# ETSI TS 186 007-2 V4.1.1 (2015-10)



Core Network and Interoperability Testing (INT); Communication HOLD (HOLD) using IP Multimedia (IM) Core Network (CN) subsystem; Conformance test specification (3GPP<sup>™</sup> Release 10); Part 2: Test Suite Structure and Test Purposes (TSS&TP) Reference

RTS/INT-00124-2

Keywords

HOLD, testing, TSS&TP

#### ETSI

#### 650 Route des Lucioles F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C Association à but non lucratif enregistrée à la Sous-Préfecture de Grasse (06) N° 7803/88

#### Important notice

The present document can be downloaded from: <u>http://www.etsi.org/standards-search</u>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at http://portal.etsi.org/tb/status/status.asp

If you find errors in the present document, please send your comment to one of the following services: <u>https://portal.etsi.org/People/CommiteeSupportStaff.aspx</u>

#### **Copyright Notification**

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI. The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2015. All rights reserved.

DECT<sup>™</sup>, PLUGTESTS<sup>™</sup>, UMTS<sup>™</sup> and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members. **3GPP**<sup>™</sup> and LTE<sup>™</sup> are Trade Marks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

**GSM**® and the GSM logo are Trade Marks registered and owned by the GSM Association.

### Contents

Intelle	ectual Property Rights	4
Forew	vord	4
Moda	l verbs terminology	4
1	Scope	5
2 2.1	References	5
2.2	Informative references	
3 3.1 3.2	Definitions and abbreviations Definitions Abbreviations	6
4	Test Suite Structure (TSS) and Test configuration	6
4.0 4.1	Introduction Configuration	
5	Test Purposes (TP)	
5.1	Introduction	7
5.1.1 5.1.2	TP naming convention Test strategy	
5.2 5.2.0	User TPs for HOLD Introduction	8
5.2.1	Served user	8
5.2.1.1 5.2.1.2		
5.3	Network TPs for HOLD	
Histor	ry	39

### Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://ipr.etsi.org).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

### Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Core Network and Interoperability Testing (INT).

The present document is part 2 of a multi-part deliverable covering the Conformance Test Specification of Communication HOLD (HOLD) using IP Multimedia (IM) Core Network (CN) subsystem, as identified below:

Part 1: "Protocol Implementation Conformance Statement (PICS)";

Part 2: "Test Suite Structure and Test Purposes (TSS&TP)".

### Modal verbs terminology

In the present document "shall", "shall not", "should", "should not", "may", "need not", "will", "will not", "can" and "cannot" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"must" and "must not" are NOT allowed in ETSI deliverables except when used in direct citation.

### 1 Scope

The present document provides the Test Suite Structure (TSS) and Test Purposes (TP) for the test specifications for the Communication HOLD (HOLD) using IP Multimedia (IM) Core Network (CN) subsystem as specified in ETSI TS 124 610 [1] and IETF RFC 3264 [6] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [5] and ETSI ETS 300 406 [3].

### 2 References

### 2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <a href="http://docbox.etsi.org/Reference">http://docbox.etsi.org/Reference</a>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1]	ETSI TS 124 610: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Communication HOLD (HOLD) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.610 Release 10)".
[2]	ETSI TS 186 007-1: "Core Network and Interoperability Testing (INT); Communication HOLD (HOLD) using IP Multimedia (IM) Core Network (CN) subsystem; Conformance test specification (3GPP Release 10) Part 1: Protocol Implementation Conformance Statement (PICS)".
[3]	ETSI ETS 300 406 (1995): "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
[4]	ISO/IEC 9646-1: "Information technology Open systems interconnection Conformance testing methodology and framework Part 1: General concepts".
[5]	ISO/IEC 9646-7: "Information technology Open systems interconnection Conformance testing methodology and framework Part 7: Implementation Conformance Statements".
[6]	IETF RFC 3264: "An Offer/Answer Model with the Session Description Protocol (SDP)".

### 2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

### 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI TS 124 610 [1] and the following apply:

6

Abstract Test Suite (ATS): Refer to ISO/IEC 9646-1 [4].

Implementation Under Test (IUT): Refer to ISO/IEC 9646-1 [4].

PICS proforma: Refer to ISO/IEC 9646-1 [4].

point of control and observation: Refer to ISO/IEC 9646-1 [4].

Protocol Implementation Conformance Statement (PICS): Refer to ISO/IEC 9646-1 [4].

System Under Test (SUT): Refer to ISO/IEC 9646-1 [4].

Test Purpose (TP): Refer to ISO/IEC 9646-1 [4].

NOTE: This may contain additional information.

### 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI TS 124 610 [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) and Test configuration

### 4.0 Introduction

#### Table 1: Test suite structure

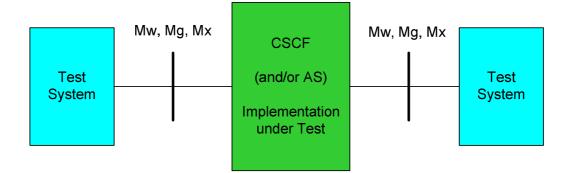
ServedUser		
	WithUPDATE	CH_U01_xxx
	WithoutUPDATE	CH_U02_xxx
Network		
		CH_N01_xxx

### 4.1 Configuration

The scope of the present document is to test the signalling and procedural aspects of the stage 3 requirements as described in ETSI TS 124 610 [1]. The stage 3 description respects the requirements to several network entities and also to requirements regarding to 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 are 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.



#### Figure 1: Applicable interfaces to test using the (generic) NNI interface

**Testing of User Equipment:** There are several requirements regarding to the end devices. Therefore a special configuration appears

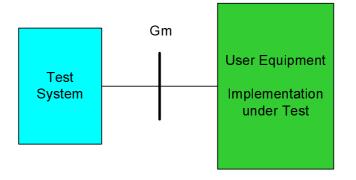


Figure 2: Applicable configuration to test the User Equipment

### 5 Test Purposes (TP)

### 5.1 Introduction

#### 5.1.1 TP naming convention

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

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

AND PICS 4.2/2

### 5.1.2 Test strategy

As the base standard ETSI TS 124 610 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification ETSI TS 186 007-1 [2].

### 5.2 User TPs for HOLD

#### 5.2.0 Introduction

All PICS items referred to in this clause are as specified in ETSI TS 186 007-1 [2] 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		PICS 4.1/1
			AND PICS 4.2/2
Test purpose:			
Session hold. UPDATE method is used. sendrecv.	Individual media strean	n is affected. The media s	tream was previously set to
Ensure that the IUT to hold an individua	I media stream of the co	mmunication session, ser	nds an UPDATE request
containing an SDP body with an attribute	e line indicating 'a= send	lonly'.	-
Precondition:			
<ul> <li>A session was established betw procedures</li> </ul>	ween the served user an	d a remote user accordin	g to the 'basic Call'
<ul> <li>The media stream was previou</li> </ul>	sly set to 'sendrecv'		
<ul> <li>One individual media stream</li> </ul>			
Comments:			
User Equipment	SUT	Test Ed	quipment
	Establish a confirm	ed session	
User invokes the HOLD service	<b>→</b>	UPDAT	E(sendonly)
	+		(recvonly)
	Apply post test	routine	· · · ·
TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_002	4.5.2.1	PICS 4.1/1

#### Test purpose:

Session hold. UPDATE method is 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 an 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'
- One individual media stream

Comments:		
User Equipment	SUT Establish a confirmed session	Test Equipment
CASE A	<b>←</b> →	UPDATE(sendonly) 200 OK ( <b>recvonly</b> )
CASE B	← → ← Apply post test routine	INVITE(sendonly) 200 OK ( <b>recvonly</b> ) ACK

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_003	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/2
Test purpose:			
Session hold. UPDATE method is used. recvonly.	Individual media stream i	's affected. The media st	tream was previously set to
Ensure that the IUT to hold an individual containing an SDP body with an attribute			ds an UPDATE request
Precondition:			
<ul> <li>A session was established betw procedures</li> </ul>	een the served user and	a remote user according	g to the 'basic Call'
<ul> <li>The media stream was previous</li> </ul>	ly set to 'recvonly'		
One individual media stream	,,		
Comments:			
User Equipment	SUT	Test Eq	luipment
	Establish a confirme		
CASE A	+	UPDAT	E(sendonly)
	<b>→</b>		(recvonly)
CASE B	←	INVITE(	(sendonly)
	<b>→</b>	200 OK	(recvonly)
	+	ACK	
User invokes the HOLD service	<b>→</b>	UPDATI	E(inactive)
	+		(inactive)
	Apply post test ro	outine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_004	4.5.2.1	PICS 4.1/1 AND PICS 4.2/2
Test purpose:			
Session resume. UPDATE method is use	ed. Individual media strea	m is affected. The media	a stream was previously set
to sendonly.			
Ensure that the IUT to resume an individe containing an SDP body with an attribute			
Precondition:	¥		
<ul> <li>A session was established betw</li> </ul>	een the served user and	a remote user according	to the 'basic Call'
procedures			
The media stream was previous	ly set to 'sendonly'		
One individual media stream			
Comments:			
User Equipment	SUT	Test Eq	uipment
	Establish a confirme	d session	
User invokes the HOLD service	<b>→</b>	UPDAT	E(sendonly)
	+		(recvonly)
User resumes the session	<b>→</b>	UPDATI	E( <b>sendrecv</b> or absent)
	+	200 OK	(sendrecv or absent)
	Apply post test ro		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_005	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/2
Test purpose:			
Session resume. UPDATE method is use	d. Individual media strea	ms are affected. The me	edia stream was previously
set to inactive.			
Ensure that the IUT to resume an individu			sends an UPDATE request
containing an SDP body with an attribute	line indicating 'a=recvon	ly'.	
Precondition:			
<ul> <li>A session was established between the set of the set</li></ul>	een the served user and	a remote user according	to the 'basic Call'
procedures			
<ul> <li>The media stream was previous</li> </ul>	y set to 'inactive'		
<ul> <li>One individual media stream</li> </ul>			
Comments:			
User Equipment	SUT	Test E	Equipment
	Establish a confirme	d session	
CASE A	+	UPDA	TE(sendonly)
	<b>→</b>		K (recvonly)
CASE B	+		E(sendonly)
	<b>→</b>	200 O	K ( <b>recvonly</b> )
	+	ACK	
User invokes the HOLD service	<b>→</b>		TE(inactive)
	, +		K (inactive)
	Υ.	200 0	
User resumes the media session	<b>→</b>	UPDA	TE( <b>recvonly</b> )
	÷		K (sendonly)
	Apply post test re		

Apply post test routine

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_006	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/2
Test purpose:			
Session hold. UPDATE method is used.	In all viele of manualian at was a was	ff ( l Tl l'	• • • •
	individual media stream i	s affected. The media st	ream was previously set to
<i>inactive.</i> Ensure that the IUT to resume an individ	ual media stream of the c	ommunication session, s	
inactive. Ensure that the IUT to resume an individ containing an SDP body with an attribute <b>Precondition</b> :	ual media stream of the c	ommunication session, s	

- 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 SUT **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	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_007	4.5.2.1	PICS 4.1/1 AND PICS 4.2/1
Test purpose: Session hold. UPDATE method is used. Individual sendrecv.	l media stream is	affected. The media strean	n was previously set to
Ensure that the IUT to hold an individual media str SDP body with an attribute line indicating 'a= send		dialogue, sends an UPDATE	E request containing an
<ul> <li>Precondition:</li> <li>An early dialogue was established betwe procedures</li> <li>The media stream was previously set to '</li> <li>One individual media stream</li> </ul>		er and a remote user accord	ding to the 'basic Call'
Comments:			
User Equipment Esta	SUT blish an early di	Test Equij alogue	oment
User invokes the HOLD service	<b>→</b>	UPDATE(s	endonly)
Ар	← oply post test ro	200 OK (re	
TSS ServedUser/WithUPDATE	<b>TP</b> CH_U01_008	HOLD reference 4.5.2.1	Selection expression PICS 4.1/1 AND PICS 4.2/1
<b>Test purpose:</b> Session hold. UPDATE method is used. Individual sendrecv. Ensure that the IUT responds to the hold request of dialogue, sends a 200 OK UPDATE response con	of an individual m	edia stream from the remot	n was previously set to e party of an early
<ul> <li>An early dialogue was established betwe procedures</li> <li>The media stream was previously set to '</li> <li>One individual media stream</li> </ul>		er and a remote user accord	ling to the 'basic Call'
User Equipment Esta	SUT blish an early di	Test Equij alogue	oment
	÷	UPDATE(s	endonly)
	<b>→</b>	200 OK (re	
Ар	ply post test ro	utine	
TSS ServedUser/WithUPDATE	<b>TP</b> CH_U01_009	HOLD reference 4.5.2.1	Selection expression PICS 4.1/1 AND PICS 4.2/2
Test purpose: Session hold. UPDATE method is used. All media sendrecv.	streams are affe	cted. The media streams w	ere previously set to
Ensure that the IUT to hold all media streams of the SDP body with a session level direction attribute li			E request containing an
<ul> <li>Precondition:</li> <li>A session was established between the s procedures</li> <li>All media streams were previously set to</li> <li>Individual media streams</li> </ul>		remote user according to t	he 'basic Call'
Comments:			
User Equipment Establ	SUT lish a confirmed	Test Equi session	oment
User invokes the HOLD service	→ ←	UPDATE( <b>s</b> 200 OK (re	
Ар	ply post test ro		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

TSS	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_010	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/2
<b>Test purpose:</b> Session hold. UPDATE method is used. All met sendrecv. Ensure that the IUT responds to hold request of sends a 200 OK INVITE/UPDATE response con	f all media streams	of the communication se	ession from the remote party,
Precondition:			
<ul> <li>A session was established between th procedures</li> <li>The media stream was previously set to One individual media stream</li> </ul>		a remote user according	to the 'basic Call'
Comments:			
User Equipment	SUT		quipment
Esta	ablish a confirmed	session	
CASE A	← →		FE(sendonly) K ( <b>recvonly</b> )
CASE B	← → ←		(sendonly) K ( <b>recvonly</b> )
	Apply post test ro		
TSS ServedUser/WithUPDATE	<b>TP</b> CH_U01_011	HOLD reference 4.5.2.1	Selection expression PICS 4.1/1 AND PICS 4.2/2
Test purpose: Session hold. UPDATE method is used. All met recvonly. Ensure that the IUT to hold all media streams o SDP body with a session level direction attribute Precondition:	f the communicatio	n session, sends an UPI	
<ul> <li>A session was established between th procedures</li> <li>All media streams were previously set</li> <li>Individual media streams</li> </ul>		a remote user according	to the 'basic Call'
Comments:			
User Equipment Esta	SUT ablish a confirmed		quipment
CASE A	← →		E(sendonly) < ( <b>recvonly</b> )
CASE B	<b>←</b> <b>→</b> <del>←</del>		(sendonly) K ( <b>recvonly</b> )
User invokes the HOLD service	→ ← Apply post test ro	200 Ok	FE( <b>inactive</b> ) K (inactive)

rss	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_012	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/2
Fest purpose:			
Session resume. UPDATE method is used sendonly.	I. All media streams are	affected. The media stre	eam were previously set to
Ensure that the IUT to resume all media st	reams of the communic	ation session, sends an	UPDATE request containing
an SDP body with a session level direction	attribute line indicating	'a=sendrecv' or without	attribute line.
Precondition:			
<ul> <li>A session was established betwee procedures</li> </ul>	en the served user and	a remote user according	to the 'basic Call'
<ul> <li>All media streams were previously</li> </ul>	y set to 'sendonly'		
<ul> <li>Individual media streams</li> </ul>			
Comments:			
Jser Equipment	SUT		Equipment
	Establish a confirmed	d session	
Jser invokes the HOLD service	<b>→</b>	UPDA	TE(sendonly)
	÷		K (recvonly)
Jser resumes the session	<b>→</b>	UPDA	TE( <b>sendrecv</b> or absent)
	+		K (sendrecv or absent)
	Apply post test ro		
	••••		
rss	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_013	4.5.2.1	PICS 4.1/1
		H.J.Z.I	1004.1/1

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 an 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'

<ul> <li>Individual media streams</li> </ul>	
--	--

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

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_014	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/2
Test purpose:			
Session hold. UPDATE method is used. A	All media streams are aff	ected. The media strean	ns were previously set to
recvonly.			
Ensure that the IUT to hold an individual r			ds an UPDATE request
containing an SDP body with an attribute	line indicating 'a=inactive	e'.	
Precondition:			
<ul> <li>A session was established betwee procedures</li> </ul>	een the served user and	a remote user according	to the 'basic Call'
The media stream was previous	y set to 'sendonly'		
Individual media streams			
Comments:			
User Equipment	SUT	Test E	Equipment
	Establish a confirme	d session	
User invokes the HOLD service	<b>→</b>	UPDA	TE(sendonly)
	+	200 O	K (recvonly)
CASE A	÷	UPDA	TE(inactive)
	<b>→</b>	200 O	K (inactive)
CASE B	÷	INVITI	E(inactive)
	→	200 O	K (inactive)
	+	ACK	
			TE (oordorky)
User resumes the media session	→ ∠		TE( <b>sendonly</b> )
			K (recvonly)
	Apply post test ro	Jutine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_015	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/1
Test purpose:			
Session hold. UPDATE method is used sendrecv.	All media streams are aff	ected. The media stream	n was previously set to
Ensure that the IUT to hold all media stre with an attribute line indicating 'a= sendo		, sends an UPDATE req	uest containing an SDP body
Precondition:	iny.		
<ul> <li>An early dialogue was establish procedures</li> <li>The media stream was previous</li> <li>Individual media streams</li> </ul>		ser and a remote user a	ccording to the 'basic Call'
Comments:			
User Equipment	SUT	Test E	Equipment
	Establish an early o	lialogue	
User invokes the HOLD service	<b>→</b>	UPDA	TE(sendonly)
	+	200 O	K (recvonly)
	Apply post test ro	outine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U01_016	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/1
Test purpose:			
Session hold. UPDATE method is sendrecv.	used. All media streams are affe	ected. The media stream	ns were previously set to
Ensure that the IUT responds to th	e hold request of all individual m	nedia streams from the i	emote party of an early
dialogue, sends a 200 OK UPDAT	E response containing an SDP I	oody with an attribute lin	e indicating 'a=recvonly'.
Precondition:			
<ul> <li>An early dialogue was est</li> </ul>	tablished between the served us	ser and a remote user a	ccording to the 'basic Call'
procedures			
<ul> <li>The media stream was pr</li> </ul>	eviously set to 'sendrecv'		
<ul> <li>Individual media streams</li> </ul>			
Comments:			
User Equipment	SUT	Test E	Equipment
	Establish an early d	ialogue	
	+	UPDA	TE(sendonly)
	→		K (recvonly)
	• • • • •		• • •

Apply post test routine

### 5.2.1.2 Communication Hold without support for UPDATE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_001	4.5.2.1	PICS 4.1/1
			AND NOT PICS 4.2/2
Test purpose:	· · · · · · · · · · · · · · · · · · ·	·	
Session hold. UPDATE method is not us	ed. Individual media strea	am is affected. The med	ia stream was previously set
to sendrecv.			
Ensure that the IUT to hold an individual	media stream of the com	munication session, sen	ds a ReINVITE request
containing an sdp body with an attribute I	ine indicating 'a=sendonl	у'.	
Precondition:			
<ul> <li>A session was established betw</li> </ul>	een the served user and	a remote user according	g to the 'basic Call'
procedures			-
The media stream was previous	ly set to 'sendrecv'		
<ul> <li>Individual media streams</li> </ul>			
Comments:			
User Equipment	SUT	Test E	Equipment
	Establish a confirme	d session	
User invokes the HOLD service	<b>→</b>	ReIN	/ITE(sendonly)
	+		K (recvonly)
	<b>→</b>	ACK	
	Apply post test re	outine	

TSS ServedUser/WithUPDATE	<b>TP</b> CH_U02_0	HOLD reference 4.5.2.1	Selection expression PICS 4.1/1
			AND NOT PICS 4.2/2
Test purpose: Session hold. UPDATE method is not use to sendrecv. Ensure that the IUT responds to the hold r remote party, sends a 200 OK INVITE/UP a=recvonly'.	equest of an individ	ual media stream of the co	ommunication session from the
Precondition:			
<ul> <li>A session was established betwee procedures</li> <li>The media stream was previously</li> <li>Individual media streams</li> </ul>		and a remote user accord	ing to the 'basic Call'
Comments:	0.17	-	
User Equipment	SUT Establish a confi		st Equipment
	Establish a confi	med session	
CASE A	←	← UPDATE(sendonly)	
	<b>→</b>		OK (recvonly)
CASE B	+		(ITE(sendonly)
	<b>→</b>		OK ( <b>recvonly</b> )
		ACI	ĸ
	Apply post te	stroutine	
TSS ServedUser/WithoutUPDATE	<b>TP</b> CH_U02_0	HOLD reference 4.5.2.1	Selection expression PICS 4.1/1 AND NOT PICS 4.2/2
Test purpose: Session hold. UPDATE method is not use set to recvonly.			
Ensure that the IUT to hold an individual n			sends a ReINVITE request
containing an SDP body with an attribute I Precondition:	ine indicating 'a=ina	ctive".	
	on the conved user	and a romate upor accord	ing to the 'basic Call'
procedures		and a remote user accord	ing to the basic Call
<ul> <li>The media stream was previously</li> <li>Individual media stream</li> </ul>	set to recoonly		

Co				
L.O	mr	ne	nт	ς.
~~				•••

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

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_004	4.5.2.1	PICS 4.1/1
T			AND NOT PICS 4.2/2
Test purpose:		tracers is offersted. The re	
Session resume. UPDATE method is not a	usea. Individual media s	tream is allected. The fr	iedia stream was previously
set to sendonly.	al madia atraam of the a	ammunication accordant	anda a DaINIV/ITE raquaat
Ensure that the IUT to resume an individual			•
containing an SDP body with an attribute I	ine indicating a=sendred		le.
Precondition:			
<ul> <li>A session was established betwe procedures</li> </ul>	en the served user and	a remote user according	g to the 'basic Call'
<ul> <li>The media stream was previously</li> </ul>	/ set to 'sendonly'		
<ul> <li>Individual media stream</li> </ul>			
Comments:			
User Equipment	SUT	Test E	Equipment
	Establish a confirmed	d session	
User invokes the HOLD service	<b>→</b>	ReIN	/ITE(sendonly)
	÷		K (recvonly)
	<b>→</b>	ACK	
User resumes the session	<b>→</b>	ReINI	/ITE( <b>sendrecv</b> or absent)
	<b>+</b>		K (sendrecv or absent)
	, →	ACK	
	Apply post test ro		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_005	4.5.2.1	PICS 4.1/1
			AND NOT PICS 4.2/2
Test purpose:			
Session resume. UPDATE method is not	used. Individual media s	tream is affected. The m	edia stream was previously
set to inactive.			
Ensure that the IUT to resume an individu			ends a ReINVITE request
containing an SDP body with an attribute Precondition:	line indicating a=recvon	Ŋ'.	
<ul> <li>A session was established betwee procedures</li> </ul>	en the served user and	a remote user according	to the basic Call
<ul> <li>The media stream was previousl</li> </ul>	y set to 'inactive'		
<ul> <li>Individual media streams</li> </ul>			
Comments:			
User Equipment	SUT		quipment
	Establish a confirme	d session	
CASE A	←	UPDA <sup>-</sup>	TE(sendonly)
	<b>→</b>		< (recvonly)
CASE B	+	INVITE	(sendonly)
	→		< (recvonly)
	+	ACK	
User invokes the HOLD service	<b>→</b>	ReINV	ITE(inactive)
	+		< (inactive)
	<b>→</b>	ACK	· · · ·
User resumes the media session	<b>→</b>	ReINV	ITE( <b>recvonly</b> )
	+	← 200 OK (	
	<b>→</b>	ACK	
	Apply post test ro	putine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_006	4.5.2.1	PICS 4.1/1
			AND NOT PICS 4.2/2
Test purpose:			
Session hold. UPDATE method is not use	d. Individual media strea	am is affected. The medi	a stream was previously se
to inactive.			
Ensure that the IUT to resume an individu			sends a ReINVITE request
containing an SDP body with an attribute <b>Precondition:</b>	line indicating a=sendor	liy.	
<ul> <li>A session was established between the setablished between the set</li></ul>	on the served user and	a remote user according	to the 'basic Call'
procedures		a remote user according	
<ul> <li>The media stream was previousl</li> </ul>	v set to 'inactive'		
One individual media stream			
Comments:			
User Equipment	SUT	Test E	quipment
	Establish a confirme	d session	
User invokes the HOLD service	<b>→</b>	ReINVITE(sendonly)	
	+		K (recvonly)
	<b>→</b>	ACK	
CASE A	←	UPDA	TE( <b>inactive</b> )
	<b>→</b>		K (inactive)
CASE B	←	INVITE	E(inactive)
	→		K (inactive)
	÷	ACK	· · · ·
User resumes the media session	<b>→</b>	ReINV	ITE( <b>sendonly</b> )
	+	200 O	K (recvonly)
	<b>→</b>	ACK	
	Apply post test ro	putine	

TSS	ТР	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_007	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/1
			AND NOT PICS 4.2/2
Test purpose:		·	· · · · ·
Session hold. UPDATE method is not use	ed. Individual media strea	am is affected. The med	a stream was previously set
to sendrecv.			
Ensure that the IUT to hold an individual r	media stream of an early	dialogue, sends an UPI	DATE request containing an
SDP body with an attribute line indicating		-	· · ·
Precondition:			
<ul> <li>An early dialogue was established</li> </ul>	ed between the served us	ser and a remote user a	ccording to the 'basic Call'
procedures			6
<ul> <li>The media stream was previous</li> </ul>	v set to 'sendrecv'		
One individual media stream	,		
Comments:			
User Equipment	SUT	Test Eq	uipment
	Establish an early d		•
User invokes the HOLD service	<b>→</b>	UPDAT	E(sendonly)
	+		(recvonly)

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_00		PICS 4.1/1
	011_002_00	1.0.2.1	AND PICS 4.2/1
			AND NOT PICS 4.2/2
Test purpose:			·
Session hold. UPDATE method is not u	used. Individual media s	tream is affected. The mea	lia stream was previously set
to sendrecv.			
Ensure that the IUT responds to the ho			
dialogue, sends a 200 OK UPDATE res Precondition:	sponse containing an SL	JP body with an attribute lin	ne indicating 'a=recvonly'.
An early dialogue was establis	shed between the serve	d user and a remote user a	ccording to the 'basic Call'
procedures			
The media stream was previo	usly set to 'sendrecv'		
One individual media stream			
Comments:	SUT	Test Fr	nuinment.
User Equipment	Establish an ear		quipment
		ly dialogue	
	+	UPDAT	E(sendonly)
	→ →		(recvonly)
	Apply post tes		
TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_00	9 4.5.2.1	PICS 4.1/1 AND NOT PICS 4.2/2
Test purpose:			
Session hold. UPDATE method is not u	used. All media streams	are affected. The media st	reams were previously set to
sendrecv. Ensure that the IUT to hold all media st	the end of the equation	ation exercises searche a Dal	
Fusure that the IUT to hold all media s			NVITE request containing an
	a attributa lina indiaating	'a_aandanlu'	
SDP body with a session level direction	n attribute line indicating	'a=sendonly'.	
SDP body with a session level direction <b>Precondition:</b> • A session was established be		•	g to the 'basic Call'
SDP body with a session level direction Precondition: • A session was established be procedures	tween the served user a	•	g to the 'basic Call'
<ul> <li>SDP body with a session level direction</li> <li>Precondition:         <ul> <li>A session was established be procedures</li> <li>All media streams were previote Individual media streams</li> </ul> </li> </ul>	tween the served user a	•	g to the 'basic Call'
<ul> <li>SDP body with a session level direction</li> <li>Precondition:         <ul> <li>A session was established be procedures</li> <li>All media streams were previote Individual media streams</li> </ul> </li> <li>Comments:</li> </ul>	tween the served user a busly set to 'sendrecv'	and a remote user according	
<ul> <li>SDP body with a session level direction</li> <li>Precondition:         <ul> <li>A session was established be procedures</li> <li>All media streams were previote</li> <li>Individual media streams</li> </ul> </li> </ul>	tween the served user a busly set to 'sendrecv' SUT	and a remote user according	g to the 'basic Call' quipment
<ul> <li>SDP body with a session level direction</li> <li>Precondition:         <ul> <li>A session was established be procedures</li> <li>All media streams were previote Individual media streams</li> </ul> </li> <li>Comments:</li> </ul>	tween the served user a busly set to 'sendrecv'	and a remote user according	
<ul> <li>SDP body with a session level direction</li> <li>Precondition: <ul> <li>A session was established be procedures</li> <li>All media streams were previo</li> <li>Individual media streams</li> </ul> </li> <li>Comments: <ul> <li>User Equipment</li> </ul> </li> </ul>	tween the served user a busly set to 'sendrecv' SUT Establish a confirm	and a remote user according Test Ec med session	quipment
<ul> <li>SDP body with a session level direction</li> <li>Precondition:         <ul> <li>A session was established be procedures</li> <li>All media streams were previote Individual media streams</li> </ul> </li> <li>Comments:</li> </ul>	tween the served user a busly set to 'sendrecv' SUT Establish a confirm	and a remote user according Test Ed med session ReINVI	quipment TE(sendonly)
<ul> <li>SDP body with a session level direction</li> <li>Precondition: <ul> <li>A session was established be procedures</li> <li>All media streams were previo</li> <li>Individual media streams</li> </ul> </li> <li>Comments: <ul> <li>User Equipment</li> </ul> </li> </ul>	tween the served user a busly set to 'sendrecv' SUT Establish a confirm	and a remote user according Test Ed med session ReINVI	quipment

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_010	4.5.2.1	PICS 4.1/1 AND NOT PICS 4.2/2
Test purpose: Session hold. UPDATE method is not used sendrecv. Ensure that the IUT responds to hold reque sends a 200 OK INVITE/UPDATE response Precondition:	st of all media streams	of the communication s	reams were previously set to ession from the remote party,
A session was established betwee procedures     The media stream was previously     One individual media stream Comments:		a remote user according	to the 'basic Call'
User Equipment	SUT Establish a confirme		uipment
CASE A	<b>←</b> →		E(sendonly) ( <b>recvonly</b> )
CASE B	← → ←		sendonly) ( <b>recvonly</b> )
	Apply post test re	_	
TSS ServedUser/WithoutUPDATE	<b>TP</b> CH_U02_011	HOLD reference 4.5.2.1	Selection expression PICS 4.1/1 AND NOT PICS 4.2/2
Test purpose: Session hold. UPDATE method is not used recvonly. Ensure that the IUT to hold all media stream sdp body with a session level direction attril Precondition: • A session was established betwee procedures • All media streams were previously	ns of the communication bute line indicating 'a=i n the served user and	on session, sends a ReIN nactive'.	IVITE request containing an
All media streams were previously     Individual media streams Comments:	set to recvonly		
User Equipment	SUT Establish a confirme		uipment
CASE A	<b>←</b> →		E(sendonly) ( <b>recvonly</b> )
CASE B	← → ←		sendonly) ( <b>recvonly</b> )
User invokes the HOLD service	→ ← →	200 OK ACK	FE( <b>inactive</b> ) (inactive)
	Apply post test re	outine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_012	4.5.2.1	PICS 4.1/1
			AND NOT PICS 4.2/2

#### 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 an 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	SUT	Test Equipment
	Establish a confirmed session	
User invokes the HOLD service	<b>→</b>	ReINVITE( <b>sendonly</b> )
	+	200 OK (recvonly)
	<b>→</b>	ACK
User resumes the session	<b>→</b>	ReINVITE( <b>sendrecv</b> or absent)
	+	200 OK (sendrecv or absent)
	→	ACK
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_013	4.5.2.1	PICS 4.1/1
			AND NOT PICS 4.2/2
Test purpose:			
Session resume. UPDATE method is no	ot used. All media streams	are affected. The media	a streams were previously set
to inactive.			

Ensure that the IUT to resume all media streams of the communication session, sends a ReINVITE request containing an 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	SUT Establish a confirmed session	Test Equipment
CASE A	<b>←</b> →	UPDATE( <b>sendonly</b> ) 200 OK (recvonly)
CASE B	← → ←	INVITE( <b>sendonly</b> ) 200 OK (recvonly) ACK
User invokes the HOLD service	→ ← →	ReINVITE( <b>inactive</b> ) 200 OK (inactive) ACK
User resumes the media session	→ ← →	ReINVITE( <b>recvonly</b> ) 200 OK (sendonly) ACK
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_014	4.5.2.1	PICS 4.1/1
			AND NOT PICS 4.2/2
Test purpose:			
Session hold. UPDATE method is notuse	d. All media streams are	affected. The media stre	eams were previously set to
recvonly.			
Ensure that the IUT to hold an individual r		-	ds an ReINVITE request
containing an SDP body with an attribute	line indicating 'a=inactive	e'.	
Precondition:			
<ul> <li>A session was established between the set of the set</li></ul>	een the served user and	a remote user according	to the 'basic Call'
procedures			
<ul> <li>The media stream was previousl</li> </ul>	y set to 'sendonly'		
<ul> <li>Individual media streams</li> </ul>			
Comments:			
User Equipment	SUT		uipment
	Establish a confirme	d session	
User invokes the HOLD service	<b>→</b>	ReINVITE( <b>sendonly</b> )	
	+	200 OK	(recvonly)
	<b>→</b>	ACK	
CASE A	+	UPDAT	E(inactive)
	<b>→</b>		(inactive)
CASE B	+	INVITE(	inactive)
	<b>→</b>		(inactive)
	+	ACK	(
User resumes the media session	<b>→</b>	ReINVI	TE(sendonly)
	+		
	<b>→</b>	ACK	
	Apply post test ro	outine	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_015	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/1
			AND NOT PICS 4.2/2
Test purpose:			
Session hold. UPDATE method is used sendrecv.	l. All media streams are aff	fected. The media strear	n was previously set to
Ensure that the IUT to hold all media sta with an attribute line indicating 'a= send		, sends an UPDATE req	uest containing an SDP body
Precondition:			
<ul> <li>An early dialogue was establis procedures</li> </ul>	hed between the served us	ser and a remote user a	ccording to the 'basic Call'
<ul> <li>The media stream was previou</li> </ul>	usly set to 'sendrecv'		
<ul> <li>Individual media streams</li> </ul>			
Comments:			
User Equipment	SUT	Test Ec	Juipment
	Establish an early o	dialogue	
User invokes the HOLD service	<b>→</b>	UPDAT	E(sendonly)
	-		
	←	200 OK	(recvonly)

TSS	TP	HOLD reference	Selection expression
ServedUser/WithUPDATE	CH_U02_016	4.5.2.1	PICS 4.1/1
			AND PICS 4.2/1
			AND NOT PICS 4.2/2
Test purpose:	•		
Session hold. UPDATE method is used sendrecv.	All media streams are aff	ected. The media strean	ns were previously set to
	request of all individual n	nodia streams from the r	amote party of an early
Ensure that the IUT responds to the hold	request of all multidual fi	neula su cams nom une i	enote party of an early
Ensure that the IUT responds to the hold dialogue, sends a 200 OK UPDATE resp <b>Precondition:</b>			

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

Comments: User Equipment	SUT Establish an early dialogue	Test Equipment	
	<del>(</del>	UPDATE(sendonly) 200 OK ( <b>recvonly</b> )	
	Apply post test routine		

### 5.3 Network TPs for HOLD

TSS	TP	HOLD re	eference	Selection expression
Network	CH_N01_0	01 4.5.2.1		PICS 4.3/1
Test purpose:				
Session hold in the early dialogue. The m	edia streams were	previously set to	o sendrecv.	
Ensure that the SUT transfers the HOLD	request in an early o	dialogue. The 2	00 OK respon	se contains an SDP body
with an attribute line indicating 'a=recvonl	y'.	-		
Precondition:				
<ul> <li>An early dialogue was established</li> </ul>	ed between the serv	ed user and a r	emote user ad	ccording to the 'basic Call'
procedures				
<ul> <li>The media stream was previous</li> </ul>	y set to 'sendrecv'			
<ul> <li>The originating party sets the se</li> </ul>	ssion on HOLD			
Comments:				
Test Equipment (Gm)	SUT	•	Test Equi	pment (Gm)
	Establish an ea	arly dialogue		
UPDATE( <b>sendonly</b> )	<b>→</b>	<b>→</b>	UPDATE(	3,
200 OK (recvonly)	+	+	200 OK ( <b>r</b>	ecvonly)
	Apply post te	est routine		

TSS	TP	HOLD refe	erence Selection expression
Network	CH_N01_00	2 4.5.2.1	PICS 4.3/1
Test purpose:			
Session retrieval in the early dialogue. The	he media streams wer	e previously set i	to sendrecv.
Ensure that the SUT transfers the HOLD	request in an early dia	alogue. The 200	OK response contains an SDP body
with an attribute line indicating 'a=sendre	ecv'.		
Precondition:			
<ul> <li>An early dialogue was establish</li> </ul>	ed between the served	d user and a rem	note user according to the 'basic Call'
procedures			
<ul> <li>The media stream was previous</li> </ul>	sly set to 'sendonly'		
<ul> <li>The originating party retrieves the second se</li></ul>	he session		
Comments:			
Test Equipment (Gm)	SUT		Test Equipment (Gm)
	Establish an ear	y dialogue	
UPDATE(sendonly)	→	<b>→</b>	UPDATE(sendonly)
200 OK (recvonly)	+	+	200 OK ( <b>recvonly</b> )
UPDATE( <b>sendrecv</b> )	→	<b>→</b>	UPDATE(sendrecv)
200 OK (sendrecv)	÷	+	200 OK (sendrecv)
	Apply post tes	t routine	· ·

TSS	TP	HOLD reference		Selection expression	
Network	CH_N01_(			PICS 4.3/1	
Test purpose:				·	
Session set on HOLD in the early dialog	que. Retrieval in the c	onfirmed dialog	ue.		
Ensure that the SUT transfers the HOL				e conformed dialogue. The	
200 OK response contains an SDP bod				5	
Precondition:		Ŭ			
An early dialogue was establis	hed between the serv	ed user and a r	emote user ac	cording to the 'basic Call'	
procedures					
The media stream was previou	isly set to 'sendonly' ii	h the early dialo	ane		
<ul> <li>The terminating user confirms</li> </ul>		The carry alaio	guo		
<ul> <li>The originating party retrieves</li> </ul>					
Comments:					
Test Equipment (Gm)	SUT	-	Test Fauir	oment (Gm)	
	Establish an ea		root Equi		
UPDATE( <b>sendonly</b> )	→	→	UPDATE(s	endonly)	
200 OK (recvonly)	÷	÷	200 OK (re		
	•	•	200 010 (10	(cvoliny)	
200 OK (recvonly)	←	←	200 OK (re	ecvonly)	
ACK	÷	÷	ACK	(evenily)	
	-	2	Non		
CASE A					
INVITE(sendrecv)	<b>→</b>		CASE a		
200 OK (sendrecv)	+	→	INVITE(se	ndrecy)	
ACK	÷	÷	200 OK (s		
	•	÷	ACK		
		-	, lon		
			CASE b		
		→	UPDATE(s	endrecy)	
		+	200 OK (s		
			(		
CASE B					
UPDATE(sendrecv)	<b>→</b>		CASE a		
200 OK (sendrecv)	+	→	UPDATE(s	endrecv)	
		+	200 OK (s		
				,	
			CASE b		
		→	INVITE(se	ndrecv)	
		÷	200 OK (s		
		<b>→</b>	ACK	,	
	Apply post te	est routine			

TSS	ТР	HOLD re	ference	Selection expression
Network	CH_N01_004	4.5.2.1		
Test purpose:				
Session hold in a confirmed dialogue. T				
Ensure that the SUT transfers the HOL				logue. The 200 OK
response containing an SDP body with	an attribute line indicating	'a=recvonly	'.	
Precondition:				
<ul> <li>A confirmed dialogue was esta</li> </ul>	blished between the serv	ed user and	a remote user a	according to the 'basic
Call' procedures				
<ul> <li>The media stream was previou</li> </ul>	usly set to 'sendrecv'			
<ul> <li>The originating party sets the s</li> </ul>	session on HOLD			
Comments:				
Test Equipment (Gm)	SUT		Test Equ	ipment (Gm)
	Establish a confirme	d dialogue		
CASE A				
INVITE( <b>sendonly</b> )	<b>→</b>		CASE a	
200 OK (recvonly)	←	→	INVITE(s	
ACK	+	+		recvonly)
		<b>→</b>	ACK	
			CASE b	
		→	UPDATE	(sendonly)
		+	200 OK (	recvonly)
CASE B				
UPDATE( <b>sendonly</b> )	<b>→</b>		CASE a	
200 OK (recvonly)	+	→	UPDATE	(sendonly)
		←	200 OK (	recvonly)
			CASE b	
		→	INVITE(s	endonly)
		+		recvonly)
		<b>→</b>	ACK	- /
	Apply post test r	outine		

TSS	TP	HOLD re	eference	Selection expression
Network	CH_N01_0	05 4.5.2.1		
Test purpose:				
Session hold in a confirmed dialogue. T				
Ensure that the SUT transfers the HOLE				lialogue. The 200 OK
response containing an SDP body with a	an attribute line indicat	ting 'a=recvonly	/'.	
Precondition:				
<ul> <li>A confirmed dialogue was esta</li> </ul>	blished between the s	erved user and	l a remote user	according to the 'basic
Call' procedures				
<ul> <li>The media stream was previou</li> </ul>	sly set to 'sendrecv'			
• The terminating party sets the	session on HOLD			
Comments:				
Test Equipment (Gm)	SUT		Test Ec	luipment (Gm)
	Establish a confir	med dialogue		
CASE A				
CASE a		+		(sendonly)
INVITE(sendonly)	+	<b>→</b>		(recvonly)
200 OK ( <b>recvonly</b> )	<b>→</b>	←	ACK	
ACK	+			
CASE b				
UPDATE(sendonly)	+			
200 OK ( <b>recvonly</b> )	<b>→</b>			
CASE B				
CASE a		+	UPDAT	E(sendonly)
UPDATE(sendonly)	+	<b>→</b>	200 OK	(recvonly)
200 OK ( <b>recvonly</b> )	<b>→</b>			
CASE b				
INVITE(sendonly)	←			
200 OK (recvonly)	<b>→</b>			
ACK	+			
	Apply post te	st routine		

TSS	TP HOLD reference		ference	Selection expression
Network	CH_N01	_006 4.5.2.1		-
Test purpose:	<u>.</u>			· · · · · · · · · · · · · · · · · · ·
Retrieve the session in a confirmed dial				
Ensure that the SUT is able support the				
originating party. The originating party s	ends an INVITE or	UPDATE request.	The 'a' attribute	e in the SDP is set to
'sendrecv' or this attribute is absent.				
Precondition:				
<ul> <li>A confirmed dialogue was esta Call' procedures</li> </ul>	blished between th	e served user and	a remote user a	according to the 'basic
<ul> <li>The media stream was previou</li> </ul>	isly set to 'sendonly	' HOLD requested	l by the originati	ng party
The originating party retrieves	the held session			
Comments:				
Test Equipment (Gm)	-	UT	Test E	quipment (Gm)
		nfirmed dialogue		
	ession on HOLD b	y the originating	party	
CASEA	_			
INVITE(sendrecv)	<b>→</b>	•	CASE	
200 OK (sendrecv)	<del>4</del>	$\rightarrow$		(sendrecv)
ACK	•	<b>←</b> →	200 Or ACK	K (sendrecv)
		7	ACK	
			CASE	k.
		<b>→</b>		D FE(sendrecv)
		÷		(sendrecv)
		-	200 01	
CASE B				
UPDATE(sendrecv)	→		CASE	а
200 OK (sendrecv)	+	<b>→</b>	UPDAT	FE(sendrecv)
. ,		←		(sendrecv)
				·
			CASE	-
		<b>→</b>		(sendrecv)
		<b>+</b>		K (sendrecv)
		<b>→</b>	ACK	
	Apply posi	test routine		

TSS	TP	HOLD refe	rence Selection expression
Network	CH_N01	_007	-
Test purpose:			
Retrieve the session in a confirmed dial			
Ensure that the SUT is able support the			
terminating party. The terminating party	sends an INVITE of	or UPDATE request.	The 'a' attribute in the SDP is set to
'sendrecv' or this attribute is absent.			
Precondition:			
<ul> <li>A confirmed dialogue was esta Call' procedures</li> </ul>	blished between th	e served user and a	remote user according to the 'basic
<ul> <li>The media stream was previou</li> </ul>		' HOLD requested b	y the terminating party
<ul> <li>The terminating party retrieves</li> </ul>	the held session		
Comments:			
Test Equipment (Gm)	-	UT	Test Equipment (Gm)
		nfirmed dialogue	
CASE A Se	ssion on HOLD by	/ the terminating pa	arty
CASE A CASE a		←	INVITE(sendrecv)
INVITE(sendrecv)	←	$\rightarrow$	200 OK (sendrecv)
200 OK (sendrecv)	× →	÷	ACK
ACK	÷	•	Nort
CASE b			
UPDATE(sendrecv)	+		
200 OK ( <b>sendrecv</b> )	<b>→</b>		
CASE B CASE a		L	
UPDATE(sendrecv)	+	← →	UPDATE( <b>sendrecv</b> ) 200 OK (sendrecv)
200 OK (sendrecv)	→	7	200 OK (Sendredv)
	-		
CASE b			
INVITE(sendrecv)	+		
200 OK (sendrecv)	<b>→</b>		
ACK	←		
	Apply post	test routine	

TSS	TP	HOLD refe	erence	Selection expression
Network	CH_N01_	008 4.5.2.1		•
Test purpose:				
Session hold in a confirmed dialogue. The				
Ensure that the SUT transfers the hold re-			onfirmed dialo	gue. The 200 OK
response containing an SDP body with ar	n attribute line indica	ating 'a= inactive.		
Precondition:				
<ul> <li>A confirmed dialogue was established</li> </ul>	ished between the	served user and a	remote user a	according to the 'basic
Call' procedures				
<ul> <li>The media stream was previousl</li> </ul>	• •	OLD requested by	y the terminati	ng party
<ul> <li>The originating party sets the set</li> </ul>	ssion on HOLD			
Comments:		_	_	
Test Equipment (Gm)	SUT		Test	Equipment (Gm)
2	Establish a confi			
	sion on HOLD by t	he terminating pa	arty	
	->			
INVITE( <b>inactive</b> )	→ ←	-	CASE	
200 OK (inactive) ACK	<del>~</del>	$\rightarrow$		E(inactive) DK (inactive)
ACK	T	← →	ACK	JK (Inactive)
		7	AUN	
			CAS	= b
		→		ATE(inactive)
		÷		DK (inactive)
				· · · · · /
CASE B				
UPDATE(inactive)	<b>→</b>		CASI	
200 OK (inactive)	←	→		ATE(inactive)
		÷	200 0	OK (inactive)
		``	CASI	- •
		→ ~		E(inactive)
		<b>←</b> →	200 C	OK (inactive)
	Apply post to	-	ACK	

TSS	TP	HOLD refe	rence Selection expressi	ion
Network	CH_N0 <sup>-</sup>	1_009 4.5.2.1		
Test purpose:			· · · · · · · · · · · · · · · · · · ·	
Session hold in a confirmed dialogue. T				
The session in a confirmed dialogue is s				
terminating party. The 200 OK response	e containing an SD	P body with an attrib	ute line indicating 'a=inactive'.	
Precondition:				
<ul> <li>A confirmed dialogue was esta Call' procedures</li> </ul>	blished between th	e served user and a	remote user according to the 'basic	
<ul> <li>The media stream was previou</li> </ul>	sly set to 'recvonly	' HOLD requested by	the originating party	
<ul> <li>The terminating party sets the</li> </ul>	session on HOLD			
Comments:				
Test Equipment (Gm)	-	UT	Test Equipment (Gm)	
-		nfirmed dialogue		
	ession on HOLD b	y the originating pa	irty	
CASE A CASE a		L	INI\/ITE(incotive)	
INVITE(inactive)	+	← →	INVITE( <b>inactive</b> ) 200 OK (inactive)	
200 OK ( <b>inactive</b> )	$\rightarrow$	→ ←	ACK	
ACK	÷	<b>`</b>	AOR	
	•			
CASE b				
UPDATE(inactive)	+			
200 OK (inactive)	→			
CASE B				
CASE B CASE a		L	LIDDATE (in postivo)	
UPDATE(inactive)	+	← →	UPDATE( <b>inactive</b> ) 200 OK (inactive)	
200 OK (inactive)	→ →	7	200 OK (mactive)	
	-			
CASE b				
INVITE(inactive)	+			
200 OK (inactive)	<b>→</b>			
ACK	+			
	Apply pos	t test routine		

TSS	TP	HOLD refer	ence Selection expression
Network	CH_N0 <sup>2</sup>	1_010 4.5.2.1	
Test purpose:		·	· · · · · · · · · · · · · · · · · · ·
Retrieve the session in a confirmed dialo			
Ensure that the SUT transfers the RETR			n a confirmed dialogue. The 200 OK
response containing an SDP body with a	an attribute line ind	icating 'a=sendonly'.	-
Precondition:			
	ablished between t	he served user and a	remote user according to the 'basic
Call' procedures			
The media stream was previous			
The media stream was previou			
The terminating party retrieves	the held session		
Comments:	-		
Test Equipment (Gm)	-	UT	Test Equipment (Gm)
<b>T</b> L		nfirmed dialogue	
		ets the session on H	
	erminating party s	ets the session on <b>I</b>	IOLD
CASE A CASE a			
INVITE(recvonly)	←	<ul> <li>←</li> <li>→</li> </ul>	INVITE( <b>recvonly</b> ) 200 OK (sendonly)
200 OK (sendonly)	← →	→ ←	ACK
ACK	<del>,</del>	T	ACK
ACK	<b>C</b>		
CASE b			
UPDATE(recvonly)	+		
200 OK (sendonly)	→		
CASEB			
CASE a		÷	UPDATE(recvonly)
UPDATE(recvonly)	← →	<b>→</b>	200 OK (sendonly)
200 OK ( <b>sendonly</b> )	7		
CASE b			
INVITE(recvonly)	÷		
200 OK (sendonly)	÷		
ACK	÷		
-		t test routine	

		32		ETSI TS 186 007-2 V4.1.1 (2015-1	
TSS Network	TP CH_N01	HOLD refe	erence	Selection expression	
Test purpose:	0				
Retrieve the session in a confirmed dial	oque. The media s	treams were previou	Islv set to ina	active.	
Ensure that the SUT transfers the RETR response containing an SDP body with a	RIVE request from t	he originating party	in a confirme		
Precondition:					
An confirmed dialogue was est Call' procedures     The procedures			a remote us	er according to the 'basic	
The media stream was previou	• •				
The media stream was previou					
The originating party retrieves	the held session				
Comments: Test Equipment (Gm)	-	UT	Т	est Equipment (Gm)	
	originating party s	nfirmed dialogue ets the session on ets the session on			
CASE A	similaring party s		HOLD		
INVITE(sendonly)	<b>→</b>		С	ASE a	
200 OK (recvonly)	+	→	IN	IVITE(sendonly)	
ACK	<b>←</b>	<ul><li>←</li><li>→</li></ul>		00 OK (recvonlý) CK	
		_	-	ASE b	
		→ ←		PDATE(sendonly) 00 OK (recvonly)	
CASE B	_				
UPDATE(sendonly)	→ ∠	د.	-	ASE a	
200 OK (recyonly)	4	<b>→</b>	11	PDATE(sendonly)	

CASE B			
UPDATE(sendonly)	<b>→</b>		CASE a
200 OK (recvonly)	+	<b>→</b>	UPDATE(sendonly)
···· (··· · ))		÷	200 OK (recvonly)
			CASE b
		<b>→</b>	INVITE(sendonly)
		+	200 OK (recvonly)
		<b>→</b>	ACK
	Apply pos	t test routine	

TSS	TP	HOLD refere	ence Selection expression
Network	CH_N0 <sup>2</sup>	1_012 4.5.2.1	
Test purpose:			
Retrieve the session in a confirmed dialo	ogue. The media s	treams were previous	ly set to inactive.
Ensure that the SUT transfers the RETR	RIVE request from t	he terminating party in	n a confirmed dialogue. The 200 OK
response containing an SDP body with a	an attribute line ind	icating 'a=recvonly'.	
Precondition:			
<ul> <li>An confirmed dialogue was established</li> </ul>	ablished between t	he served user and a	remote user according to the 'basic
Call' procedures			
<ul> <li>The media stream was previou</li> </ul>	sly set to 'sendonly	/'	
The media stream was previou	sly set to 'inactive'		
• The terminating party retrieves	the held session		
Comments:			
Test Equipment (Gm)	-	UT	Test Equipment (Gm)
		nfirmed dialogue	
		ets the session on H	
	originating party s	ets the session on H	OLD
CASE A			
CASE a		←	INVITE( <b>sendonly</b> )
INVITE(sendonly)	+	→	200 OK (recvonly)
200 OK (recvonly)	<b>→</b>	←	ACK
ACK	+		
	+		
UPDATE(sendonly) 200 OK ( <b>recvonly</b> )	<b>∼</b> →		
200 OK (recvolity)	7		
CASE B			
CASE a		←	UPDATE(sendonly)
UPDATE(sendonly)	←	→	200 OK (recvonly)
200 OK (recvonly)	÷	2	200 01((1000011))
	-		
CASE b			
INVITE(sendonly)	+		
200 OK (recvonly)	→		
ACK	+		
	Apply post	t test routine	

33

**ETSI** 

TSS	TP	HOLD refere	nce Selection expression
Network	CH_N01_	013 4.5.2.1	
Test purpose:			
Retrieve the session in a confirmed dia			
Ensure that the SUT transfers the RET	RIVE request from the	originating party in a	a confirmed dialogue. The 200 OK
response containing an SDP body with	an attribute line indica	ating 'a=recvonly'.	
Precondition:			
	stablished between the	served user and a r	emote user according to the 'basic
Call' procedures			
<ul> <li>The media stream was previo</li> </ul>	usly set to 'sendonly'		
<ul> <li>The media stream was previo</li> </ul>			
<ul> <li>The originating party retrieves</li> </ul>	the held session		
Comments:			
Test Equipment (Gm)	SU		Test Equipment (Gm)
	Establish a conf		
The	terminating party set	s the session on H	OLD
	originating party set	s the session on H	OLD
CASEA			0.07
INVITE(recvonly)	<b>→</b>		CASE a
200 OK (sendonly)	<b>+</b>	<b>→</b>	INVITE(recvonly)
ACK	+	<b>←</b> →	200 OK (sendonly)
		7	ACK
			CASE b
		<b>→</b>	UPDATE(recvonly)
		÷	200 OK (sendonly)
		×	200 Ort (Schooliny)
CASE B			
UPDATE(recvonly)	<b>→</b>		CASE a
200 OK (sendonly)	÷	→	UPDATE(recvonly)
		+	200 OK (sendonly)
			CASE b
		→	INVITE(recvonly)
		+	200 OK (sendonly)
		<b>→</b>	ACK
	Apply post t	est routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_014	4.5.2.4	PICS 4.3/3
Test purpose:		·	
The network provides an announceme	nt to the originating user wl	hen set the session on H	IOLD.
Ensure that the SUT provides an annot	uncement to the originating	user when setting the s	ession on HOLD.
Precondition:			
<ul> <li>A confirmed dialogue was esta Call' procedures</li> </ul>		ed user and a remote use	er according to the 'basic
<ul> <li>The media stream is set on He</li> </ul>	OLD		
<ul> <li>The SUT provides an annound</li> </ul>	cement		
Comments:			
Test Equipment (Gm)	SUT	Test	t Equipment (Gm)
	Establish a confirmed	d dialogue	
CASE A			
INVITE( <b>sendonly</b> )	<b>→</b>		
200 OK (recvonly)	+		
ACK	+		
	Announceme	nt	
CASE B			
UPDATE(sendonly)	<b>→</b>		
200 OK (recvonly)	+		
	Announceme	nt	
	Apply post test r	outine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_015	4.5.2.4	PICS 4.3/3
Fest purpose:	·	·	
The network provides an announcement to the			
Ensure that the SUT provides an announceme	ent to the terminating	user when setting the	e session on HOLD.
Precondition:			
<ul> <li>A confirmed dialogue was established Call' procedures</li> </ul>	d between the serve	d user and a remote u	user according to the 'basic
<ul> <li>The media stream is set on HOLD</li> </ul>			
<ul> <li>The SUT provides an announcement</li> </ul>			
Comments:			
Test Equipment (Gm)	SUT Test Equipment (Gm)		t Equipment (Gm)
Est	tablish a confirmed	-	
		• • • •	
			ITE(sendonly)
		→ 200 ← ACł	OK (recvonly)
		► AU	X .
	Announcement		
		CAS	SE B
			DATE( <b>sendonly</b> )
		→ 200	OK (recvonly)
	Announce Apply post test ro		

Network	CH_N01_016	4.5.2.4	PICS 4.3/4
TSS	TP	HOLD reference	Selection expression

**Test purpose:**  *The SUT lower the bandwidth by setting the b=AS to a small value.* Ensure that the SUT shall for each media stream when the originating user sets the session on HOLD marked "recvonly" lower the bandwidth by setting the "b=AS:" parameter to a small value, e.g. "b=AS:0". The "b=RR:" and "b=RS:" parameters shall be set to values large enough to enable continuation of the RTCP flow, e.g. "b=RR:800" and "b=RS:800".

#### SIP header values

200 OK (recvonly)

b=AS:<> b=RR:<>

### b=RS:<>

Comments:			
Test Equipment (Gm)	-	SUT onfirmed dialogue	Test Equipment (Gm)
CASE A			
INVITE(sendonly)	→		CASE a
200 OK (recvonly)	+	→	INVITE(sendonly)
ACK	+	← →	200 OK (recvonly)
		7	ACK
			CASE b
		→	UPDATE(sendonly)
		+	200 OK (recvonly)
CASE B			
UPDATE(sendonly)	→		CASE a
200 OK (recvonly)	+	<b>→</b>	UPDATE(sendonly)
		+	200 OK (recvonly)
			CASE b
		<b>→</b>	INVITE(sendonly)
		÷	200 OK (recvonly)
		÷	ACK
	Apply pos	st test routine	-

TSS	TP	HOLD ref	
Network	CH_N01	_017	PICS 4.3/4
Test purpose:			
The SUT lower the bandwidth by setting			
Ensure that the SUT shall for each medi			
"recvonly" lower the bandwidth by settin			
"b=RS:" parameters shall be set to value	es large enough to	enable continuatior	n of the RTCP flow, e.g. "b=RR:800" ar
"b=RS:800".			
SIP header values			
200 OK (recvonly)			
b=AS:<>			
b=RR:<>			
b=RS:<>			
Comments:	0	т	Test Faultament (Cm)
Test Equipment (Gm)		firmed dialogue	Test Equipment (Gm)
CASE A	ESTUDIEN A COL	inimed dialogue	
CASE A CASE a		+	INVITE( <b>sendonly</b> )
INVITE(sendonly)	÷	→	200 OK (recvonly)
200 OK (recvonly)	÷	<i>+</i>	ACK
ACK	÷	<b>`</b>	Aon
	•		
CASE b			
UPDATE(sendonly)	+		
200 OK (recvonly)	<b>→</b>		
· · · · · · · · · · · · · · · · · · ·			
CASE B			
CASE a		+	UPDATE( <b>sendonly</b> )
UPDATE(sendonly)	← →	<b>→</b>	200 OK (recvonly)
200 OK ( <b>recvonly</b> )	<b>→</b>		
INVITE(sendonly)	← →		
200 OK ( <b>recvonly</b> ) ACK	7		
AUN	T Annly need	test routine	

TSS	TP	HOLD refere	ence Selection expression
Network	CH_N01	_018	
Test purpose:			
The SUT lower the bandwidth by settin			
Ensure that the SUT shall for each me			
"inactive" lower the bandwidth by settir			
"b=RS:" parameters shall be set to value	ues large enough to e	nable 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)	SU	-	Test Equipment (Gm)
	Establish a con		
S	ession on HOLD by	the terminating part	ty
CASE A			
INVITE(inactive)	→		CASE a
200 OK (inactive)	÷	→	INVITE(inactive)
ACK	+	+	200 OK (inactive)
		→	ACK
			CASE b
		→	UPDATE(inactive)
		+	200 OK (inactive)
	-		
UPDATE(inactive)	<b>&gt;</b>	-	
200 OK (inactive)	+	→ ←	UPDATE(inactive)
		•	200 OK (inactive)
			CASE b
		<b>→</b>	
			INVITE(inactive) 200 OK (inactive)
		<b>←</b>	ACK
	Apply post	-	AUN

TSS	TP	HOLD reference	e Selection expression
Network	CH_N01_0	19 4.5.2.1	-
Test purpose:	·		
The SUT lower the bandwidth by setting			
Ensure that the SUT shall for each medi			
"inactive" lower the bandwidth by setting			
"b=RS:" parameters shall be set to value	es large enough to ena	able continuation of the	e 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		Test Equipment (Gm)
	Establish a confir		
	ssion on HOLD by tl	ne originating party	
CASE A			
CASE a		+	INVITE( <b>inactive</b> )
INVITE(inactive)	+	→	200 OK (inactive)
200 OK (inactive)	<b>→</b>	+	ACK
ACK	÷		
CASE b			
	+		
UPDATE(inactive)	← →		
200 OK (inactive)	7		
CASE B			
CASE a		←	UPDATE(inactive)
UPDATE(inactive)	←	÷	200 OK (inactive)
200 OK (inactive)	÷	-	
	-		
CASE b			
INVITE(inactive)	+		
200 OK (inactive)	<b>→</b>		
ACK	+		
	Apply post te	st routine	

## History

Document history			
V4.1.1	October 2015	Publication	