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Core Network and Interoperability Testing (INT);
Communication HOLD (HOLD) using IP Multimedia (IM)
Core Network (CN) subsystem;
Conformance test specification;
(3GPP™ Release 12);
Part 2: Test Suite Structure and Test Purposes (TSS&TP)

Reference
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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)".

Part 3: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification".

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).

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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 referenced document (including any amendments) applies.

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

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 12)".

[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 12); 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 referenced document (including any amendments) applies.

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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, symbols 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:

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

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

PICS pro forma: 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 Symbols

For the purposes of the present document, the symbols given in ETSI TS 124 610 [1] apply.

3.3 Abbreviations

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

AS	Application Server
CN	Core Network
ETSI	European Telecommunication Standardization Institute
HOLD	Communication HOLD
IM	IP Multimedia
INT	Core Network and Interoperability Testing
IP	Internet Protocol
IUT	Implementation Under Test
NNI	Network Network Interface
PICS	Protocol Implementation Conformance Statement
RTCP	RTP Control Protocol
SDP	Session Description Protocol
SIP	Session Initiation Protocol
SUT	System Under Test
TP	Test Purpose
TS	Technical Specification
TSS	Test Suite Structure

4 Test Suite Structure (TSS) and Test configuration

4.0 Table of Test suite Structure

Table 4-1: 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.

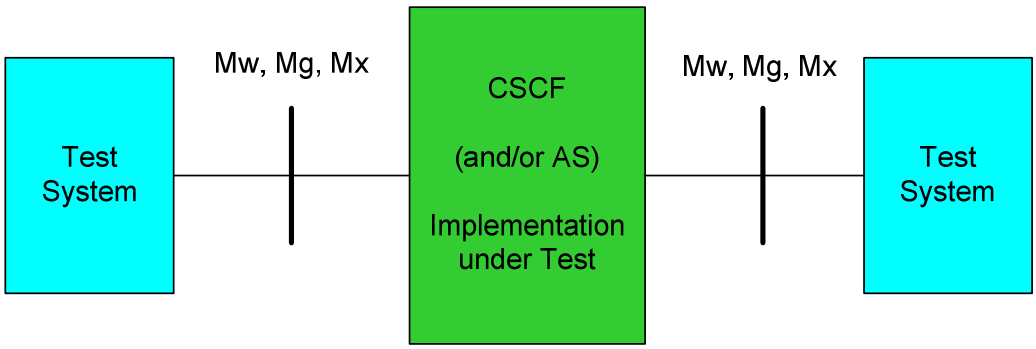

Figure 4-1: Applicable interfaces to test using the (generic) NNI interface

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

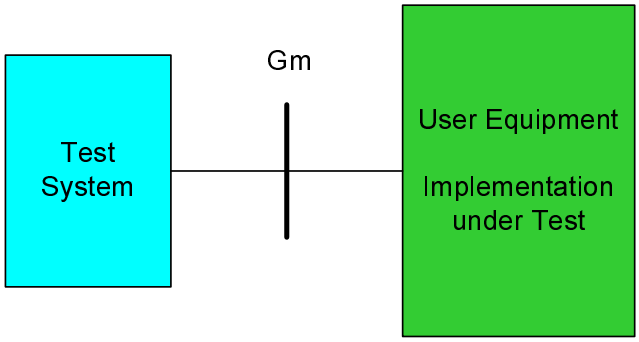

Figure 4-2: Applicable configuration to test the User Equipment

5 Test Purposes (TP)

5.1 Introduction

5.1.1 TP naming convention

Table 5-1: TP identifier naming convention scheme

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

5.1.2 Test strategy

As the base standard 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	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

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 to hold an individual media stream of the communication session, sends an UPDATE request containing an SDP body with an attribute line indicating 'a= sendonly'.

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

Comments:

User Equipment	**SUT**	**Test Equipment**
	Establish a confirmed session	
User invokes the HOLD service	→	UPDATE(**sendonly**)
	←	200 OK (recvonly)
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_002	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

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**	**Test Equipment**
	Establish a confirmed session	
CASE A	←	UPDATE(sendonly)
	→	200 OK (**recvonly**)
CASE B	←	INVITE(sendonly)
	→	200 OK (**recvonly**)
	←	ACK
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_003	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is used. Individual media stream is affected. The media stream was previously set to recvonly.
Ensure that the IUT to hold an individual media stream of the communication session, sends an UPDATE request containing an SDP body with an attribute line indicating 'a=inactive'.

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

Comments:

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_004	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session resume. UPDATE method is used. Individual media stream is affected. The media stream was previously set to sendonly.
Ensure that the IUT to resume an individual media stream of the communication session, sends an UPDATE request containing an SDP body with an attribute line indicating 'a=sendrecv' or without attribute line.

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

Comments:

User Equipment	**SUT**	**Test Equipment**
	Establish a confirmed session	
User invokes the HOLD service	→	UPDATE(**sendonly**)
	←	200 OK (recvonly)
User resumes the session	→	UPDATE(**sendrecv** or absent)
	←	200 OK (sendrecv or absent)
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_005	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session resume. UPDATE method is used. Individual media streams are affected. The media stream was previously set to inactive.
Ensure that the IUT to resume an individual media stream of the communication session, sends an UPDATE request containing 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 'inactive'
- One individual media stream

Comments:

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_006	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is used. Individual media stream is affected. The media stream was previously set to inactive.
Ensure that the IUT to resume an individual media stream of the communication session, sends an UPDATE request containing an SDP body with an attribute line indicating 'a=sendonly'.

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

Comments:		
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	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_007	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/1

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 to hold an individual media stream of an early dialogue, sends an UPDATE request containing an SDP body with an attribute line indicating 'a= sendonly'.

Precondition:
- An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- One individual media stream

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_008	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/1

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 from the remote party of an early dialogue, sends a 200 OK UPDATE response containing an SDP body with an attribute line indicating 'a=recvonly'.

Precondition:
- An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- One individual media stream

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_009	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to sendrecv.
Ensure that the IUT to hold all media streams of the communication session, sends an UPDATE request containing an SDP body with a session level direction attribute line indicating 'a=sendonly'.

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 'sendrecv'
- Individual media streams

Comments:

User Equipment	**SUT**	**Test Equipment**
	Establish a confirmed session	
User invokes the HOLD service	→	UPDATE(**sendonly**)
	←	200 OK (recvonly)
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_010	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to sendrecv.
Ensure that the IUT responds to hold request of all media streams 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**	**Test Equipment**
	Establish a confirmed session	
CASE A	←	UPDATE(sendonly)
	→	200 OK (**recvonly**)
CASE B	←	INVITE(sendonly)
	→	200 OK (**recvonly**)
	←	ACK
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_011	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is used. All media streams are affected. The media stream were previously set to recvonly.
Ensure that the IUT to hold all media streams of the communication session, sends an UPDATE request containing an SDP body with a session level direction attribute line indicating 'a=inactive'.

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 'recvonly'
- Individual media streams

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_012	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session resume. UPDATE method is used. All media streams are affected. The media stream were previously set to sendonly.
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=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	→	UPDATE(**sendonly**)
	←	200 OK (recvonly)
User resumes the session	→	UPDATE(**sendrecv** or absent)
	←	200 OK (sendrecv or absent)
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_013	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session resume. UPDATE method is used. All media streams are affected. The media streams were previously set to inactive.
Ensure that the IUT to resume all media streams of the communication session, sends an UPDATE request containing 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**	**Test Equipment**
	Establish a confirmed session	
CASE A	←	UPDATE(**sendonly**)
	→	200 OK (recvonly)
CASE B	←	INVITE(**sendonly**)
	→	200 OK (recvonly)
	←	ACK
User invokes the HOLD service	→	UPDATE(**inactive**)
	←	200 OK (inactive)
User resumes the media session	→	UPDATE(**recvonly**)
	←	200 OK (sendonly)
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_014	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to recvonly.
Ensure that the IUT to hold an individual media stream of the communication session, sends an UPDATE request containing an SDP body with an attribute line indicating 'a=inactive'.

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

Comments:		
User Equipment	**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	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_015	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/1

Test purpose:
Session hold. UPDATE method is used. All media streams are affected. The media stream was previously set to sendrecv.
Ensure that the IUT to hold all media streams of an early dialogue, sends an UPDATE request containing an SDP body with an attribute line indicating 'a= sendonly'.

Precondition:
- An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- Individual media streams

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U01_016	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/1
Test purpose: *Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to sendrecv.* Ensure that the IUT responds to the hold request of all individual media streams from the remote party of an early dialogue, sends a 200 OK UPDATE response containing an SDP body with an attribute line indicating 'a=recvonly'.			
Precondition: • An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • Individual media streams			
Comments:			
User Equipment	**SUT**		**Test Equipment**
	Establish an early dialogue		
	←		UPDATE(sendonly)
	→		200 OK (**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 4.5.1/1 AND NOT PICS 4.6.1/2
Test purpose: *Session hold. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to sendrecv.* Ensure that the IUT to hold an individual media stream of the communication session, sends a ReINVITE request containing an sdp body with an attribute line indicating 'a=sendonly'.			
Precondition: • A session was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • Individual media streams			
Comments:			
User Equipment	**SUT**		**Test Equipment**
	Establish a confirmed session		
User invokes the HOLD service	→		ReINVITE(**sendonly**)
	←		200 OK (recvonly)
	→		ACK
	Apply post test routine		

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U02_002	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to sendrecv.
Ensure that the IUT responds to the hold request of an individual media stream of the communication session from the remote party, sends a 200 OK INVITE/UPDATE response containing 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'
- Individual media streams

Comments:

User Equipment	**SUT**	**Test Equipment**
	Establish a confirmed session	
CASE A	←	UPDATE(sendonly)
	→	200 OK (**recvonly**)
CASE B	←	INVITE(sendonly)
	→	200 OK (**recvonly**)
	←	ACK
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_003	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

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

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

Comments:

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

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_004	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

Test purpose:
Session resume. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to sendonly.
Ensure that the IUT to resume an individual media stream of the communication session, sends a ReINVITE request containing an SDP body with an attribute line indicating 'a=sendrecv' or without attribute line.

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

Comments:

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

TSS	TP	HOLD reference	Selection expression
ServedUser/WithoutUPDATE	CH_U02_005	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

Test purpose:
Session resume. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to inactive.
Ensure that the IUT to resume an individual media stream of the communication session, sends a ReINVITE request containing 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 'inactive'
- Individual media streams

Comments:

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U02_006	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

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

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

Comments:

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U02_007	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/1 AND NOT PICS 4.6.1/2

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

Precondition:
- An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- One individual media stream

Comments:

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U02_008	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/1 AND NOT PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is not used. Individual media stream is affected. The media stream was previously set to sendrecv.
Ensure that the IUT responds to the hold request of an individual media stream from the remote party of an early dialogue, sends a 200 OK UPDATE response containing an SDP body with an attribute line indicating 'a=recvonly'.

Precondition:
- An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- One individual media stream

Comments:

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_009	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is not used. All media streams are affected. The media streams were previously set to sendrecv.
Ensure that the IUT to hold all media streams of the communication session, sends a ReINVITE request containing an SDP body with a session level direction attribute line indicating 'a=sendonly'.

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 'sendrecv'
- Individual media streams

Comments:

User Equipment	**SUT**	**Test Equipment**
	Establish a confirmed session	
User invokes the HOLD service	→	ReINVITE(**sendonly**)
	←	200 OK (recvonly)
	→	ACK
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U02_010	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is not used. All media streams are affected. The media streams were previously set to sendrecv.
Ensure that the IUT responds to hold request of all media streams of the communication session from the remote party, sends a 200 OK INVITE/UPDATE response containing 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**	**Test Equipment**
	Establish a confirmed session	
CASE A	←	UPDATE(sendonly)
	→	200 OK (**recvonly**)
CASE B	←	INVITE(sendonly)
	→	200 OK (**recvonly**)
	←	ACK
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_011	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is not used. All media streams are affected. The media stream were previously set to recvonly.
Ensure that the IUT to hold all media streams of the communication session, sends a ReINVITE request containing an sdp body with a session level direction attribute line indicating 'a=inactive'.

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 'recvonly'
- Individual media streams

Comments:

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_012	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

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	→	ReINVITE(**sendonly**)
	←	200 OK (recvonly)
	→	ACK
User resumes the session	→	ReINVITE(**sendrecv** or absent)
	←	200 OK (sendrecv or absent)
	→	ACK
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithoutUPDATE	CH_U02_013	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

Test purpose:
Session resume. UPDATE method is not used. All media streams are affected. The media streams were previously set to inactive.
Ensure that the IUT to resume all media streams of the communication session, sends a ReINVITE request containing 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**	**Test Equipment**
	Establish a confirmed session	
CASE A	←	UPDATE(**sendonly**)
	→	200 OK (recvonly)
CASE B	←	INVITE(**sendonly**)
	→	200 OK (recvonly)
	←	ACK
User invokes the HOLD service	→	ReINVITE(**inactive**)
	←	200 OK (inactive)
	→	ACK
User resumes the media session	→	ReINVITE(**recvonly**)
	←	200 OK (sendonly)
	→	ACK
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U02_014	4.5.2.1	PICS 4.5.1/1 AND NOT PICS 4.6.1/2

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

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

Comments:

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U02_015	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/1 AND NOT PICS 4.6.1/2

Test purpose:
Session hold. UPDATE method is used. All media streams are affected. The media stream was previously set to sendrecv.
Ensure that the IUT to hold all media streams of an early dialogue, sends an UPDATE request containing an SDP body with an attribute line indicating 'a= sendonly'.

Precondition:
- An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- Individual media streams

Comments:

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

TSS	**TP**	**HOLD reference**	**Selection expression**
ServedUser/WithUPDATE	CH_U02_016	4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/1 AND NOT PICS 4.6.1/2
Test purpose: *Session hold. UPDATE method is used. All media streams are affected. The media streams were previously set to sendrecv.* Ensure that the IUT responds to the hold request of all individual media streams from the remote party of an early dialogue, sends a 200 OK UPDATE response containing an SDP body with an attribute line indicating 'a=recvonly'.			
Precondition: • An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • Individual media streams			
Comments:			

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

5.3 Network TPs for HOLD

TSS	**TP**	**HOLD reference**	**Selection expression**
Network	CH_N01_001	4.5.2.1	PICS 4.5.1/2 AND PICS 4.7.1/1
Test purpose: *Session hold in the early dialogue. The media streams were previously set to sendrecv.* Ensure that the SUT transfers the HOLD request in an early dialogue. The 200 OK response contains an SDP body with an attribute line indicating 'a=recvonly'.			
Precondition: • An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendrecv' • The originating party sets the session on HOLD			
Comments:			

Test Equipment (Gm)	**SUT**		**Test Equipment (Gm)**
	Establish an early dialogue		
UPDATE(**sendonly**)	→	→	UPDATE(sendonly)
200 OK (recvonly)	←	←	200 OK (**recvonly**)
	Apply post test routine		

TSS	**TP**	**HOLD reference**	**Selection expression**
Network	CH_N01_002	4.5.2.1	PICS 4.5.1/2 AND PICS 4.7.1/1
Test purpose: *Session retrieval in the early dialogue. The media streams were previously set to sendrecv.* Ensure that the SUT transfers the HOLD request in an early dialogue. The 200 OK response contains an SDP body with an attribute line indicating 'a=sendrecv'.			
Precondition: • An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures • The media stream was previously set to 'sendonly' • The originating party retrieves the session			

Comments:

Test Equipment (Gm)	SUT	Test Equipment (Gm)
	Establish an early dialogue	
UPDATE(**sendonly**)	→	→ UPDATE(sendonly)
200 OK (recvonly)	←	← 200 OK (**recvonly**)
UPDATE(**sendrecv**)	→	→ UPDATE(sendrecv)
200 OK (sendrecv)	←	← 200 OK (**sendrecv**)
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
Network	CH_N01_003	4.5.2.1	PICS 4.5.1/2 AND PICS 4.7.1/1

Test purpose:

Session set on HOLD in the early dialogue. Retrieval in the confirmed dialogue.

Ensure that the SUT transfers the HOLD request in an early dialogue and the retrieval in the conformed dialogue. The 200 OK response contains an SDP body with an attribute line indicating 'a=sendrecv'.

Precondition:

- An early dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendonly' in the early dialogue
- The terminating user confirms the dialogue.
- The originating party retrieves the session

Comments:

Test Equipment (Gm)	SUT	Test Equipment (Gm)
	Establish an early dialogue	
UPDATE(**sendonly**)	→	→ UPDATE(sendonly)
200 OK (recvonly)	←	← 200 OK (**recvonly**)
200 OK (recvonly)	←	← 200 OK (recvonly)
ACK	→	→ ACK
CASE A		
INVITE(**sendrecv**)	→	**CASE a**
200 OK (sendrecv)	←	→ INVITE(sendrecv)
ACK	←	← 200 OK (**sendrecv**)
		→ ACK
		CASE b
		→ UPDATE(sendrecv)
		← 200 OK (**sendrecv**)
CASE B		
UPDATE(**sendrecv**)	→	**CASE a**
200 OK (sendrecv)	←	→ UPDATE(sendrecv)
		← 200 OK (**sendrecv**)
		CASE b
		→ INVITE(sendrecv)
		← 200 OK (**sendrecv**)
		→ ACK
	Apply post test routine	

TSS	**TP**	**HOLD reference**	**Selection expression**
Network	CH_N01_004	4.5.2.1	PICS 4.5.1/2

Test purpose:

Session hold in a confirmed dialogue. The media streams were previously set to sendrecv.

Ensure that the SUT transfers the HOLD request from the originating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.

Precondition:

- A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- The originating party sets the session on HOLD

Comments:

Test Equipment (Gm)	**SUT**		**Test Equipment (Gm)**
	Establish a confirmed dialogue		
CASE A			
INVITE(**sendonly**)	→		**CASE a**
200 OK (recvonly)	←	→	INVITE(sendonly)
ACK	←	←	200 OK (**recvonly**)
		→	ACK
			CASE b
		→	UPDATE(sendonly)
		←	200 OK (**recvonly**)
CASE B			
UPDATE(**sendonly**)	→		**CASE a**
200 OK (recvonly)	←	→	UPDATE(sendonly)
		←	200 OK (**recvonly**)
			CASE b
		→	INVITE(sendonly)
		←	200 OK (**recvonly**)
		→	ACK
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_005	4.5.2.1	PICS 4.5.1/2

Test purpose:

Session hold in a confirmed dialogue. The media streams were previously set to sendrecv.

Ensure that the SUT transfers the HOLD request from the terminating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.

Precondition:

- A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendrecv'
- The terminating party sets the session on HOLD

Comments:

Test Equipment (Gm)		SUT		Test Equipment (Gm)
		Establish a confirmed dialogue		
CASE A				
CASE a			←	INVITE(**sendonly**)
INVITE(sendonly)	←		→	200 OK (recvonly)
200 OK (**recvonly**)	→		←	ACK
ACK	←			
CASE b				
UPDATE(sendonly)	←			
200 OK (**recvonly**)	→			
CASE B				
CASE a			←	UPDATE(**sendonly**)
UPDATE(sendonly)	←		→	200 OK (recvonly)
200 OK (**recvonly**)	→			
CASE b				
INVITE(sendonly)	←			
200 OK (**recvonly**)	→			
ACK	←			
		Apply post test routine		

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_006	4.5.2.1	PICS 4.5.1/2

Test purpose:

Retrieve the session in a confirmed dialogue. The media streams were previously set to sendonly.

Ensure that the SUT is able support the retrieval of a hold session. The session was previous set on HOLD by the originating party. The originating party sends an INVITE or UPDATE request. The 'a' attribute in the SDP is set to 'sendrecv' or this attribute is absent.

Precondition:

- A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendonly' HOLD requested by the originating party
- The originating party retrieves the held session

Comments:

Test Equipment (Gm)	SUT		Test Equipment (Gm)
	Establish a confirmed dialogue		
	Session on HOLD by the originating party		
CASE A			
INVITE(**sendrecv**)	→		CASE a
200 OK (sendrecv)	←	→	INVITE(sendrecv)
ACK	←	←	200 OK (sendrecv)
		→	ACK
			CASE b
		→	UPDATE(sendrecv)
		←	200 OK (sendrecv)
CASE B			
UPDATE(**sendrecv**)	→		CASE a
200 OK (sendrecv)	←	→	UPDATE(sendrecv)
		←	200 OK (sendrecv)
			CASE b
		→	INVITE(sendrecv)
		←	200 OK (sendrecv)
		→	ACK
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_007	4.5.2.1	PICS 4.5.1/2

Test purpose:

Retrieve the session in a confirmed dialogue. The media streams were previously set to sendonly.

Ensure that the SUT is able support the retrieval of a hold session. The session was previous set on HOLD by the terminating party. The terminating party sends an INVITE or UPDATE request. The 'a' attribute in the SDP is set to 'sendrecv' or this attribute is absent.

Precondition:

- A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendonly' HOLD requested by the terminating party
- The terminating party retrieves the held session

Comments:

Test Equipment (Gm)	SUT	Test Equipment (Gm)
	Establish a confirmed dialogue	
	Session on HOLD by the terminating party	
CASE A		
CASE a	←	INVITE(**sendrecv**)
INVITE(sendrecv) ←	→	200 OK (sendrecv)
200 OK (**sendrecv**) →	←	ACK
ACK ←		
CASE b		
UPDATE(sendrecv) ←		
200 OK (**sendrecv**) →		
CASE B		
CASE a	←	UPDATE(**sendrecv**)
UPDATE(sendrecv) ←	→	200 OK (sendrecv)
200 OK (**sendrecv**) →		
CASE b		
INVITE(sendrecv) ←		
200 OK (**sendrecv**) →		
ACK ←		
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_008	4.5.2.1	PICS 4.5.1/2

Test purpose:

Session hold in a confirmed dialogue. The media streams were previously set to recvonly.

Ensure that the SUT transfers the hold request from the originating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a= inactive.

Precondition:

- A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'recvonly' HOLD requested by the terminating party
- The originating party sets the session on HOLD

Comments:

Test Equipment (Gm)	SUT		Test Equipment (Gm)
	Establish a confirmed dialogue		
	Session on HOLD by the terminating party		
CASE A			
INVITE(**inactive**)	→		CASE a
200 OK (inactive)	←	→	INVITE(inactive)
ACK	←	←	200 OK (inactive)
		→	ACK
			CASE b
		→	UPDATE(inactive)
		←	200 OK (inactive)
CASE B			
UPDATE(inactive)	→		CASE a
200 OK (inactive)	←	→	UPDATE(inactive)
		←	200 OK (inactive)
			CASE b
		→	INVITE(inactive)
		←	200 OK (inactive)
		→	ACK
	Apply post test routine		

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_009	4.5.2.1	PICS 4.5.1/2

Test purpose:

Session hold in a confirmed dialogue. The media streams were previously set to recvonly.

The session in a confirmed dialogue is set on HOLD Ensure that the SUT transfers the HOLD request from the terminating party. The 200 OK response containing an SDP body with an attribute line indicating 'a=inactive'.

Precondition:

- A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'recvonly' HOLD requested by the originating party
- The terminating party sets the session on HOLD

Comments:

Test Equipment (Gm)	SUT	Test Equipment (Gm)
	Establish a confirmed dialogue	
	Session on HOLD by the originating party	
CASE A		
CASE a	←	INVITE(**inactive**)
INVITE(inactive)	→	200 OK (inactive)
200 OK (**inactive**)	←	ACK
ACK		
CASE b		
UPDATE(inactive)		
200 OK (**inactive**)		
CASE B		
CASE a	←	UPDATE(**inactive**)
UPDATE(inactive)	→	200 OK (inactive)
200 OK (**inactive**)		
CASE b		
INVITE(inactive)		
200 OK (**inactive**)		
ACK		
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_010	4.5.2.1	PICS 4.5.1/2

Test purpose:

Retrieve the session in a confirmed dialogue. The media streams were previously set to inactive.

Ensure that the SUT transfers the RETRIVE request from the terminating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=sendonly'.

Precondition:

- An confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'recvonly'
- The media stream was previously set to 'inactive'
- The terminating party retrieves the held session

Comments:

Test Equipment (Gm)	SUT	Test Equipment (Gm)
	Establish a confirmed dialogue	
	The originating party sets the session on HOLD	
	The terminating party sets the session on HOLD	
CASE A		
CASE a	←	INVITE(**recvonly**)
INVITE(recvonly)	→	200 OK (sendonly)
200 OK (**sendonly**)	←	ACK
ACK		
CASE b		
UPDATE(recvonly)	←	
200 OK (**sendonly**)	→	
CASE B		
CASE a	←	UPDATE(**recvonly**)
UPDATE(recvonly)	→	200 OK (sendonly)
200 OK (**sendonly**)		
CASE b		
INVITE(recvonly)	←	
200 OK (**sendonly**)	→	
ACK	←	
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_011	4.5.2.1	PICS 4.5.1/2

Test purpose:

Retrieve the session in a confirmed dialogue. The media streams were previously set to inactive.

Ensure that the SUT transfers the RETRIVE request from the originating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.

Precondition:

- An confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'recvonly'
- The media stream was previously set to 'inactive'
- The originating party retrieves the held session

Comments:

Test Equipment (Gm)	SUT		Test Equipment (Gm)
	Establish a confirmed dialogue		
	The originating party sets the session on HOLD		
	The terminating party sets the session on HOLD		
CASE A			
INVITE(**sendonly**)	→		CASE a
200 OK (recvonly)	←	→	INVITE(sendonly)
ACK	←	←	200 OK (recvonly)
		→	ACK
			CASE b
		→	UPDATE(sendonly)
		←	200 OK (recvonly)
CASE B			
UPDATE(**sendonly**)	→		CASE a
200 OK (recvonly)	←	→	UPDATE(sendonly)
		←	200 OK (recvonly)
			CASE b
		→	INVITE(sendonly)
		←	200 OK (recvonly)
		→	ACK
	Apply post test routine		

TSS	**TP**	**HOLD reference**	**Selection expression**
Network	CH_N01_012	4.5.2.1	PICS 4.5.1/2

Test purpose:

Retrieve the session in a confirmed dialogue. The media streams were previously set to inactive.

Ensure that the SUT transfers the RETRIVE request from the terminating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.

Precondition:

- An confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendonly'
- The media stream was previously set to 'inactive'
- The terminating party retrieves the held session

Comments:

Test Equipment (Gm)	**SUT**	**Test Equipment (Gm)**
	Establish a confirmed dialogue	
	The terminating party sets the session on HOLD	
	The originating party sets the session on HOLD	
CASE A		
CASE a	←	INVITE(**sendonly**)
INVITE(sendonly)	→	200 OK (recvonly)
200 OK (**recvonly**)	←	ACK
ACK		
CASE b		
UPDATE(sendonly)	←	
200 OK (**recvonly**)	→	
CASE B		
CASE a	←	UPDATE(**sendonly**)
UPDATE(sendonly)	→	200 OK (recvonly)
200 OK (**recvonly**)		
CASE b		
INVITE(sendonly)	←	
200 OK (**recvonly**)	→	
ACK	←	
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_013	4.5.2.1	PICS 4.5.1/2

Test purpose:
Retrieve the session in a confirmed dialogue. The media streams were previously set to inactive.
Ensure that the SUT transfers the RETRIVE request from the originating party in a confirmed dialogue. The 200 OK response containing an SDP body with an attribute line indicating 'a=recvonly'.

Precondition:
- An confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream was previously set to 'sendonly'
- The media stream was previously set to 'inactive'
- The originating party retrieves the held session

Comments:

Test Equipment (Gm)	SUT	Test Equipment (Gm)
	Establish a confirmed dialogue	
	The terminating party sets the session on HOLD	
	The originating party sets the session on HOLD	
CASE A		
INVITE(**recvonly**)	→	CASE a
200 OK (sendonly)	← →	INVITE(recvonly)
ACK	← ←	200 OK (sendonly)
	→	ACK
		CASE b
	→	UPDATE(recvonly)
	←	200 OK (sendonly)
CASE B		
UPDATE(**recvonly**)	→	CASE a
200 OK (sendonly)	← →	UPDATE(recvonly)
	←	200 OK (sendonly)
		CASE b
	→	INVITE(recvonly)
	←	200 OK (sendonly)
	→	ACK
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_014	4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose:
The network provides an announcement to the originating user when set the session on HOLD.
Ensure that the SUT provides an announcement to the originating user when setting the session on HOLD.

Precondition:
- A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream is set on HOLD
- The SUT provides an announcement

Comments:

Test Equipment (Gm)	SUT	Test Equipment (Gm)
	Establish a confirmed dialogue	
CASE A		
INVITE(**sendonly**)	→	
200 OK (recvonly)	←	
ACK	←	
	Announcement	
CASE B		
UPDATE(**sendonly**)	→	
200 OK (recvonly)	←	
	Announcement	
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_015	4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/3

Test purpose:
The network provides an announcement to the terminating user when set the session on HOLD.
Ensure that the SUT provides an announcement to the terminating user when setting the session on HOLD.

Precondition:
- A confirmed dialogue was established between the served user and a remote user according to the 'basic Call' procedures
- The media stream is set on HOLD
- The SUT provides an announcement

Comments:

Test Equipment (Gm)	SUT	Test Equipment (Gm)
	Establish a confirmed dialogue	
		CASE A
	←	INVITE(**sendonly**)
	→	200 OK (recvonly)
	←	ACK
	Announcement	
		CASE B
	←	UPDATE(**sendonly**)
	→	200 OK (recvonly)
	Announcement	
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_016	4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/4

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	Test Equipment (Gm)
	Establish a confirmed dialogue	
CASE A		
INVITE(**sendonly**)	→	CASE a
200 OK (recvonly)	← →	INVITE(sendonly)
ACK	← ←	200 OK (recvonly)
	→	ACK
		CASE b
	→	UPDATE(sendonly)
	←	200 OK (recvonly)
CASE B		
UPDATE(**sendonly**)	→	CASE a
200 OK (recvonly)	← →	UPDATE(sendonly)
	←	200 OK (recvonly)
		CASE b
	→	INVITE(sendonly)
	←	200 OK (recvonly)
	→	ACK
	Apply post test routine	

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_017	4.5.2.4	PICS 4.5.1/2 AND PICS 4.7.1/4

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 terminating 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		Test Equipment (Gm)
		Establish a confirmed dialogue		
CASE A				
CASE a			←	INVITE(**sendonly**)
INVITE(sendonly)	←		→	200 OK (recvonly)
200 OK (**recvonly**)	→		←	ACK
ACK	←			
CASE b				
UPDATE(sendonly)	←			
200 OK (**recvonly**)	→			
CASE B				
CASE a			←	UPDATE(**sendonly**)
UPDATE(sendonly)	←		→	200 OK (recvonly)
200 OK (**recvonly**)	→			
CASE b				
INVITE(sendonly)	←			
200 OK (**recvonly**)	→			
ACK	←			
		Apply post test routine		

TSS	TP	HOLD reference	Selection expression
Network	CH_N01_018	4.5.2.1	PICS 4.5.1/2

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 "inactive" 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		Test Equipment (Gm)
	Establish a confirmed dialogue		
	Session on HOLD by the terminating party		
CASE A			
INVITE(**inactive**)	→		CASE a
200 OK (inactive)	←	→	INVITE(inactive)
ACK	←	←	200 OK (inactive)
		→	ACK
			CASE b
		→	UPDATE(inactive)
		←	200 OK (inactive)
CASE B			
UPDATE(inactive)	→		CASE a
200 OK (inactive)	←	→	UPDATE(inactive)
		←	200 OK (inactive)
			CASE b
		→	INVITE(inactive)
		←	200 OK (inactive)
		→	ACK
	Apply post test routine		

TSS	**TP**	**HOLD reference**	**Selection expression**
Network	CH_N01_019	4.5.2.1	PICS 4.5.1/2

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 terminating user sets the session on HOLD marked "inactive" 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**		**Test Equipment (Gm)**
		Establish a confirmed dialogue		
		Session on HOLD by the originating party		
CASE A				
CASE a			←	INVITE(**inactive**)
INVITE(inactive)	←		→	200 OK (inactive)
200 OK (**inactive**)	→		←	ACK
ACK	←			
CASE b				
UPDATE(inactive)	←			
200 OK (**inactive**)	→			
CASE B				
CASE a			←	UPDATE(**inactive**)
UPDATE(inactive)	←		→	200 OK (inactive)
200 OK (**inactive**)	→			
CASE b				
INVITE(inactive)	←			
200 OK (**inactive**)	→			
ACK	←			
		Apply post test routine		

History

Document history		
V1.1.1	July 2006	Publication
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