----|-----------------------------------------------------------------------------|-----|--------|--------|
| Date           | TSG # | TSG Doc.  | CR   | Rev | Subject/Comment                                                             | Cat | Old    | New    |
| 2004-09        | SA-25 | SP-040580 | --   | --  | Draft created based on 32.401 V6.1.0 and submitted to SA#25 for Information | --  | 1.0.0  |        |
| 2004-12        | SA-26 | SP-040788 | --   | --  | Submitted to SA#26 for Approval                                             | --  | 2.0.0  | 6.0.0  |
| 2005-09        | SA-29 | SP-050585 | 0001 | --  | Enhance PM ASN.1 file with measInfo                                         | C   | 6.0.0  | 7.0.0  |
| 2008-12        | SA-42 | --        | --   | --  | Upgrade to Release 8                                                        | --  | 7.0.0  | 8.0.0  |
| 2009-12        | SA-46 | --        | --   | --  | Upgrade to Release 9                                                        | --  | 8.0.0  | 9.0.0  |
| 2011-03        | -     | -         | -    | -   | Update to Rel-10 version (MCC)                                              | --  | 9.0.0  | 10.0.0 |
| 2012-09        | SA-57 | -         | -    | -   | Automatic upgrade from previous Release version 10.0.0                      | -   | 10.0.0 | 11.0.0 |
| 2014-10        | -     | -         | -    | -   | Update to Rel-12 version (MCC)                                              |     | 11.0.0 | 12.0.0 |
| 2016-01        | -     | -         | -    | -   | Update to Rel-13 version (MCC)                                              |     | 12.0.0 | 13.0.0 |
| 2017-04        | SA#75 | -         | -    | -   | Promotion to Release 14 without technical change                            |     | 13.0.0 | 14.0.0 |

| Change history |         |      |    |     |     |                                |             |
|----------------|---------|------|----|-----|-----|--------------------------------|-------------|
| Date           | Meeting | TDoc | CR | Rev | Cat | Subject/Comment                | New version |
| 2018-06        |         |      |    |     |     | Update to Rel-15 version (MCC) | 15.0.0      |
| 2020-07        | -       | -    | -  | -   | -   | Update to Rel-16 version (MCC) | 16.0.0      |
| 2022-04        | -       | -    | -  | -   | -   | Update to Rel-17 version (MCC) | 17.0.0      |
| 2024-04        | -       | -    | -  | -   | -   | Update to Rel-18 version (MCC) | 18.0.0      |
| 2025-09        | SA#109  | -    | -  | -   | -   | Update to Rel-19 version (MCC) | 19.0.0      |

---

# History

| Document history |              |             |
|------------------|--------------|-------------|
| V19.0.0          | October 2025 | Publication |
|                  |              |             |
|                  |              |             |
|                  |              |             |
|                  |              |             |