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ITU-T

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STANDARDIZATION SECTOR
OF ITU

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SERIES Q: SWITCHING AND SIGNALLING

Testing specifications – Testing specifications for SIP-IMS

Communication HOLD using IP multimedia core network subsystem; Conformance testing – Part 2: Network side; Test suite structure and test purposes

Recommendation ITU-T Q.4003.2

ITU-T



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For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T Q.4003.2

Communication HOLD using IP multimedia core network subsystem; Conformance testing – Part 2: Network side; Test suite structure and test purposes

Summary

Recommendation ITU-T Q.4003.2 v.1 (2006) is part 2 of the testing specifications for HOLD service implemented on an IMS basis on the network side. The Recommendation specifies the test suite structure and test purposes (TSS&TP) which can be used for testing against the Recommendation ITU-T Q.3619 v.1, "Communication HOLD using IP multimedia core network subsystem – Protocol specification".

The version number, v.1, indicates that this is version one of Recommendation ITU-T Q.4003.2, and that it relates to Release 10 of the relevant 3GPP/ETSI standard.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T Q.4003.2 v.1	2016-02-13	11	11.1002/1000/12734

Keywords

HOLD, IP multimedia subsystem, IMS, network side, protocol implementation conformance statement, PICS, session description protocol, SDP, session initiation protocol, SIP, testing, user side.

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

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Recommendation ITU-T Q.4003.2

Communication HOLD using IP multimedia core network subsystem; Conformance testing – Part 2: Network side; Test suite structure and test purposes

1 Scope

The present Recommendation provides the test suite structure (TSS) and test purposes (TP) for the test specifications for the communication HOLD on the network side using IP multimedia (IM) core network (CN) subsystem as specified in [ITU-T Q.3619 v.1] and [IETF RFC 3264] in compliance with the relevant requirements and in accordance with the relevant guidance given in [ITU-T X.296].

This Recommendation can be used for compliance testing against Recommendation [ITU-T Q.3619 v.1] "Communication HOLD using IP multimedia core network subsystem—Protocol specification" on the network side.

The version number, v.1, indicates that this is version one of Recommendation ITU-T Q.4003.2, and that it relates to Release 10 of the relevant 3GPP/ETSI standard.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- | | |
|----------------------|---|
| [ITU-T Q.3619 v.1] | Recommendation ITU-T Q.3619 v.1, <i>Communication HOLD using IP multimedia core network subsystem. Protocol specification.</i> |
| [ITU-T Q.4003.1 v.1] | Recommendation ITU-T Q.4003.1 v.1, <i>Communication HOLD using IP multimedia core network subsystem; Conformance Testing – Part 1: Network side and user side; Protocol implementation conformance statement.</i> |
| [ITU-T X.290] | Recommendation ITU-T X.290 (1995), <i>OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – General concepts.</i> |
| [ITU-T X.296] | Recommendation ITU-T X.296 (1995), <i>OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Implementation conformance statements.</i> |
| [IETF RFC 3264] | IETF RFC 3264 (2002), <i>An Offer/Answer Model with the Session Description Protocol (SDP).</i> |

3 Definitions

For the purposes of this Recommendation, the terms and definitions given in [ITU-T Q.3619 v.1] and the following apply:

3.1 abstract test suite (ATS): Refer to [ITU-T X.290].

- 3.2 **implementation under test (IUT):** Refer to [ITU-T X.290].
 - 3.3 **PICS proforma:** Refer to [ITU-T X.290].
 - 3.4 **point of control and observation:** Refer to [ITU-T X.290].
 - 3.5 **protocol implementation conformance statement (PICS):** Refer to [ITU-T X.290].
 - 3.6 **system under test (SUT):** Refer to [ITU-T X.290].
 - 3.7 **test purpose (TP):** Refer to [ITU-T X.290].
 - 3.8 **Gm reference point:** Reference point between User Equipment and P-CSCF
- NOTE – This may contain additional information.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

- IMS IP Multimedia Subsystem
- IP Internet Protocol
- IUT Implementation Under Test
- PICS Protocol Implementation Conformance Statement
- SDP Session Description Protocol
- SIP Session Initiation Protocol
- SUT System Under Test
- UE User Equipment

5 Test suite structure (TSS) and test configuration

5.0 Introduction

The following test suite structure is used in this Recommendation.

Table 1 – Test suite structure

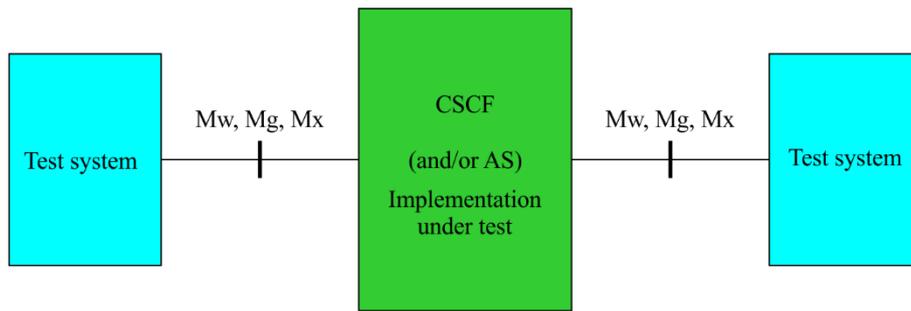
Network	
	CH_N01_xxx

5.1 Configuration

The scope of this Recommendation is to test the signalling and procedural aspects of the stage 3 requirements as described in [ITU-T Q.3619 v.1]. The stage 3 description respects the requirements to several network entities and also to requirements regarding end devices. Therefore several interfaces (reference points) are addressed to satisfy the test of the different entities.

Therefore to test the appropriate entities the configurations below is applicable:

Testing of the network: This entity is responsible to perform the service. In case only the Gm interface is accessible this shall be used instead. In this case, be aware that the verification of several requirements is impeded, see Figure 5-1.



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Figure 5-1 – Applicable interfaces to test using the (generic) NNI interface

6 Test purposes (TP)

6.1 Introduction

For each test requirement a TP is defined.

6.1.1 TP naming convention

Test purposes (TPs) are numbered, starting at 001, within each group. Groups are organized according to the test suite structure (TSS). Additional references are added to identify the actual test suite and whether it applies to the network or the user (see Table 2).

Table 2 – TP identifier naming convention scheme

Identifier: <ss>_<iut><group>_<nnn>		
<ss>	= supplementary service:	e.g. "CH"
<iut>	= type of IUT:	U User N Network
<group>	= group	2 digit field representing group reference according to TSS
<nnn>	= sequential number	(001-999)

6.1.2 Test strategy

As the base standard [ITU-T Q.3619 v.1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the protocol implementation conformance statement (PICS) specification Recommendation [ITU-T Q.4003.1 v.1].

6.2 Network TPs for HOLD

All PICS items referred to in this clause are as specified in [ITU-T Q.4003.1 v.1] unless indicated otherwise by another numbered reference.

TSS Network	TP CH_N01_001	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.3/1															
Test purpose: <i>Session hold in the early dialogue. The media streams were previously set to sendrecv.</i> Ensure that the SUT transfers the HOLD request in an early dialogue. The 200 OK response contains an SDP body with an attribute line indicating 'a=recvonly'.																		
Precondition: <ul style="list-style-type: none"> • An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • The originating party sets the session on HOLD 																		
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Test Equipment (Gm)	SUT	Test Equipment (Gm)																
	Establish an early dialogue																	
UPDATE(sendonly)	→	UPDATE(sendonly)																
200 OK (recvonly)	←	200 OK (recvonly)																
Apply post test routine																		

TSS Network	TP CH_N01_002	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.3/1																					
Test purpose: <i>Session retrieval in the early dialogue. The media streams were previously set to sendrecv.</i> Ensure that the SUT transfers the HOLD request in an early dialogue. The 200 OK response contains an SDP body with an attribute line indicating 'a=sendrecv'.																								
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TSS Network	TP CH_N01_003	HOLD reference Clause 4.5.2.1 of ITU-T Q.3619 v.1]	Selection expression PICS 5.3/1																																																																		
<p>Test purpose: <i>Session set on HOLD in the early dialogue. Retrieval in the confirmed dialogue.</i> Ensure that the SUT transfers the HOLD request in an early dialogue and the revival in the conformed dialogue. The 200 OK response contains an SDP body with an attribute line indicating 'a=sendrecv'.</p>																																																																					
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TSS Network	TP CH_N01_004	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression																																																						
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TSS Network	TP CH_N01_006	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression																																																									
Test purpose: <i>Retrieve the session in a confirmed dialogue. The media streams were previously set to sendonly.</i> Ensure that the SUT is able to support the retrieval of a hold session. The session was previous set on HOLD by the originating party. The originating party sends an INVITE or UPDATE request. The 'a' attribute in the SDP is set to 'sendrecv' or this attribute is absent.																																																												
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TSS Network	TP CH_N01_007	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression																																																												
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TSS Network	TP CH_N01_009	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression																																																												
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TSS Network	TP CH_N01_010	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression																																																									
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TSS Network	TP CH_N01_016	HOLD reference Clause 4.5.2.4 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.3/4																																																						
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SERIES OF ITU-T RECOMMENDATIONS

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Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
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Series H	Audiovisual and multimedia systems
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Series K	Protection against interference
Series L	Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
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