# ETSI TS 132 341 V16.0.0 (2020-08)


**Digital cellular telecommunications system (Phase 2+) (GSM);**
**Universal Mobile Telecommunications System (UMTS);**
**LTE;**
**Telecommunication management;**
**File Transfer (FT) Integration Reference Point (IRP);**
**Requirements**
**(3GPP TS 32.341 version 16.0.0 Release 16)**

Reference
RTS/TSGS-0532341vg00

Keywords
GSM,LTE,UMTS

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# Contents

# Foreword

This Technical Specification (TS) 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 the 32.34x-series covering the 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

32.341: "File Transfer (FT) Integration Reference Point (IRP): Requirements"

32.342: "File Transfer (FT) Integration Reference Point (IRP): Information Service (IS)"

32.346: "File Transfer (FT) Integration Reference Point (IRP); Solution Set (SS) definitions"

The Itf-N interface is built up by a number of Integration Reference Points (IRP's) and a related Name Convention, which realize the functional capabilities over this interface. The basic structure of the IRP's is defined in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2].

Network Elements (NEs) under management, element managers as well as network managers generate various management information stored in file format. This IRP is addressing how these file are exchanged through Itf-N as well as certain aspects of file management and maintenance. It is anticipated that all management functions (e.g. PM, Call Trace, CM) as well as associated IRP's making reuse of capabilities provided by this File Transfer IRP.

# 1 Scope

The present document specifies the overall requirements for the File Transfer Integration Reference Point (FT IRP) as it applies to the Itf-N.

# 2 References

The following documents contain provisions that, 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 32.111-series: "Telecommunication management; Fault Management; Alarm Integration Reference Point (IRP)".

[4] 3GPP TS 32.30x-series: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP)".

[5] 3GPP TS 32.33x-series: "Telecommunication management; Notification log Integration Reference Point (IRP)".

[6] 3GPP TS 32.32x-series: "Telecommunication management; Test management Integration Reference Point (IRP)".

[7] 3GPP TS 32.401: "Telecommunication management; Performance Management (PM); Concept and requirements".

[8] 3GPP TS 32.41x-series: "Telecommunication management; Performance Management (PM) Integration Reference Point (IRP)".

[9] 3GPP TS 32.421: "Telecommunication management; Subscriber and equipment trace: Trace concepts and requirements".

[10] 3GPP TS 32.61x-series: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP)".

[11] 3GPP TS 32.240: "Telecommunication management; Charging management; Charging architecture and principles".

# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2] apply.

## 3.2 Abbreviations

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

| | |
|---|---|
| CM | Configuration Management |
| EM | Element Manager |
| FT | File Transfer |
| FTP | File Transfer Protocol |
| IRP | Integration Reference Point |
| NE | Network Element |
| NM | Network Manager |
| PM | Performance Management |
| SFTP | Secure File Transfer Protocol |

# 4 File Transfer IRP concept

Network Elements (NEs) under management, element managers as well as network managers generate various management information that is stored in files. This IRP is addressing how these file are exchanged through Itf-N as well as certain aspects of file management and maintenance. It is anticipated that all management functions (e.g. PM, Call Trace, CM) as well as associated IRP's making reuse of capabilities provided by this File Transfer IRP.

It should be noted that this File Transfer IRP is not defining a file transfer protocol (applicable file transfer protocols are defined by 3GPP TS 32.101 [1]) but will make reuse of generic concepts defined by these file transfer protocol.

# 5 File Transfer IRP requirements

## 5.1 General requirements for File Transfer IRP

The FT IRP shall ensure preservation of file content:

- The used file transfer protocol implementation shall preserve the formatting of the file during exchange.
- The used file transfer protocol implementation shall preserve the encoding of the file during exchange.

NOTE 1: Above requirement(s) are considered as being satisfied by FTP.

The FT IRP shall support the following file transfer protocols:

- FTP.
- SFTP

NOTE 2: SFTP providing initial security capabilities, which may be complemented by additional security features that might be added in future versions of the present document.

The FT IRP shall specify all necessary descriptive file information and parameters, to enable exchange of files between IRPManager and IRPAgent and to ensure respective file management capabilities (such as listing).

File Name conventions:

- In the context of this File Transfer IRP an overall applicable file name convention should be specified, ensuring the use of meaningful and uniform names of files generated by various IRP's. This convention should reuse the current PM File Naming Conventions to the greatest extent possible [7].
- This file name convention should address issues with potential Operating System based changes in file names during or after file exchange (e.g. upper case / lower case).
- The file name shall contain the file expiration date

## 5.2 File type requirements

The FT IRP shall support the exchange and management/maintenance of the following file types:

- Performance measurement results as defined in [7] and [8].
- Test results as defined in [6].
- Bulk CM files as defined in [10].
- Call trace records as defined in [9].
- Notification log as defined in [5].
- Charging files as defined in [11].
- Vendor-specific files containing management information.

Subsequently this File Transfer IRP shall consider requirements from management applications listed above.

Future 3GPP management information file types shall be supported as well (e.g. inventory information).

## 5.3 File exchange requirements

The IRP Manager shall be able to:

- Upload (read) one or more files from the IRP Agent using FTP or SFTP;
- Download (write) one or more files to the IRP Agent using FTP or SFTP, and indicate to the IRP Agent that files have been downloaded.

Subsequently: the IRP Manager will always act as the initiator (client) of file transfer actions, while the IRP Agent shall provide the corresponding server capabilities.

This IRP Agent should provide the following notifications to the IRP Manager:

- "File Ready", indicating that a file is ready for upload;
- "File Preparation Error", indicating that an error occurred during or before file preparation and that no file is being made available related to a specific request;
- “File Deleted”, indicating that a file has been made unavailable for access though Itf-N.

## 5.4 File management/maintenance/security requirements

The IRP Manager should be able to request the IRP Agent to:

- Provide a list of available files, based on file name and file creation date/time filter criteria.

In addition the following requirements should be considered:

- Security mechanisms supported by applicable file transfer protocols defined in [1] should be supported (e.g. username, password, encryption).
- File system overload mechanism on IRP Agent side (e.g. automatic deletion of transmitted files, automatic deletion of outdated files, emission of notifications in case of automatic deletion).
- File deletion is determined by a file expiration date, which is part of the file name.

# 6 Overview of IRP's related to File Transfer (FT)

Itf-N is built up by a number of IRP's. The basic structure of the IRP's is defined in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2].

For the purpose of the File Transfer IRP the following IRP's are needed:

- Notification IRP [4].

The following IRP/specifications shall consider using this FT IRP for file transfer purposes (future IRP or IRP capabilities not listed here shall also consider reuse of this FT IRP for file transfer purposes):

- Performance measurement results as defined in [7] and [8].
- Test results as defined in [6].
- Bulk CM files as defined in [10].
- Call trace records as defined in [9].
- Notification log exports as defined in [5].

Specification changes needed by those IRP's to make reuse of the FT IRP are outside the scope of the present document.

# Annex A (informative): Change history

| Change history | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Date** | **TSG #** | **TSG Doc.** | **CR** | **Rev** | **Subject/Comment** | **Cat** | **Old** | **New** |
| Jun 2003 | SA_20 | SP-030295 | -- | -- | Submitted to TSG SA#20 for information | -- | 1.0.0 | |
| Mar 2004 | SA_23 | SP-040124 | -- | -- | Submitted to TSG SA#23 for Approval | -- | 2.0.0 | 6.0.0 |
| Mar 2005 | SA_27 | SP-050037 | 0001 | -- | Add file type requirements - Align with FTIRP IS in TS 32.342 | F | 6.0.0 | 6.1.0 |
| Sep 2006 | SA_33 | SP-060530 | 0002 | -- | Correct the file exchange requirements in File Transfer (FT) Integration Reference Point (IRP) | F | 6.1.0 | 6.2.0 |
| Jun 2007 | SA_36 | -- | -- | -- | Automatic upgrade to Rel-7 (no CR) at freeze of Rel-7. Deleted reference to CMIP SS, discontinued from R7 onwards. | -- | 6.2.0 | 7.0.0 |
| Mar 2009 | SA_43 | SP-090207 | 0003 | -- | Include reference to SOAP Solution Set specification | D | 7.0.0 | 8.0.0 |
| 2009-12 | - | - | - | - | Update to Rel-9 version (MCC) | - | 8.0.0 | 9.0.0 |
| 2011-03 | - | - | - | - | Update to Rel-10 version (MCC) | - | 9.0.0 | 10.0.0 |
| 2012-09 | - | - | - | - | Update to Rel-11 version (MCC) | | 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** |
| 2017-03 | 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** |

# History

| Document history | | |
|---|---|---|
| V16.0.0 | August 2020 | Publication |
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