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TELECOMMUNICATION
STANDARDIZATION SECTOR
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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 3: User side; Test suite structure and test purposes

Recommendation ITU-T Q.4003.3

ITU-T



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Recommendation ITU-T Q.4003.3

Communication HOLD using IP multimedia core network subsystem; Conformance testing – Part 3: User side; Test suite structure and test purposes

Summary

Recommendation ITU-T Q. 4003.3 v.1 (2016) is part 3 of the testing specifications for HOLD service implemented on IP multimedia subsystem (IMS) basis on the user 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.4003.3 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.4003.3 v.1	2016-02-13	11	11.1002/1000/12735

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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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.4003.3

Communication HOLD using IP multimedia core network subsystem; Conformance testing – Part 3: User side, Test suite structure and test purposes

1 Scope

This Recommendation provides the test suite structure (TSS) and test purposes (TP) for the test specifications for the communication HOLD on the user 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 [ITU-T Q.3619 v.1] "Communication HOLD using IP multimedia core network subsystem – Protocol specification" on the user side.

The version number, v.1, indicates that this is version one of Recommendation ITU-T Q.4003.3, 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 (2016), *Communication HOLD using IP multimedia core network subsystem – Protocol specification*.
- [ITU-T Q.4003.1 v.1] Recommendation ITU-T Q.4003.1 v.1 (2016), *Communication HOLD using IP multimedia core network subsystem; Conformance Testing – Part 1: Network side and user side; Protocol implementation conformance statement*.
- [ITU-T X.290] Recommendation ITU-T X.290 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – General concepts*.
- [ITU-T X.296] Recommendation ITU-T X.296 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Implementation conformance statements*.
- [IETF RFC 3264] IETF RFC 3264 (2002), *An Offer/Answer Model with the Session Description Protocol (SDP)*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

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

3.1.2 implementation under test (IUT): Refer to [ITU-T X.290].

- 3.1.3 **PICS proforma:** Refer to [ITU-T X.290].
- 3.1.4 **point of control and observation:** Refer to [ITU-T X.290].
- 3.1.5 **protocol implementation conformance statement (PICS):** Refer to [ITU-T X.290].
- 3.1.6 **system under test (SUT):** Refer to [ITU-T X.290].
- 3.1.7 **test purpose (TP):** Refer to [ITU-T X.290].

3.2 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

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

- IUT Implementation Under Test
- SUT System Under Test
- TSS Test Suite Structure
- UE User Equipment

4 Test Suite Structure (TSS)

ServedUser		
	WithUPDATE	CH_U01_xxx
	WithoutUPDATE	CH_U02_xxx

Figure 1 – Test suite structure

4.1 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]. Stage 3 describes the requirements for several network entities and also the requirements for terminal 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 are applicable.

4.1.2 Testing of the UE

There are special clauses in the protocol standard describing the procedures that apply at the originating and terminating user equipment (UE). Therefore the test configuration below has been chosen.

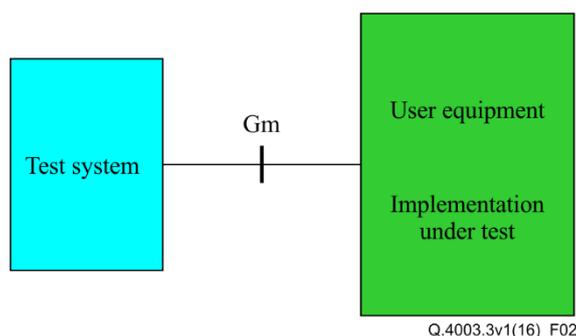


Figure 2 – Applicable configuration to test UE functionalities

5 Test purposes (TP)

5.1 Introduction

For each test requirement a test purpose (TP) is defined.

5.1.1 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 1).

Table 1 – 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)	

5.1.2 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 statements (PICS) in [ITU-T Q.4003.1].

5.2 User 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.

5.2.1 Served user

5.2.1.1 Communication Hold with support for UPDATE

TSS ServedUser/WithUPDATE	TP CH_U01_001	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/2
Test purpose: <i>Session hold. UPDATE method is used. Individual media stream is affected. The media stream was previously set to sendrecv.</i> Ensure that the IUT to hold an individual media stream of the communication session, sends an UPDATE request containing a SDP body with an attribute line indicating 'a= sendonly'.			
Precondition: <ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • One individual media stream 			
Comments:			
User Equipment	Test Equipment		
	Establish a confirmed session		
User invokes the HOLD service	→	UPDATE(sendonly)	
	←	200 OK (recvonly)	
	Apply post test routine		

TSS ServedUser/WithUPDATE	TP CH_U01_002	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/2																								
<p>Test purpose: <i>Session hold. UPDATE method is used. Individual media stream is affected. The media stream was previously set to sendrecv.</i> Ensure that the IUT responds to the hold request of an individual media stream of the communication session from the remote party, sends a 200 OK INVITE/UPDATE response containing a SDP body with an attribute line indicating 'a=recvonly'.</p>																											
<p>Precondition:</p> <ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • One individual media stream 																											
<p>Comments:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">User Equipment</td> <td style="width: 40%;"></td> <td style="width: 30%; text-align: right;">Test Equipment</td> </tr> <tr> <td></td> <td style="text-align: center;">Establish a confirmed session</td> <td></td> </tr> <tr> <td>CASE A</td> <td style="text-align: center;">←</td> <td>UPDATE(sendonly)</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>200 OK (recvonly)</td> </tr> <tr> <td>CASE B</td> <td style="text-align: center;">←</td> <td>INVITE(sendonly)</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>200 OK (recvonly)</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>ACK</td> </tr> <tr> <td></td> <td colspan="2" style="text-align: center;">Apply post test routine</td> </tr> </table>				User Equipment		Test Equipment		Establish a confirmed session		CASE A	←	UPDATE(sendonly)		→	200 OK (recvonly)	CASE B	←	INVITE(sendonly)		→	200 OK (recvonly)		←	ACK		Apply post test routine	
User Equipment		Test Equipment																									
	Establish a confirmed session																										
CASE A	←	UPDATE(sendonly)																									
	→	200 OK (recvonly)																									
CASE B	←	INVITE(sendonly)																									
	→	200 OK (recvonly)																									
	←	ACK																									
	Apply post test routine																										

TSS ServedUser/WithUPDATE	TP CH_U01_003	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/2																														
<p>Test purpose: <i>Session hold. UPDATE method is used. Individual media stream is affected. The media stream was previously set to recvonly.</i> Ensure that the IUT to hold an individual media stream of the communication session, sends an UPDATE request containing a SDP body with an attribute line indicating 'a=inactive'.</p>																																	
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CASE B	←	INVITE(sendonly)																															
	→	200 OK (recvonly)																															
	←	ACK																															
User invokes the HOLD service	→	UPDATE(inactive)																															
	←	200 OK (inactive)																															
	Apply post test routine																																

TSS ServedUser/WithUPDATE	TP CH_U01_004	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/2
<p>Test purpose: <i>Session resume. UPDATE method is used. Individual media stream is affected. The media stream was previously set to sendonly.</i> Ensure that the IUT to resume an individual media stream of the communication session, sends an UPDATE request containing a SDP body with an attribute line indicating 'a=sendrecv' or without attribute line.</p>			

Precondition:		
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendonly' • One individual media stream 		
Comments:		
User Equipment		Test Equipment
Establish a confirmed session		
User invokes the HOLD service	→	UPDATE(sendonly)
	←	200 OK (recvonly)
User resumes the session	→	UPDATE(sendrecv or absent)
	←	200 OK (sendrecv or absent)
Apply post test routine		

TSS ServedUser/WithUPDATE	TP CH_U01_005	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/2
Test purpose:			
<i>Session resume. UPDATE method is used. Individual media streams are affected. The media stream was previously set to inactive.</i>			
Ensure that the IUT to resume an individual media stream of the communication session, sends an UPDATE request containing a SDP body with an attribute line indicating 'a=recvonly'.			
Precondition:			
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'inactive' • One individual media stream 			
Comments:			
User Equipment		Test Equipment	
Establish a confirmed session			
CASE A	←	UPDATE(sendonly)	
	→	200 OK (recvonly)	
CASE B	←	INVITE(sendonly)	
	→	200 OK (recvonly)	
	←	ACK	
User invokes the HOLD service	→	UPDATE(inactive)	
	←	200 OK (inactive)	
User resumes the media session	→	UPDATE(recvonly)	
	←	200 OK (sendonly)	
Apply post test routine			

TSS ServedUser/WithUPDATE	TP CH_U01_006	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/2
Test purpose:			
<i>Session hold. UPDATE method is used. Individual media stream is affected. The media stream was previously set to inactive.</i>			
Ensure that the IUT to resume an individual media stream of the communication session, sends an UPDATE request containing a SDP body with an attribute line indicating 'a=sendonly'.			
Precondition:			
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'inactive' • One individual media stream 			

Comments:		
User Equipment		Test Equipment
Establish a confirmed session		
User invokes the HOLD service	→ ←	UPDATE(sendonly) 200 OK (recvonly)
CASE A	← →	UPDATE(inactive) 200 OK (inactive)
CASE B	← → ←	INVITE(inactive) 200 OK (inactive) ACK
User resumes the media session	→ ←	UPDATE(sendonly) 200 OK (recvonly)
Apply post test routine		

TSS ServedUser/WithUPDATE	TP CH_U01_007	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/1
Test purpose: <i>Session hold. UPDATE method is used. Individual media stream is affected. The media stream was previously set to sendrecv.</i> Ensure that the IUT to hold an individual media stream of an early dialogue, sends an UPDATE request containing a SDP body with an attribute line indicating 'a= sendonly'.			
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' • One individual media stream 			
Comments:			
User Equipment		Test Equipment	
Establish an early dialogue			
User invokes the HOLD service	→ ←	UPDATE(sendonly) 200 OK (recvonly)	
Apply post test routine			

TSS ServedUser/WithUPDATE	TP CH_U01_008	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/1
Test purpose: <i>Session hold. UPDATE method is used. Individual media stream is affected. The media stream was previously set to sendrecv.</i> Ensure that the IUT responds to the hold request of an individual media stream from the remote party of an early dialogue, sends a 200 OK UPDATE response containing a 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' • One individual media stream 			
Comments:			
User Equipment		Test Equipment	
Establish an early dialogue			
	← →	UPDATE(sendonly) 200 OK (recvonly)	
Apply post test routine			

TSS ServedUser/WithUPDATE	TP CH_U01_009	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/2												
Test purpose: <i>Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to sendrecv.</i> Ensure that the IUT to hold all media streams of the communication session, sends an UPDATE request containing a SDP body with a session level direction attribute line indicating 'a=sendonly'.															
Precondition: <ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'sendrecv' • Individual media streams 															
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User invokes the HOLD service	→	UPDATE(sendonly)													
	←	200 OK (recvonly)													
	Apply post test routine														

TSS ServedUser/WithUPDATE	TP CH_U01_010	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/2																					
Test purpose: <i>Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to sendrecv.</i> Ensure that the IUT responds to hold request of all media streams of the communication session from the remote party, sends a 200 OK INVITE/UPDATE response containing aSDP body with an attribute line indicating 'a=recvonly'.																								
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CASE B	←	INVITE(sendonly)																						
	→	200 OK (recvonly)																						
	←	ACK																						
	Apply post test routine																							

TSS ServedUser/WithUPDATE	TP CH_U01_011	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/2
Test purpose: <i>Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to recvonly.</i> Ensure that the IUT to hold all media streams of the communication session, sends an UPDATE request containing a SDP body with a session level direction attribute line indicating 'a=inactive'.			
Precondition: <ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'recvonly' • Individual media streams 			

Comments:			Test Equipment
User Equipment			
	Establish a confirmed session		
CASE A	←		UPDATE(sendonly)
	→		200 OK (recvonly)
CASE B	←		INVITE(sendonly)
	→		200 OK (recvonly)
	←		ACK
User invokes the HOLD service	→		UPDATE(inactive)
	←		200 OK (inactive)
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_012	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND PICS 5.2/2
Test purpose:			
<i>Session resume. UPDATE method is used. All media streams are affected. The media streams were previously set to sendonly.</i>			
Ensure that the IUT to resume all media streams of the communication session, sends an UPDATE request containing a SDP body with a session level direction attribute line indicating 'a=sendrecv' or without attribute line.			
Precondition:			
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'sendonly' • Individual media streams 			
Comments:			
User Equipment			Test Equipment
	Establish a confirmed session		
User invokes the HOLD service	→		UPDATE(sendonly)
	←		200 OK (recvonly)
User resumes the session	→		UPDATE(sendrecv or absent)
	←		200 OK (sendrecv or absent)
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_013	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND PICS 5.2/2
Test purpose:			
<i>Session resume. UPDATE method is used. All media streams are affected. The media streams were previously set to inactive.</i>			
Ensure that the IUT to resume all media streams of the communication session, sends an UPDATE request containing a SDP body with a session level direction attribute line indicating 'a=recvonly'.			
Precondition:			
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'inactive' • Individual media streams 			

Comments:			Test Equipment
User Equipment			
	Establish a confirmed session		
CASE A	←		UPDATE(sendonly)
	→		200 OK (recvonly)
CASE B	←		INVITE(sendonly)
	→		200 OK (recvonly)
	←		ACK
User invokes the HOLD service	→		UPDATE(inactive)
	←		200 OK (inactive)
User resumes the media session	→		UPDATE(recvonly)
	←		200 OK (sendonly)
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_014	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND PICS 5.2/2
Test purpose:			
<i>Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to recvonly.</i>			
Ensure that the IUT to hold an individual media stream of the communication session, sends an UPDATE request containing a SDP body with an attribute line indicating 'a=inactive'.			
Precondition:			
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendonly' • Individual media streams 			
Comments:			
User Equipment			Test Equipment
	Establish a confirmed session		
User invokes the HOLD service	→		UPDATE(sendonly)
	←		200 OK (recvonly)
CASE A	←		UPDATE(inactive)
	→		200 OK (inactive)
CASE B	←		INVITE(inactive)
	→		200 OK (inactive)
	←		ACK
User resumes the media session	→		UPDATE(sendonly)
	←		200 OK (recvonly)
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_015	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND PICS 5.2/1
Test purpose:			
<i>Session hold. UPDATE method is used. All media streams are affected. The media stream was previously set to sendrecv.</i>			
Ensure that the IUT to hold all media streams of an early dialogue, sends an UPDATE request containing a SDP body with an attribute line indicating 'a= sendonly'.			
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' • Individual media streams 			

Comments:		
User Equipment	Establish an early dialogue	Test Equipment
User invokes the HOLD service	→ ←	UPDATE(sendonly) 200 OK (recvonly)
	Apply post test routine	

TSS ServedUser/WithUPDATE	TP CH_U01_016	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/1
Test purpose: <i>Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to sendrecv.</i> Ensure that the IUT responds to the hold request of all individual media streams from the remote party of an early dialogue, sends a 200 OK UPDATE response containing aSDP 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' • Individual media streams 			
Comments:			
User Equipment	Establish an early dialogue	Test Equipment	
	← →	UPDATE(sendonly) 200 OK (recvonly)	
	Apply post test routine		

5.2.1.2 Communication Hold without support for UPDATE

TSS ServedUser/WithoutUPDATE	TP CH_U02_001	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND NOT PICS 5.2/2
Test purpose: <i>Session hold. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to sendrecv.</i> Ensure that the IUT to hold an individual media stream of the communication session, sends a ReINVITE request containing aSDP body with an attribute line indicating 'a=sendonly'.			
Precondition: <ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • Individual media streams 			
Comments:			
User Equipment	Establish a confirmed session	Test Equipment	
User invokes the HOLD service	→ ← →	ReINVITE(sendonly) 200 OK (recvonly) ACK	
	Apply post test routine		

TSS ServedUser/WithUPDATE	TP CH_U02_002	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND NOT PICS 5.2/2
Test purpose: <i>Session hold. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to sendrecv.</i> Ensure that the IUT responds to the hold request of an individual media stream of the communication session from the remote party, sends a 200 OK INVITE/UPDATE response containing a SDP body with an attribute line indicating 'a=recvonly'.			

Precondition:		
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • Individual media streams 		
Comments:		
User Equipment		Test Equipment
Establish a confirmed session		
CASE A	← →	UPDATE(sendonly) 200 OK (recvonly)
CASE B	← → ←	INVITE(sendonly) 200 OK (recvonly) ACK
Apply post test routine		

TSS ServedUser/WithoutUPDATE	TP CH_U02_003	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND NOT PICS 5.2/2
Test purpose:			
<i>Session hold. UPDATE method is not used. Individual media streams are affected. The media stream was previously set to recvonly.</i> Ensure that the IUT to hold an individual media streams of the communication session, sends a ReINVITE request containing a SDP body with an attribute line indicating 'a=inactive'.			
Precondition:			
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'recvonly' • Individual media stream 			
Comments:			
User Equipment		Test Equipment	
Establish a confirmed session			
CASE A	← →	UPDATE(sendonly) 200 OK (recvonly)	
CASE B	← → ←	INVITE(sendonly) 200 OK (recvonly) ACK	
User invokes the HOLD service	→ ← →	ReINVITE(inactive) 200 OK (inactive) ACK	
Apply post test routine			

TSS ServedUser/WithoutUPDATE	TP CH_U02_004	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND NOT PICS 5.2/2
Test purpose:			
<i>Session resume. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to sendonly.</i> Ensure that the IUT to resume an individual media stream of the communication session, sends a ReINVITE request containing a SDP body with an attribute line indicating 'a=sendrecv' or without attribute line.			
Precondition:			
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendonly' • Individual media stream 			

Comments:			Test Equipment
User Equipment			
	Establish a confirmed session		
User invokes the HOLD service	→		ReINVITE(sendonly)
	←		200 OK (recvonly)
	→		ACK
User resumes the session	→		ReINVITE(sendrecv or absent)
	←		200 OK (sendrecv or absent)
	→		ACK
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_005	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND NOT PICS 5.2/2

Test purpose:
Session resume. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to inactive.
 Ensure that the IUT to resume an individual media stream of the communication session, sends a ReINVITE request containing a SDP body with an attribute line indicating 'a=recvonly'.

Precondition:

- A session was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'inactive'
- Individual media streams

Comments:			Test Equipment
User Equipment			
	Establish a confirmed session		
CASE A	←		UPDATE(sendonly)
	→		200 OK (recvonly)
CASE B	←		INVITE(sendonly)
	→		200 OK (recvonly)
	←		ACK
User invokes the HOLD service	→		ReINVITE(inactive)
	←		200 OK (inactive)
	→		ACK
User resumes the media session	→		ReINVITE(recvonly)
	←		200 OK (sendonly)
	→		ACK
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_006	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND NOT PICS 5.2/2

Test purpose:
Session hold. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to inactive.
 Ensure that the IUT to resume an individual media stream of the communication session, sends a ReINVITE request containing a SDP body with an attribute line indicating 'a=sendonly'.

Precondition:

- A session was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'inactive'
- One individual media stream

Comments:			Test Equipment
User Equipment			
	Establish a confirmed session		
User invokes the HOLD service	→		ReINVITE(sendonly)
	←		200 OK (recvonly)
	→		ACK
CASE A	←		UPDATE(inactive)
	→		200 OK (inactive)
CASE B	←		INVITE(inactive)
	→		200 OK (inactive)
	←		ACK
User resumes the media session	→		ReINVITE(sendonly)
	←		200 OK (recvonly)
	→		ACK
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_007	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND PICS 5.2/1 AND NOT PICS 5.2/2
Test purpose:			
<i>Session hold. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to sendrecv.</i>			
Ensure that the IUT to hold an individual media stream of an early dialogue, sends an UPDATE request containing a SDP body with an attribute line indicating 'a= sendonly'.			
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' One individual media stream 			
Comments:			
User Equipment			Test Equipment
	Establish an early dialogue		
User invokes the HOLD service	→		UPDATE(sendonly)
	←		200 OK (recvonly)
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_008	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND PICS 5.2/1 AND NOT PICS 5.2/2
Test purpose:			
<i>Session hold. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to sendrecv.</i>			
Ensure that the IUT responds to the hold request of an individual media stream from the remote party of an early dialogue, sends a 200 OK UPDATE response containing a 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' One individual media stream 			
Comments:			
User Equipment			Test Equipment
	Establish an early dialogue		
	←		UPDATE(sendonly)
	→		200 OK (recvonly)
	Apply post test routine		

TSS ServedUser/WithoutUPDATE	TP CH_U02_009	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND NOT PICS 5.2/2																		
Test purpose: <i>Session hold. UPDATE method is not used. All media streams are affected. The media streams were previously set to sendrecv.</i> Ensure that the IUT to hold all media streams of the communication session, sends a ReINVITE request containing a SDP body with a session level direction attribute line indicating 'a=sendonly'.																					
Precondition: <ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'sendrecv' • Individual media streams 																					
Comments: <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">User Equipment</td> <td style="width: 30%;"></td> <td style="width: 30%; text-align: right;">Test Equipment</td> </tr> <tr> <td></td> <td style="text-align: center;">Establish a confirmed session</td> <td></td> </tr> <tr> <td>User invokes the HOLD service</td> <td style="text-align: center;">→</td> <td>ReINVITE(sendonly)</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>200 OK (recvonly)</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>ACK</td> </tr> <tr> <td></td> <td style="text-align: center;">Apply post test routine</td> <td></td> </tr> </table>				User Equipment		Test Equipment		Establish a confirmed session		User invokes the HOLD service	→	ReINVITE(sendonly)		←	200 OK (recvonly)		→	ACK		Apply post test routine	
User Equipment		Test Equipment																			
	Establish a confirmed session																				
User invokes the HOLD service	→	ReINVITE(sendonly)																			
	←	200 OK (recvonly)																			
	→	ACK																			
	Apply post test routine																				

TSS ServedUser/WithUPDATE	TP CH_U02_010	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND NOT PICS 5.2/2																								
Test purpose: <i>Session hold. UPDATE method is not used. All media streams are affected. The media streams were previously set to sendrecv.</i> Ensure that the IUT responds to hold request of all media streams of the communication session from the remote party, sends a 200 OK INVITE/UPDATE response containing aSDP body with an attribute line indicating 'a=recvonly'.																											
Precondition: <ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • One individual media stream 																											
Comments: <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">User Equipment</td> <td style="width: 30%;"></td> <td style="width: 30%; text-align: right;">Test Equipment</td> </tr> <tr> <td></td> <td style="text-align: center;">Establish a confirmed session</td> <td></td> </tr> <tr> <td>CASE A</td> <td style="text-align: center;">←</td> <td>UPDATE(sendonly)</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>200 OK (recvonly)</td> </tr> <tr> <td>CASE B</td> <td style="text-align: center;">←</td> <td>INVITE(sendonly)</td> </tr> <tr> <td></td> <td style="text-align: center;">→</td> <td>200 OK (recvonly)</td> </tr> <tr> <td></td> <td style="text-align: center;">←</td> <td>ACK</td> </tr> <tr> <td></td> <td style="text-align: center;">Apply post test routine</td> <td></td> </tr> </table>				User Equipment		Test Equipment		Establish a confirmed session		CASE A	←	UPDATE(sendonly)		→	200 OK (recvonly)	CASE B	←	INVITE(sendonly)		→	200 OK (recvonly)		←	ACK		Apply post test routine	
User Equipment		Test Equipment																									
	Establish a confirmed session																										
CASE A	←	UPDATE(sendonly)																									
	→	200 OK (recvonly)																									
CASE B	←	INVITE(sendonly)																									
	→	200 OK (recvonly)																									
	←	ACK																									
	Apply post test routine																										

TSS ServedUser/WithoutUPDATE	TP CH_U02_011	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND NOT PICS 5.2/2
Test purpose: <i>Session hold. UPDATE method is not used. All media streams are affected. The media streams were previously set to recvonly.</i> Ensure that the IUT to hold all media streams of the communication session, sends a ReINVITE request containing a SDP body with a session level direction attribute line indicating 'a=inactive'.			
Precondition: <ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • All media streams were previously set to 'recvonly' • Individual media streams 			

Comments:	User Equipment	Test Equipment
	Establish a confirmed session	
CASE A	← →	UPDATE(sendonly) 200 OK (recvonly)
CASE B	← → ←	INVITE(sendonly) 200 OK (recvonly) ACK
User invokes the HOLD service	→ ← →	ReINVITE(inactive) 200 OK (inactive) ACK
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_012	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND NOT PICS 5.2/2

Test purpose:
Session resume. UPDATE method is not used. All media streams are affected. The media stream was previously set to sendonly.

Ensure that the IUT to resume all media streams of the communication session, sends a ReINVITE request containing a SDP body with a session level direction attribute line indicating 'a=sendrecv' or without attribute line.

Precondition:

- A session was established between the served user and a remote user according to the 'basic Call' procedures
- All media streams were previously set to 'sendonly'
- Individual media streams

Comments:	User Equipment	Test Equipment
	Establish a confirmed session	
User invokes the HOLD service	→ ← →	ReINVITE(sendonly) 200 OK (recvonly) ACK
User resumes the session	→ ← →	ReINVITE(sendrecv or absent) 200 OK (sendrecv or absent) ACK
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_013	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND NOT PICS 5.2/2

Test purpose:
Session resume. UPDATE method is not used. All media streams are affected. The media streams were previously set to inactive.

Ensure that the IUT to resume all media streams of the communication session, sends a ReINVITE request containing a SDP body with a session level direction attribute line indicating 'a=recvonly'.

Precondition:

- A session was established between the served user and a remote user according to the 'basic Call' procedures
- All media streams were previously set to 'inactive'
- Individual media streams

Comments:			Test Equipment
User Equipment	Establish a confirmed session		
CASE A	←		UPDATE(sendonly)
	→		200 OK (recvonly)
CASE B	←		INVITE(sendonly)
	→		200 OK (recvonly)
	←		ACK
User invokes the HOLD service	→		ReINVITE(inactive)
	←		200 OK (inactive)
	→		ACK
User resumes the media session	→		ReINVITE(recvonly)
	←		200 OK (sendonly)
	→		ACK
Apply post test routine			

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_014	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND NOT PICS 5.2/2
Test purpose:			
<i>Session hold. UPDATE method is not used. All media streams are affected. The media streams were previously set to recvonly.</i>			
Ensure that the IUT to hold an individual media stream of the communication session, sends a ReINVITE request containing a SDP body with an attribute line indicating 'a=inactive'.			
Precondition:			
<ul style="list-style-type: none"> • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendonly' • Individual media streams 			
Comments:			
User Equipment	Establish a confirmed session		Test Equipment
User invokes the HOLD service	→		ReINVITE(sendonly)
	←		200 OK (recvonly)
	→		ACK
CASE A	←		UPDATE(inactive)
	→		200 OK (inactive)
CASE B	←		INVITE(inactive)
	→		200 OK (inactive)
	←		ACK
User resumes the media session	→		ReINVITE(sendonly)
	←		200 OK (recvonly)
	→		ACK
Apply post test routine			

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_015	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND PICS 5.2/1 AND NOT PICS 5.2/2
Test purpose:			
<i>Session hold. UPDATE method is used. All media streams are affected. The media stream was previously set to sendrecv.</i>			
Ensure that the IUT to hold all media streams of an early dialogue, sends an UPDATE request containing a SDP body with an attribute line indicating 'a= sendonly'.			
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' • Individual media streams 			

Comments: User Equipment	Establish an early dialogue	Test Equipment
User invokes the HOLD service	→ ←	UPDATE(sendonly) 200 OK (recvonly)
	Apply post test routine	

TSS ServedUser/WithUPDATE	TP CH_U02_016	HOLD reference Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	Selection expression PICS 5.1/1 AND PICS 5.2/1 AND NOT PICS 5.2/2
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Test purpose:
Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to sendrecv.

Ensure that the IUT responds to the hold request of all individual media streams from the remote party of an early dialogue, sends a 200 OK UPDATE response containing a SDP body with an attribute line indicating 'a=recvonly'.

- Precondition:**
- 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'
 - Individual media streams

Comments: User Equipment	Establish an early dialogue	Test Equipment
	← →	UPDATE(sendonly) 200 OK (recvonly)
	Apply post test routine	

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