

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 2: Network side; Test suite structure and test purposes

Recommendation ITU-T Q.4003.2

T-U-T



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## **Recommendation ITU-T Q.4003.2**

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

#### 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.

<sup>\*</sup> 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> <u>830-en</u>.

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# **Recommendation ITU-T Q.4003.2**

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

#### 1 Scope

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

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

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

### 2 References

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

[ITU-T Q.3619 v.1]	Recommendation ITU-T Q.3619 v.1, <i>Communication HOLD</i> using IP multimedia core network subsystem. Protocol specification.
[ITU-T Q.4003.1 v.1]	Recommendation ITU-T Q.4003.1 v.1, 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

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].

1

- **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

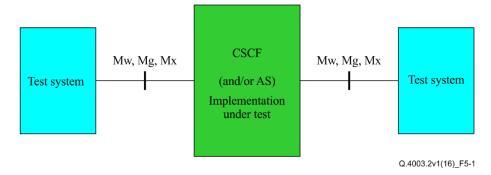
Network	
	CH_N01_xxx

#### 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.



## 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>_<nr< th=""><th>nn&gt;</th></nr<></group></iut></ss>	nn>
<ss> = supplementary service:</ss>	e.g. "CH"
<iut> = type of IUT:</iut>	U User N Network
<group> = group</group>	2 digit field representing group reference according to TSS
<nnn> = sequential number</nnn>	(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	TP	HOLD reference	Selection expression
Network	CH_N01_001	Clause 4.5.2.1 of	PICS 5.3/1
		[ITU-T Q.3619 v.1]	
Test purpose:			
Session hold in the early dialogue. The media str			
Ensure that the SUT transfers the HOLD request	in an early dialogu	ue. The 200 OK response co	ontains an SDP body with
an attribute line indicating 'a=recvonly'.			
<ul> <li>Precondition:</li> <li>An early dialogue was established betw procedures</li> </ul>	veen the served u	user and a remote user acc	cording to the 'basic Call'
The media stream was previously set to	'sendrecv'		
The originating party sets the session or	n HOLD		
Comments:			
Test Equipment (Gm)	SUT		uipment (Gm)
	ablish an early di	-	
UPDATE(sendonly)		UPDATE(sendonly)	
200 OK (recvonly)		← 200 OK (recvonly)	
A	pply post test ro	utine	
TSS	TP	HOLD reference	Selection expression
Network	CH_N01_002	Clause 4.5.2.1 of	PICS 5.3/1
		[ITU-T Q.3619 v.1]	
Test purpose:			
Session retrieval in the early dialogue. The media			
Ensure that the SUT transfers the HOLD request	in an early dialogu	ue. The 200 OK response co	ontains an SDP body with
an attribute line indicating 'a=sendrecv'.  Precondition:			
	waan the convedu	war and a remate waar and	ording to the 'head Call'
<ul> <li>An early dialogue was established betw procedures</li> </ul>			ording to the basic Call
The media stream was previously set to	'sendonly'		
<ul> <li>The originating party retrieves the session</li> </ul>	on		
Comments:			
Test Equipment (Gm)	SUT		uipment (Gm)
	ablish an early di		
UPDATE(sendonly) → 200 OK (recvonly) ←		<ul> <li>→ UPDATE(sendonly)</li> <li>← 200 OK (recvonly)</li> </ul>	
UPDATE(sendrecv)		➔ UPDATE(sendrecv)	
200 OK (sendrecv)	1	← 200 OK (sendrecv)	
	pply post test ro	utine	

TSS Network	<b>TP</b> CH_N01_00	3 Claus	<b>D reference</b> le 4.5.2.1 of [Q.3619 v.1]	Selection expression PICS 5.3/1	
<b>Test purpose:</b> Session set on HOLD in the early dialog. Ensure that the SUT transfers the HOLD OK response contains an SDP body with	request in an early dia	logue and	the rerival in the co	nformed dialogue. The 200	
Precondition:					
<ul> <li>An early dialogue was establis procedures</li> </ul>	hed between the serve	ed user an	d a remote user a	ccording to the 'basic Call'	
The media stream was previous	sly set to 'sendonly' in t	the early di	alogue		
The terminating user confirms the second secon	ne dialogue.				
The originating party retrieves the second sec	ne session				
Comments: Test Equipment (Gm)	SUT			quipment (Gm)	
	Establish an earl	-		- 4	
UPDATE( <b>sendonly</b> ) 200 OK (recvonly)	→ ←	→ ←	UPDATE(sendonl 200 OK (recvonly		
	<b>x</b>	•	200 010 (1001011)	")	
200 OK (recvonly)	+	÷	200 OK (recvonly)	)	
ACK	<b>→</b>	<b>→</b>	ACK		
CASE A					
INVITE(sendrecv)	<b>→</b>		CASE a		
200 OK (sendrecv)	+	→	INVITE(sendrecv)		
ACK	÷	÷	200 OK (sendrec	<b>v</b> )	
		<b>→</b>	ACK		
			CASE b		
		→	UPDATE(sendred		
		÷	200 OK (sendrec	<b>v</b> )	
CASE B					
UPDATE(sendrecv)	<b>→</b>		CASE a		
200 OK (sendrecv)	÷	<b>→</b>	UPDATE(sendred	∵v)	
		+	200 OK (sendrec	<b>v</b> )	
			CASE b		
		→	INVITE(sendrecv)		
		÷	200 OK (sendrec		
		<b>→</b>	ACK		
	Apply post tes	t routine			

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_004	Clause 4.5.2.1 of	• • • • •
		[ITU-T Q.3619 v.1]	
Test purpose:			
Session hold in a confirmed dialogue. The			
Ensure that the SUT transfers the HOLD			alogue. The 200 OK response
containing an SDP body with an attribute	e line indicating 'a=recvon	ly'.	
Precondition:			
<ul> <li>A confirmed dialogue was esta procedures</li> </ul>	blished between the serve	ed user and a remote use	er according to the 'basic Call'
The media stream was previou	sly set to 'sendrecv'		
• The originating party sets the s	ession on HOLD		
Comments:			
Test Equipment (Gm)	SUT		Equipment (Gm)
	Establish a confirmed	d dialogue	
CASE A			
INVITE( <b>sendonly</b> )	<b>→</b>	CASE a	
200 OK (recvonly)	+	→ INVITE(sen	
ACK	+	← 200 OK (red	cvonly)
		→ ACK	
		CASE b	
		→ UPDATE(se	and only)
		← 200 OK (red	
			, voing)
CASE B			
UPDATE(sendonly)	<b>→</b>	CASE a	
200 OK (recvonly)	+	→ UPDATE(se	endonly)
		← 200 OK (red	
		CASE b	
		→ INVITE(sen	
		← 200 OK (red	cvonly)
	• • • • •	→ ACK	
	Apply post test re	outine	

TSS	Т	Р	HOL	D reference	Selection expression
Network	С	H_N01_005	Clause 4.5.2.1 of		
			[ITU-	T Q.3619 v.1]	
Test purpose:					
Session hold in a confirmed dialogue.					
Ensure that the SUT transfers the HOL				y in aconfirmed dialog	ue. The 200 OK response
containing an SDP body with an attribu	ute line indicat	ing 'a=recvoni	y'.		
Precondition:	habliabad batu				aarding to the linesis Call
<ul> <li>A confirmed dialogue was est procedures</li> </ul>	adiished detw	een the serve	a user	and a remote user ac	cording to the basic Call
The media stream was previo	ously set to 'se	ndrecv'			
• The terminating party sets the	e session on H	IOLD			
Comments:					
Test Equipment (Gm)		SUT			uipment (Gm)
	Establis	h a confirmed	dialog	gue	
CASE A CASE a			←	INVITE(sendonly)	
INVITE(sendonly)	←		Š	200 OK (recvonly)	
200 OK (recvonly)	→		÷	ACK	
ACK	÷		•		
CASE b					
UPDATE(sendonly)	+				
200 OK ( <b>recvonly</b> )	<b>→</b>				
CASE B					
CASE a			←	UPDATE(sendonly	v)
UPDATE(sendonly)	←		÷	200 OK (recvonly)	/
200 OK (recvonly)	<b>→</b>			(	
CASE b					
INVITE(sendonly)	←				
200 OK (recvonly)	<b>→</b>				
ACK	←				
	App	ly post test ro	utine		

TSS	-	ТР	HOLD r	eference	Selection expression	
Network		CH_N01_006		Clause 4.5.2.1 of		
			[ITU-T (	Q.3619 v.1]		
Test purpose:						
Retrieve the session in a confirme						
Ensure that the SUT is able to su						
originating party. The originating		INVITE or UPE	ATE req	uest. The 'a' attr	ibute in the SDP is set to	
'sendrecv' or this attribute is abser Precondition:	It.					
	actablished bet	waan tha aanva	d upor op	d a ramata ugar a	according to the 'basis Call'	
<ul> <li>A confirmed dialogue was procedures</li> </ul>	s established bet	ween the serve	u user an	u a remote user a	according to the 'basic Call'	
<ul> <li>The media stream was pr</li> </ul>	eviously set to 's	endonly' HOLD	requeste	d by the origination	ng party	
The originating party retri	eves the held see	ssion				
Comments:						
Test Equipment (Gm)		SUT			quipment (Gm)	
		sh a confirmed				
CASE A	Session on F	IOLD by the or	iginating	party		
INVITE(sendrecv)	<b>→</b>			CASE a		
200 OK (sendrecv)	÷		→	INVITE(sendre	2CV)	
ACK	÷		÷	200 OK (send		
	_		<b>→</b>	ACK		
				CASE b		
			→	UPDATE(send	(roov)	
			÷	200 OK (send		
			•	200 011 (36110		
CASE B						
UPDATE( <b>sendrecv</b> )	→			CASE a		
200 OK (sendrecv)	+		→	UPDATE(send		
			÷	200 OK ( <b>send</b>	recv)	
				CASE b		
			→	INVITE(sendre	ecv)	
			÷	200 OK (send		
			÷	ACK	,	
	App	oly post test ro	outine			

TSS	ТР	HOLD reference	Selection expression
Network	CH_N01_0		
		[ITU-T Q.3619 v.1	1]
Test purpose:			
Retrieve the session in a confirmed di			
Ensure that the SUT is able support			
terminating party. The terminating pa 'sendrecy' or this attribute is absent.	irty sends an INVITE o	r UPDATE request. The	e 'a' attribute in the SDP is set to
Precondition:			
<ul> <li>A confirmed dialogue was es procedures</li> </ul>	tablished between the s	served user and a remote	e user according to the 'basic Call'
The media stream was previous	ously set to 'sendonly' H	IOLD requested by the te	erminating party
The terminating party retrieve	es the held session		
Comments:			
Test Equipment (Gm)	SUT		Test Equipment (Gm)
	Establish a confi		
	Session on HOLD by t	ne terminating party	
	←	<ul> <li>← INVITE(se</li> <li>→ 200 OK (se</li> </ul>	
INVITE(sendrecv) 200 OK ( <b>sendrecv</b> )	÷	ACK	
ACK	÷	<b>N</b> AON	
	•		
CASE b			
UPDATE(sendrecv)	÷		
200 OK (sendrecv)	<b>→</b>		
CASE B			
CASE a		← UPDATE(s	sendrecv)
UPDATE(sendrecv)	←	→ 200 OK (set)	
200 OK (sendrecv)	<b>→</b>		,
CASE b			
INVITE(sendrecv)	←		
200 OK (sendrecv)	<b>→</b>		
ACK	÷		
	Apply post te	est routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_008	Clause 4.5.2.1 of	
		[ITU-T Q.3619 v.1]	
Test purpose:			
Session hold in a confirmed dialogue. The			
Ensure that the SUT transfers the hold r			lialogue. The 200 OK response
containing an SDP body with an attribute	e line indicating 'a= inactiv	е.	
Precondition:			
<ul> <li>An confirmed dialogue was esta procedures</li> </ul>	ablished between the serv	ed user and a remote u	ser according to the 'basic Call'
The media stream was previou	sly set to 'recvonly' HOLD	requested by the term	inating party
The originating party sets the s	ession on HOLD		
Comments:			
Test Equipment (Gm)	SUT		st Equipment (Gm)
	Establish a confirmed		
	ssion on HOLD by the te	erminating party	
	د	CASE a	
INVITE( <b>inactive</b> ) 200 OK (inactive)	→ ←	→ INVITE(ina	active
ACK	÷	← 200 OK (ii	
Non		→ ACK	
		2 7.011	
		CASE b	
		→ UPDATE(	inactive)
		← 200 OK (ii	nactive)
	د	CASE a	
UPDATE(inactive) 200 OK (inactive)	→ ←		inactivo)
	<b>F</b>	← 200 OK (ii	
		<ul> <li>200 OR (II</li> </ul>	naouve,
		CASE b	
		→ INVITE(inal	active)
		← 200 OK (ii	
		→ ACK	
	Apply post test re	outine	

TSS	TP	Н	OLD reference	Selection expression
Network	CH_N01		lause 4.5.2.1 of	
		[]	TU-T Q.3619 v.1]	
Test purpose:				
Session hold in a confirmed dialogue. Th				
The session in a confirmed dialogue is set				
party. The 200 OK response containing a	n SDP body with	an attribute	e line indicating 'a=ii	nactive'.
Precondition:				
<ul> <li>A confirmed dialogue was estab procedures</li> </ul>	lished between th	e served u	ser and a remote us	ser according to the 'basic Call'
The media stream was previous	y set to 'recvonly'	HOLD rec	uested by the origir	nating party
The terminating party sets the set	ession on HOLD			
Comments:				
Test Equipment (Gm)	-	JT		st Equipment (Gm)
-	Establish a co			
CASE A Ses	sion on HOLD b	/ the origi	nating party	
CASE A CASE a			← INVITE(inacti	
INVITE(inactive)	÷		→ 200 OK (inacti	
200 OK (inactive)	÷		✓ ACK	
ACK	←			
CASE b				
UPDATE(inactive)	← →			
200 OK (inactive)	7			
CASE B				
CASE a			UPDATE(inac	ctive)
UPDATE(inactive)	÷		→ 200 OK (inact)	ive)
200 OK (inactive)	<b>→</b>			
CASE b				
INVITE(inactive)	←			
200 OK (inactive)	÷			
ACK	←			
	Apply post	test routi	ne	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_0		
Test purpose:		[[10-1 Q.3019 V.1]	
Retrieve the session in a confirmed dia	aloque. The media strea	ams were previously set to ir	nactive.
Ensure that the SUT transfers the RE			
response containing an SDP body with	an attribute line indica	ting 'a=sendonly'.	Ū.
Precondition:			
<ul> <li>A confirmed dialogue was est procedures</li> </ul>	ablished between the s	served user and a remote use	er according to the 'basic Call'
The media stream was previo	usly set to 'recvonly'		
The media stream was previo	usly set to 'inactive'		
The terminating party retrieve	s the held session		
Comments:			
Test Equipment (Gm)	SUT		t Equipment (Gm)
	Establish a confi		
The	originating party sets	the session on HOLD	
The	terminating party sets	s the session on HOLD	
CASE A			
CASE a	-	← INVITE(recvor	
INVITE(recvonly)	<del>(</del>	→ 200 OK (sendo	only)
200 OK ( <b>sendonly</b> ) ACK	→ ←	← ACK	
ACK	T		
CASE b			
UPDATE(recvonly)	+		
200 OK (sendonly)	<b>→</b>		
CASE B			
CASE a		← UPDATE(recv	only)
UPDATE(recvonly)	+	→ 200 OK (sendo	
200 OK (sendonly)	<b>→</b>	Υ.	,
	L		
INVITE(recvonly) 200 OK ( <b>sendonly</b> )	← →		
ACK	<del>,</del>		
	Apply post te	est routine	

TSS		ТР	HOLD re	ference	Selection expression
Network		CH_N01_011	Clause 4.5.2.1 of [ITU-T Q.3619 v.1]		
Test purpose:					
Retrieve the session in a confirm Ensure that the SUT transfers t	he RETRIVE requ	uest from the or	iginating p	arty in a confirme	
response containing an SDP boo	ly with an attribute	e line indicating '	a=recvonly	/'.	
<ul> <li>A confirmed dialogue w procedures</li> </ul>	as established be	tween the serve	d user and	a remote user ac	cording to the 'basic Call'
• The media stream was	previously set to '	recvonly'			
The media stream was	previously set to '	inactive'			
The originating party ref	rieves the held se	ession			
Comments:					
Test Equipment (Gm		SUT sh a confirmed		Test Eq	uipment (Gm)
CASE A	The originating The terminating				
INVITE(sendonly)	<b>→</b>			CASE a	
200 OK (recvonly)	+		<b>→</b>	INVITE(sendon	y)
ACK	÷		← →	200 OK ( <b>recvor</b> ACK	nly)
			<b>→</b> ←	CASE b UPDATE(sendo 200 OK (recvor	nly) <b>ily</b> )
CASE B					
UPDATE( <b>sendonly</b> ) 200 OK (recvonly)	→ ←		→ ←	CASE a UPDATE(sendo 200 OK (recvor	
		ply post test ro	→ + +	CASE b INVITE(sendonl 200 OK (recvor ACK	

TSS	TP	HOL	D reference	Selection expression
Network	CH_N01_		se 4.5.2.1 of -T Q.3619 v.1]	
Test purpose:				
Retrieve the session in a confirmed				
Ensure that the SUT transfers the				med dialogue. The 200 OK
response containing an SDP body v Precondition:	with an attribute line indic	ating a=recv	/only.	
	established between the	served user	and a remote user	according to the 'basic Call'
The media stream was pre	viously set to 'sendonly'			
The media stream was pre	viously set to 'inactive'			
The terminating party retrie	•			
Comments:				
Test Equipment (Gm)	SU	т	Test E	quipment (Gm)
	Establish a conf	irmed dialo		,
T	he terminating party se			
	he originating party set			
CASE A				
CASE a		+		
INVITE(sendonly)	+	<b>&gt;</b>		)
200 OK ( <b>recvonly</b> ) ACK	→ ←	+	ACK	
ACK	7			
CASE b				
UPDATE(sendonly)	+			
200 OK (recvonly)	<b>→</b>			
CASE B				
CASE B CASE a		←	UPDATE(sendor	
UPDATE(sendonly)	+	→ →	200 OK (recvonly	
200 OK (recvonly)	÷	-	200 010 (1000011)	)
CASE b				
INVITE(sendonly)	+			
200 OK (recvonly)	<b>→</b>			
ACK	<b>+</b>			
	Apply post t	est routine		

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_013	Clause 4.5.2.1 of	•
		[ITU-T Q.3619 v.1]	
<b>Test purpose:</b> Retrieve the session in a confirmed d	ialoque. The media stream	s were previously set to	inactive
Ensure that the SUT transfers the R			
response containing an SDP body wit			inimica dialogue. The 200 ert
Precondition:		g u=loovolliy.	
<ul> <li>A confirmed dialogue was es procedures</li> </ul>	stablished between the serv	ved user and a remote u	ser according to the 'basic Call'
The media stream was previ	ously set to 'sendonly'		
The media stream was previ	ously set to 'inactive'		
The originating party retrieve	es the held session		
Comments:			
Test Equipment (Gm)	SUT		st Equipment (Gm)
	Establish a confirme	ed dialogue	
The	e terminating party sets the	ne session on HOLD	
	e originating party sets th		
CASE A	· · · · · · · · · · · · · · · · · · ·		
INVITE( <b>recvonly</b> )	<b>→</b>	CASE a	
200 OK (sendonly)	←	→ INVITE(re)	
ACK	÷		sendonly)
		→ ACK	
		CASE b	
		→ UPDATE(	recvonly)
		← 200 OK (s	sendonly)
CASEB			
UPDATE(recvonly)	→ ←		
200 OK (sendonly)	€	<ul> <li>→ UPDATE(</li> <li>← 200 OK (s</li> </ul>	
		₹ 200 OK (\$	sendonly)
		CASE b	
		→ INVITE(re	ecvonly)
			sendonly)
		→ ACK	
	Apply post test	routine	

	HOLD reference	Selection expression
CH_N01_014	Clause 4.5.2.4 of	PICS 5.3/3
	[ITU-T Q.3619 v.1]	
ement to the originating	user when setting the se	ssion on HOLD.
shed between the serve	d user and a remote use	r according to the 'basic Call'
)		
ent		
SUT		Equipment (Gm)
Establish a confirmed	d dialogue	
_		
=		
₹		
Announcemer	nt	
<b>→</b>		
<del>(</del>		
Announcemer	<b>h</b>	
•	o the originating user wheement to the originating shed between the serve onent Establish a confirmed	[ITU-T Q.3619 v.1] to the originating user when setting the session or ement to the originating user when setting the se shed between the served user and a remote user onent SUT Test Establish a confirmed dialogue → ← ← Announcement →

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_015	Clause 4.5.2.4 of [ITU-T Q.3619 v.1]	PICS 5.3/3
Test purpose:			· · · · ·
The network provides an announcement to the Ensure that the SUT provides an announceme			
Precondition:			
<ul> <li>A confirmed dialogue was established procedures</li> </ul>	between the serve	d user and a remote use	r according to the 'basic Call'
The media stream is set on HOLD			
The SUT provides an announcement			
Comments:			
Test Equipment (Gm)	SUT		Equipment (Gm)
Est	ablish a confirmed		
		CASE A ← INVITE(sendon → 200 OK (recvon) ← ACK	
	Announcemer	nt	
		CASE B ← UPDATE(sendo → 200 OK (recvon)	
	Announcemer Apply post test ro		

TSS	ТР	HOLD	reference	Selection expression
Network	CH_N01_016	Clause 4.5.2.4 of [ITU-T Q.3619 v.1]		PICS 5.3/4
Test purpose:				
The SUT lower the bandwidth by s				
Ensure that the SUT shall lower t				
HOLD marked "recvonly" by settir				
parameters shall be set to value	es large enough to enable o	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:				
Test Equipment (Gm)	SUT			Equipment (Gm)
CASE A	Establish a confirme	ed dialogu	е	
INVITE(sendonly)	د.		CASE a	
200 OK (recvonly)	→ ←	→	INVITE(send	lonky
ACK	<del>~</del>	÷	200 OK ( <b>rec</b>	
ACK	X	À	ACK	voliny)
			Non	
			CASE b	
		→	UPDATE(sei	ndonly)
		←	200 OK (rec	
CASE B				
UPDATE(sendonly)	<b>→</b>	_	CASE a	
200 OK (recvonly)	+	<b>→</b>	UPDATE(se	
		+	200 OK ( <b>rec</b>	vonly)
			CASE b	
		→	INVITE(send	(only)
		+ +	200 OK (rec	
		÷	ACK	voniy,
	Apply post test	-		

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_017	Clause 4.5.2.4 of	PICS 5.3/4
		[ITU-T Q.3619 v.1]	
Test purpose:			
The SUT lower the bandwidth by setting	g the b=AS to a small val	ue.	
Ensure that the SUT shall lower the ba			inating user sets the session on
HOLD marked "recvonly" by setting the			
parameters shall be set to values la			
"b=RS:800".	• •		
SIP header values			
200 OK (recvonly)			
b=AS:<>			
b=RR:<>			
b=RS:<>			
Comments:			
Test Equipment (Gm)	SUT	Т	est Equipment (Gm)
	Establish a confirm	ed dialogue	
CASE A			
CASE a		← INVITE(sen	
INVITE(sendonly)	+	→ 200 OK (rec)	vonly)
200 OK ( <b>recvonly</b> )	<b>→</b>	← ACK	
ACK	÷		
CASE b			
UPDATE(sendonly)	L		
200 OK (recvonly)	← →		
	7		
CASE B			
CASE a		← UPDATE(se	ndonly)
UPDATE(sendonly)	+	→ 200 OK (rec)	
200 OK (recvonly)	÷		
CASE b			
INVITE(sendonly)	+		
200 OK (recvonly)	<b>→</b>		
ACK	÷		
	Apply post test	routine	

TSS	TP	HOLD	reference	Selection expression
Network	CH_N01_018	Clause	4.5.2.1 of	
		[ITU-T (	Q.3619 v.1]	
Test purpose:	·			·
The SUT lower the bandwidth by setting	the b=AS to a small value	ə.		
Ensure that the SUT shall lower the ba			nen the originatin	g user sets the session on
HOLD marked "inactive" by setting the				
parameters shall be set to values larg				
"b=RS:800".				
SIP header values				
200 OK (recvonly)				
b=AS:<>				
b=RR:<>				
b=RS:<>				
Comments:				
Test Equipment (Gm)	SUT			quipment (Gm)
_	Establish a confirmed			
	sion on HOLD by the te	erminating	g party	
CASE A	-			
INVITE(inactive)	<b>→</b>	_	CASE a	
200 OK (inactive)	+	<b>→</b>	INVITE(inactiv	
ACK	←	÷	200 OK (inact	tive)
		→	ACK	
			0.005.	
			CASE b	<i></i>
		→ ←	UPDATE(inac	
		←	200 OK ( <b>inac</b> t	tive)
CASE B				
	-		CASE a	
UPDATE(inactive)	→ ←	-	····	4: (a)
200 OK (inactive)	<b>F</b>	→ ←	UPDATE(inac	
		~	200 OK ( <b>inac</b> t	live)
			CASE b	
		→	INVITE(inactiv	
			200 OK (inactiv	
		$\overline{}$	ACK	live)
	Apply post tost r	-	AUN	
	Apply post test re	Juline		

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_019	Clause 4.5.2.1 of	
		[ITU-T Q.3619 v.1]	
Test purpose:	·		<u>.</u>
The SUT lower the bandwidth by setting	the b=AS to a small value	э.	
Ensure that the SUT shall lower the bar			ng user sets the session on
HOLD marked "inactive" by setting the	"b=AS:" parameter to a s	small value, e.g. "b=AS:0'	". The "b=RR:" and "b=RS:"
parameters shall be set to values larg	ge enough to enable co	ntinuation 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:			
Test Equipment (Gm)	SUT		Equipment (Gm)
	Establish a confirmed		
	ssion on HOLD by the o	riginating party	
CASE A			、 、
CASE a		← INVITE(inactive	
INVITE(inactive)	← →	→ 200 OK (inactive	2)
200 OK (inactive)	→ ←	← ACK	
ACK	Æ		
CASE b			
UPDATE(inactive)	÷		
200 OK (inactive)	÷		
	2		
CASE B			
CASE a		← UPDATE(inactiv	ve)
UPDATE(inactive)	÷	→ 200 OK (inactive	,
200 OK (inactive)	<b>→</b>	, , , , , , , , , , , , , , , , , , ,	,
CASE b			
	L		
INVITE(inactive) 200 OK ( <b>inactive</b> )	← →		
ACK	7 <del>(</del>		
AUN	-	outino	
	Apply post test ro	Juline	

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