

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.4003.2

(02/2016)

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 Q-SERIES RECOMMENDATIONS
SWITCHING AND SIGNALLING

SIGNALLING IN THE INTERNATIONAL MANUAL SERVICE	Q.1–Q.3
INTERNATIONAL AUTOMATIC AND SEMI-AUTOMATIC WORKING	Q.4–Q.59
FUNCTIONS AND INFORMATION FLOWS FOR SERVICES IN THE ISDN	Q.60–Q.99
CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS	Q.100–Q.119
SPECIFICATIONS OF SIGNALLING SYSTEMS No. 4, 5, 6, R1 AND R2	Q.120–Q.499
DIGITAL EXCHANGES	Q.500–Q.599
INTERWORKING OF SIGNALLING SYSTEMS	Q.600–Q.699
SPECIFICATIONS OF SIGNALLING SYSTEM No. 7	Q.700–Q.799
Q3 INTERFACE	Q.800–Q.849
DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 1	Q.850–Q.999
PUBLIC LAND MOBILE NETWORK	Q.1000–Q.1099
INTERWORKING WITH SATELLITE MOBILE SYSTEMS	Q.1100–Q.1199
INTELLIGENT NETWORK	Q.1200–Q.1699
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR IMT-2000	Q.1700–Q.1799
SPECIFICATIONS OF SIGNALLING RELATED TO BEARER INDEPENDENT CALL CONTROL (BICC)	Q.1900–Q.1999
BROADBAND ISDN	Q.2000–Q.2999
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR THE NGN	Q.3000–Q.3899
TESTING SPECIFICATIONS	Q.3900–Q.4099
Testing specifications for next generation networks	Q.3900–Q.3999
Testing specifications for SIP-IMS	Q.4000–Q.4039
Testing specifications for Cloud computing	Q.4040–Q.4059

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

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

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.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

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/>.

© ITU 2016

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

Table of Contents

	Page
1 Scope	1
2 References.....	1
3 Definitions	1
4 Abbreviations and acronyms	2
5 Test Suite Structure (TSS) and Test configuration.....	2
5.0 Introduction	2
5.1 Configuration.....	2
6 Test Purposes (TP).....	3
6.1 Introduction	3
6.2 Network TPs for HOLD	3

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

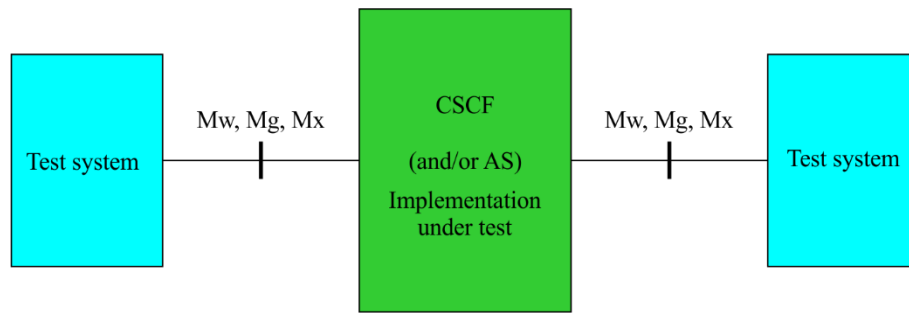
Network	
	CH_N01_xxx

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.



Q.4003.2v1(16)_F5-1

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																		
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td></td><td>Establish an early dialogue</td><td></td></tr><tr><td>UPDATE(sendonly)</td><td>➔</td><td>UPDATE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>➔</td><td>200 OK (recvonly)</td></tr><tr><td></td><td>Apply post test routine</td><td></td></tr></table>				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	
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'.																								
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 'sendonly'• The originating party retrieves the session																								
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td></td><td>Establish an early dialogue</td><td></td></tr><tr><td>UPDATE(sendonly)</td><td>→</td><td>UPDATE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>←</td><td>200 OK (recvonly)</td></tr><tr><td>UPDATE(sendrecv)</td><td>→</td><td>UPDATE(sendrecv)</td></tr><tr><td>200 OK (sendrecv)</td><td>←</td><td>200 OK (sendrecv)</td></tr><tr><td></td><td>Apply post test routine</td><td></td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)		Establish an early dialogue		UPDATE(sendonly)	→	UPDATE(sendonly)	200 OK (recvonly)	←	200 OK (recvonly)	UPDATE(sendrecv)	→	UPDATE(sendrecv)	200 OK (sendrecv)	←	200 OK (sendrecv)		Apply post test routine	
Test Equipment (Gm)	SUT	Test Equipment (Gm)																						
	Establish an early dialogue																							
UPDATE(sendonly)	→	UPDATE(sendonly)																						
200 OK (recvonly)	←	200 OK (recvonly)																						
UPDATE(sendrecv)	→	UPDATE(sendrecv)																						
200 OK (sendrecv)	←	200 OK (sendrecv)																						
	Apply post test routine																							

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
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'.			
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 'sendonly' in the early dialogue• The terminating user confirms the dialogue.• The originating party retrieves the session			
Comments:			
Test Equipment (Gm)	SUT	Test Equipment (Gm)	
Establish an early dialogue			
UPDATE(sendonly)	➔	➔	UPDATE(sendonly)
200 OK (recvonly)	➔	➔	200 OK (recvonly)
200 OK (recvonly)	➔	➔	200 OK (recvonly)
ACK	➔	➔	ACK
CASE A			
INVITE(sendrecv)	➔		CASE a
200 OK (sendrecv)	➔	➔	INVITE(sendrecv)
ACK	➔	➔	200 OK (sendrecv)
		➔	ACK
			CASE b
		➔	UPDATE(sendrecv)
		➔	200 OK (sendrecv)
CASE B			
UPDATE(sendrecv)	➔		CASE a
200 OK (sendrecv)	➔	➔	UPDATE(sendrecv)
		➔	200 OK (sendrecv)
			CASE b
		➔	INVITE(sendrecv)
		➔	200 OK (sendrecv)
		➔	ACK
Apply post test routine			

TSS Network	TP CH_N01_004	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression
Test purpose: <i>Session hold in a confirmed dialogue. The media streams were previously set to sendrecv.</i> Ensure that the SUT transfers the HOLD request from the originating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.			
Precondition: <ul style="list-style-type: none">A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' proceduresThe media stream was previously set to 'sendrecv'The originating party sets the session on HOLD			
Comments:			
Test Equipment (Gm)	SUT		Test Equipment (Gm)
Establish a confirmed dialogue			
CASE A			CASE a
INVITE(sendonly)	➔		INVITE(sendonly)
200 OK (recvonly)	➤	➔	200 OK (recvonly)
ACK	➤	➤	ACK
			CASE b
		➔	UPDATE(sendonly)
		➤	200 OK (recvonly)
CASE B			CASE a
UPDATE(sendonly)	➔		UPDATE(sendonly)
200 OK (recvonly)	➤	➔	200 OK (recvonly)
			CASE b
		➔	INVITE(sendonly)
		➤	200 OK (recvonly)
		➤	ACK
Apply post test routine			

TSS Network	TP CH_N01_005	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression
Test purpose: <i>Session hold in a confirmed dialogue. The media streams were previously set to sendrecv.</i> Ensure that the SUT transfers the HOLD request from the terminating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.			
Precondition: <ul style="list-style-type: none">• A confirmed 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 terminating party sets the session on HOLD			
Comments:			
Test Equipment (Gm)	SUT	Test Equipment (Gm)	
Establish a confirmed dialogue			
CASE A			
CASE a		←	INVITE(sendonly)
INVITE(sendonly)	←	→	200 OK (recvonly)
200 OK (recvonly)	→	←	ACK
ACK	←		
CASE b			
UPDATE(sendonly)	←		
200 OK (recvonly)	→		
CASE B			
CASE a		←	UPDATE(sendonly)
UPDATE(sendonly)	←	→	200 OK (recvonly)
200 OK (recvonly)	→		
CASE b			
INVITE(sendonly)	←		
200 OK (recvonly)	→		
ACK	←		
Apply post test routine			

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.																																																									
Precondition: <ul style="list-style-type: none">• A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures• The media stream was previously set to 'sendonly' HOLD requested by the originating party• The originating party retrieves the held session																																																									
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td colspan="3">Establish a confirmed dialogue</td></tr><tr><td colspan="3">Session on HOLD by the originating party</td></tr><tr><td>CASE A</td><td></td><td>CASE a</td></tr><tr><td>INVITE(sendrecv)</td><td>➔</td><td>INVITE(sendrecv)</td></tr><tr><td>200 OK (sendrecv)</td><td>➞</td><td>200 OK (sendrecv)</td></tr><tr><td>ACK</td><td>➞</td><td>ACK</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td></td><td>➔ UPDATE(sendrecv)</td></tr><tr><td></td><td></td><td>➞ 200 OK (sendrecv)</td></tr><tr><td>CASE B</td><td></td><td>CASE a</td></tr><tr><td>UPDATE(sendrecv)</td><td>➔</td><td>UPDATE(sendrecv)</td></tr><tr><td>200 OK (sendrecv)</td><td>➞</td><td>200 OK (sendrecv)</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td></td><td>➔ INVITE(sendrecv)</td></tr><tr><td></td><td></td><td>➞ 200 OK (sendrecv)</td></tr><tr><td></td><td></td><td>➔ ACK</td></tr><tr><td colspan="3">Apply post test routine</td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)	Establish a confirmed dialogue			Session on HOLD by the originating party			CASE A		CASE a	INVITE(sendrecv)	➔	INVITE(sendrecv)	200 OK (sendrecv)	➞	200 OK (sendrecv)	ACK	➞	ACK			CASE b			➔ UPDATE(sendrecv)			➞ 200 OK (sendrecv)	CASE B		CASE a	UPDATE(sendrecv)	➔	UPDATE(sendrecv)	200 OK (sendrecv)	➞	200 OK (sendrecv)			CASE b			➔ INVITE(sendrecv)			➞ 200 OK (sendrecv)			➔ ACK	Apply post test routine		
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																							
Establish a confirmed dialogue																																																									
Session on HOLD by the originating party																																																									
CASE A		CASE a																																																							
INVITE(sendrecv)	➔	INVITE(sendrecv)																																																							
200 OK (sendrecv)	➞	200 OK (sendrecv)																																																							
ACK	➞	ACK																																																							
		CASE b																																																							
		➔ UPDATE(sendrecv)																																																							
		➞ 200 OK (sendrecv)																																																							
CASE B		CASE a																																																							
UPDATE(sendrecv)	➔	UPDATE(sendrecv)																																																							
200 OK (sendrecv)	➞	200 OK (sendrecv)																																																							
		CASE b																																																							
		➔ INVITE(sendrecv)																																																							
		➞ 200 OK (sendrecv)																																																							
		➔ ACK																																																							
Apply post test routine																																																									

TSS Network	TP CH_N01_007	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 support the retrieval of a hold session. The session was previous set on HOLD by the terminating party. The terminating party sends an INVITE or UPDATE request. The ‘a’ attribute in the SDP is set to ‘sendrecv’ or this attribute is absent.																																																															
Precondition: <ul style="list-style-type: none">• A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures• The media stream was previously set to 'sendonly' HOLD requested by the terminating party• The terminating party retrieves the held session																																																															
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td colspan="3">Establish a confirmed dialogue</td></tr><tr><td colspan="3">Session on HOLD by the terminating party</td></tr><tr><td colspan="3">CASE A</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>INVITE(sendrecv)</td><td>←</td><td>← INVITE(sendrecv)</td></tr><tr><td>200 OK (sendrecv)</td><td>→</td><td>→ 200 OK (sendrecv)</td></tr><tr><td>ACK</td><td>←</td><td>← ACK</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>UPDATE(sendrecv)</td><td>←</td><td></td></tr><tr><td>200 OK (sendrecv)</td><td>→</td><td></td></tr><tr><td colspan="3">CASE B</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>UPDATE(sendrecv)</td><td>←</td><td>← UPDATE(sendrecv)</td></tr><tr><td>200 OK (sendrecv)</td><td>→</td><td>→ 200 OK (sendrecv)</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>INVITE(sendrecv)</td><td>←</td><td></td></tr><tr><td>200 OK (sendrecv)</td><td>→</td><td></td></tr><tr><td>ACK</td><td>←</td><td></td></tr><tr><td colspan="3">Apply post test routine</td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)	Establish a confirmed dialogue			Session on HOLD by the terminating party			CASE A			CASE a			INVITE(sendrecv)	←	← INVITE(sendrecv)	200 OK (sendrecv)	→	→ 200 OK (sendrecv)	ACK	←	← ACK	CASE b			UPDATE(sendrecv)	←		200 OK (sendrecv)	→		CASE B			CASE a			UPDATE(sendrecv)	←	← UPDATE(sendrecv)	200 OK (sendrecv)	→	→ 200 OK (sendrecv)	CASE b			INVITE(sendrecv)	←		200 OK (sendrecv)	→		ACK	←		Apply post test routine		
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																													
Establish a confirmed dialogue																																																															
Session on HOLD by the terminating party																																																															
CASE A																																																															
CASE a																																																															
INVITE(sendrecv)	←	← INVITE(sendrecv)																																																													
200 OK (sendrecv)	→	→ 200 OK (sendrecv)																																																													
ACK	←	← ACK																																																													
CASE b																																																															
UPDATE(sendrecv)	←																																																														
200 OK (sendrecv)	→																																																														
CASE B																																																															
CASE a																																																															
UPDATE(sendrecv)	←	← UPDATE(sendrecv)																																																													
200 OK (sendrecv)	→	→ 200 OK (sendrecv)																																																													
CASE b																																																															
INVITE(sendrecv)	←																																																														
200 OK (sendrecv)	→																																																														
ACK	←																																																														
Apply post test routine																																																															

TSS Network	TP CH_N01_008	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression																																																												
Test purpose: <i>Session hold in a confirmed dialogue. The media streams were previously set to recvnly.</i> Ensure that the SUT transfers the hold request from the originating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a= inactive'.																																																															
Precondition: <ul style="list-style-type: none">• An confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures• The media stream was previously set to 'recvnly' HOLD requested by the terminating party• The originating party sets the session on HOLD																																																															
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td colspan="3">Establish a confirmed dialogue</td></tr><tr><td colspan="3">Session on HOLD by the terminating party</td></tr><tr><td>CASE A</td><td></td><td></td></tr><tr><td>INVITE(<i>inactive</i>)</td><td>➔</td><td>CASE a</td></tr><tr><td>200 OK (<i>inactive</i>)</td><td>➞</td><td>INVITE(<i>inactive</i>)</td></tr><tr><td>ACK</td><td>➞</td><td>200 OK (<i>inactive</i>)</td></tr><tr><td></td><td></td><td>ACK</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td>➔</td><td>UPDATE(<i>inactive</i>)</td></tr><tr><td></td><td>➞</td><td>200 OK (<i>inactive</i>)</td></tr><tr><td>CASE B</td><td></td><td></td></tr><tr><td>UPDATE(<i>inactive</i>)</td><td>➔</td><td>CASE a</td></tr><tr><td>200 OK (<i>inactive</i>)</td><td>➞</td><td>UPDATE(<i>inactive</i>)</td></tr><tr><td></td><td>➞</td><td>200 OK (<i>inactive</i>)</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td>➔</td><td>INVITE(<i>inactive</i>)</td></tr><tr><td></td><td>➞</td><td>200 OK (<i>inactive</i>)</td></tr><tr><td></td><td>➞</td><td>ACK</td></tr><tr><td colspan="3">Apply post test routine</td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)	Establish a confirmed dialogue			Session on HOLD by the terminating party			CASE A			INVITE(<i>inactive</i>)	➔	CASE a	200 OK (<i>inactive</i>)	➞	INVITE(<i>inactive</i>)	ACK	➞	200 OK (<i>inactive</i>)			ACK			CASE b		➔	UPDATE(<i>inactive</i>)		➞	200 OK (<i>inactive</i>)	CASE B			UPDATE(<i>inactive</i>)	➔	CASE a	200 OK (<i>inactive</i>)	➞	UPDATE(<i>inactive</i>)		➞	200 OK (<i>inactive</i>)			CASE b		➔	INVITE(<i>inactive</i>)		➞	200 OK (<i>inactive</i>)		➞	ACK	Apply post test routine		
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																													
Establish a confirmed dialogue																																																															
Session on HOLD by the terminating party																																																															
CASE A																																																															
INVITE(<i>inactive</i>)	➔	CASE a																																																													
200 OK (<i>inactive</i>)	➞	INVITE(<i>inactive</i>)																																																													
ACK	➞	200 OK (<i>inactive</i>)																																																													
		ACK																																																													
		CASE b																																																													
	➔	UPDATE(<i>inactive</i>)																																																													
	➞	200 OK (<i>inactive</i>)																																																													
CASE B																																																															
UPDATE(<i>inactive</i>)	➔	CASE a																																																													
200 OK (<i>inactive</i>)	➞	UPDATE(<i>inactive</i>)																																																													
	➞	200 OK (<i>inactive</i>)																																																													
		CASE b																																																													
	➔	INVITE(<i>inactive</i>)																																																													
	➞	200 OK (<i>inactive</i>)																																																													
	➞	ACK																																																													
Apply post test routine																																																															

TSS Network	TP CH_N01_009	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression																																																												
Test purpose: <i>Session hold in a confirmed dialogue. The media streams were previously set to recvnly.</i> The session in a confirmed dialogue is set on HOLD Ensure that the SUT transfers the HOLD request from the terminating party. The 200 OK response containing an SDP body with an attribute line indicating 'a=inactive'.																																																															
Precondition: <ul style="list-style-type: none">• A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures• The media stream was previously set to 'recvnly' HOLD requested by the originating party• The terminating party sets the session on HOLD																																																															
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td colspan="3">Establish a confirmed dialogue</td></tr><tr><td colspan="3">Session on HOLD by the originating party</td></tr><tr><td colspan="3">CASE A</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>INVITE(inactive)</td><td>←</td><td>← INVITE(inactive)</td></tr><tr><td>200 OK (inactive)</td><td>→</td><td>→ 200 OK (inactive)</td></tr><tr><td>ACK</td><td>←</td><td>← ACK</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>UPDATE(inactive)</td><td>←</td><td></td></tr><tr><td>200 OK (inactive)</td><td>→</td><td></td></tr><tr><td colspan="3">CASE B</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>UPDATE(inactive)</td><td>←</td><td>← UPDATE(inactive)</td></tr><tr><td>200 OK (inactive)</td><td>→</td><td>→ 200 OK (inactive)</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>INVITE(inactive)</td><td>←</td><td></td></tr><tr><td>200 OK (inactive)</td><td>→</td><td></td></tr><tr><td>ACK</td><td>←</td><td></td></tr><tr><td colspan="3">Apply post test routine</td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)	Establish a confirmed dialogue			Session on HOLD by the originating party			CASE A			CASE a			INVITE(inactive)	←	← INVITE(inactive)	200 OK (inactive)	→	→ 200 OK (inactive)	ACK	←	← ACK	CASE b			UPDATE(inactive)	←		200 OK (inactive)	→		CASE B			CASE a			UPDATE(inactive)	←	← UPDATE(inactive)	200 OK (inactive)	→	→ 200 OK (inactive)	CASE b			INVITE(inactive)	←		200 OK (inactive)	→		ACK	←		Apply post test routine		
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																													
Establish a confirmed dialogue																																																															
Session on HOLD by the originating party																																																															
CASE A																																																															
CASE a																																																															
INVITE(inactive)	←	← INVITE(inactive)																																																													
200 OK (inactive)	→	→ 200 OK (inactive)																																																													
ACK	←	← ACK																																																													
CASE b																																																															
UPDATE(inactive)	←																																																														
200 OK (inactive)	→																																																														
CASE B																																																															
CASE a																																																															
UPDATE(inactive)	←	← UPDATE(inactive)																																																													
200 OK (inactive)	→	→ 200 OK (inactive)																																																													
CASE b																																																															
INVITE(inactive)	←																																																														
200 OK (inactive)	→																																																														
ACK	←																																																														
Apply post test routine																																																															

TSS Network	TP CH_N01_010	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 inactive.</i> Ensure that the SUT transfers the RETRIVE request from the terminating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=sendonly'.																																																																		
Precondition: <ul style="list-style-type: none">A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' proceduresThe media stream was previously set to 'recvonly'The media stream was previously set to 'inactive'The terminating party retrieves the held session																																																																		
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td></td><td>Establish a confirmed dialogue</td><td></td></tr><tr><td></td><td>The originating party sets the session on HOLD</td><td></td></tr><tr><td></td><td>The terminating party sets the session on HOLD</td><td></td></tr><tr><td colspan="3">CASE A</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>INVITE(recvonly)</td><td>←</td><td>← INVITE(recvonly)</td></tr><tr><td>200 OK (sendonly)</td><td>→</td><td>→ 200 OK (sendonly)</td></tr><tr><td>ACK</td><td>←</td><td>← ACK</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>UPDATE(recvonly)</td><td>←</td><td></td></tr><tr><td>200 OK (sendonly)</td><td>→</td><td></td></tr><tr><td colspan="3">CASE B</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>UPDATE(recvonly)</td><td>←</td><td>← UPDATE(recvonly)</td></tr><tr><td>200 OK (sendonly)</td><td>→</td><td>→ 200 OK (sendonly)</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>INVITE(recvonly)</td><td>←</td><td></td></tr><tr><td>200 OK (sendonly)</td><td>→</td><td></td></tr><tr><td>ACK</td><td>←</td><td></td></tr><tr><td></td><td>Apply post test routine</td><td></td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)		Establish a confirmed dialogue			The originating party sets the session on HOLD			The terminating party sets the session on HOLD		CASE A			CASE a			INVITE(recvonly)	←	← INVITE(recvonly)	200 OK (sendonly)	→	→ 200 OK (sendonly)	ACK	←	← ACK	CASE b			UPDATE(recvonly)	←		200 OK (sendonly)	→		CASE B			CASE a			UPDATE(recvonly)	←	← UPDATE(recvonly)	200 OK (sendonly)	→	→ 200 OK (sendonly)	CASE b			INVITE(recvonly)	←		200 OK (sendonly)	→		ACK	←			Apply post test routine	
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																																
	Establish a confirmed dialogue																																																																	
	The originating party sets the session on HOLD																																																																	
	The terminating party sets the session on HOLD																																																																	
CASE A																																																																		
CASE a																																																																		
INVITE(recvonly)	←	← INVITE(recvonly)																																																																
200 OK (sendonly)	→	→ 200 OK (sendonly)																																																																
ACK	←	← ACK																																																																
CASE b																																																																		
UPDATE(recvonly)	←																																																																	
200 OK (sendonly)	→																																																																	
CASE B																																																																		
CASE a																																																																		
UPDATE(recvonly)	←	← UPDATE(recvonly)																																																																
200 OK (sendonly)	→	→ 200 OK (sendonly)																																																																
CASE b																																																																		
INVITE(recvonly)	←																																																																	
200 OK (sendonly)	→																																																																	
ACK	←																																																																	
	Apply post test routine																																																																	

TSS	TP	HOLD reference	Selection expression																																																															
Network	CH_N01_011	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]																																																																
Test purpose: <i>Retrieve the session in a confirmed dialogue. The media streams were previously set to inactive.</i> Ensure that the SUT transfers the RETRIVE request from the originating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.																																																																		
Precondition: <ul style="list-style-type: none">A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' proceduresThe media stream was previously set to 'recvonly'The media stream was previously set to 'inactive'The originating party retrieves the held session																																																																		
Comments: <table><tr><th>Test Equipment (Gm)</th><th>SUT</th><th>Test Equipment (Gm)</th></tr><tr><td colspan="3">Establish a confirmed dialogue The originating party sets the session on HOLD The terminating party sets the session on HOLD</td></tr><tr><td>CASE A</td><td></td><td>CASE a</td></tr><tr><td>INVITE(sendonly)</td><td>➔</td><td>INVITE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>➔</td><td>200 OK (recvonly)</td></tr><tr><td>ACK</td><td>➔</td><td>ACK</td></tr><tr><td></td><td></td><td>➔</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td></td><td>UPDATE(sendonly)</td></tr><tr><td></td><td></td><td>200 OK (recvonly)</td></tr><tr><td></td><td></td><td>➔</td></tr><tr><td>CASE B</td><td></td><td>CASE a</td></tr><tr><td>UPDATE(sendonly)</td><td>➔</td><td>UPDATE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>➔</td><td>200 OK (recvonly)</td></tr><tr><td></td><td></td><td>➔</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td></td><td>INVITE(sendonly)</td></tr><tr><td></td><td></td><td>200 OK (recvonly)</td></tr><tr><td></td><td></td><td>➔</td></tr><tr><td></td><td></td><td>ACK</td></tr><tr><td colspan="3">Apply post test routine</td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)	Establish a confirmed dialogue The originating party sets the session on HOLD The terminating party sets the session on HOLD			CASE A		CASE a	INVITE(sendonly)	➔	INVITE(sendonly)	200 OK (recvonly)	➔	200 OK (recvonly)	ACK	➔	ACK			➔			CASE b			UPDATE(sendonly)			200 OK (recvonly)			➔	CASE B		CASE a	UPDATE(sendonly)	➔	UPDATE(sendonly)	200 OK (recvonly)	➔	200 OK (recvonly)			➔			CASE b			INVITE(sendonly)			200 OK (recvonly)			➔			ACK	Apply post test routine		
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																																
Establish a confirmed dialogue The originating party sets the session on HOLD The terminating party sets the session on HOLD																																																																		
CASE A		CASE a																																																																
INVITE(sendonly)	➔	INVITE(sendonly)																																																																
200 OK (recvonly)	➔	200 OK (recvonly)																																																																
ACK	➔	ACK																																																																
		➔																																																																
		CASE b																																																																
		UPDATE(sendonly)																																																																
		200 OK (recvonly)																																																																
		➔																																																																
CASE B		CASE a																																																																
UPDATE(sendonly)	➔	UPDATE(sendonly)																																																																
200 OK (recvonly)	➔	200 OK (recvonly)																																																																
		➔																																																																
		CASE b																																																																
		INVITE(sendonly)																																																																
		200 OK (recvonly)																																																																
		➔																																																																
		ACK																																																																
Apply post test routine																																																																		

TSS Network	TP CH_N01_012	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 inactive.</i> Ensure that the SUT transfers the RETRIVE request from the terminating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.																																																																		
Precondition: <ul style="list-style-type: none">• A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures• The media stream was previously set to 'sendonly'• The media stream was previously set to 'inactive'• The terminating party retrieves the held session																																																																		
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td colspan="3">Establish a confirmed dialogue</td></tr><tr><td colspan="3">The terminating party sets the session on HOLD</td></tr><tr><td colspan="3">The originating party sets the session on HOLD</td></tr><tr><td colspan="3">CASE A</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>INVITE(sendonly)</td><td>←</td><td>← INVITE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>→</td><td>→ 200 OK (recvonly)</td></tr><tr><td>ACK</td><td>←</td><td>← ACK</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>UPDATE(sendonly)</td><td>←</td><td></td></tr><tr><td>200 OK (recvonly)</td><td>→</td><td></td></tr><tr><td colspan="3">CASE B</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>UPDATE(sendonly)</td><td>←</td><td>← UPDATE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>→</td><td>→ 200 OK (recvonly)</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>INVITE(sendonly)</td><td>←</td><td></td></tr><tr><td>200 OK (recvonly)</td><td>→</td><td></td></tr><tr><td>ACK</td><td>←</td><td></td></tr><tr><td colspan="3">Apply post test routine</td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)	Establish a confirmed dialogue			The terminating party sets the session on HOLD			The originating party sets the session on HOLD			CASE A			CASE a			INVITE(sendonly)	←	← INVITE(sendonly)	200 OK (recvonly)	→	→ 200 OK (recvonly)	ACK	←	← ACK	CASE b			UPDATE(sendonly)	←		200 OK (recvonly)	→		CASE B			CASE a			UPDATE(sendonly)	←	← UPDATE(sendonly)	200 OK (recvonly)	→	→ 200 OK (recvonly)	CASE b			INVITE(sendonly)	←		200 OK (recvonly)	→		ACK	←		Apply post test routine		
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																																
Establish a confirmed dialogue																																																																		
The terminating party sets the session on HOLD																																																																		
The originating party sets the session on HOLD																																																																		
CASE A																																																																		
CASE a																																																																		
INVITE(sendonly)	←	← INVITE(sendonly)																																																																
200 OK (recvonly)	→	→ 200 OK (recvonly)																																																																
ACK	←	← ACK																																																																
CASE b																																																																		
UPDATE(sendonly)	←																																																																	
200 OK (recvonly)	→																																																																	
CASE B																																																																		
CASE a																																																																		
UPDATE(sendonly)	←	← UPDATE(sendonly)																																																																
200 OK (recvonly)	→	→ 200 OK (recvonly)																																																																
CASE b																																																																		
INVITE(sendonly)	←																																																																	
200 OK (recvonly)	→																																																																	
ACK	←																																																																	
Apply post test routine																																																																		

TSS Network	TP CH_N01_013	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 inactive.</i> Ensure that the SUT transfers the RETRIVE request from the originating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.																																																												
Precondition: <ul style="list-style-type: none">• A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures• The media stream was previously set to 'sendonly'• The media stream was previously set to 'inactive'• The originating party retrieves the held session																																																												
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td colspan="3">Establish a confirmed dialogue</td></tr><tr><td colspan="3">The terminating party sets the session on HOLD</td></tr><tr><td colspan="3">The originating party sets the session on HOLD</td></tr><tr><td>CASE A</td><td></td><td>CASE a</td></tr><tr><td>INVITE(recvonly)</td><td>→</td><td>INVITE(recvonly)</td></tr><tr><td>200 OK (sendonly)</td><td>←</td><td>200 OK (sendonly)</td></tr><tr><td>ACK</td><td>←</td><td>ACK</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td></td><td>→ UPDATE(recvonly)</td></tr><tr><td></td><td></td><td>← 200 OK (sendonly)</td></tr><tr><td>CASE B</td><td></td><td>CASE a</td></tr><tr><td>UPDATE(recvonly)</td><td>→</td><td>UPDATE(recvonly)</td></tr><tr><td>200 OK (sendonly)</td><td>←</td><td>200 OK (sendonly)</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td></td><td>→ INVITE(recvonly)</td></tr><tr><td></td><td></td><td>← 200 OK (sendonly)</td></tr><tr><td></td><td></td><td>→ ACK</td></tr><tr><td colspan="3">Apply post test routine</td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)	Establish a confirmed dialogue			The terminating party sets the session on HOLD			The originating party sets the session on HOLD			CASE A		CASE a	INVITE(recvonly)	→	INVITE(recvonly)	200 OK (sendonly)	←	200 OK (sendonly)	ACK	←	ACK			CASE b			→ UPDATE(recvonly)			← 200 OK (sendonly)	CASE B		CASE a	UPDATE(recvonly)	→	UPDATE(recvonly)	200 OK (sendonly)	←	200 OK (sendonly)			CASE b			→ INVITE(recvonly)			← 200 OK (sendonly)			→ ACK	Apply post test routine		
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																										
Establish a confirmed dialogue																																																												
The terminating party sets the session on HOLD																																																												
The originating party sets the session on HOLD																																																												
CASE A		CASE a																																																										
INVITE(recvonly)	→	INVITE(recvonly)																																																										
200 OK (sendonly)	←	200 OK (sendonly)																																																										
ACK	←	ACK																																																										
		CASE b																																																										
		→ UPDATE(recvonly)																																																										
		← 200 OK (sendonly)																																																										
CASE B		CASE a																																																										
UPDATE(recvonly)	→	UPDATE(recvonly)																																																										
200 OK (sendonly)	←	200 OK (sendonly)																																																										
		CASE b																																																										
		→ INVITE(recvonly)																																																										
		← 200 OK (sendonly)																																																										
		→ ACK																																																										
Apply post test routine																																																												

TSS Network	TP CH_N01_014	HOLD reference Clause 4.5.2.4 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.3/3																																				
Test purpose: <i>The network provides an announcement to the originating user when setting the session on HOLD.</i> Ensure that the SUT provides an announcement to the originating user when setting the session on HOLD.																																							
Precondition: <ul style="list-style-type: none">• A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures• The media stream is set on HOLD• The SUT provides an announcement																																							
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td></td><td>Establish a confirmed dialogue</td><td></td></tr><tr><td>CASE A</td><td></td><td></td></tr><tr><td>INVITE(sendonly)</td><td>→</td><td></td></tr><tr><td>200 OK (recvonly)</td><td>←</td><td></td></tr><tr><td>ACK</td><td>←</td><td></td></tr><tr><td></td><td>Announcement</td><td></td></tr><tr><td>CASE B</td><td></td><td></td></tr><tr><td>UPDATE(sendonly)</td><td>→</td><td></td></tr><tr><td>200 OK (recvonly)</td><td>←</td><td></td></tr><tr><td></td><td>Announcement</td><td></td></tr><tr><td></td><td>Apply post test routine</td><td></td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)		Establish a confirmed dialogue		CASE A			INVITE(sendonly)	→		200 OK (recvonly)	←		ACK	←			Announcement		CASE B			UPDATE(sendonly)	→		200 OK (recvonly)	←			Announcement			Apply post test routine	
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																					
	Establish a confirmed dialogue																																						
CASE A																																							
INVITE(sendonly)	→																																						
200 OK (recvonly)	←																																						
ACK	←																																						
	Announcement																																						
CASE B																																							
UPDATE(sendonly)	→																																						
200 OK (recvonly)	←																																						
	Announcement																																						
	Apply post test routine																																						

TSS Network	TP CH_N01_015	HOLD reference Clause 4.5.2.4 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.3/3																																				
Test purpose: <i>The network provides an announcement to the terminating user when setting the session on HOLD.</i> Ensure that the SUT provides an announcement to the terminating user when setting the session on HOLD.																																							
Precondition: <ul style="list-style-type: none">• A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures• The media stream is set on HOLD• The SUT provides an announcement																																							
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td></td><td>Establish a confirmed dialogue</td><td></td></tr><tr><td></td><td>CASE A</td><td></td></tr><tr><td></td><td>← INVITE(sendonly)</td><td></td></tr><tr><td></td><td>→ 200 OK (recvonly)</td><td></td></tr><tr><td></td><td>← ACK</td><td></td></tr><tr><td></td><td>Announcement</td><td></td></tr><tr><td></td><td>CASE B</td><td></td></tr><tr><td></td><td>← UPDATE(sendonly)</td><td></td></tr><tr><td></td><td>→ 200 OK (recvonly)</td><td></td></tr><tr><td></td><td>Announcement</td><td></td></tr><tr><td></td><td>Apply post test routine</td><td></td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)		Establish a confirmed dialogue			CASE A			← INVITE(sendonly)			→ 200 OK (recvonly)			← ACK			Announcement			CASE B			← UPDATE(sendonly)			→ 200 OK (recvonly)			Announcement			Apply post test routine	
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																					
	Establish a confirmed dialogue																																						
	CASE A																																						
	← INVITE(sendonly)																																						
	→ 200 OK (recvonly)																																						
	← ACK																																						
	Announcement																																						
	CASE B																																						
	← UPDATE(sendonly)																																						
	→ 200 OK (recvonly)																																						
	Announcement																																						
	Apply post test routine																																						

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																																																			
Test purpose: <i>The SUT lower the bandwidth by setting the b=AS to a small value.</i> Ensure that the SUT shall lower the bandwidth for each media stream when the originating user sets the session on HOLD marked "recvonly" by setting the "b=AS:" parameter to a small value, e.g. "b=AS:0". The "b=RR:" and "b=RS:" parameters shall be set to values large enough to enable continuation of the RTCP flow, e.g. "b=RR:800" and "b=RS:800".																																																						
SIP header values 200 OK (recvonly) b=AS:<> b=RR:<> b=RS:<>																																																						
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td colspan="3">Establish a confirmed dialogue</td></tr><tr><td>CASE A</td><td></td><td>CASE a</td></tr><tr><td>INVITE(sendonly)</td><td>→</td><td>INVITE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>←</td><td>200 OK (recvonly)</td></tr><tr><td>ACK</td><td>←</td><td>ACK</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td></td><td>UPDATE(sendonly)</td></tr><tr><td></td><td></td><td>200 OK (recvonly)</td></tr><tr><td>CASE B</td><td></td><td>CASE a</td></tr><tr><td>UPDATE(sendonly)</td><td>→</td><td>UPDATE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>←</td><td>200 OK (recvonly)</td></tr><tr><td></td><td></td><td>CASE b</td></tr><tr><td></td><td></td><td>INVITE(sendonly)</td></tr><tr><td></td><td></td><td>200 OK (recvonly)</td></tr><tr><td></td><td></td><td>ACK</td></tr><tr><td colspan="3">Apply post test routine</td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)	Establish a confirmed dialogue			CASE A		CASE a	INVITE(sendonly)	→	INVITE(sendonly)	200 OK (recvonly)	←	200 OK (recvonly)	ACK	←	ACK			CASE b			UPDATE(sendonly)			200 OK (recvonly)	CASE B		CASE a	UPDATE(sendonly)	→	UPDATE(sendonly)	200 OK (recvonly)	←	200 OK (recvonly)			CASE b			INVITE(sendonly)			200 OK (recvonly)			ACK	Apply post test routine		
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																				
Establish a confirmed dialogue																																																						
CASE A		CASE a																																																				
INVITE(sendonly)	→	INVITE(sendonly)																																																				
200 OK (recvonly)	←	200 OK (recvonly)																																																				
ACK	←	ACK																																																				
		CASE b																																																				
		UPDATE(sendonly)																																																				
		200 OK (recvonly)																																																				
CASE B		CASE a																																																				
UPDATE(sendonly)	→	UPDATE(sendonly)																																																				
200 OK (recvonly)	←	200 OK (recvonly)																																																				
		CASE b																																																				
		INVITE(sendonly)																																																				
		200 OK (recvonly)																																																				
		ACK																																																				
Apply post test routine																																																						

TSS Network	TP CH_N01_017	HOLD reference Clause 4.5.2.4 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.3/4																																																									
Test purpose: <i>The SUT lower the bandwidth by setting the b=AS to a small value.</i> Ensure that the SUT shall lower the bandwidth for each media stream when the terminating user sets the session on HOLD marked "recvonly" by setting the "b=AS:" parameter to a small value, e.g. "b=AS:0". The "b=RR:" and "b=RS:" parameters shall be set to values large enough to enable continuation of the RTCP flow, e.g. "b=RR:800" and "b=RS:800".																																																												
SIP header values 200 OK (recvonly) b=AS:<> b=RR:<> b=RS:<>																																																												
Comments: <table><tr><td>Test Equipment (Gm)</td><td>SUT</td><td>Test Equipment (Gm)</td></tr><tr><td colspan="3">Establish a confirmed dialogue</td></tr><tr><td colspan="3">CASE A</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>INVITE(sendonly)</td><td>←</td><td>← INVITE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>→</td><td>→ 200 OK (recvonly)</td></tr><tr><td>ACK</td><td>←</td><td>← ACK</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>UPDATE(sendonly)</td><td>←</td><td></td></tr><tr><td>200 OK (recvonly)</td><td>→</td><td></td></tr><tr><td colspan="3">CASE B</td></tr><tr><td>CASE a</td><td></td><td></td></tr><tr><td>UPDATE(sendonly)</td><td>←</td><td>← UPDATE(sendonly)</td></tr><tr><td>200 OK (recvonly)</td><td>→</td><td>→ 200 OK (recvonly)</td></tr><tr><td>CASE b</td><td></td><td></td></tr><tr><td>INVITE(sendonly)</td><td>←</td><td></td></tr><tr><td>200 OK (recvonly)</td><td>→</td><td></td></tr><tr><td>ACK</td><td>←</td><td></td></tr><tr><td colspan="3">Apply post test routine</td></tr></table>				Test Equipment (Gm)	SUT	Test Equipment (Gm)	Establish a confirmed dialogue			CASE A			CASE a			INVITE(sendonly)	←	← INVITE(sendonly)	200 OK (recvonly)	→	→ 200 OK (recvonly)	ACK	←	← ACK	CASE b			UPDATE(sendonly)	←		200 OK (recvonly)	→		CASE B			CASE a			UPDATE(sendonly)	←	← UPDATE(sendonly)	200 OK (recvonly)	→	→ 200 OK (recvonly)	CASE b			INVITE(sendonly)	←		200 OK (recvonly)	→		ACK	←		Apply post test routine		
Test Equipment (Gm)	SUT	Test Equipment (Gm)																																																										
Establish a confirmed dialogue																																																												
CASE A																																																												
CASE a																																																												
INVITE(sendonly)	←	← INVITE(sendonly)																																																										
200 OK (recvonly)	→	→ 200 OK (recvonly)																																																										
ACK	←	← ACK																																																										
CASE b																																																												
UPDATE(sendonly)	←																																																											
200 OK (recvonly)	→																																																											
CASE B																																																												
CASE a																																																												
UPDATE(sendonly)	←	← UPDATE(sendonly)																																																										
200 OK (recvonly)	→	→ 200 OK (recvonly)																																																										
CASE b																																																												
INVITE(sendonly)	←																																																											
200 OK (recvonly)	→																																																											
ACK	←																																																											
Apply post test routine																																																												

TSS Network	TP CH_N01_018	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression
Test purpose: <i>The SUT lower the bandwidth by setting the b=AS to a small value.</i> Ensure that the SUT shall lower the bandwidth for each media stream when the originating user sets the session on HOLD marked "inactive" by setting the "b=AS:" parameter to a small value, e.g. "b=AS:0". The "b=RR:" and "b=RS:" parameters shall be set to values large enough to enable continuation of the RTCP flow, e.g. "b=RR:800" and "b=RS:800".			
SIP header values 200 OK (recvonly) b=AS:<> b=RR:<> b=RS:<>			
Comments: <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;"> Test Equipment (Gm) CASE A INVITE(<i>inactive</i>) 200 OK (<i>inactive</i>) ACK CASE B UPDATE(<i>inactive</i>) 200 OK (<i>inactive</i>) </div> <div style="width: 40%; text-align: center;"> SUT Establish a confirmed dialogue Session on HOLD by the terminating party → ← ← → ← → ← → ← → ← → → ← → </div> <div style="width: 30%; text-align: right;"> Test Equipment (Gm) CASE a INVITE(<i>inactive</i>) 200 OK (<i>inactive</i>) ACK CASE b UPDATE(<i>inactive</i>) 200 OK (<i>inactive</i>) CASE a UPDATE(<i>inactive</i>) 200 OK (<i>inactive</i>) CASE b INVITE(<i>inactive</i>) 200 OK (<i>inactive</i>) ACK ACK </div> </div> <p style="text-align: center;">Apply post test routine</p>			

TSS Network	TP CH_N01_019	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression
Test purpose: <i>The SUT lower the bandwidth by setting the b=AS to a small value.</i> Ensure that the SUT shall lower the bandwidth for each media stream when the terminating user sets the session on HOLD marked "inactive" by setting the "b=AS:" parameter to a small value, e.g. "b=AS:0". The "b=RR:" and "b=RS:" parameters shall be set to values large enough to enable continuation of the RTCP flow, e.g. "b=RR:800" and "b=RS:800".			
SIP header values 200 OK (recvnly) b=AS:<> b=RR:<> b=RS:<>			
Comments: <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">Test Equipment (Gm)</div> <div style="width: 40%; text-align: center;"> SUT Establish a confirmed dialogue Session on HOLD by the originating party </div> <div style="width: 30%; text-align: right;">Test Equipment (Gm)</div> </div> CASE A <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> CASE a INVITE(inactive) 200 OK (inactive) ACK </div> <div style="width: 40%; text-align: center;"> ← → → ← </div> <div style="width: 30%; text-align: right;"> ← INVITE(inactive) → 200 OK (inactive) ← ACK </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> CASE b UPDATE(inactive) 200 OK (inactive) </div> <div style="width: 40%; text-align: center;"> ← → </div> <div style="width: 30%;"></div> </div> CASE B <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> CASE a UPDATE(inactive) 200 OK (inactive) </div> <div style="width: 40%; text-align: center;"> ← → </div> <div style="width: 30%; text-align: right;"> ← UPDATE(inactive) → 200 OK (inactive) </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> CASE b INVITE(inactive) 200 OK (inactive) ACK </div> <div style="width: 40%; text-align: center;"> ← → ← </div> <div style="width: 30%;"></div> </div> <div style="text-align: right;">Apply post test routine</div>			

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
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
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Terminals and subjective and objective assessment methods
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks, open system communications and security
Series Y	Global information infrastructure, Internet protocol aspects and next-generation networks, Internet of Things and smart cities
Series Z	Languages and general software aspects for telecommunication systems