# ETSI TS 132 446 V13.0.0 (2016-03)

**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Trace Management Integration Reference Point (IRP);
Solution Set (SS) definitions
(3GPP TS 32.446 version 13.0.0 Release 13)**

Reference
RTS/TSGS-0532446vd00

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

***Important notice***

The present document can be downloaded from:
http://www.etsi.org/standards-search

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 only prevailing document is the print of the Portable Document Format (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:
https://portal.etsi.org/People/CommiteeSupportStaff.aspx

***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.

© European Telecommunications Standards Institute 2016.
All rights reserved.

**DECT**™, **PLUGTESTS**™, **UMTS**™ and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.
**3GPP**™ and **LTE**™ are Trade Marks of ETSI 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 (https://ipr.etsi.org/).

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.

# 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
Foreword ..... 2
Modal verbs terminology ..... 2
Foreword ..... 5
Introduction ..... 5
1 Scope ..... 6
2 References ..... 6
3 Definitions and abbreviations ..... 7
3.1 Definitions ..... 7
3.2 Abbreviations ..... 8
4 Solution Set definitions ..... 8
**Annex A (normative): CORBA Solution Set ..... 9**
A.1 Architectural features ..... 9
A.1.1 Syntax for Distinguished Names ..... 9
A.1.2 Notification Services ..... 9
A.1.3 Push and Pull Style ..... 9
A.1.4 Support multiple notifications in one push operation ..... 9
A.1.5 Trace Management Notification Interface ..... 9
A.1.5.1 Method push (M) ..... 9
A.2 Mapping ..... 10
A.2.1 Operation and Notification mapping ..... 10
A.2.2 Operation parameter mapping ..... 10
A.2.3 Notification parameter mapping ..... 12
A.3 Solution Set definitions ..... 18
A.3.1 IDL definition structure ..... 18
A.3.2 IDL specification (file name "TraceIRPConstDefs.idl") ..... 19
A.3.3 IDL specification (file name 'TraceIRPSystem.idl') ..... 23
A.3.4 IDL specification (file name 'TraceIRPNotifications.idl') ..... 25
**Annex B (normative): XML definitions ..... 27**
B.1 Architectural Features ..... 27
B.1.1 Syntax for Distinguished Names ..... 27
B.1.2 Notification Services ..... 27
B.1.3 IOC definitions ..... 27
B.2 Mapping ..... 27
B.3 Solution Set definitions ..... 27
B.3.1 XML definition structure ..... 27
B.3.2 Graphical Representation ..... 28
B.3.3 XML Schema 'tMIRPNotif.xsd' ..... 30
B.3.4 XML Schema 'tMIRPIOCs.xsd' ..... 32
**Annex C (normative): SOAP Solution Set ..... 37**
C.1 Architectural features ..... 37
C.1.1 Syntax for Distinguished Names ..... 37
C.1.2 Notification Services ..... 37
C.1.3 Supported W3C specifications ..... 37
C.1.4 Prefixes and namespaces ..... 37

C.2 Mapping ..... 38
C.2.1 Operation and notification mapping ..... 38
C.2.2 Operation parameter mapping ..... 38
C.2.3 Notification parameter mapping ..... 40
C.3 Solution Set definitions ..... 41
C.3.1 WSDL definition structure ..... 41
C.3.2 Graphical Representation ..... 41
C.3.3 WSDL specification 'TraceIRPSystem.wsdl' ..... 42
**Annex D (informative): Change history ..... 48**
History ..... 49

# 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:

32.441 "Trace Management Integration Reference Point (IRP): Requirements".

32.442 "Trace Management Integration Reference Point (IRP): Information Service (IS)".

**32.446 "Trace Management Integration Reference Point (IRP): Solution Set (SS) definitions".**

The present document is part of a TS-family which describes the information service necessary for the Telecommunication Management (TM) of 3G systems. The TM principles and TM architecture are specified in 3GPP TS 32.101 [2] and 3GPP TS 32.102 [3].

Trace provides very detailed information on call level for a specific subscriber or MS. This data is an additional information source to Performance Measurements and allows deeper investigations in problems solving or in case of optimization.

# 1 Scope

The present document specifies the Solution Set definitions for the IRP whose semantics are specified in Trace Management IRP: Information Service (3GPP TS 32.442 [5]). This specification is applicable to UMTS networks and EPS networks. GSM Trace is outside of the scope of this specification.

The conditions for supporting Network Sharing are stated in 3GPP TS 32.441 [6].

This Solution Set specification is related to 3GPP TS 32.442 V12. 0.X.

# 2 References

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

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

[1] 3GPP 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 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".

[5] 3GPP TS 32.442: "Telecommunication management; Trace Management Integration Reference Point (IRP): Information Service (IS)".

[6] void.

[7] 3GPP TS 32.311: "Telecommunication management; Generic Integration Reference Point (IRP): Requirements".

[8] void.

[9] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".

[10] 3GPP TS 32.306: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Solution Set definitions"

[11] void.

[12] OMG TC Document telecom/98-11-01: "OMG Notification Service". http://www.omg.org/technology/documents/

[13] 3GPP TS 32.342: "Telecommunication management; File Transfer (FT) Integration Reference Point (IRP): Information Service (IS)".

[14] W3C REC-xml-20001006: "Extensible Markup Language (XML) 1.0 (Second Edition)".

[15] W3C REC-xmlschema-0-20010502: "XML Schema Part 0: Primer".

[16] W3C REC-xmlschema-1-20010502: "XML Schema Part 1: Structures".