

# ETSI TS 102 790-3 V3.1.1 (2014-07)



**Core Network and Interoperability Testing (INT);  
IMS specific use of Session Initiation Protocol (SIP)  
and Session Description Protocol (SDP);  
Conformance Testing;  
(3GPP Release 10);  
Part 3: Abstract Test Suite (ATS) and partial Protocol  
Implementation eXtra Information for Testing (PIXIT)  
proforma specification**

---

Reference

RTS/INT-00093-3

---

Keywords

ATS, conformance, IMS, PIXIT, SIP, testing

**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>

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:

[http://portal.etsi.org/chaicor/ETSI\\_support.asp](http://portal.etsi.org/chaicor/ETSI_support.asp)

---

**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 2014.

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.

# Contents

Intellectual Property Rights .....	4
Foreword.....	4
Modal verbs terminology.....	4
1 Scope .....	5
2 References .....	5
2.1 Normative references .....	5
2.2 Informative references.....	6
3 Definitions and abbreviations.....	7
3.1 Definitions.....	7
3.2 Abbreviations .....	7
4 Abstract Test Method (ATM).....	8
4.1 Network architecture .....	8
4.2 Protocol architecture.....	8
4.3 Test architecture .....	9
4.3.1 Test configuration .....	9
4.3.1.1 Configurations using Gm interface only .....	9
4.3.1.2 Configurations using the Mw interface .....	10
4.3.1.3 Configurations using the Ic interface .....	10
4.3.1.4 Configurations using the ISC interface .....	11
4.3.2 Interconnection of TS and SUT .....	12
4.3.3 Test system architecture.....	12
4.3.3.1 General .....	12
4.3.3.2 Structure .....	13
4.3.3.3 Interaction between TTCN-3 Executable (TE) and SUT Adapter (SA).....	13
4.3.3.3.1 Sending and receiving SIP/IMS messages .....	13
4.3.3.3.2 Security & messages compression feature.....	13
4.3.3.4 Encoding/Decoding requirements .....	14
4.3.3.4.1 Encoding/Decoding System requirements for basic SIP messages/headers .....	14
4.3.3.4.2 Encoding/Decoding System requirements for basic SIP and SIP/IMS specific messages and headers.....	15
5 The ATS development process.....	16
5.1 Requirements and Test Purposes.....	16
5.2 ATS structure .....	16
5.2.1 Test case grouping .....	16
5.2.2 Test case identifiers .....	17
5.3 ATS specification framework.....	18
5.3.1 ATS Library.....	18
5.3.2 Use of TTCN-3 .....	19
5.3.2.1 General .....	19
5.3.2.2 TTCN-3 naming conventions.....	19
5.3.2.3 Test Suite documentation.....	21
<b>Annex A (normative): Partial PIXIT proforma .....</b>	<b>22</b>
A.1 Introduction .....	22
A.2 PIXIT items .....	22
A.2.1 SIP/IMS-related PIXIT.....	22
<b>Annex B (informative): TTCN-3 library modules.....</b>	<b>29</b>
B.1 Electronic annex, zip file with TTCN-3 code .....	29
History .....	30

---

## 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://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 Technical Committee Core Network and Interoperability Testing (INT).

The present document is part 3 of a multi-part deliverable covering the IMS specific use of Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Conformance Testing, as identified below:

- Part 1: "Protocol Implementation Conformance Statement (PICS)";
- Part 2: "Test Suite Structure (TSS) and Test Purposes (TP)";
- Part 3: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification".**

---

## Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**may not**", "**need**", "**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.

---

# 1 Scope

The purpose of the present document is to provide the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma for conformance tests of the IP Multimedia core network Subsystem (IMS) equipment supporting the Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP) as specified in TS 124 229 [2] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [5] and ETS 300 406 [6].

The content of the present document follows the requirements that have been first collected in an internal unpublished requirements catalogue and is written according to the guidelines of TS 102 351 [12], ISO/IEC 9646-1 [4] and ETS 300 406 [6].

The following test specification- and design considerations can be found in the body of the present document:

- the overall test suite structure;
- the testing architecture;
- the test methods and port definitions;
- the test configurations;
- the design principles, assumptions, and used interfaces to the TTCN3 tester (System Simulator);
- TTCN styles and conventions;
- the partial PIXIT proforma;
- the modules containing the TTCN-3 ATS.

Annex A provides the Partial Implementation Extra Information for Testing (PIXIT) Proforma of the ATS.

Annex B provides the Testing and Test Control Notation (TTCN-3) part of the ATS.

---

# 2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

## 2.1 Normative references

The following referenced documents are necessary for the application of the present document.

NOTE: References have been used both in the present document and in the TTCN-3 library modules (annex B).

- [1] ETSI TS 102 790-2: "Core Network and Interoperability Testing (INT); IMS specific use of Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Conformance Testing; (3GPP Release 10); Part 2: Test Suite Structure (TSS) and Test Purposes (TP)".
- [2] ETSI TS 124 229 (V10.14.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.229 version 10.14.0 Release 10)".