

TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU



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

T-U-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, <u>http://handle.itu.int/11.1002/1000/11</u>830-en.

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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), <i>Communication HOLD using</i> <i>IP multimedia core network subsystem – Protocol specification.</i>
[ITU-T Q.4003.1 v.1]	Recommendation ITU-T Q.4003.1 v.1 (2016), <i>Communication HOLD using</i> <i>IP multimedia core network subsystem; Conformance Testing – Part 1:</i> <i>Network side and user side; Protocol implementation conformance</i> <i>statement.</i>
[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].

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- **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.

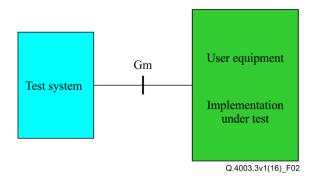


Figure 2 – Applicable configuration to test UE functionalities

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>_<nr< th=""><th>nn></th><th></th></nr<></group></iut></ss>	nn>	
<ss> = supplementary service:</ss>	e.g. "CH'	n
<iut> = type of IUT:</iut>	U N	User Network
<group> = group</group>	2 digit fie	eld representing group reference according to TSS
<nnn> = sequential number</nnn>	(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	TP	HOLD reference	Selection expression			
ServedUser/WithUPDATE	CH_U01_001	Clause 4.5.2.1 of	PICS 5.1/1			
		[ITU-T Q.3619 v.1]	AND PICS 5.2/2			
Test purpose:						
Session hold. UPDATE method is used. Indivisional sendrecv.	idual media stream	is affected. The media s	stream was previously set to			
Ensure that the IUT to hold an individual me	dia stream of the	communication session,	sends an UPDATE request			
containing a SDP body with an attribute line inc	dicating 'a= sendon	ly'.				
Precondition:						
A session was established between th	e served user and	a remote user according t	to the 'basic Call' procedures			
The media stream was previously set	to 'sendrecv'					
One individual media stream						
Comments:						
User Equipment		Test Equipmen	t			
Est	Establish a confirmed session					
User invokes the HOLD service	→	UPDATE(sendo	only)			
	+	200 OK (recvonl	V)			
	Apply post test re	outine	.,			

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_002	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND PICS 5.2/2
lest purpose:			AND FIGS 5.2/2
Session hold. UPDATE method is use sendrecv.	ed. Individual media stream	is affected. The media s	stream was previously set to
Ensure that the IUT responds to the h			
remote party, sends a 200 OK INVI	TE/UPDATE response con	taining a SDP body with	n an attribute line indicating
'a=recvonly'. Precondition:			
 A session was established be 	atween the served user and	a remote user according	to the 'basic Call' procedure
		a remote user according	
	Jusiy set to senurecy		
One individual media stream Comments:			
User Equipment		Test Equipmen	t
	Establish a confirme		-
CASE A	L		an ha sì
CASEA	← →	UPDATE(sendo 200 OK (recvor	
	-	200 010 (100101)
CASE B	←	INVITE(sendonl	
	→	200 OK (recvor	lly)
	Apply pact tast r	ACK	
	Apply post test r	Juline	
		-	
	TD	HOLD reference	Selection expression
	TP		
	CH_U01_003	Clause 4.5.2.1 of	PICS 5.1/1
ServedUser/WithUPDATE			
ServedUser/WithUPDATE Test purpose:	CH_U01_003	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]	PICS 5.1/1 AND PICS 5.2/2
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly.	CH_U01_003 ed. Individual media stream	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi	CH_U01_003 ed. Individual media stream	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session,	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi containing a SDP body with an attribut	CH_U01_003 ed. Individual media stream	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session,	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi containing a SDP body with an attribut Precondition:	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session,	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi containing a SDP body with an attribut Precondition: • A session was established be	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session,	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi- containing a SDP body with an attribut Precondition: • A session was established be • The media stream was previous	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session,	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi containing a SDP body with an attribut Precondition:	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session,	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi containing a SDP body with an attribut Precondition:	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session, a remote user according	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques to the 'basic Call' procedures
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi containing a SDP body with an attribut Precondition:	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session, a remote user according Test Equipmen	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques to the 'basic Call' procedures
Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an individe containing a SDP body with an attribut Precondition: • A session was established be • The media stream was previde • One individual media stream Comments: User Equipment	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and pusly set to 'recvonly' Establish a confirme	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session, a remote user according Test Equipment d session	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques to the 'basic Call' procedures t
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi containing a SDP body with an attribut Precondition:	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and busly set to 'recvonly' Establish a confirme	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session, a remote user according Test Equipment d session UPDATE(sendo	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques to the 'basic Call' procedures t
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi containing a SDP body with an attribut Precondition:	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and pusly set to 'recvonly' Establish a confirme	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session, a remote user according Test Equipment d session	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques to the 'basic Call' procedures t
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an indivi containing a SDP body with an attribut Precondition:	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and pusly set to 'recvonly' Establish a confirme ÷	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session, a remote user according Test Equipment d session UPDATE(sendon 200 OK (recvor INVITE(sendon)	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques to the 'basic Call' procedures t t nly)
ServedUser/WithUPDATE Test purpose: Session hold. UPDATE method is use recvonly. Ensure that the IUT to hold an individ containing a SDP body with an attribut Precondition:	CH_U01_003 ed. Individual media stream idual media stream of the te line indicating 'a=inactive etween the served user and busly set to 'recvonly' Establish a confirme \$	Clause 4.5.2.1 of [ITU-T Q.3619 v.1] is affected. The media s communication session, a remote user according Test Equipment d session UPDATE(sendo 200 OK (recvor	PICS 5.1/1 AND PICS 5.2/2 stream was previously set to sends an UPDATE reques to the 'basic Call' procedure: t nly) nly)

User invokes the HOLD service ← UPDATE(inactive) ← 200 OK (inactive) Apply post test routine

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_004	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/2

Session resume. UPDATE method is used. Individual media stream is affected. The media stream was previously set to sendonly.

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.

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 '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 routing	ne		

TSS	HOLD reference	Selection expression
ServedUser/WithUPDATE	Clause 4.5.2.1 of	PICS 5.1/1
	[ITU-T Q.3619 v.1]	AND PICS 5.2/2

Test purpose:

Session resume. UPDATE method is used. Individual media streams are affected. The media stream was previously set to inactive.

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:

- 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
	stablish a confirmed coop	
E	Establish a confirmed sess	ion
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	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_006	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/2

Test purpose:

Session hold. UPDATE method is 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 an UPDATE request containing a SDP body with an attribute line indicating 'a=sendonly'.

- 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:		T	
User Equipment	Establish a confirmed ses	Test Equipment	
-			
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 routin	e	

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
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Session hold. UPDATE method is used. Individual media stream is affected. The media stream was previously set to sendrecv.

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:

- 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 dialogu	e	
User invokes the HOLD service	→	UPDATE(sendonly)	
	←	200 OK (recvonly)	
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_008	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/1
Test purpose:			
Session hold. UPDATE method is used. sendrecv.	Individual media stream	is affected. The media	stream was previously set to
Ensure that the IUT responds to the hold	request of an individual me	edia stream from the remo	ote party of an early dialogue,
sends a 200 OK UPDATE response cont	aining a SDP body with a	in attribute line indicating	'a=recvonly'.
Precondition:			
 An early dialogue was establish procedures 	ned between the served	user and a remote user	according to the 'basic Call'
The media stream was previous	ly set to 'sendrecv'		
One individual media stream			
Comments:			
Comments: User Equipment		Test Equipmen	t
	Establish an early c		t

Apply post test routine

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_009	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/2
Test purpose:			
Session hold. UPDATE method is used. All sendrecv.	media streams are	affected. The media stre	eams were previously set to
Ensure that the IUT to hold all media streams			PDATE request containing a
SDP body with a session level direction attribu	ite line indicating 'a=	sendonly'.	
 Precondition: A session was established between the set of the	he served user and a	a remote user according	to the 'basic Call' procedures
All media streams were previously se			·····
Individual media streams			
Comments:			
User Equipment		Test Equipmen	t
Es	tablish a confirme	d session	
User invokes the HOLD service	→	UPDATE(sendo	only)
	+	200 OK (recvon	
	Apply post test ro	outine	
TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_010	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/2
Test purpose:			
Session hold. UPDATE method is used. All	media streams are	affected. The media stre	eams were previously set to
sendrecv. Ensure that the IUT responds to hold request (of all media streams	of the communication se	ession from the remote party
sends a 200 OK INVITE/UPDATE response of			
Precondition:		,	
A session was established between t	he served user and a	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 Equipmen	t
Es	tablish a confirme	d session	
CASE A	+	UPDATE(sendo	nlv)
	→	200 OK (recvor	
CASE B	L	INVITE(sendonl	v)
	→	200 OK (recvor	
	Ĺ	ACK	··•,
	7	ACK	

TSS	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_011	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/2

Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to recvonly.

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'.

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

TSS	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_012	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/2

Session resume. UPDATE method is used. All media streams are affected. The media streams were previously set to sendonly.

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:

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- 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

 Individual media streams 		
Comments:		
User Equipment		Test Equipment
E	Establish a confirmed s	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 rout	

Apply post test routine

TSS	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_013	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/2

Test purpose:

Session resume. UPDATE method is 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 an UPDATE 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:			
User Equipment		Test Equipment	
	Establish a confirmed s	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 rout	line	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_014	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/2
Test purpose:			/ 100 0.2/2

Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to recvonly.

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:

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 sessi	on	
User invokes the HOLD service	→ ←	UPDATE(sendonly)	
	τ.	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	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/1

Test purpose:

Session hold. UPDATE method is used. All media streams are affected. The media stream was previously set to sendrecv.

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:

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		Test Equipment				
	Establish an early dialogue					
User invokes the HOLD service	→	UPDATE(sendor				
	← oply post test ro	200 OK (recvonly	()			
A	ppiy post test to	uline				
TSS	ТР	HOLD reference	Selection expression			
ServedUser/WithUPDATE	CH_U01_016	Clause 4.5.2.1 of	PICS 5.1/1			
Test purpose:		[ITU-T Q.3619 v.1]	AND PICS 5.2/1			
Session hold. UPDATE method is used. All met sendrecv. Ensure that the IUT responds to the hold reque dialogue, sends a 200 OK UPDATE response cor Precondition: • An early dialogue was established betw procedures	st of all individua	al media streams from th dy with an attribute line in	e remote party of an early dicating 'a=recvonly'.			
 The media stream was previously set to 	'sendrecy'					
Individual media streams	001101001					
Comments:						
User Equipment		Test Equipment				
	blish an early d	alogue				
A	← → oply post test ro	UPDATE(sendon 200 OK (recvonl utine				

5.2.1.2 Communication Hold without support for UPDATE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_001	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND NOT PICS 5.2/2
Test purpose:			
Session hold. UPDATE method is not used	. Individual media stre	am is affected. The med	ia stream was previously set
to sendrecv.			
Ensure that the IUT to hold an individual containing aSDP body with an attribute line			sends a ReINVITE request
Precondition:			
A session was established between	the served user and	a remote user according	to the 'basic Call' procedures
The media stream was previously s	set to 'sendrecv'		
Individual media streams			
Comments:			
User Equipment		Test Equipmen	t
I	Establish a confirme	d session	
User invokes the HOLD service	→	ReINVITE(send	only)
	÷	200 OK (recvonl	ly)
	→	ACK	-
	Apply post test re	outine	

TSS	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_002	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.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 sendrecv.

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:

- 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	Test Equipment session	
CASE A	← →	UPDATE(sendonly) 200 OK (recvonly)	
CASE B	← → ←	INVITE(sendonly) 200 OK (recvonly) ACK	
	Apply post test rou	itine	

TSS	ТР	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_003	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND NOT PICS 5.2/2
Test purpose:			
Session hold. UPDATE method is not used. Individ	dual media strear	ns are affected. The media	stream was previously set
to recvonly.			
Ensure that the IUT to hold an individual media containing a SDP body with an attribute line indica			ends a Reinville request
Precondition:	9		
A session was established between the s	erved user and a	a remote user according to t	he 'basic Call' procedures
The media stream was previously set to '	recvonly'		
Individual media stream			
Comments:			
User Equipment		Test Equipment	
Estab	lish 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	e)
	+	200 OK (inactive)	
	→	ACK	
Ar	oply post test ro	utine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_004	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.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 sendonly.

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:**

- 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: User Equipment	Establish a confirmed sessi	Test Equipment
	Establish a communed sessi	
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	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND NOT PICS 5.2/2

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:			
User Equipment		Test Equipment	
	Establish a confirmed sessi	on	
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	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_006	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.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'.

- 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		
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	→ ← → Apply post test rou	ReINVITE(sendonly) 200 OK (recvonly) ACK Itine	

TSS ServedUser/WithUPDATE	TP CH_U02_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 AND NOT PICS 5.2/2
Test purpose: Session hold. UPDATE method is not used. Indiv to sendrecv.			
Ensure that the IUT to hold an individual media a SDP body with an attribute line indicating 'a= send		ly dialogue, sends an UPD	ATE request containing a
Precondition:			
 An early dialogue was established betw procedures 	een the served	user and a remote user ac	cording to the 'basic Call'
• The media stream was previously set to	'sendrecv'		
One individual media stream			
Comments:			
User Equipment	ablish an early d	Test Equipment	
ESIC	ablish ali early u	lalogue	
User invokes the HOLD service	→	UPDATE(sendonl	y)
	(200 OK (recvonly)	
Α	pply post test ro	outine	
TSS	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_008	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND PICS 5.2/1 AND NOT PICS 5.2/2
Test purpose:			AND NOT FIGS 5.2/2
Session hold. UPDATE method is not used. Indivito sendrecv.	/idual media stre	am is affected. The media	stream was previously set
Ensure that the IUT responds to the hold request c sends a 200 OK UPDATE response containing a			
Precondition:			
 An early dialogue was established betw procedures 	een the served	user and a remote user ac	cording to the 'basic Call'
• The media stream was previously set to	'sendrecv'		
One individual media stream			
Comments:			
User Equipment		Test Equipment	
Esta	ablish an early d	lalogue	
	÷	UPDATE(sendonly	()
	→	200 OK (recvonly)	
A	pply post test ro	outine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_009	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND NOT PICS 5.2/2
Test purpose:			
Session hold. UPDATE method is not use sendrecv.	ed. All media streams an	e affected. The media sti	reams were previously set to
Ensure that the IUT to hold all media stre	ams of the communicat	ion session, sends a Re	INVITE request containing a
SDP body with a session level direction at	tribute line indicating 'a=	sendonly'.	
Precondition:			
 A session was established between the session was est	en the served user and a	a remote user according	to the 'basic Call' procedures
All media streams were previous	y set to 'sendrecv'		
 Individual media streams 			
Comments:			
User Equipment		Test Equipmen	t
	Establish a confirme	dession	
	Establish a committee		
		ReINVITE(send	only)
User invokes the HOLD service			
	÷	ReINVITE(send	

TSS	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_010	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND NOT PICS 5.2/2

Session hold. UPDATE method is not used. All media streams are affected. The media streams were previously set to sendrecv.

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:

- 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' ٠

One individual media stream		
Comments:		
User Equipment		Test Equipment
	Establish a confirmed sessi	on
CASE A	+	UPDATE(sendonly)
	→	200 OK (recvonly)
CASE B	+	INVITE(sendonly)
	→	200 OK (recvonly)
	+	ACK
	Apply post test routine	

TSS	ТР	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_011	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND NOT PICS 5.2/2

Test purpose:

Session hold. UPDATE method is not used. All media streams are affected. The media streams were previously set to recvonly.

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'.

- 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' ٠
- Individual media streams •

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

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_012	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.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 s	treams of the communic	ation session, sends a Re	eINVITE request containing a
SDP body with a session level direction a	ttribute line indicating 'a=	sendrecv' or without attri	bute line.
Precondition:			
 A session was established between the set of the set	een the served user and	a remote user according	to the 'basic Call' procedures
All media streams were previous	ly set to 'sendonly'		
Individual media streams			
Comments:			
User Equipment		Test Equipmen	it
	Establish a confirme	d session	
User invokes the HOLD service	→	ReINVITE(send	lonly)
	+	200 OK (recvon	• /
	→	ACK	.,
User resumes the session	→	ReINVITE(send	Irecv or absent)
	+	200 OK (sendre	
	→	ACK	,
	Apply post test r	outino	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_013	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND NOT PICS 5.2/2
Test purpose:			
Session resume. UPDATE method is not us	ed. All media streams	are affected. The media	streams were previously set
to inactive.			
Ensure that the IUT to resume all media stre	ams of the communica	ation session, sends a Re	NVITE 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:			
User Equipment		Test Equipment	
	Establish a confirmed sess	on	
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	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_014	Clause 4.5.2.1 of	PICS 5.1/1
		[ITU-T Q.3619 v.1]	AND NOT PICS 5.2/2

Session hold. UPDATE method is not used. All media streams are affected. The media streams were previously set to recvonly.

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'.

- 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	
E	stablish 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 rou	ıtine	

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

- The media stream was previously set to 'sendrecv'
- Individual media streams

Comments:					
User Equipment	r Equipment Test Equipment				
E	stablish an early c	lialogue			
User invokes the HOLD service	→	UPDATE(sendo	nly)		
User invokes the HOLD service	÷	200 OK (recvonl			
	Apply post test ro		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
TSS	TP	HOLD reference	Selection expression		
ServedUser/WithUPDATE	CH_U02_016	Clause 4.5.2.1 of	PICS 5.1/1		
		[ITU-T Q.3619 v.1]	AND PICS 5.2/1		
			AND NOT PICS 5.2/2		
Ensure that the IUT responds to the hold req dialogue, sends a 200 OK UPDATE response of Precondition: • An early dialogue was established be procedures	containing a SDP b	ody with an attribute line	indicating 'a=recvonly'.		
 The media stream was previously set f 	to 'sendrecv'				
Individual media streams					
Comments:					
ser Equipment Test Equipment			t		
Establish an early dialogue					
	+	UPDATE(sendo	nly)		
	→	200 OK (recvon	ly)		
	Apply post test re	outine			

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