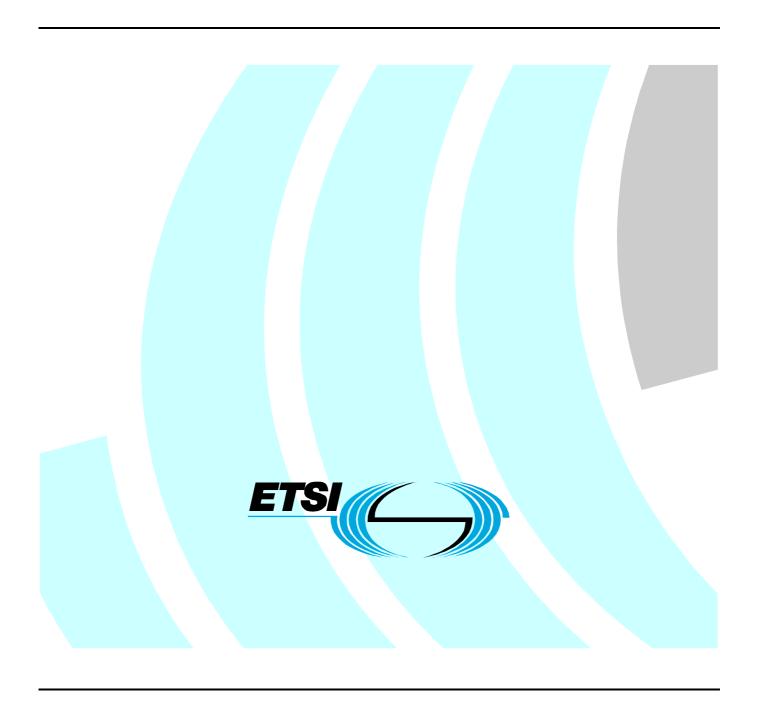
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Technical Specification

Telecommunications and Internet Converged Services and Protocols for Advanced Networking (TISPAN);
Communication HOLD (CH);
Part 2: Test Suite Structure and Test Purposes (TSS&TP)



Reference DTS/TISPAN-06021-2-NGN

Keywords
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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

The present document is part 2 of a multi-part deliverable covering Communication Hold (CH) as identified below:

Part 1: "PICS";

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

The present version updates the references to the basic call specifications.

NOTE: Some new parts will be developed in the future.

1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP of the Communication Hold service, based on stage one and two of the ISDN HOLD supplementary services.

A further part of the present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma based on the present document.

Within the TISPAN NGN Release 1 Next Generation Network (NGN) the stage 3 description is specified using the IP Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP).

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

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

[1]	ETSI TS 181 002: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Multimedia Telephony with PSTN/ISDN simulation services".
[2]	ETSI ES 283 003: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IP Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP) Stage 3 [3GPP TS 24.229 (Release 7), modified]".
[3]	IETF RFC 3515: "The Session Initiation Protocol (SIP) Refer Method".
[4]	ETSI TS 183 010: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); NGN Signalling Control Protocol; Communication HOLD (HOLD); PSTN/ISDN simulation services".
[5]	ETSI ES 283 027: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Endorsement of the SIP-ISUP Interworking between the IP Multimedia (IM) Core Network (CN) subsystem and Circuit Switched (CS) networks [3GPP TS 29.163 (Release 7), modified]".
[6]	ITU-T Recommendation E.164: "The international public telecommunication numbering plan".
[7]	IETF RFC 2806: "URLs for Telephone Calls".
[8]	IETF RFC 2396: "Uniform Resource Identifiers (URI): Generic Syntax".
[9]	ITU-T Recommendation Q.9: "Vocabulary of switching and signalling terms".
[10]	ETSI TS 183 010: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); NGN Signalling Control Protocol; Communication HOLD (HOLD); PSTN/ISDN simulation services".
[11]	ETSI EN 300 092-1: "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service; Digital Subscriber Signalling System No. one (DSS1)

protocol; Part 1: Protocol specification".

[12]	ETSI TS 186 006-1: "Telecommunications and Internet Converged Services and Protocols for Advanced Networking (TISPAN); Originating Identification Presentation (OIP) and Originating Identification Restriction (OIR); Part 1: PICS".
[13]	ETSI TS 186 007-1: "Telecommunications and Internet Converged Services and Protocols for Advanced Networking (TISPAN); Communication HOLD (CH); Part 1: PICS".
[14]	IETF RFC 3261: "SIP: Session Initiation Protocol".
[15]	ETSI EN 300 356 (series): "Integrated Services Digital Network (ISDN); Signalling System No.7 (SS7); ISDN User Part (ISUP) version 4 for the international interface".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

address identity: See Recommendation E.164 [6] or/and RFC 2806 [7].

call: See ITU-T Recommendation Q.9 [9], definition 2201.

call state: state as defined in clause 2.1 of the present document, for either the user side or network side as appropriate

NOTE: A call state may exist for each call reference value (and at the network side for each additional responding CEI in the incoming call states).

communication: Refer to TS 181 002 [1].

identity information: includes all the information (RFC 2806 [7]/RFC 2396 [8]/E.164 [6]) identifying a user, including trusted (network generated) and/or untrusted (user generated) addresses

supplementary service: a service that modifies or supplements a basic Telecommunication service

trusted identity: network generated user address information

untrusted identity: user generated user address information

voice session: existing voice connection between two terminal equipments

EXAMPLE: Via RTP.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CN Core Network
CS Circuit Switched

HOLD Communication session Hold

IM IP Multimedia IP Internet Protocol

ISDN Integrated Service Data Network NGN Next Generation Network

PSTN Public Switch Telephone Network

SIP Session Initiation Protocol

TP Test Purpose
TSS Test Suite Structure
UE User Equipment

4 Test Suite Structure (TSS)

ServedUser			
	WithoutAnnounc	WithUPDATE	CH_U01_xxx
		WithoutUPDATE	CH_U02_xxx
	WithAnnounc	WithUPDATE	CH_U03_xxx
		WithoutUPDATE	CH_U04_xxx
	RingingState		CH_U05_xxx
RemoteUser			
	WithUPDATE		CH_U06_xxx
	WithoutUPDATE		CH_U07_xxx

Figure 1: Test suite structure

5 Test Purposes (TP)

5.1 Introduction

For each test requirement a TP is defined.

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 1).

Table 1: TP identifier naming convention scheme

Identifier: <	Identifier: <ss>_<iut><group>_<nnn></nnn></group></iut></ss>					
<ss></ss>	=	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)			

5.1.2 Test strategy

As the base standard TS 183 010 [10] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification TS 186 007-1 [13].

5.2 User TPs for HOLD

All PICS items referred to in this clause are as specified in TS 186 007-1 [13] unless indicated otherwise by another numbered reference.

5.2.1 Served user

5.2.1.1 Communication without announcements

5.2.1.1.1 Communication Hold with support for UPDATE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithUPDATE	CH_U01_001	4.5.2.1	PICS 1/2 AND
			NOT PICS 1/3

Test purpose:

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

Ensure that the IUT requesting the hold session stops sending media and sends an UPDATE to hold the session. Hold is done containing the SDP with the attribute 'a=' sendonly. The IUT after requesting the hold session *receives* 200 OK final response containing the SDP with the attribute 'a=' recvonly.

Precondition:

- A session was established between user A and user B according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- Individual media streams

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
UPDATE(sendonly)	→	→ UPDATE(sendonly)
200 OK UPDATE (recvonly)	←	← 200 OK UPDATE (recvonly)
BYE	→	→ BYE
200 OK BYE	(€ 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithUPDATE	CH_U01_002	4.5.2.1	PICS 1/2 AND
			NOT PICS 1/3

Test purpose:

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

Ensure that the IUT requesting the hold session stops sending media and sends an UPDATE to hold the session. Hold is done containing the SDP with the attribute 'a=' inactive. The IUT after requesting the hold session *receives* 200 OK final response containing the SDP with the attribute 'a=' inactive.

- A session was established between user A and user B according to the 'basic Call' procedures
- The media stream was previously set to 'recvonly'
- Individual media streams

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
UPDATE(sendonly)	←	← UPDATE(sendonly)
200 OK UPDATE (recvonly)	→	→ 200 OK UPDATE (recvonly)
UPDATE(inactive)	→	→ UPDATE(inactive)
200 OK UPDATE (inactive)	←	← 200 OK UPDATE (inactive)
BYE	→	→ BYE
200 OK BYE	←	€ 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithUPDATE	CH_U01_003	4.5.2.1	PICS 1/2 AND
			NOT PICS 1/3

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

Ensure that the IUT is requesting to **resume the session** with user B the UE-A starts sending media and sends an UPDATE to resume the session with the attribute 'a=' **sendrecv** in the SDP. The IUT after requesting the hold session *receives* 200 OK final response and optionally the attribute 'a=' **sendrecv** in the SDP. The a=sendrecv attribute is the default value therefore the attribute can be omitted

Precondition:

- · A session was established between user A and user B according to the 'basic Call' procedures
- The media stream was previously set to 'sendonly'
- Individual media streams

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
UPDATE(sendonly)	→	→ UPDATE(sendonly)
200 OK UPDATE (recvonly)	←	← 200 OK UPDATE (recvonly)
UPDATE(sendrecv)	→	→ UPDATE(sendrecv)
200 OK UPDATE (sendrecv)	←	← 200 OK UPDATE (sendrecv)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithUPDATE	CH_U01_004	4.5.2.1	PICS 1/2 AND
			NOT PICS 1/3

Test purpose:

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

Ensure that the IUT is requesting to resume the session with user B the UE-A starts sending media and sends an UPDATE to resume the session with the attribute 'a=' **recvonly** in the SDP. The IUT after requesting the hold session *receives* 200 OK final response and optionally the attribute 'a=' **sendonly** in the SDP.

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

Individual media streams			
Comments:			
UA C		SUT	SIP
INVITE (sendrecv)	→	→	INVITE
180 Ringing	←	←	180 Ringing
200 OK INVITE	←	←	200 OK INVITE
UPDATE(sendonly)	←	←	UPDATE(sendonly)
200 OK UPDATE (recvonly)	→	→	200 OK UPDATE (recvonly)
UPDATE(inactive)	→	→	UPDATE(inactive)
200 OK UPDATE (inactive)	←	←	200 OK UPDATE (inactive)
UPDATE(recvonly)	→	→	UPDATE(recvonly)
200 OK UPDATE (sendonly)	←	←	200 OK UPDATE (sendonly)
BYE	→	→	BYE
200 OK BYE	←	←	200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithUPDATE	CH_U01_005	4.5.2.1	PICS 1/2 AND
			NOT PICS 1/3

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

Ensure that the IUT requesting the hold session stops sending media and sends an UPDATE to hold the session. Hold is done containing the SDP with the attribute 'a=' sendonly. The IUT after requesting the hold session *receives* 200 OK final response containing the SDP with the attribute 'a=' recvonly.

Precondition:

- A session was established between user A and user B according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- Media streams in the SDP

Comments:			
UA C		SUT	SIP
INVITE (sendrecv)	→	→	INVITE
180 Ringing	←	←	180 Ringing
200 OK INVITE	←	←	200 OK INVITE
UPDATE(sendonly)	→	→	UPDATE(sendonly)
200 OK UPDATE (recvonly)	←	←	200 OK UPDATE (recvonly)
BYE	→	→	BYE
200 OK BYE	←	←	200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithUPDATE	CH_U01_006	4.5.2.1	PICS 1/2 AND
			NOT PICS 1/3

Test purpose:

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

Ensure that the IUT requesting the hold session stops sending media and sends an UPDATE to hold the session. Hold is done containing the SDP with the attribute 'a=' inactive. The IUT after requesting the hold session *receives* 200 OK final response containing the SDP with the attribute 'a=' inactive.

- A session was established between user A and user B according to the 'basic Call' procedures
- · The media stream was previously set to 'recvonly'
- Media streams in the SDP

Wiedla Streams in the SDI				
Comments:				
UA C		SUT		SIP
INVITE (sendrecv)	→		→	INVITE
180 Ringing	←		←	180 Ringing
200 OK ĬNŬITE	←		←	200 OK ĬNŬITE
UPDATE(sendonly)	←		←	UPDATE(sendonly)
200 OK UPDATE (recvonly)	→		→	200 OK UPDATE (recvonly)
UPDATE(inactive)	→		→	UPDATE(inactive)
200 OK UPDATE (inactive)	←		←	200 OK UPDATE (inactive)
				, ,
BYE	→		→	BYE
200 OK BYE	←		←	200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithUPDATE	CH_U01_007	4.5.2.1	PICS 1/2 AND
			NOT PICS 1/3

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

Ensure that the IUT is requesting to resume the session with user B the UE-A starts sending media and sends an UPDATE to resume the session with the attribute 'a=' sendrecv in the SDP. The IUT after requesting the hold session receives 200 OK final response and optionally the attribute 'a=' sendrecv in the SDP. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

- · A session was established between user A and user B according to the 'basic Call' procedures
- The media stream was previously set to 'sendonly'
- Media streams in the SDP

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK ĬNŬITE
UPDATE(sendonly)	→	→ UPDATE(sendonly)
200 OK UPDATE (recvonly)	←	← 200 OK UPDATE (recvonly)
UPDATE(sendrecv)	→	→ UPDATE(sendrecv)
200 OK UPDATE (sendrecv)	←	← 200 OK UPDATE (sendrecv)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithUPDATE	CH_U01_008	4.5.2.1	PICS 1/2 AND
			NOT PICS 1/3

Test purpose:

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

Ensure that the IUT is requesting to resume the session with user B the UE-A starts sending media and sends an UPDATE to resume the session with the attribute 'a=' recvonly in the SDP. The IUT after requesting the hold session receives 200 OK final response and optionally the attribute 'a=' sendonly in the SDP.

- A session was established between user A and user B according to the 'basic Call' procedures
- The media stream was previously set to 'inactive'
- Media streams in the SDP

Iviedia streams in the SDP			
Comments:			
UA C	S	SUT	SIP
INVITE (sendrecv)	→	→	INVITE
180 Ringing	((180 Ringing
200 OK ĬNŬITE	←	←	200 OK INVITE
UPDATE(sendonly)	←	←	UPDATE(sendonly)
200 OK UPDATE (recvonly)	→	→	200 OK UPDATE (recvonly)
UPDATE(inactive)	→	→	UPDATE(inactive)
200 OK UPDATE (inactive)	←	←	200 OK UPDATE (inactive)
UPDATE(recvonly)	→	→	UPDATE(recvonly)
200 OK UPDATE (sendonly)	←	←	200 OK UPDATE (sendonly)
BYE	→	→	BYE
200 OK BYE	(←	200 OK BYE

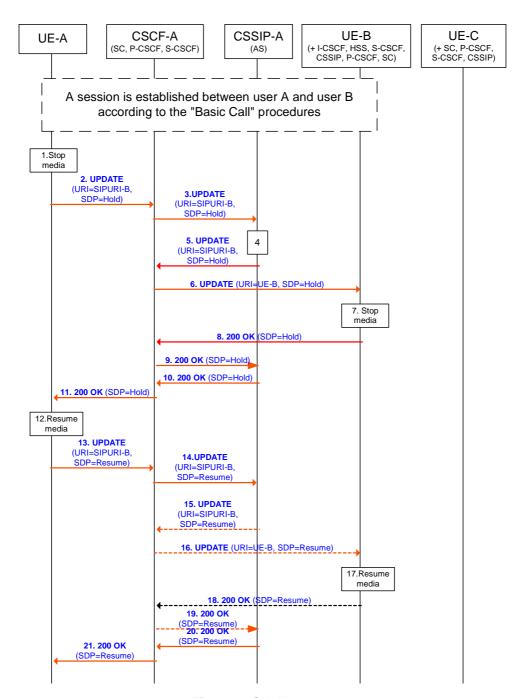


Figure 2: CH_U01_008

5.2.1.1.2 Communication Hold without support for UPDATE

TSS		TP		HOLD reference	Selection expression
ServedUser/WithoutAnnounc/Without	JPDATE	CH_U02_001			
Test purpose:					
UPDAT method is not supported, the	reINVITE is use	ed			
Ensure that in the case that UPDATE	is not supporte	d in one of the	endp	oints, and therefore	does not have UPDATE in
the allow header in the initial INVITE,	Communication	n Hold should b	e do	ne using a Re-INVIT	E.
The UPDATE is not contained in Allov	v header in the	200 OK INVIT	E		
Comments:					
UA C		SUT		SIP	
INVITE (sendrecv)	→		→	INVITE	
180 Ringing	←		←	180 Ringing	
200 OK INVITE	←		←	200 OK INVITE	
	_		_		
INVITE(sendonly)	→		→	INVITE(sendonly)	
200 OK INVITE (recvonly)	←		←	200 OK INVITE(re	ecvonly)
DVE				DVE	
BYE	→		7	BYE	
200 OK BYE	←		←	200 OK BYE	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithoutUPDATE	CH_U02_002	4.5.2.1	NOT PICS 1/2 AND
			NOT PICS 1/3

Test purpose:

Session hold. INVITE method is used. Individual media streams are affected. The media stream was previously set to

Ensure that the IUT requesting the hold session stops sending media and sends an INVITE to hold the session. Hold is done containing the SDP with the attribute 'a=' sendonly. The IUT after requesting the hold session receives 200 OK final response containing the SDP with the attribute 'a=' recvonly.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendrecv'

Individual media streams

Comments:			
UA C		SUT	SIP
INVITE (sendrecv)	→	→	INVITE
180 Ringing	←	←	180 Ringing
200 OK INVITE	←	←	200 OK INVITE
INVITE(sendonly)	→	→	INVITE(sendonly)
200 OK INVITE (recvonly)	←	(` • · · · · · · · · · · · · · · · · · ·
BYE	→	→	BYE
200 OK BYE	-	←	_ · _

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithoutUPDATE	CH_U02_003	4.5.2.1	NOT PICS 1/2 AND
			NOT PICS 1/3

Session hold. INVITE method is used. Individual media streams are affected. The media stream was previously set to recvonly.

Ensure that the IUT requesting the hold session stops sending media and sends an INVITE to hold the session. Hold is done containing the SDP with the attribute 'a=' inactive. The IUT after requesting the hold session *receives* 200 OK final response containing the SDP with the attribute 'a=' inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'recvonly'

Individual media streams

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE (sendonly)	←	← INVITE(sendonly)
200 OK INVITE (recvonly)	→	→ 200 OK INVITE(recvonly)
INVITE (inactive)	→	→ INVITE(inactive)
200 OK INVITE (inactive)	←	← 200 OK INVITE(inactive)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithoutUPDATE	CH_U02_004	-	NOT PICS 1/2 AND NOT PICS 1/3

Test purpose:

Session hold. INVITE method is used. Individual media streams are affected. The media stream was previously set to sendonly.

Ensure that the IUT is requesting to resume the session with user B the UE-A starts sending media and sends an INVITE to resume the session with the attribute 'a=' sendrecv in the SDP. The IUT after requesting the hold session receives 200 OK final response and optionally the attribute 'a=' sendrecv in the SDP. The a=sendrecv attribute is the default value therefore the attribute can be omitted

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendonly'

Individual media streams

marriada modia otroamo		
Comments:		
UA C	(SUT SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INIVITE (condens)	→	→ INVITE(sendonly)
INVITE (sendonly)	7	
200 OK INVITE (recvonly)	(← 200 OK INVITE(recvonly)
INVITE (sendrecv)	→	→ INVITE (sendrecv)
200 OK INVITE (sendrecv)	-	€ 200 OK INVITE (sendrecv)
(======================================	_	(contailout)
BYE	→	→ BYE
200 OK BYE	(← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithoutUPDATE	CH_U02_005	4.5.2.1	NOT PICS 1/2 AND
			NOT PICS 1/3

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

Ensure that the IUT is requesting to resume the session with user B the UE-A starts sending media and sends an INVITE to resume the session with the attribute 'a=' recvonly in the SDP. The IUT after requesting the hold session receives 200 OK final response and optionally the attribute 'a=' sendonly in the SDP.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'inactive'

Individual media streams

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE(sendonly)	←	← INVITE(sendonly)
200 OK INVITE (recvonly)	→	→ 200 OK INVITE(recvonly)
ACK	←	← ACK
INVITE(inactive)	→	→ INVITE(inactive)
200 OK INVITE (inactive)	(← 200 OK INVITE(inactive)
INVITE (recvonly)	→	→ INVITE (recvonly)
200 OK INVITE (sendonly)	←	← 200 OK INVITE (sendonly)
BYE	→	→ BYE
200 OK BYE	←	★ 200 OK BYE

ServedUser/WithoutAnnounc/WithoutUPDATE CH U02 006 4.5.2.1 NOT PICS 1/2 ANI	rss — — — — — — — — — — — — — — — — — —	OLD referenc	TSS	HOLD reference Selection expression	1
	ServedUser/WithoutAnnounc/WithoutUPDATE	5.2.1	ServedUser/WithoutAnnounc/WithoutUPDATE	4.5.2.1 NOT PICS 1/2 AND	
NOT PICS 1/3				NOT PICS 1/3	

Test purpose:

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

Ensure that the IUT requesting the hold session stops sending media and sends an INVITE to hold the session. Hold is done containing the SDP with the attribute 'a=' sendonly. The IUT after requesting the hold session *receives* 200 OK final response containing the SDP with the attribute 'a=' recvonly.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendrecv'

iviedia streams in the SDF		
Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE(sendonly)	→	→ INVITE(sendonly)
200 OK INVITE (recvonly)	(← 200 OK INVITE(recvonly)
BYE 200 OK BYE	→ ←	→ BYE ← 200 OK BYE
I .		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithoutUPDATE	CH_U02_007	4.5.2.1	NOT PICS 1/2 AND
			NOT PICS 1/3

Session hold. INVITE method is used. All the media streams are affected. The media stream was previously set to recvonly.

Ensure that the IUT requesting the hold session stops sending media and sends an INVITE to hold the session. Hold is done containing the SDP with the attribute 'a=' inactive. The IUT after requesting the hold session *receives* 200 OK final response containing the SDP with the attribute 'a=' inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'recvonly'

Media streams in the SDP

Media Streams in the ODI		
Comments:		
UA C	SU	JT SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE (sendonly)	←	← INVITE(sendonly)
200 OK INVITE (recvonly)	→	→ 200 OK INVITE(recvonly)
INVITE(inactive)	→	→ INVITE(inactive)
200 OK INVITE (inactive)	(← 200 OK INVITE (inactive)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithoutUPDATE	CH_U02_008	-	NOT PICS 1/2 AND NOT PICS 1/3

Test purpose:

Session hold. INVITE method is used. All the media streams are affected. The media stream was previously set to sendonly.

Ensure that the IUT is requesting to resume the session with user B the UE-A starts sending media and sends an INVITE to resume the session with the attribute 'a=' sendrecv in the SDP. The IUT after requesting the hold session receives 200 OK final response and optionally the attribute 'a=' sendrecv in the SDP. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendonly'

Wicdia Streams in the ODI			
Comments:			
UA C		SUT	SIP
INVITE (sendrecv)	→	→	INVITE
180 Ringing	←	←	180 Ringing
200 OK ĬNŬITE	←	←	200 OK INVITE
INVITE (sendonly)	→	→	INVITE(sendonly)
200 OK INVITE (recvonly)	←	←	200 OK INVITE(recvonly)
INVITE (sendrecv)	→	→	INVITE (sendrecv)
200 OK INVITE (sendrecv)	←	←	200 OK INVITE (sendrecv)
BYE	→	→	BYE
200 OK BYE	←	←	200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutAnnounc/WithoutUPDATE	CH_U02_009	4.5.2.1	NOT PICS 1/2 AND
			NOT PICS 1/3

Session hold. INVITE method is used. All the media streams are affected. The media stream was previously set to inactive.

Ensure that the IUT is requesting to resume the session with user B the UE-A starts sending media and sends an INVITE to resume the session with the attribute 'a=' recvonly in the SDP. The IUT after requesting the hold session receives 200 OK final response and optionally the attribute 'a=' sendonly in the SDP.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures. The media stream was previously set to 'inactive'

wiedia streams in the SDP				
Comments:				
UA C		SUT		SIP
INVITE (sendrecv)	→		→	INVITE
180 Ringing	←		←	180 Ringing
200 OK INVITE	←		←	200 OK INVITE
INVITE(sendonly)	←		←	INVITE(sendonly)
200 OK INVITE (recvonly)	→		→	200 OK INVITE(recvonly)
INVITE(inactive)	→		→	INVITE(inactive)
200 OK INVITE (inactive)	←		←	200 OK INVITE (inactive)
BYE	→		→	BYE
200 OK BYE	←		←	200 OK BYE

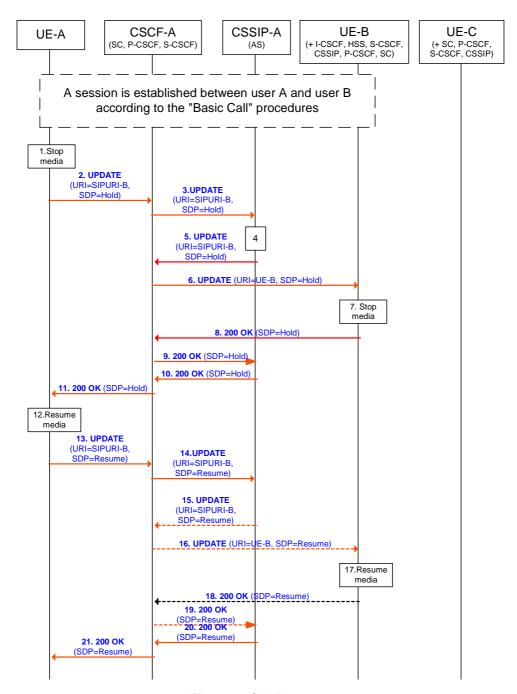


Figure 3: CH_U02_009

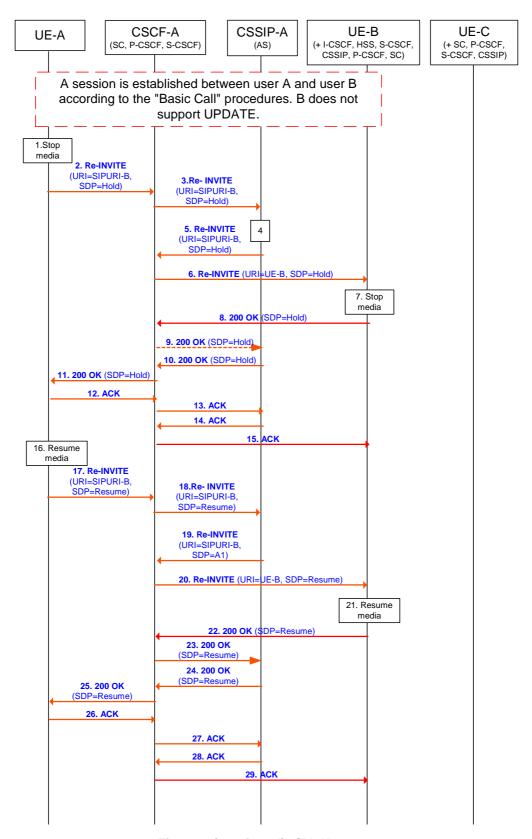


Figure 3 (continued): CH_U02_009

5.2.1.2 Communication with announcements

5.2.1.2.1 Communication Hold with support for UPDATE

TSS		TP		HOLD reference	Selection expression
ServedUser/WithAnnounc/WithUP	DATE	CH_U03_00)1	4.5.2.1	PICS 1/2 AND PICS 1/3
Test purpose:					
The emote user is put on hold, an	announcement sta	arts to the he	ld user.	The UPDATE meth	od is used. Individual
media streams are affected.					
Ensure that when the remote user	is set on HOLD, a	an announcer	nent is	started to the remote	UE. An UPDATE is sent
to the remote user B with SDP a=s	sendonly.				
Precondition:					
A session was established bety	ween user A and	l user B acc	ording	to the 'basic Call'	procedures
Individual media streams					
Comments:					
UA C		SUT		SIP	
INVITE (sendrecv)	→		→	INVITE	
180 Ringing	←		←	180 Ringing	
200 OK INVITE	←		←	200 OK INVITE	

UPDATE(sendonly) 200 OK UPDATE (recvonly)	→	→	UPDATE(sendonly) 200 OK UPDATE (recvonly)
, , , , ,	Announce	ment to UE B	` - /
BYE	→	→	BYE
200 OK BYE	←	←	200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithUPDATE	CH_U03_002	4.5.2.1	PICS 1/2 AND
			PICS 1/3

Test purpose:

The announcement is stopped after the held user puts the media stream on hold. The UPDATE method is used. Individual media streams are affected.

Ensure that no announcement is started to any user if the media stream was previously put on hold by user A is subsequently put on hold by user B. An UPDATE is sent to User A with a SDP a=inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Individual media streams

individual intedia streams			
Comments:			
UA C	SU	JT	SIP
INVITE (sendrecv)	→	→	INVITE
180 Ringing	←	(180 Ringing
200 OK INVITE	←	←	200 OK INVITE
UPDATE(sendonly)	→	→	UPDATE(sendonly)
200 OK UPDATE (recvonly)	←	←	200 OK UPDATE (recvonly)
	Announcen	nent to UE B	77
UPDATE(inactive)	←	←	UPDATE(inactive)
200 OK UPDATE (inactive)	→	→	200 OK UPDATE (inactive)
	Media srear	n is stopped	,
BYE	→	→	BYE
200 OK BYE	←	←	200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithUPDATE	CH_U03_003	4.5.2.1	PICS 1/2 AND
			PICS 1/3

The announcement is stopped after retrieve. Individual media streams are affected.

Ensure that the announcement started to user B is stopped when the user B is retrieved by user A. An UPDATE is sent with SDP a=sendrecv. The normal conversation shall apply between user A and user B. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Individual media streams

Comments:			
UA C	S	SUT	SIP
INVITE (sendrecv)	→	→	INVITE
180 Ringing	←	←	180 Ringing
200 OK INVITE	←	←	200 OK INVITE
UPDATE(sendonly)	→	→	UPDATE(sendonly)
200 OK UPDATE (recvonly)	←	←	200 OK UPDATE (recvonly)
, , , , ,	Announce	ment to UE B	` •
UPDATE(sendrecv)	→	→	UPDATE(sendrecv)
200 OK UPDATE (sendrecv)	←	+	200 OK UPDATE (sendrecv)
	Conv	ersation	
BYE	→	→	BYE
200 OK BYE	←	←	200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithUPDATE	CH_U03_004	4.5.2.1	PICS 1/2 AND
			PICS 1/3

Test purpose:

Announcement is started to user B when user B retrieves the connection. Individual media streams are affected. Ensure that when user B retrieves the connection and is still held by the user A (was previously set on hold by user A), an UPDATE with SDP a=recvonly is sent to user A, the announcement is started to user B

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Individual media streams

Individual media streams		G	·
Comments:			
UA C	SU ⁻	Т	SIP
INVITE (sendrecv)	→	→	INVITE
180 Ringing	←	←	180 Ringing
200 OK INVITE	←	+	200 OK INVITE
UPDATE(sendonly)	→	→	UPDATE(sendonly)
200 OK UPDATE (recvonly)	←	←	200 OK UPDATE (recvonly)
	Announceme	ent to UE B	
UPDATE(inactive)	(←	UPDATE(inactive)
200 OK UPDATE (inactive)	→	→	200 OK UPDATE (inactive)
	Media sream	is stopped	
UPDATE(recvonly)	(←	UPDATE(recvonly)
200 OK UPDATE (sendonly)	→	→	200 OK UPDATE (sendonly)
	Announceme	ent to UE B	
BYE	→	→	BYE
200 OK BYE	←	←	200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithUPDATE	CH_U03_005	4.5.2.1	PICS 1/2 AND
			PICS 1/3

The emote user is put on hold, an announcement starts to the held user. The UPDATE method is used. All the media streams are affected.

Ensure that when the remote user is set on HOLD, an announcement is started to the remote UE. An UPDATE is sent to the remote user with SDP a=sendonly.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Media streams in the SDP

Comments:			
UA C	SUT		SIP
INVITE (sendrecv)	→	→	INVITE
180 Ringing	←	←	180 Ringing
200 OK INVITE	←	←	200 OK INVITE
	Conversation		
UPDATE(sendonly)	→	→	UPDATE(sendonly)
200 OK UPDATE (recvonly)	←	←	200 OK UPDATE (recvonly)
, , , ,	Announcement to	UE B	
BYE	→	→	BYE
200 OK BYE	÷	÷	200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithUPDATE	CH_U03_006	4.5.2.1	PICS 1/2 AND
			PICS 1/3

Test purpose:

The announcement is stopped after the held user puts the media stream on hold. The UPDATE method is used. All the media streams are affected.

Ensure that no announcement is started to any user if the media stream was prevviously put on hold by user A is subsequently put on hold by user B. An UPDATE is sent to User A with a SDP a=inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Media streams in the SDP

Media streams in the SDP		
Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
UPDATE(sendonly)	→	→ UPDATE(sendonly)
200 OK UPDATE (recvonly)	←	 200 OK UPDATE (recvonly)
		Announcement to UE B
UPDATE(inactive)	←	UPDATE(inactive)
200 OK UPDATE (inactive)	→	→ 200 OK UPDATE (inactive)
,		Media sream is stopped
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithUPDATE	CH_U03_007	4.5.2.1	PICS 1/2 AND
			PICS 1/3

Announcement is stopped after retrieve. All the media streams are affected.

Ensure that the announcement started to user B is stopped when the user B is retrieved by user A. An UPDATE is sent with SDP a=sendrecv. The normal conversation shall apply between user A and user B. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Media streams in the SDP

iviedia streams in the SDI		
Comments:		
UA C	SI	JT SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	(← 180 Ringing
200 OK ÎNVITE	←	← 200 OK INVITE
UPDATE(sendonly)	→	→ UPDATE(sendonly)
200 OK UPDATE (recvonly)	(← 200 OK UPDATE (recvonly)
` '	Annou	incement to UE B
UPDATE(sendrecv)	→	→ UPDATE(sendrecv)
200 OK UPDATE (sendrecv)	←	← 200 OK UPDATE (sendrecv)
,	Conve	ersation
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithUPDATE	CH_U03_008	4.5.2.1	PICS 1/2 AND
			PICS 1/3

Test purpose:

Announcement is started to user B when user B retrieves the connection. All the media streams are affected. Ensure that when user B retrieves the connection and is still held by the user A (was previously set on hold by user A), an UPDATE with SDP a=recvonly is sent to user A, the announcement is started to user B

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures

Madia atra area in the CDD	sei A and user b acc	ording to the basic call procedures	
Media streams in the SDP			
Comments:			
UA C	S	JT SIP	
INVITE (sendrecv)	→	→ INVITE	
180 Ringing	←	 180 Ringing 	
200 OK ÎNVITE	←	← 200 OK ÎNVÎTE	
UPDATE(sendonly)	→	→ UPDATE(sendonly)	
200 OK UPDATE (recvonly)	←	← 200 OK UPDATE (recvonly)	
UPDATE(inactive)	←	← UPDATE(inactive)	
200 OK UPDATE (inactive)	→	→ 200 OK UPDATE (inactive)	
UPDATE(recvonly)	←	← UPDATE(recvonly)	
200 OK UPDATE (sendonly)	→	→ 200 OK UPDATE (sendonly)	
, , ,	Annou	ncement to UE B	
BYE	→	→ BYE	
200 OK BYE	←	← 200 OK BYE	

5.2.1.2.2 Communication Hold without support for UPDATE

TSS		TP	HOLD reference	Selection expression		
ServedUser/WithAnnounc/WithoutUF	PDATE	CH_U04_001	4.5.2.1	NOT PICS 1/2 AND PICS 1/3		
Test purpose:						
The emote user is put on hold, an an streams are affected.	nouncement st	arts to the held use	r. The INVITE method	is used. Individual media		
Ensure that when the remote user is the remote user with SDP a=sendonl	,	an announcement is	started to the remote	UE. An INVITE is sent to		
Precondition:						
A session was established between undividual media streams	A session was established between user A and user B according to the 'basic Call' procedures Individual media streams					
Comments:						
UA C		SUT	SIP			
INVITE (sendrecv)	→	→	INVITE			
180 Ringing	←	-	180 Ringing			
200 OK INVITE	+	+	200 OK INVITE			
INVITE(sendonly)	→	→	()			
200 OK INVITE (recvonly) Announcement to UE B						

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithoutUPDATE	CH_U04_002	4.5.2.1	NOT PICS 1/2 AND
			PICS 1/3

BYE

200 OK BYE

Test purpose:

200 OK BYE

BYE

The announcement is stopped after the held user puts the media stream on hold. The INVITE method is used. Individual media streams are affected.

Ensure that no announcement is started to any user if the media stream was previously put on hold by user A is subsequently put on hold by user B. An INVITE is sent to User A with a SDP a=inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Individual media streams

Individual media streams		
Comments:		
UA C	SI	UT SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE(sendonly)	→	→ INVITE (sendonly)
200 OK INVITE (recvonly)	(200 OK INVITE(recvonly)
	Annou	uncement to UE B
INVITE (inactive)	←	← INVITE (inactive)
200 OK INVITE (inactive)	→	→ 200 OK INVITE (inactive)
, ,	Media	sream is stopped
BYE	→	→ BYE
200 OK BYE	<	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithoutUPDATE	CH_U04_003	4.5.2.1	NOT PICS 1/2 AND
			PICS 1/3

Announcement is stopped after retrieve. The INVITE method is used. Individual media streams are affected. Ensure that the announcement started to user B is stopped when the user B is retrieved by user A. An INVITE is sent with SDP a=sendrecv. The normal conversation shall apply between user A and user B. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Individual media streams

marviduai media streams				
Comments:				
UA C	SU	JT SIP		
INVITE (sendrecv)	→	→ INVITE		
180 Ringing	←	← 180 Ringing		
200 OK INVITE	←	← 200 OK ĬNŬITE		
INVITE(sendonly)	→	→ INVITE(sendonly)		
200 OK INVITE (recvonly)	←	← 200 OK INVITE (recvonly)		
` ,	Announcement to UE B			
INVITE (sendrecv)	→	→ INVITE (sendrecv)		
200 OK INVITE (sendrecv)	←	← 200 OK INVITE (sendrecv)		
	Conve	rsation		
BYE	→	→ BYE		
200 OK BYE	←	← 200 OK BYE		

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithoutUPDATE	CH_U04_004	4.5.2.1	NOT PICS 1/2 AND
			PICS 1/3

Test purpose:

Announcement is started to user B when user B retrieves the connection. The INVITE method is used. Individual media streams are affected.

Ensure that when user B retrieves the connection and is still held by the user A (was previously set on hold by user A), an INVITE with SDP a=recvonly is sent to user A, the announcement is started to user B

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Individual media streams

Individual media streams		
Comments:		
UA C	SU	T SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	-	€ 200 OK INVITE
200 OK IIVITE	•	200 01(11(11))
INVITE(sendonly)	→	→ INVITE(sendonly)
	É	
200 OK INVITE (recvonly)	~	← 200 OK INVITE(recvonly)
INVITE (inactive)	←	← INVITE(inactive)
	÷	→ 200 OK INVITE(inactive)
200 OK INVITE (inactive)	7	200 OK INVITE(IIIactive)
INVITE (recvonly)	←	← INVITE (recvonly)
200 OK INVITE (sendonly)	÷	→ 200 OK INVITE (sendonly)
200 OK INVITE (Sendonly)	=	` • • • • • • • • • • • • • • • • • • •
	Annou	ncement to UE B
BYE	→	→ BYE
	=	- · -
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithoutUPDATE	CH_U04_005	4.5.2.1	NOT PICS 1/2 AND
			PICS 1/3

The emote user is put on hold, an announcement starts to the held user. The INVITE method is used. All the media streams are affected.

Ensure that when the remote user is set on HOLD, an announcement is started to the remote UE. An INVITE is sent to the remote user with SDP a=sendonly.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Media streams in the SDP

Media streams in the SDP		
Comments:		
UA C	S	SUT SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE(sendonly)	→	→ INVITE (sendonly)
200 OK INVITE (recvonly)	←	← 200 OK INVITE (recvonly)
	Annou	uncement to UE B
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithoutUPDATE	CH_U04_006	4.5.2.1	NOT PICS 1/2 AND
			PICS 1/3

Test purpose:

The announcement is stopped after the held user puts the media stream on hold. The INVITE method is used. All the media streams are affected.

Ensure that no announcement is started to any user if the media stream was previously put on hold by user A is subsequently put on hold by user B. An INVITE is sent to User A with a SDP a=inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Media streams in the SDP

Media streams in the SDP				
Comments:				
UA C	S	UT	SIP	
INVITE (sendrecv)	→	→	INVITE	
180 Ringing	(←	180 Ringing	
200 OK INVITE	←	←	200 OK INVITE	
INVITE(sendonly)	→	→	INVITE (sendonly)	
200 OK INVITE (recvonly)	(←	200 OK INVITE(recvonly)	
	Annou	incement to U	JE B	
INVITE (inactive)	←	←	INVITE (inactive)	
200 OK INVITE (inactive)	→	→	200 OK INVITE (inactive)	
, ,	Media sream	is stopped	,	
BYE	→	→	BYE	
200 OK BYE	←	←	200 OK BYE	

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithoutUPDATE	CH_U04_007	4.5.2.1	NOT PICS 1/2 AND
			PICS 1/3

Announcement is stopped after retrieve. The INVITE method is used. All the media streams are affected. Ensure that the announcement started to user B is stopped when the user B is retrieved by user A. An INVITE is sent with SDP a=sendrecv. The normal conversation shall apply between user A and user B. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Media streams in the SDP

iviedia streams in the ODI		
Comments:		
UA C	SU	JT SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK ĬNVITE
INVITE(sendonly)	→	→ INVITE(sendonly)
200 OK INVITE (recvonly)	←	← 200 OK INVITE (recvonly)
, , , , , ,	Annour	ncement to UE B
INVITE (sendrecv)	→	→ INVITE (sendrecv)
200 OK INVITE (sendrecv)	←	← 200 OK INVITE (sendrecv)
	Conve	rsation
BYE	→	→ BYE
200 OK BYE	(← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
ServedUser/WithAnnounc/WithoutUPDATE	CH_U04_008	4.5.2.1	NOT PICS 1/2 AND
			PICS 1/3

Test purpose:

Announcement is started to user B when user B retrieves the connection. The INVIT method id used. All the media streams are affected.

Ensure that when user B retrieves the connection and is still held by the user A (was previously set on hold by user A), an INVITE with SDP a=recvonly is sent to user A, the announcement is started to user B

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures Media streams in the SDP

Media streams in the SDP		
Comments:		
UA C	Sl	T SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE(sendonly)	→	→ INVITE(sendonly)
200 OK INVITE (recvonly)	←	← 200 OK INVITE(recvonly)
INVITE (inactive)	←	← INVITE(inactive)
200 OK INVITE (inactive)	→	→ 200 OK INVITE(inactive)
INVITE (recvonly)	←	← INVITE (recvonly)
200 OK INVITE (sendonly)	→	→ 200 OK INVITE (sendonly)
	Annou	ncement to UE B
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

5.2.1.3 The early dialogue is established

TSS	TP		HOLD reference	Selection expression
ServedUser/RingingState	CH	_U05_001a		PICS 1/1
Test purpose:				
The caller puts the media stream on ho	ld; the early dialog	gue is establish	ed.	
Ensure that the IUT requesting to hold	the session send	ls an UPDATE t	to hold the session. H	lold is done containing
the SDP with the attribute 'a=' sendonl			old session receives a	a 200 OK (UPDATE)
message containing the SDP with the a	ttribute 'a=' recon	ly.		•
Precondition:				
early dialogue was established between	n user A and user	B according to	the 'basic Call' proce	dures
Comments:				
UA C		SUT	SIP	
INVITE (sendrecv)	→	→	INVITE	
180 Ringing	<	←	180 Ringing	
UPDATE(sendonly)	→	→	UPDATE(sendonly	Λ
200 OK UPDATE (recvonly)	-	-	200 OK UPDATE	
LOO OR OF DATE (IECVOINS)	~	~	200 ON OFDATE	(160vorily)
BYE	→	→	BYE	

TSS	TP	HOLD reference	Selection expression
ServedUser/RingingState	CH_U05_002	4.5.2.1	PICS 1/1

200 OK BYE

Test purpose:

200 OK BYE

The caller retrieves the media stream; the early dialogue is established.

Ensure that the IUT is requesting to **resume the session** with user B the UE-A starts sending media and sends a UPDATE to resume the session with the supported codec in the SDP. The IUT after requesting the hold session receives a 200 OK (UPDATE) message containing the SDP with the supported codec. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

session was established between user A and user B according to the 'basic Call' procedures

Comments:			
UA C	SUT	SIP	
INVITE (sendrecv)	→	→ INVITE	
180 Ringing	←	← 180 Ringing	
UPDATE(sendonly)	→	→ UPDATE(sendonly	<i>'</i>)
200 OK UPDATE (recvonly)	←	← 200 OK UPDATE	recvonly)
UPDATE(sendrecv)	→	→ UPDATE(sendrect	/)
200 OK UPDATE (sendrecv)	←	← 200 OK UPDATE	(sendrecv)
BYE	→	→ BYE	
200 OK BYE	(← 200 OK BYE	

5.2.2 Remote User

5.2.2.1 Communication Hold with support for UPDATE

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_001	4.5.2.1	PICS 1/2

Test purpose:

Terminating UE is put on hold. UPDATE method is used. Individual media streams are affected. The media stream was previously set to sendrecv.

Ensure that when the IUT detects a request from the served user to hold the active session and receives UPDATE to hold the session with the attribute 'a=' sendonly. The IUT after requesting the hold session sends 200 OK final response containing the SDP with the attribute 'a=' recvonly.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendrecv'

Individual media streams

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_001	4.5.2.1	PICS 1/2
Comments:			
UA C	SUT	SIP	
INVITE (sendrecv) →	→	INVITE	
180 Ringing ←	←	180 Ringing	
200 OK ÎNVÎTE ←	+	200 OK INVITE (sei	ndrecv)
UPDATE(sendonly) →	→	UPDATE(sendonly)
200 OK UPDATE (recvonly) ←	+	200 OK UPDATE (r	ecvonly)
BYE →	→	BYE	
200 OK BYE ←	+	200 OK BYE	

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_002	4.5.2.1	PICS 1/2

Terminating UE is put on hold. UPDATE method is used. Individual media streams are affected. The media stream was previously set to sendonly.

Ensure that when the IUT detects a request from the served user to hold the active session and receives UPDATE to hold the session with the attribute 'a=' inactive. The IUT after requesting the hold session sends 200 OK final response containing the SDP with the attribute 'a=' inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendonly'

Individual media streams

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK ĬNŬITE
UPDATE(sendonly)	←	← UPDATE(sendonly)
200 OK UPDATE (recvonly)	→	→ 200 OK UPDATE (recvonly)
UPDATE(inactive)	→	→ UPDATE(inactive)
200 OK UPDATE (inactive)	←	← 200 OK UPDATE (inactive)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_003	4.5.2.1	PICS 1/2

Test purpose:

Terminating UE is put on hold. UPDATE method is used. Individual media streams are affected. The media stream was previously set to recvonly.

Ensure that when the IUT detects a request from the served user to hold the active session and receives UPDATE to hold the session with the attribute 'a=' sendrecv in the SDP. The IUT after requesting the hold session sends 200 OK final response and optionally the attribute 'a=' sendrecv in the SDP. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'recvonly'

Individual media streams

TSS		TP		HOLD reference	Selection expression
RemoteUser/ WithUPDATE		CH_U06_003		4.5.2.1	PICS 1/2
Comments:					
UA C		SUT		SIP	
INVITE (sendrecv)	→		→	INVITE	
180 Ringing	←		←	180 Ringing	
200 OK INVITE	+		←	200 OK INVITE	
UPDATE(sendonly)	→		→	UPDATE(sendonl	y)
200 OK UPDATE (recvonly)	←		←	200 OK UPDATE	(recvonly)
UPDATE(sendrecv)	→		→	UPDATE(sendred	ev)
200 OK UPDATE (sendrecv)	←		←	200 OK ÙPDATE	(sendrecv)
BYE	→		→	BYE	
200 OK BYE	←		←	200 OK BYE	

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_004	4.5.2.1	PICS 1/2

Terminating UE is put on hold. UPDATE method is used. Individual media streams are affected. The media stream was previously set to inactive.

Ensure that when the IUT detects a request from the served user to hold the active session and receives UPDATE to hold the session with the attribute 'a=' recvonly in the SDP. The IUT after requesting the hold session sends 200 OK final response and optionally the attribute 'a=' sendonly in the SDP.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'inactive'

Individual media streams

SUT		
301		SIP
→	→	INVITE
←	←	180 Ringing
←	←	200 OK ÎNVITE
←	←	UPDATE(sendonly)
→	→	200 OK UPDATE (recvonly)
→	→	UPDATE(inactive)
←	←	200 OK UPDATE (inactive)
→	→	UPDATE(recvonly)
←	←	200 OK UPDATE (sendonly)
→	→	BYE
←	←	200 OK BYE
	→ ← ← ← → ← → ← →	<pre></pre>

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_005	4.5.2.1	PICS 1/2

Test purpose:

Terminating UE is put on hold. UPDATE method is used. All the media streams are affected. The media stream was previously set to sendrecv

Ensure that when the IUT detects a request from the served user to hold the active session and receives UPDATE to hold the session with the attribute 'a=' sendonly. The IUT after requesting the hold session sends 200 OK final response containing the SDP with the attribute 'a=' recvonly.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendrecv'

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_005	4.5.2.1	PICS 1/2
Comments:			
UA C	SUT	SIP	
INVITE (sendrecv) →	→	INVITE	
180 Ringing ←	←	180 Ringing	
200 OK ÎNVÎTE ←	+	200 OK INVITE (sei	ndrecv)
UPDATE(sendonly) →	→	UPDATE(sendonly)
200 OK UPDATE (recvonly) ←	+	200 OK UPDATE (r	ecvonly)
BYE →	→	BYE	
200 OK BYE ←	+	200 OK BYE	

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_006	4.5.2.1	PICS 1/2

Terminating UE is put on hold. UPDATE method is used. All the media streams are affected. The media stream was previously set to sendonly.

Ensure that when the IUT detects a request from the served user to hold the active session and receives UPDATE to hold the session with the attribute 'a=' inactive. The IUT after requesting the hold session sends 200 OK final response containing the SDP with the attribute 'a=' inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendonly'

Media etreditio in the ebi		
Comments:		
UA C	SI	JT SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK ĬNŬITE
UPDATE(sendonly)	←	← UPDATE(sendonly)
200 OK UPDATE (recvonly)	→	→ 200 OK UPDATE (recvonly)
UPDATE(inactive)	→	→ UPDATE(inactive)
200 OK UPDATE (inactive)	←	← 200 OK UPDATE (inactive)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_007	4.5.2.1	PICS 1/2

Terminating UE is put on hold. UPDATE method is used. All the media streams are affected. The media stream was previously set to recvonly.

Ensure that when the IUT detects a request from the served user to hold the active session and receives UPDATE to hold the session with the attribute 'a=' sendrecv in the SDP. The IUT after requesting the hold session sends 200 OK final response and optionally the attribute 'a=' sendrecv in the SDP. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'recvonly'

Media streams in the SDP

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	(← 200 OK INVITE
UPDATE(sendonly)	→	→ UPDATE(sendonly)
200 OK UPDATE (recvonly)	(← 200 OK UPDATE (recvonly)
UPDATE(sendrecv)	→	→ UPDATE(sendrecv)
200 OK UPDATE (sendrecv)	←	← 200 OK UPDATE (sendrecv)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
RemoteUser/ WithUPDATE	CH_U06_008	4.5.2.1	PICS 1/2

Test purpose:

Terminating UE is put on hold. UPDATE method is used. All the media streams are affected. The media stream was previously set to inactive.

Ensure that when the IUT detects a request from the served user to hold the active session and receives UPDATE to hold the session with the attribute 'a=' recvonly in the SDP. The IUT after requesting the hold session sends 200 OK final response and optionally the attribute 'a=' sendonly in the SDP.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'inactive'

Media streams in the SDP		
Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	€ 200 OK INVITE
UPDATE(sendonly)	←	UPDATE(sendonly)
200 OK UPDATE (recvonly)	→	→ 200 OK UPDATE (recvonly)
200 Off Of Britz (100voilly)	-	2 200 OR OF BATE (100Volliy)
UPDATE(inactive)	→	→ UPDATE(inactive)
200 OK UPDATE (inactive)	-	€ 200 OK UPDATE (inactive)
200 OR OF DATE (macrive)	•	200 OR OF BATE (Mactive)
UPDATE(recvonly)	→	→ UPDATE(recvonly)
200 OK UPDATE (sendonly)	É	€ 200 OK UPDATE (sendonly)
200 OR OFDATE (Selidolly)		200 OR OFDATE (Sendonly)
BYE	→	→ BYE
200 OK BYE	-	€ 200 OK BYE
ZUU UN BIE	~	T ZUU UN DIE

5.2.2.2 Communication Hold without support for UPDATE

TSS	TP	HOLD reference	Selection expression
RemoteUser/WithoutUPDATE	CH_U07_001	4.5.2.1	NOT PICS 1/2

Test purpose:

Terminating UE is put on hold. INVITE method is used. Individual media streams are affected. The media stream was previously set to sendrecv.

Ensure that when the IUT detects a request from the served user to hold the active session and receives INVITE to hold the session with the attribute 'a=' sendonly. The IUT after requesting the hold session sends 200 OK final response containing the SDP with the attribute 'a=' recvonly.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendrecv'

Individual media streams

Comments:		
UA C	SU	JT SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE(sendrecv)
INVITE(sendonly)	→	→ INVITE(sendonly)
200 OK INVITE (recvonly)	←	← OK INVITE (recvonly)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
RemoteUser/WithoutUPDATE	CH_U07_002	4.5.2.1	NOT PICS 1/2

Test purpose:

Terminating UE is put on hold. INVITE method is used. Individual media streams are affected. The media stream was previously set tosendonly

Ensure that when the IUT detects a request from the served user to hold the active session and receives INVITE to hold the session with the attribute 'a=' inactive. The IUT after requesting the hold session sends 200 OK final response containing the SDP with the attribute 'a=' inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures. The media stream was previously set to 'sendonly'

Individual media streams

marriada modia on odino		
Comments:		
UA C	SU	T SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK ĬNŬITE
INVITE(sendonly)	←	← INVITE (sendonly)
200 OK INVITE (recvonly)	→	→ 200 OK INVITE(recvonly)
INVITE (inactive)	→	→ INVITE (inactive)
OK INVITE (inactive)	←	← 200 OK INVITE (inactive)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
RemoteUser/WithoutUPDATE	CH_U07_003	4.5.2.1	NOT PICS 1/2

Terminating UE is put on hold. INVITE method is used. Individual media streams are affected. The media stream was previously set torecvonly.

Ensure that when the IUT detects a request from the served user to hold the active session and receives INVITE to

Ensure that when the IUT detects a request from the served user to hold the active session and receives INVITE to hold the session with the attribute 'a=' sendrecv in the SDP. The IUT after requesting the hold session sends 200 OK final response and optionally the attribute 'a=' sendrecv in the SDP. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'recvonly'

Individual media streams

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE(sendonly)	→	→ INVITE(sendonly)
200 OK INVITE (recvonly)	←	← 200 OK UPDATE (recvonly)
INVITE (sendrecv)	→	→ INVITE (sendrecv)
200 OK INVITE (sendrecv)	←	← 200 OK INVITE (sendrecv)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
RemoteUser/WithoutUPDATE	CH_U07_004	4.5.2.1	NOT PICS 1/2

Test purpose:

Terminating UE is put on hold. INVITE method is used. Individual media streams are affected. The media stream was previously set to inactive.

Ensure that when the IUT detects a request from the served user to hold the active session and receives INVITE to hold the session with the attribute 'a=' recvonly in the SDP. The IUT after requesting the hold session sends 200 OK final response and optionally the attribute 'a=' sendonly in the SDP.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'inactive'

Individual media streams

individual media streams		
Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE(sendonly)	←	INVITE(sendonly)
200 OK INVITE (recvonly)	→	→ 200 OK INVITE(recvonly)
	_	
INVITE(inactive)	→	→ INVITE(inactive)
200 OK INVITE (inactive)	←	← 200 OK INVITE(inactive)
INVITE(recvonly)	→	→ INVITE(recvonly)
		
200 OK INVITE (sendonly)	•	← 200 OK INVITE(sendonly)
BYE	→	→ BYE
200 OK BYE	,	€ 200 OK BYE
ZOO ON BIL	•	200 OK DIL

TSS	TP	HOLD reference	Selection expression
RemoteUser/WithoutUPDATE	CH_U07_005	4.5.2.1	NOT PICS 1/2

Terminating UE is put on hold. INVITE method is used. All the media streams are affected. The media stream was previously set to sendrecv.

Ensure that when the IUT detects a request from the served user to hold the active session and receives INVITE to hold the session with the attribute 'a=' sendonly. The IUT after requesting the hold session sends 200 OK final response containing the SDP with the attribute 'a=' recvonly.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'sendrecv'

Media streams in the SDP

-		
Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	-	€ 200 OK INVITE
INVITE(sendonly)	→	→ INVITE (sendonly)
200 OK INVITE (recvonly)	←	← 200 OK INVITE (recvonly)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
RemoteUser/WithoutUPDATE	CH_U07_006	4.5.2.1	NOT PICS 1/2

Test purpose:

Terminating UE is put on hold. INVITE method is used. All the media streams are affected. The media stream was previously set to recvonly.

Ensure that when the IUT detects a request from the served user to hold the active session and receives INVITE to hold the session with the attribute 'a=' inactive. The IUT after requesting the hold session sends 200 OK final response containing the SDP with the attribute 'a=' inactive.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'recvonly'

Modia officialle in the ODI		
Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK ĬNŬITE
INVITE(sendonly)	←	← INVITE(sendonly)
200 OK INVITE (recvonly)	→	→ 200 OK INVITE(recvonly)
INVITE (inactive)	→	→ INVITE(inactive)
200 OK INVITE (inactive)	←	← 200 OK INVITE(inactive)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
RemoteUser/WithoutUPDATE	CH_U07_007	4.5.2.1	NOT PICS 1/2

Terminating UE is put on hold. INVITE method is used. All the media streams are affected. The media stream was previously set to recvonly.

Ensure that when the IUT detects a request from the served user to hold the active session and receives INVITE to hold the session with the attribute 'a=' sendrecv in the SDP. The IUT after requesting the hold session sends 200 OK final response and optionally the attribute 'a=' sendrecv in the SDP. The a=sendrecv attribute is the default value therefore the attribute can be omitted.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'recvonly'

Media streams in the SDP

Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	← 200 OK INVITE
INVITE(sendonly)	→	→ INVITE(sendonly)
200 OK INVITE (recvonly)	←	← 200 OK INVITE(recvonly)
INVITE(sendrecv)	→	→ INVITE(sendrecv)
200 OK INVITE (sendrecv)	←	← 200 OK INVITE(sendrecv)
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

TSS	TP	HOLD reference	Selection expression
RemoteUser/WithoutUPDATE	CH_U07_008	4.5.2.1	NOT PICS 1/2

Test purpose:

Terminating UE is put on hold. INVITE method is used. All the media streams are affected. The media stream was previously set to inactive.

Ensure that when the IUT detects a request from the served user to hold the active session and receives INVITE to hold the session with the attribute 'a=' recvonly in the SDP. The IUT after requesting the hold session sends 200 OK final response and optionally the attribute 'a=' sendonly in the SDP.

Precondition:

A session was established between user A and user B according to the 'basic Call' procedures The media stream was previously set to 'inactive'

Media streams in the SDP		
Comments:		
UA C	SUT	SIP
INVITE (sendrecv)	→	→ INVITE
180 Ringing	←	← 180 Ringing
200 OK INVITE	←	€ 200 OK INVITE
INVITE(sendonly)	←	INVITE(sendonly)
200 OK INVITE (recvonly)	→	→ 200 OK INVITE(recvonly)
INVITE(inactive)	→	→ INVITE(inactive)
200 OK INVITE (inactive)	←	← 200 OK INVITE (inactive)
,		,
INVITE(recvonly)	→	→ INVITE(recvonly)
200 OK INVITE (sendonly)	←	← 200 OK INVITE(sendonly)
`		,
BYE	→	→ BYE
200 OK BYE	←	← 200 OK BYE

6 Interworking between SIP und ISUP

6.1 SIP - ISUP

TP502001	SIP reference: RFC	3261 [14]	IS	SUP reference:
			EN 30	00 356 series [15]
TSS reference:	SIP-ISUP/SS/HOLD/			
SIP selection	Support the temporarily stops sending one or more unicast media streams			
criteria:				
ISUP selection	Support the generic notificat	ion procedure for	HOLD suppleme	entary service
criteria:				
Test purpose:	Ensure that a party can put the other party on hold at any time after the call is answered and before call clearing has begun. Ensure that a party can retrieve the call previously put on hold.			
	The calling party should be a	able to put the oth	er party on hold	
	The calling party should be a	able to retrieve the	other party	
	The called party should be a	ble to put the othe	er party on hold	
	The called party should be a		other party	
SIP Parameter	SDP: a=sendonly (put on hold)			
values:	a=sendrecv or omitte		l)	
	o= <version increm<="" td=""><td></td><td></td><td></td></version>			
ISUP Parameter	CPG: Generic notification: r			
values:				ROGRESS (retrieve the call)
Comments:	SIP INVITE		GCF >	ISUP
	180 Ringing	→ ←	7	IAM ACM
	200 OK INVITE	-	-	ANM
	200 OK IIVITE	•	•	7 (1 414)
	INVITE(sendonly)	→	→	CPG(hold)
	200 OK INVITE(recvonly)	←		, ,
	INVITE(sendrecv)	→	→	CPG(retrieve)
	200 OK INVITE(sendrecv)	-	-	or o(romovo)
	INVITE(sendonly) 200 OK INVITE(recvonly)	← →	←	CPG(hold)
	INVITE(sendrecv) 200 OK INVITE(sendrecv)	← →	←	CPG(retrieve)

TP502002	SIP reference: RFC 3261 [14]	ISUP refer EN 300 356 se	
TSS reference:	SIP-ISUP/SS/HOLD/	LI4 300 330 30	crica [10]
SIP selection criteria:	Support the temporarily stops sending one or	more unicast media strea	ms
ISUP selection criteria:	Support the generic notification procedure for HOLD supplementary service Support the invokation of the service in the alerting state		
Test purpose:	Ensure that a party can put the other party on hold in the alerting state. Ensure that the party can retrieve the call previously put on hold. The calling party should be able to put the other party on hold. The calling party should be able to retrieve the other party		
SIP Parameter values:	SDP: a=sendonly (put on hold) a=sendrecv or omitted (retrieve the call) o= <version incremented=""></version>		
ISUP Parameter	CPG: Generic notification: remote hold Event indicator PROGRESS (put on hold)		
values:	Generic notification: remote retrieval e		s (retrieve the call)
Comments:	INVITE 180 Ringing UPDATE(sendonly) 200 OK UPDATE(recvonly) UPDATE(sendrecv) 200 OK UPDATE(sendrecv)	GCF ISUP → IAM ← ACM → CPG(hol	,

TP502003	SIP reference: RFC 3261 [14]	ISUP reference: EN 300 356 series [15]	
TSS reference:	SIP-ISUP/SS/HOLD/	LIN 300 330 Series [13]	
SIP selection		more unicast media streams	
criteria:	Support the temporarily stops sending one or more unicast media streams Support the invokation of the service after the calling user has provided all of the		
ontona.	information necessary for processing the call		
ISUP selection criteria:	Support the generic notification procedure for HOLD supplementary service		
Test purpose:	Ensure that a party can put the other party on the information necessary for processing the opreviously put on hold. The calling party should be able to put the oth	call. Ensure that the party can retrieve the call	
	The calling party should be able to retrieve the		
SIP Parameter	SDP: a=sendonly (put on hold)		
values:	a=sendrecv or omitted (retrieve the call)		
	o= <version> incremented</version>		
ISUP Parameter	ACM: called party status: no indication		
values:	CPG: Generic notification: remote hold Event	indicator PROGRESS (put on hold)	
	Generic notification: remote retrieval E	vent indicator PROGRESS (retrieve the call)	
Comments:	1	GCF ISUP	
	INVITE -	→ IAM	
	LIDDATE(condents)		
	UPDATE(sendonly) 200 OK UPDATE(recvonly) ←		
	200 OK OPDATE(lecvolly)		
	UPDATE(sendrecv) →		
	200 OK UPDATE(sendrecv)		
NOTE: A CPG is	not sent before an ACM was received.		

TP502004	SIP reference: RFC 3261 [14]	ISUP reference:	
		EN 300 356 series [15]	
TSS reference:	SIP-ISUP/SS/HOLD/		
SIP selection	Support the temporarily stops sending one or	more unicast media streams	
criteria:			
ISUP selection	Support the generic notification procedure for	HOLD supplementary service	
criteria:			
Test purpose:	Ensure that a party can put the other party on hold at any time after the call is answered and before call clearing has begun. Ensure that a party can retrieve the call previously put on hold.		
	The calling party should be able to put the oth		
	The calling party should be able to retrieve th	e other party	
SIP Parameter	SDP: a=sendonly (put on hold)		
values:	a=sendrecv or omitted (retrieve the ca	II)	
ISUP Parameter values:	CPG: Generic notification: remote hold Event indicator PROGRESS (put on hold) Generic notification: remote retrieval event indicator PROGRESS (retrieve the call)		
Comments:	-	GCF ISUP	
	INVITE →	→ IAM	
	180 Ringing	← ACM	
	200 OK INVITE ←	← ANM	
	UPDATE(sendonly) 200 OK INVITE(recvonly) →	→ CPG(hold)	
	UPDATE(sendrecv) 200 OK UPDATE(recvonly) ◆	→ CPG(retrieve)	

TP502005	SIP reference: RFC 3261 [14]	ISUP reference: EN 300 356 series [15]		
TSS reference:	SIP-ISUP/SS/HOLD/			
SIP selection	Support the temporarily stops sending one or	more unicast media streams		
criteria:	The MGCF sends the update of the media stre	eam in an UPDATE message		
ISUP selection	Support the generic notification procedure for	HOLD supplementary service		
criteria:				
Test purpose:	Ensure that a party can put the other party on hold at any time after the call is answered and before call clearing has begun. Ensure that a party can retrieve the call previously put on hold. The called party should be able to put the other party on hold. The called party should be able to retrieve the other party.			
SIP Parameter	SDP: a=sendonly (put on hold)	other party		
values:	a=sendrecv or omitted (retrieve the call)			
	o= <version incremented=""></version>			
ISUP Parameter	CPG: Generic notification: remote hold Event indicator PROGRESS (put on hold)			
values:	Generic notification: remote retrieval event indicator PROGRESS (retrieve the call)			
Comments:	SIP INVITE 180 Ringing 200 OK INVITE UPDATE(sendonly) 200 OK INVITE(recvonly) UPDATE(sendrecv) 200 OK UPDATE(recvonly)	ISUP → IAM ← ACM ← ANM ← CPG(hold) ← CPG(retrieve)		

TP502006	SIP reference: RFC 3261 [14] ISUP reference:				
	E		EN 30	N 300 356 series [15]	
TSS reference:	SIP-ISUP/SS/HOLD/				
SIP selection	Support the temporarily stop	s sending one or	more unicast me	edia streams	
criteria:					
ISUP selection	Support the generic notificat	ion procedure for	HOLD suppleme	entary service	
criteria:				6 4 11	
Test purpose:	Ensure that a party can put the other party on hold at any time after the call is answered and before call clearing has begun. Ensure that a party in held state can put the remote				
	party put on hold. Ensure that	at a party can retri	eve the call prev	nously put on noid.	
	The calling party should be a	able to put the oth	er party on hold		
	The called party should be a				
	The calling party should be a				
	The called party should be a		other party		
SIP Parameter	SDP: a=sendonly or a=inactive (put on hold)				
values:	a=sendrecv or a=recvonly or omitted (retrieve the call)				
10110 0	o= <version increm<="" td=""><td></td><td></td><td>77700 () 1 1 1 1</td></version>			77700 () 1 1 1 1	
ISUP Parameter	CPG: Generic notification: r				
values:	SIP Generic notification: r		ent indicator PF CF	ROGRESS (retrieve the call) ISUP	
Comments:	INVITE	→ NVC	→ →	130F	
	180 Ringing	É	É		
	200 OK INVITE	-	-		
	INVITE(sendonly)	→	→	CPG(hold)	
	200 OK INVITE(recvonly)	É	•	Ci G(iloid)	
	INVITE(inactive)	←	(CPG(hold)	
	200 OK INVITE(inactive) →				
	INVITE(recvonly)	→	→	CPG(retrieve)	
	200 OK INVITE(sendonly)	←		,	
	INVITE(sendrecv)	←	←	CPG(retrieve)	
	200 OK INVITE(sendrecv)	→			

TP502007	SIP reference: RFC 3261 [14]		UP reference:	
			EN 30	0 356 series [15]	
TSS reference:	SIP-ISUP/SS/HOLD/				
SIP selection criteria:	Support the temporarily stops send	ding one or	more unicast me	dia streams	
ISUP selection criteria:	Support the generic notification procedure for HOLD supplementary service				
Test purpose:	Ensure that a party can put the other party on hold at any time after the call is answered and before call clearing has begun. Ensure that a party in held state can put the remote party put on hold. Ensure that a party can retrieve the call previously put on hold. The calling party should be able to put the other party on hold				
	The called party should be able to put the other party on hold The called party should be able to retrieve the other party The calling party should be able to retrieve the other party				
SIP Parameter	SDP: a=sendonly or a=inactive (p	out on hold)			
values:	a=sendrecv or a=recvonly or omitted (retrieve the call) o= <version incremented=""></version>				
ISUP Parameter	CPG: Generic notification: remote				
values:				OGRESS (retrieve the call)	
Comments:	SIP		GCF _	ISUP	
	INVITE -		→		
	180 Ringing 200 OK INVITE ←		(
	INVITE(sendonly) 200 OK INVITE(recvonly) →		→	CPG(hold)	
	INVITE(inactive) ← 200 OK INVITE(inactive) →		←	CPG(hold)	
	INVITE(recvonly) 200 OK INVITE(sendonly) →		←	CPG(retrieve)	
	INVITE(sendrecv) 200 OK INVITE(sendrecv) ◆		→	CPG(retrieve)	
	L				

6.2 ISUP - SIP

TP602001	SIP reference:	RFC 3261 [14]	ISUP reference:	
	10112 012 (00 (110) 2 (EN 300 356 series [15]	
TSS reference:	ISUP-SIP/SS/HOLD/			
SIP selection criteria:	Support the temporari	Support the temporarily stops sending one or more unicast media streams		
ISUP selection	Support the generic no	otification procedure for	HOLD supplementary service	
criteria:				
Test purpose:	Ensure that a party can put the other party on hold at any time after the call is answered and before call clearing has begun. Ensure that a party can retrieve the call previously put on hold.			
		ld be able to put the oth		
		ld be able to retrieve the		
		d be able to put the other		
		d be able to retrieve the	other party	
SIP Parameter	SDP: a=sendonly (pu			
values:		omitted (retrieve the cal	1)	
	o= <version< td=""><td></td><td></td></version<>			
ISUP Parameter			t indicator PROGRESS (put on hold)	
values:			vent indicator PROGRESS (retrieve the call)	
Comments:	ISUP/BICC	MGC	_	
	IAM ACM)	→ INVITE	
	ANM	←	← 180 Ringing← 200 OK INVITE	
	AINIVI	~	200 OK INVITE	
	CPG(hold)	→	→ INVITE(sendonly)	
	or o(noid)	-	€ 200 OK INVITE(recvonly)	
	CPG(retrieve)	→	→ INVITE(sendrecv)	
			← 200 OK INVITE(sendrecv)	
	CPG(hold)	←	← INVITE(sendonly)	
			→ 200 OK INVITE(recvonly)	
	CPG(retrieve)	+	★ INVITE(sendrecv)→ 200 OK INVITE(sendrecv)	
			<u>, </u>	

TP602002	SIP reference: RFC 3261 [14	4]		ISUP reference:
			EI	N 300 356 series [15]
TSS reference:	ISUP-SIP/SS/HOLD/			
SIP selection	Support the temporarily stops sendir	ng one or n	nore unicas	t media streams
criteria:	Support the invokation of the service	e in the aler	ting state	
ISUP selection	Support the generic notification proc	edure for F	HOLD supp	lementary service
criteria:				
Test purpose:	Ensure that a party can put the othe	r party on h	nold in the a	alerting state. Ensure that the
	party can retrieve the call previously	put on hole	d.	
	The calling party should be able to p			
	The calling party should be able to re	etrieve the	other party	
SIP Parameter	SDP: a=sendonly (put on hold)			
values:	a=sendrecv or omitted (retrieve the call)			
	o= <version incremented=""></version>			
ISUP Parameter	CPG: Generic notification: remote hold Event indicator PROGRESS (put on hold)			
values:	Generic notification: remote retrieval event indicator PROGRESS (retrieve the call)			
Comments:	ISUP/BICC	MGCF		SIP
	IAM →		→	INVITE
	ACM ←		(180 Ringing
	CPG(hold) →		→	UPDATE(sendonly)
	CFG(floid)		-	200 OK UPDATE(recevonly)
			•	200 Off Of Britz (Todevoriny)
	CPG(retrieve) →		→	UPDATE(sendrecv)
	, ,		←	200 OK UPDATE(sendrecv)
				<u> </u>

TP602003	SIP reference: RFC 3261 [14]	ISUP reference:	
		EN 300 356 series [15]	
TSS reference:	ISUP-SIP/SS/HOLD/		
SIP selection	Support the temporarily stops sending one or	more unicast media streams	
criteria:			
ISUP selection	Support the generic notification procedure for	HOLD supplementary service	
criteria:			
Test purpose:	Ensure that a party can put the other party on the information necessary for processing the continuous continuous and the continuous		
	call previously put on hold.	all. Ensure that the party can retheve the	
	The calling party should be able to put the oth	• •	
	The calling party should be able to retrieve the	e other party	
SIP Parameter	SDP: a=sendonly (put on hold)		
values:	a=sendrecv or omitted (retrieve the call)		
	0= <version incremented=""></version>		
ISUP Parameter	ACM: called party status: no indication		
values:	CPG: Generic notification: remote hold Event indicator PROGRESS (put on hold) Generic notification: remote retrieval event indicator PROGRESS (retrieve the call)		
Comments:	ISUP/BICC MGC		
	IAM →	→ INVITE	
	ACM ←	← 180 Ringing	
	ANM ←	← 200 OK INVITE	
	CPG(hold) ← UPDATE(sendonly)		
	→ 200 OK UPDATE(recevonly)		
	CPG(retrieve) ←	← UPDATE(sendrecv)	
		→ 200 OK UPDATE(sendrecv)	

TP602004	SIP reference: RFC 3261 [14]	EN	ISUP reference: N 300 356 series [15]
TSS reference:	ISUP-SIP/SS/HOLD/		4 300 330 3cmc3 [13]
SIP selection criteria:	Support the temporarily stops sending one The MGCF sends the update of the media		
ISUP selection criteria:	Support the generic notification procedure		
Test purpose:	Ensure that a party can put the other party on hold in the alerting state. Ensure that the party can retrieve the call previously put on hold. The calling party should be able to put the other party on hold. The calling party should be able to retrieve the other party.		
SIP Parameter values:	SDP: a=sendonly (put on hold) a=sendrecv or omitted (retrieve the call) o= <version incremented=""></version>		
ISUP Parameter values:	CPG: Generic notification: remote hold Event indicator PROGRESS (put on hold) Generic notification: remote retrieval event indicator PROGRESS (retrieve the call)		
Comments:		GCF	SIP INVITE 180 Ringing 200 OK INVITE UPDATE(sendonly) 200 OK UPDATE(recevonly) UPDATE(sendrecv) 200 OK UPDATE(sendrecv)

TP602005	SIP reference	e: RFC 3261 [14]	ISUP reference: EN 300 356 series [15]	
TSS reference:	ISUP-SIP/SS/HOLD/			
SIP selection criteria:			more unicast media streams	
ISUP selection criteria:	Support the generic notification procedure for HOLD supplementary service			
Test purpose:	Ensure that a party can put the other party on hold at any time after the call is answered and before call clearing has begun. Ensure that a party can retrieve the call previously put on hold.			
	The calling party should be able to put the other party on hold The called party should be able to put the other party on hold The calling party should be able to retrieve the other party The called party should be able to retrieve the other party			
SIP Parameter	SDP: a=sendonly (
values:	a=sendrecv or omitted (retrieve the call) o= <version incremented=""></version>			
ISUP Parameter	CPG: Generic notification: remote hold Event indicator PROGRESS (put on hold)			
values:	Generic notification: remote retrieval event indicator PROGRESS (retrieve the call)			
Comments:	ISUP/BICC IAM ACM ANM	MGC → ← ←	F SIP → INVITE ← 180 Ringing ← 200 OK INVITE	
	CPG(hold)	→	→ INVITE(sendonly)← 200 OK INVITE(recvonly)	
	CPG(hold)	←	★ INVITE(inactive)→ 200 OK INVITE(inactive)	
	CPG(retrieve)	→	→ INVITE(recvonly)← 200 OK INVITE(sendonly)	
	CPG(retrieve)	←	★ INVITE(sendrecv)→ 200 OK INVITE(sendrecv)	
	CPG(retrieve)	←	← INVITE(sendrecv)	

TP602006	SIP reference:	RFC 3261 [14]	ISUP reference: EN 300 356 series [15]	
TSS reference:	ISUP-SIP/SS/HOLD/			
SIP selection criteria:	Support the temporarily stops sending one or more unicast media streams			
ISUP selection criteria:	Support the generic notification procedure for HOLD supplementary service			
Test purpose:	Ensure that a party can put the other party on hold at any time after the call is answered and before call clearing has begun. Ensure that a party can retrieve the call previously put on hold.			
	The calling party should be able to put the other party on hold The called party should be able to put the other party on hold The called party should be able to retrieve the other party The calling party should be able to retrieve the other party			
SIP Parameter	SDP: a=sendonly (pu			
values:	a=sendrecv or omitted (retrieve the call) o= <version incremented=""></version>			
ISUP Parameter	CPG: Generic notification: remote hold Event indicator PROGRESS (put on hold)			
values:	Generic notification: remote retrieval event indicator PROGRESS (retrieve the call)			
Comments:	ISUP/BICC IAM ACM ANM	MGC → ← ←	F SIP → INVITE ← 180 Ringing ← 200 OK INVITE	
	CPG(hold)	→	→ INVITE(sendonly)← 200 OK INVITE(recvonly)	
	CPG(hold)	←	← INVITE(inactive)→ 200 OK INVITE(inactive)	
	CPG(retrieve)	←	← INVITE(recvonly)→ 200 OK INVITE(sendonly)	
	CPG(retrieve)	→	→ INVITE(sendrecv)← 200 OK INVITE(sendrecv)	
			·	

7 Compliance

An ATS which complies with this TSS&TP specification shall:

- a) consist of a set of test cases corresponding to the set or to a subset of the TPs specified in clause 5;
- b) use a TSS which is an appropriate subset of the whole of the TSS specified in clause 4;
- c) use the same naming conventions for the test groups and test cases;
- d) maintain the relationship specified in clause 5 between the test groups and TPs and the entries in the PICS proforma to be used for test case deselection;
- e) comply with ISO/IEC 9646-2.

In the case of a) or b) above, a subset shall be used only where a particular Abstract Test Method (ATM) makes some TPs untestable. All testable TPs from clause 5 shall be included in a compliant ATS.

8 Requirements for a comprehensive testing service

As a minimum the Remote test method, as specified in ISO/IEC 9646-2, shall be used by any organization claiming to provide a comprehensive testing service for user equipment claiming conformance to EN 300 092-1 [11].

Annex A (informative): Bibliography

- ETSI TS 122 228: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Service requirements for the Internet Protocol (IP) multimedia core network subsystem (IMS); Stage 1 (3GPP TS 22.228)".
- ETSI TS 123 228: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); IP Multimedia Subsystem (IMS); Stage 2 (3GPP TS 23.228)".
- ETSI TS 124 228: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Signalling flows for the IP multimedia call control based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.228)".
- ETSI TS 124 229: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.229)".
- ISO/IEC 9646-2: "Information technology Open Systems Interconnection Conformance testing methodology and framework Part 2: Abstract Test Suite specification".

History

	Document history			
V1.1.1	July 2006	Publication		