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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<sup>™</sup> 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.

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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 <sup>TM</sup> 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></nnn></group></iut> |                 |   |
|-----------------|-------|--|-----------------|---|
| <\$\$>          | =     | supplementary service:                 | e.g. "CH"       |   |
| <iut></iut>     | =     | type of IUT:                           | U<br>N          | User<br>Network                               |
| <group></group> | =     | group                                  | 2 digit field i | representing group reference according to TSS |
| <nnn></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 i | s affected. The media st | ream was previously set to |
| sendrecv.  |                           |                          |                            |
| Ensure that the IUT to hold an individual          | media stream of the com   | munication session, sen  | ds an UPDATE request       |
| containing an SDP body with an attribute           | line indicating 'a= sendo | nly'.                    |                            |
| Precondition:                                      |                           |                          |                            |
| <ul> <li>A session was established betw</li> </ul> | een the served user and   | a remote user according  | to the 'basic Call'        |
| procedures   |                           |                          |                            |
| The media stream was previous                      | ly set to 'sendrecv'      |                          |                            |
| One individual media stream                        |                           |                          |                            |
| Comments:  |                           |                          |                            |
| User Equipment                                     | SUT                       | Test Eq                  | uipment                    |
|  | Establish a confirme      | d session                |                            |
| User invokes the HOLD service                      | <b>→</b>                  | UPDAT                    | E(sendonly)                |
|  | +                         | 200 OK                   | (recvonly)                 |
|  | Apply post test re        | _                        |                            |

| 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     |

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<br>Establish a confirmed session | Test Equipment  |
| CASE A         | <b>←</b><br>→                        | UPDATE(sendonly)<br>200 OK ( <b>recvonly</b> )        |
| CASE B         | ←<br>→<br>←                          | INVITE(sendonly)<br>200 OK ( <b>recvonly</b> )<br>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              | l. Individual media stream i   | s affected. The media si | tream was previously set to |
| recvonly.  |                                |                          |                             |
| Ensure that the IUT to hold an individua         | al media stream of the com     | munication session, sen  | ds an UPDATE request        |
| containing an SDP body with an attribu           | te line indicating 'a=inactive | e'.                      |                             |
| Precondition:                                    |                                |                          |                             |
| <ul> <li>A session was established be</li> </ul> | tween the served user and      | a remote user according  | g to the 'basic Call'       |
| procedures                                       |                                |                          |                             |

- The media stream was previously set to 'recvonly'
- One individual media stream

| Comments:<br>User Equipment   | SUT                           | Test Equipment    |
|-------------------------------|-------------------------------|-------------------|
|                               | Establish a confirmed session |                   |
| CASE A                        | ←                             | UPDATE(sendonly)  |
|                               | <b>→</b>                      | 200 OK (recvonly) |
| CASE B                        | ÷                             | INVITE(sendonly)  |
|                               | →                             | 200 OK (recvonly) |
|                               | <del>(</del>                  | ACK               |
| User invokes the HOLD service | <del>``</del>                 | 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<br>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.

| Prec | on | dition:  |
|------|----|--|
| •    |    | 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:<br>User Equipment   | SUT<br>Establish a confirmed session | Test Equipment  |
|-------------------------------|--------------------------------------|---|
| User invokes the HOLD service | →<br>←                               | UPDATE( <b>sendonly</b> )<br>200 OK (recvonly)                    |
| User resumes the session      | →<br>←<br>Apply post test routine    | UPDATE( <b>sendrecv</b> or absent)<br>200 OK (sendrecv or absent) |

| TSS  | TP                        | HOLD reference          | Selection expression             |  |
|--|---------------------------|-------------------------|----------------------------------|--|
| ServedUser/WithUPDATE  | CH_U01_005                | 4.5.2.1                 | PICS 4.5.1/1<br>AND PICS 4.6.1/2 |  |
| Test purpose:  |                           |                         | ·                                |  |
| Session resume. UPDATE method is used  | d. Individual media strea | ms are affected. The me | edia stream was previously       |  |
| set to inactive.   |                           |                         |                                  |  |
| Ensure that the IUT to resume an individuation   | al media stream of the c  | ommunication session,   | sends an UPDATE request          |  |
| containing an SDP body with an attribute I   | ine indicating 'a=recvon  | ly'.                    |                                  |  |
| Precondition:  |                           |                         |                                  |  |
| <ul> <li>A session was established between the setablished between the set</li></ul> | en the served user and    | a remote user according | to the 'basic Call'              |  |
| procedures   |                           |                         |                                  |  |
| <ul> <li>The media stream was previously</li> </ul>  | / set to 'inactive'       |                         |                                  |  |
| <ul> <li>One individual media stream</li> </ul>  |                           |                         |                                  |  |
| Comments:  |                           |                         |                                  |  |
| User Equipment   | SUT                       |                         | Equipment                        |  |
|  | Establish a confirme      | d session               |                                  |  |
| CASE A   | A ← UPD                   |                         | TE(sendonly)                     |  |
|  | <b>→</b>                  |                         | K (recvonly)                     |  |
| CASE B   | ←                         | INIVIT                  | E(sendonly)                      |  |
|  |                           |                         | K (recvonly)                     |  |
|  | ÷                         | ACK                     |                                  |  |
|  | •                         |                         |                                  |  |
| User invokes the HOLD service  | →                         | UPDA                    | TE(inactive)                     |  |
|  | +                         |                         | K (inactive)                     |  |
|  |                           |                         | · /                              |  |
| User resumes the media session   | →                         | UPDA                    | TE( <b>recvonly</b> )            |  |
|  | +                         | 200 O                   | K (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<br>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'.

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

| 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 st | ream was previously set to            |
| sendrecv.   |                          |                           |                                       |
| Ensure that the IUT to hold an individual           | media stream of an early | dialogue, sends an UPI    | DATE request containing an            |
| SDP body with an attribute line indicating          | j 'a= sendonly'.         |                           |                                       |
| Precondition:                                       |                          |                           |                                       |
| <ul> <li>An early dialogue was establish</li> </ul> | ed between the served u  | ser and a remote user a   | ccording to the 'basic Call'          |
| procedures  |                          |                           | C C                                   |
| The media stream was previous                       | sly set to 'sendrecv'    |                           |                                       |
| One individual media stream                         | -                        |                           |                                       |
| Comments:   |                          |                           |                                       |
| User Equipment                                      | SUT                      | Test E                    | Equipment                             |
|   | Establish an early o     | lialogue                  |                                       |
|   |                          |                           |                                       |
| User invokes the HOLD service                       | <b>→</b>                 | UPDA                      | TE(sendonly)                          |
| User invokes the HOLD service                       | →<br>+                   |                           | TE( <b>sendonly</b> )<br>K (recvonly) |

| TSS  | TP                        | HOLD reference            | Selection expression          |
|--|---------------------------|---------------------------|-------------------------------|
| ServedUser/WithUPDATE  | CH_U01_00                 | 08 4.5.2.1                | PICS 4.5.1/1                  |
|  |                           |                           | AND PICS 4.6.1/1              |
| Test purpose:  |                           |                           |                               |
| Session hold. UPDATE method is used  | l. Individual media strea | am is affected. The media | stream was previously set to  |
| sendrecv.  |                           |                           |                               |
| Ensure that the IUT responds to the hol<br>dialogue, sends a 200 OK UPDATE res   |                           |                           |                               |
| Precondition:  |                           |                           |                               |
| <ul> <li>An early dialogue was establis<br/>procedures</li> <li>The media stream was previou</li> <li>One individual media stream</li> </ul> |                           | d user and a remote user  | according to the 'basic Call' |
| Comments:  |                           |                           |                               |
| User Equipment   | SUT                       | Tes                       | t Equipment                   |
|  | Establish an ear          |                           |                               |
|  | +                         | UPE                       | DATE(sendonly)                |
|  | →                         | 200                       | OK (recvonly)                 |
|  | Apply post tes            | st routine                |                               |

| TSS   | TP                      | HOLD reference             | Selection expression                 |
|---|-------------------------|----------------------------|--------------------------------------|
| ServedUser/WithUPDATE   | CH_U01_009              | 4.5.2.1                    | PICS 4.5.1/1                         |
|   |                         | 1.0.2.1                    | AND PICS 4.6.1/2                     |
| Test purpose:   |                         |                            | <b>-</b>                             |
| Session hold. UPDATE method is used. Al   | media streams are af    | fected. The media stream   | ns were previously set to            |
| sendrecv.   |                         |                            |                                      |
| Ensure that the IUT to hold all media stream  |                         |                            | DATE request containing an           |
| SDP body with a session level direction attr<br><b>Precondition:</b>                | ibute line indicating a | =sendoniy'.                |                                      |
| <ul> <li>A session was established betwee</li> </ul>                                | n the served user and   | l a remote user according  | n to the 'basic Call'                |
| procedures  |                         |                            |                                      |
| <ul> <li>All media streams were previously</li> </ul>                               | set to 'sendrecy'       |                            |                                      |
| Individual media streams  |                         |                            |                                      |
| Comments:   |                         |                            |                                      |
| User Equipment  | SUT                     |                            | Equipment                            |
|   | Establish a confirme    | ed session                 |                                      |
| User invokes the HOLD service   | <b>→</b>                | UPDA                       | TE(sendonly)                         |
|   | ÷                       |                            | K (recvonly)                         |
|   | Apply post test r       |                            |                                      |
|   |                         |                            |                                      |
|   |                         |                            |                                      |
|   | TP                      | HOLD reference             | Selection expression<br>PICS 4.5.1/1 |
| ServedUser/WithUPDATE   | CH_U01_010              | 4.5.2.1                    | AND PICS 4.6.1/2                     |
| Test purpose:   |                         |                            |                                      |
| Session hold. UPDATE method is used. Al   | media streams are af    | fected. The media stream   | ns were previously set to            |
| sendrecv.   |                         |                            |                                      |
| Ensure that the IUT responds to hold reque<br>sends a 200 OK INVITE/UPDATE response |                         |                            |                                      |
| Precondition:   | s containing an ODF b   | ouy with an attribute line |                                      |
| A session was established between   | n the served user and   | a remote user according    | n to the 'basic Call'                |
| procedures  |                         |                            |                                      |
| The media stream was previously   | set to 'sendrecv'       |                            |                                      |
| One individual media stream   |                         |                            |                                      |
| Comments:   |                         |                            |                                      |
| User Equipment  | SUT                     |                            | Equipment                            |
|   | Establish a confirme    | ed session                 |                                      |
| CASE A  | +                       |                            | TE(sendonly)                         |
|   | ×<br>→                  |                            | K (recvonly)                         |
|   | -                       | 200 0                      | ,                                    |
| CASE B  | ←                       | INVIT                      | E(sendonly)                          |
|   | <b>→</b>                | 200 O                      | K (recvonly)                         |
|   | ←                       | ACK                        | -                                    |
|   | Apply post test r       | outine                     |                                      |

| TSS                   | ТР         | HOLD reference | Selection expression |
|-----------------------|------------|----------------|----------------------|
| ServedUser/WithUPDATE | CH_U01_011 | 4.5.2.1        | PICS 4.5.1/1         |
|                       |            |                | AND PICS 4.6.1/2     |

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'.

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

| 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 use   | ed. All media streams are   | affected. The media str | eam were previously set to     |
| sendonly.  |                             |                         |                                |
| Ensure that the IUT to resume all media s  |                             |                         |                                |
| an SDP body with a session level directio  | n attribute line indicating | 'a=sendrecv' or without | attribute line.                |
| Precondition:  |                             |                         |                                |
| <ul> <li>A session was established between the session was est</li></ul> | een the served user and     | a remote user according | g to the 'basic Call'          |
| procedures   |                             |                         |                                |
| <ul> <li>All media streams were previous</li> </ul>  | sly set to 'sendonly'       |                         |                                |
| Individual media streams   |                             |                         |                                |
| Comments:  |                             |                         |                                |
| User Equipment   | SUT                         |                         | Equipment                      |
|  | Establish a confirmed       | d session               |                                |
| User invokes the HOLD service  | <b>→</b>                    | UPDA                    | TE(sendonly)                   |
|  | +                           |                         | K (recvonly)                   |
| User resumes the session   | <b>→</b>                    | UPDA                    | TE( <b>sendrecv</b> or absent) |
|  | +                           | 200 O                   | K (sendrecv or absent)         |
|  | Apply post test ro          | outine                  |                                |

| App | ly | post | test | routine |
|-----|----|------|------|---------|
|-----|----|------|------|---------|

| TSS<br>ServedUser/WithUPDATE | <b>TP</b><br>CH_U01_013 | HOLD reference<br>4.5.2.1 | Selection expression<br>PICS 4.5.1/1<br>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' ٠

Individual media streams •

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

| 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. A                              | Il media streams are aff  | ected. The media stream | is were previously set to |
| recvonly.   |                           |                         |                           |
| Ensure that the IUT to hold an individual n                         |                           |                         | ds an UPDATE request      |
| containing an SDP body with an attribute I                          | ine indicating a=inactive | 9.                      |                           |
| Precondition:   |                           |                         |                           |
| <ul> <li>A session was established betwee<br/>procedures</li> </ul> | en the served user and    | a remote user according | to the 'basic Call'       |
| <ul> <li>The media stream was previously</li> </ul>                 | v set to 'sendonly'       |                         |                           |
| <ul> <li>Individual media streams</li> </ul>                        | y set to seridonly        |                         |                           |
| Comments:   |                           |                         |                           |
| User Equipment  | SUT                       | Test F                  | quipment                  |
|   | Establish a confirme      |                         | derburgut                 |
| User invokes the HOLD service                                       | →                         |                         | TE(sendonly)              |
| User invokes the HOLD service                                       | ÷                         |                         | K (recvonly)              |
|   |                           |                         |                           |
| CASE A  | ÷                         | UPDA                    | TE(inactive)              |
|   | <b>→</b>                  | 200 OI                  | K (inactive)              |
| CASE B  | +                         | INVITE                  | E(inactive)               |
|   | ÷                         |                         | K (inactive)              |
|   | +                         | ACK                     |                           |
|   |                           |                         |                           |
| User resumes the media session                                      | <b>→</b>                  | UPDA <sup>-</sup>       | TE( <b>sendonly</b> )     |
|   | +                         |                         | K (recvonly)              |
|   | Apply post test ro        | putine                  |                           |

| TSS                   |            |         | Selection expression |
|-----------------------|------------|---------|----------------------|
| ServedUser/WithUPDATE | CH_U01_015 | 4.5.2.1 | PICS 4.5.1/1         |
|                       |            |         | AND PICS 4.6.1/1     |

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'.

- 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:<br>User Equipment   | SUT<br>Establish an early dialogue | Test Equipment    |  |
|-------------------------------|------------------------------------|-------------------|--|
| User invokes the HOLD service | <b>→</b>                           | 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:<br>User Equipment | SUT<br>Establish an early dialogue | Test Equipment                                 |  |
|-----------------------------|------------------------------------|--|--|
|                             | ←<br>→<br>Apply post test routine  | UPDATE(sendonly)<br>200 OK ( <b>recvonly</b> ) |  |

#### 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               |
| Served Servin Bater BATE  | 011_002_001        | 1.0.2.1                  | AND NOT PICS 4.6.1/2       |
| Test purpose:   |                    |                          | 7110 1101 1100 4.0.1/2     |
|   | idual modia stroa  | n is affected. The modia | stroom was providually sot |
| Session hold. UPDATE method is not used. Indivi   | uuai meula sireai  | n is anected. The media  | stream was previously set  |
| to sendrecv.  |                    |                          |                            |
| Ensure that the IUT to hold an individual media st  |                    | •                        | s a ReINVITE request       |
| containing an sdp body with an attribute line indica  | ating 'a=sendonly' | •                        |                            |
| Precondition:   |                    |                          |                            |
| <ul> <li>A session was established between the second second</li></ul> | 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 E                   | quipment                   |
|   | lish a confirmed   |                          | 1 ··· F · · · · · ·        |
| User invokes the HOLD service   | <b>→</b>           | ReINVI                   | TE(sendonly)               |
|   | +                  | 200 OK                   | (recvonly)                 |
|   | →                  | ACK                      |                            |
| Ar  | oply post test rou | utine                    |                            |

| TSS<br>ServedUser/WithUPDATE   | <b>TP</b><br>CH_U02_002     | HOLD reference<br>4.5.2.1                             | Selection expression<br>PICS 4.5.1/1<br>AND NOT PICS 4.6.1/2 |
|--|-----------------------------|---|--|
| Test purpose:<br>Session hold. UPDATE method is not use<br>to sendrecv.<br>Ensure that the IUT responds to the hold r<br>remote party, sends a 200 OK INVITE/UP<br>'a=recvonly'. | request of an individual r  | nedia stream of the com                               | munication session from the                                  |
| <ul> <li>Precondition:</li> <li>A session was established betwe<br/>procedures</li> <li>The media stream was previously</li> <li>Individual media streams</li> </ul>             |                             | a remote user according                               | to the 'basic Call'  |
| Comments:<br>User Equipment  | SUT<br>Establish a confirme |   | quipment   |
| CASE A   | <b>←</b><br>→               | UPDATE(sendonly)<br>200 OK ( <b>recvonly</b> )        |  |
| CASE B   | ←<br>→<br>←                 | INVITE(sendonly)<br>200 OK ( <b>recvonly</b> )<br>ACK |  |
|  | Apply post test ro          |   |  |
| <b>TSS</b><br>ServedUser/WithoutUPDATE   | <b>TP</b><br>CH_U02_003     | HOLD reference<br>4.5.2.1                             | Selection expression<br>PICS 4.5.1/1<br>AND NOT PICS 4.6.1/2 |
| Test purpose:<br>Session hold. UPDATE method is not use<br>set to recvonly.<br>Ensure that the IUT to hold an individual m<br>containing an SDP body with an attribute I         | nedia streams of the cor    | nmunication session, se                               | edia stream was previously                                   |
| <ul> <li>Precondition:</li> <li>A session was established betwee<br/>procedures</li> </ul>   | een the served user and     | a remote user according                               | to the 'basic Call'  |

- The media stream was previously set to 'recvonly' Individual media stream ٠
- •

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

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| 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 s  | tream is affected. The n     | nedia stream was previously      |
| set to sendonly.                                   |                           |                              |                                  |
| Ensure that the IUT to resume an individu          | ual media stream of the c | ommunication session,        | sends a ReINVITE request         |
| containing an SDP body with an attribute           | line indicating 'a=sendre | cv' or without attribute lin | ne.                              |
| Precondition:                                      |                           |                              |                                  |
| <ul> <li>A session was established betw</li> </ul> | een the served user and   | a remote user according      | g to the 'basic Call'            |
| procedures   |                           |                              |                                  |
| <ul> <li>The media stream was previous</li> </ul>  | ly set to 'sendonly'      |                              |                                  |
| <ul> <li>Individual media stream</li> </ul>        |                           |                              |                                  |
| Comments:  |                           |                              |                                  |
| User Equipment                                     | SUT                       | Test E                       | Equipment                        |
|  | Establish a confirme      | d session                    |                                  |
| User invokes the HOLD service                      | <b>→</b>                  | ReIN                         | /ITE(sendonly)                   |
|  | ←                         |                              | K (recvonly)                     |
|  | <b>→</b>                  | ACK                          |                                  |
|  |                           |                              |                                  |
| User resumes the session                           | <b>→</b>                  | ReIN                         | /ITE( <b>sendrecv</b> or absent) |
|  | +                         | 200 O                        | K (sendrecv or absent)           |
|  | <b>→</b>                  | ACK                          |                                  |
|  | Apply post test ro        | outine                       |                                  |

| 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 s  | tream is affected. The m | edia stream was previously |
| set to inactive.  |                           |                          |                            |
| Ensure that the IUT to resume an individu                           |                           |                          | ends a ReINVITE request    |
| containing an SDP body with an attribute                            | line indicating 'a=recvon | ly'.                     |                            |
| Precondition:   |                           |                          |                            |
| <ul> <li>A session was established betwee<br/>procedures</li> </ul> | een the served user and   | a remote user according  | to the 'basic Call'        |
| The media stream was previousl                                      | y set to 'inactive'       |                          |                            |
| <ul> <li>Individual media streams</li> </ul>                        |                           |                          |                            |
| Comments:   |                           |                          |                            |
| User Equipment  | SUT                       |                          | quipment                   |
|   | Establish a confirme      | d session                |                            |
| CASE A  | +                         | UPDA                     | TE(sendonly)               |
|   | <b>→</b>                  |                          | K (recvonly)               |
| CASE B  | +                         | INVITE                   | E(sendonly)                |
|   | →                         | 200 O                    | K (recvonly)               |
|   | +                         | ACK                      |                            |
| User invokes the HOLD service                                       | →                         | ReINV                    | ITE(inactive)              |
|   | ÷                         |                          | K (inactive)               |
|   | <b>→</b>                  | ACK                      | · · ·                      |
| User resumes the media session                                      | <b>→</b>                  | ReINV                    | ITE( <b>recvonly</b> )     |
|   | +                         | 200 O                    | K (sendonly)               |
|   | →                         | ACK                      |                            |
|   | Apply post test ro        | putine                   |                            |

| TSS   | ТР                        | 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 use  | d. Individual media strea | am is affected. The medi | a stream was previously set |
| to inactive.  |                           |                          |                             |
| Ensure that the IUT to resume an individu<br>containing an SDP body with an attribute   |                           |                          | sends a ReINVITE request    |
| Precondition:   |                           |                          |                             |
| <ul> <li>A session was established between the set of the set</li></ul> | en the served user and    | a remote user according  | to the 'basic Call'         |
| procedures  |                           |                          |                             |
| <ul> <li>The media stream was previousl</li> </ul>  | y set to 'inactive'       |                          |                             |
| <ul> <li>One individual media stream</li> </ul>   |                           |                          |                             |
| Comments:   |                           |                          |                             |
| User Equipment  | SUT                       |                          | quipment                    |
|   | Establish a confirme      | d session                |                             |
| User invokes the HOLD service   | <b>→</b>                  | ReINV                    | /ITE(sendonly)              |
|   | +                         | •                        |                             |
|   | <b>→</b>                  | ACK                      | · · · · ·                   |
| CASE A  | +                         | UPDA                     | TE(inactive)                |
|   | <b>→</b>                  |                          | K (inactive)                |
| CASE B  | +                         | INVITE                   | E(inactive)                 |
|   | →                         | 200 O                    | K (inactive)                |
|   | +                         | ACK                      |                             |
| User resumes the media session  | <b>→</b>                  |                          | (ITE( <b>sendonly</b> )     |
|   | ÷                         |                          | K (recvonly)                |
|   | <b>→</b>                  | ACK                      |                             |
|   | Apply post test re        | outine                   |                             |

| 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 use                | ed. Individual media strea | am is affected. The medi | a stream was previously set  |
| to sendrecv.  |                            |                          |                              |
| Ensure that the IUT to hold an individual r           | media stream of an early   | dialogue, sends an UPE   | DATE request containing an   |
| SDP body with an attribute line indicating            | 'a= sendonly'.             | -                        | -                            |
| Precondition:   |                            |                          |                              |
| <ul> <li>An early dialogue was established</li> </ul> | ed between the served us   | ser and a remote user a  | ccording to the 'basic Call' |
| procedures  |                            |                          | C C                          |
| The media stream was previous                         | y set to 'sendrecv'        |                          |                              |
| One individual media stream                           | -                          |                          |                              |
| Comments:   |                            |                          |                              |
| User Equipment  | SUT                        | Test Eq                  | uipment                      |
|   | Establish an early o       | lialogue                 | •                            |
| User invokes the HOLD service                         | <b>→</b>                   | UPDAT                    | E(sendonly)                  |
|   | +                          | 200 OK                   | (recvonly)                   |
|   | Apply post test re         |                          |                              |

| TSS<br>ServedUser/WithUPDATE<br>Test purpose:   | <b>TP</b><br>CH_U02_008     | HOLD reference<br>4.5.2.1               | Selection expression<br>PICS 4.5.1/1<br>AND PICS 4.6.1/1<br>AND NOT PICS 4.6.1/2 |
|---|-----------------------------|---|--|
| Session hold. UPDATE method is not used. Indivito sendrecv.<br>Ensure that the IUT responds to the hold request dialogue, sends a 200 OK UPDATE response cor<br>Precondition:               | of an individual m          | edia stream from the remo               | ote party of an early  |
| <ul> <li>An early dialogue was established betwee procedures</li> <li>The media stream was previously set to</li> <li>One individual media stream</li> </ul>                                |                             | er and a remote user acco               | rding to the 'basic Call'  |
| Comments:<br>User Equipment<br>Esta   | SUT<br>ablish an early di   | Test Equip<br>alogue                    | oment  |
| Α   | ←<br>→<br>pply post test ro | UPDATE(s<br>200 OK ( <b>re</b><br>utine |  |
| •   |                             |   |  |
| TSS<br>ServedUser/WithoutUPDATE   | <b>TP</b><br>CH_U02_009     | HOLD reference<br>4.5.2.1               | Selection expression<br>PICS 4.5.1/1<br>AND NOT PICS 4.6.1/2                     |
| Test purpose:<br>Session hold. UPDATE method is not used. All m<br>sendrecv.<br>Ensure that the IUT to hold all media streams of the<br>SDP body with a session level direction attribute I | he communicatior            | n session, sends a ReINVI               |  |
| <ul> <li>Precondition:</li> <li>A session was established between the sprocedures</li> <li>All media streams were previously set to</li> <li>Individual media streams</li> </ul>            |                             | remote user according to                | the 'basic Call'   |
| Comments:<br>User Equipment<br>Estab  | SUT<br>lish a confirmed     | Test Equip                              | oment  |
| User invokes the HOLD service   | →<br>+<br>→                 | ReINVITE(<br>200 OK (re<br>ACK          |  |
| A   | pply post test ro           | utine                                   |  |

| TSS  |  | HOLD reference                        | Selection expression   |
|--|--|---------------------------------------|--|
| ServedUser/WithUPDATE  | CH_U02_010   | 4.5.2.1                               | PICS 4.5.1/1<br>AND NOT PICS 4.6.1/2                         |
| Test purpose:<br>Session hold. UPDATE method is not used.<br>sendrecv.<br>Ensure that the IUT responds to hold reques<br>sends a 200 OK INVITE/UPDATE response<br>Precondition:  | st of all media streams  | s of the communication s              | treams were previously set to session from the remote party, |
| <ul> <li>A session was established between<br/>procedures</li> <li>The media stream was previously s</li> <li>One individual media stream</li> </ul>   |  | a remote user accordin                | g to the 'basic Call'  |
| Comments:<br>User Equipment  | SUT<br>Establish a confirme  |                                       | quipment   |
| CASE A   | <b>←</b><br>→  |                                       | E(sendonly)<br>( ( <b>recvonly</b> )                         |
| CASE B   | ←<br>→<br>←  |                                       | (sendonly)<br>K ( <b>recvonly</b> )                          |
|  | Apply post test r  |                                       |  |
| TSS<br>ServedUser/WithoutUPDATE  | <b>TP</b><br>CH_U02_011  | HOLD reference<br>4.5.2.1             | Selection expression<br>PICS 4.5.1/1<br>AND NOT PICS 4.6.1/2 |
| Test purpose:<br>Session hold. UPDATE method is not used.<br>recvonly.<br>Ensure that the IUT to hold all media stream<br>sdp body with a session level direction attrib<br>Precondition:<br>• A session was established between<br>procedures | is of the communication of the communication of the communication of the second s | on session, sends a Rel<br>inactive'. | NVITE request containing an                                  |
| <ul> <li>All media streams were previously</li> <li>Individual media streams</li> </ul>  | set to 'recvonly'  |                                       |  |
| Comments:<br>User Equipment  | SUT<br>Establish a confirme  |                                       | quipment   |
| CASE A   | <b>←</b><br>→  |                                       | E(sendonly)<br>( ( <b>recvonly</b> )                         |
| CASE B   | ←<br>→<br>←  |                                       | (sendonly)<br>( ( <b>recvonly</b> )                          |
| User invokes the HOLD service  | →<br>←<br>→  | 200 OK<br>ACK                         | TE( <b>inactive</b> )<br>( (inactive)                        |
|  | Apply post test r  | outine                                |  |

| 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 |
|                          |            |                |                      |

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'

| <ul> <li>Individual media streams</li> </ul> |                               |                              |
|--|-------------------------------|------------------------------|
| Comments:                                    |                               |                              |
| User Equipment                               | SUT                           | Test Equipment               |
|  | Establish a confirmed session |                              |
| User invokes the HOLD service                | <b>→</b>                      | ReINVITE( <b>sendonly</b> )  |
|  | ←                             | 200 OK (recvonly)            |
|  | <b>→</b>                      | ACK                          |
| User resumes the session                     | <b>→</b>                      | ReINVITE(sendrecv or absent) |
|  | +                             | 200 OK (sendrecv or absent)  |
|  | <b>→</b>                      | 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 |

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'.

- 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<br>Establish a confirmed session | Test Equipment  |
| CASE A                         | ←<br>→                               | UPDATE( <b>sendonly</b> )<br>200 OK (recvonly)          |
| CASE B                         | ←<br>→<br>←                          | INVITE( <b>sendonly</b> )<br>200 OK (recvonly)<br>ACK   |
| User invokes the HOLD service  | →<br>←<br>→                          | ReINVITE( <b>inactive</b> )<br>200 OK (inactive)<br>ACK |
| User resumes the media session | →<br>←<br>→                          | ReINVITE( <b>recvonly</b> )<br>200 OK (sendonly)<br>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 use<br>recvonly.   | ed. All media streams are | e affected. The media str | eams were previously set to |
| Ensure that the IUT to hold an individual r   | nedia stream of the com   | munication session sen    | ds an ReINI/ITE request     |
| containing an SDP body with an attribute  |                           |                           |                             |
| Precondition:   |                           |                           |                             |
| A session was established between the setablished | en the served user and    | a remote user according   | to the 'basic Call'         |
| procedures  |                           |                           |                             |
| The media stream was previousl  | v set to 'sendonlv'       |                           |                             |
| <ul> <li>Individual media streams</li> </ul>  | ,,                        |                           |                             |
| Comments:   |                           |                           |                             |
| User Equipment  | SUT                       | Test Eq                   | uipment                     |
|   | Establish a confirme      | d session                 |                             |
| User invokes the HOLD service   | <b>→</b>                  | ReINVIT                   | E(sendonly)                 |
|   | +                         | 200 OK                    | (recvonly)                  |
|   | <b>→</b>                  | ACK                       |                             |
| CASE A  | +                         | UPDATE                    | E(inactive)                 |
|   | <b>→</b>                  | 200 OK                    | (inactive)                  |
| CASE B  | +                         | INVITE(                   | inactive)                   |
|   | →                         | 200 OK                    | (inactive)                  |
|   | ←                         | ACK                       | <b>``</b>                   |
| User resumes the media session  | <b>→</b>                  | ReINVIT                   | E(sendonly)                 |
|   | +                         |                           | (recvonly)                  |
|   | →                         | ACK                       |                             |
|   | Apply post test ro        | outine                    |                             |

| 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 sendrecv.   | media streams are aff | ected. The media stream | n was previously set to      |
| Ensure that the IUT to hold all media stream<br>with an attribute line indicating 'a= sendonly |                       | , sends an UPDATE req   | uest containing an SDP body  |
| Precondition:  |                       |                         |                              |
| An early dialogue was established  | between the served us | ser and a remote user a | ccording to the 'basic Call' |
| procedures   |                       |                         | C C                          |
| • The media stream was previously  | set to 'sendrecv'     |                         |                              |
| Individual media streams   |                       |                         |                              |
| Comments:  |                       |                         |                              |
| User Equipment   | SUT                   | Test Eo                 | uipment                      |
|  | Establish an early d  | lialogue                |                              |
| User invokes the HOLD service  | <b>→</b>              | UPDAT                   | E(sendonly)                  |
|  | +                     |                         | (recvonly)                   |
|  | Apply post test ro    |                         |                              |

| TSS   | ТР                              | 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 use<br>sendrecv.   | d. All media streams are aff    | ected. The media stream    | ns were previously set to    |
| Ensure that the IUT responds to the ho            | old request of all individual n | nedia streams from the i   | remote party of an early     |
| dialogue, sends a 200 OK UPDATE re                | sponse containing an SDP        | body with an attribute lir | ne indicating 'a=recvonly'.  |
| Precondition:                                     | -                               |                            |                              |
| <ul> <li>An early dialogue was establi</li> </ul> | shed between the served us      | ser and a remote user a    | ccording to the 'basic Call' |

- 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

| User Equipment | SUT<br>Establish an early dialogue | Test Equipment    |  |
|----------------|------------------------------------|-------------------|--|
|                | +                                  | 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 m             | edia streams were prev   | iously set to sendrecv. |                              |
| Ensure that the SUT transfers the HOLD                | equest in an early dialo | gue. The 200 OK respor  | ise contains an SDP body     |
| with an attribute line indicating 'a=recvonly         | /'.                      | -                       |                              |
| Precondition:   |                          |                         |                              |
| <ul> <li>An early dialogue was established</li> </ul> | d between the served u   | ser and a remote user a | ccording to the 'basic Call' |
| procedures  |                          |                         |                              |
| <ul> <li>The media stream was previousl</li> </ul>    | y set to 'sendrecv'      |                         |                              |
| The originating party sets the set                    | sion on HOLD             |                         |                              |
| Comments:   |                          |                         |                              |
| Test Equipment (Gm)                                   | SUT                      | Test Equi               | ipment (Gm)                  |
|   | Establish an early       | dialogue                |                              |
| UPDATE(sendonly)                                      | →                        |                         | (sendonly)                   |
| 200 OK (recvonly)                                     | +                        | ← 200 OK (I             | recvonly)                    |
|   | Apply post test r        | outine                  |                              |

| TSS                                | TP                                    | HOLD reference           | Selection expression             |
|------------------------------------|---------------------------------------|--------------------------|----------------------------------|
| Network                            | CH_N01_002                            | 4.5.2.1                  | PICS 4.5.1/2<br>AND PICS 4.7.1/1 |
| Test purpose:                      | · · · · · · · · · · · · · · · · · · · |                          |                                  |
| Session retrieval in the early dis | loque. The media streams were n       | raviously sat to sandrac | 17                               |

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'.

- An early dialogue was established between the served user and a remote user according to the 'basic Call' ٠ procedures
- The media stream was previously set to 'sendonly'
- The originating party retrieves the session •

| Comments:<br>Test Equipment (Gm) | SUT             |              | Test Equipment (Gm) |  |
|----------------------------------|-----------------|--------------|---------------------|--|
|                                  | Establish an ea | rly dialogue |                     |  |
| UPDATE(sendonly)                 | <b>→</b>        | · →          | UPDATE(sendonly)    |  |
| 200 OK (recvonly)                | ÷               | +            | 200 OK (recvonly)   |  |
| UPDATE( <b>sendrecv</b> )        | <b>→</b>        | <b>→</b>     | UPDATE(sendrecv)    |  |
| 200 OK (sendrecv)                | +               | +            | 200 OK (sendrecv)   |  |
| , ,                              | Apply post te   | st 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     |

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'.

- 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) | S                           | UT             | Test Equipment (Gm) |  |  |
|                     | Establish an early dialogue |                |                     |  |  |
| UPDATE(sendonly)    | <b>→</b>                    | <b>→</b>       | UPDATE(sendonly)    |  |  |
| 200 OK (recvonly)   | ←                           | +              | 200 OK (recvonly)   |  |  |
| 200 OK (recvonly)   | ←                           | +              | 200 OK (recvonly)   |  |  |
| ACK                 | <b>→</b>                    | <b>→</b>       | ACK                 |  |  |
| CASE A              |                             |                |                     |  |  |
| INVITE(sendrecv)    | <b>→</b>                    |                | CASE a              |  |  |
| 200 OK (sendrecv)   | ←                           | →              | INVITE(sendrecv)    |  |  |
| ACK                 | ←                           | ÷              | 200 OK (sendrecv)   |  |  |
|                     |                             | <b>→</b>       | ACK                 |  |  |
|                     |                             |                | CASE b              |  |  |
|                     |                             | →              | UPDATE(sendrecv)    |  |  |
|                     |                             | +              | 200 OK (sendrecv)   |  |  |
| CASE B              |                             |                |                     |  |  |
| UPDATE(sendrecv)    | →                           |                | CASE a              |  |  |
| 200 OK (sendrecv)   | +                           | <b>→</b>       | UPDATE(sendrecv)    |  |  |
|                     |                             | +              | 200 OK (sendrecv)   |  |  |
|                     |                             |                | CASE b              |  |  |
|                     |                             | →              | INVITE(sendrecv)    |  |  |
|                     |                             | +              | 200 OK (sendrecv)   |  |  |
|                     |                             | →              | ACK                 |  |  |
|                     | Apply pos                   | t test routine |                     |  |  |

| TSS   | TP                          | HOLD re        | eference        | 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 se  | et to sendrecv. |                           |
| Ensure that the SUT transfers the HOL                   |                             |                |                 | dialogue. The 200 OK      |
| response containing an SDP body with                    | an attribute line indicatir | ig 'a=recvonly | y'.             |                           |
| Precondition:   |                             |                |                 |                           |
| <ul> <li>A confirmed dialogue was esta</li> </ul>       | ablished between the se     | ved user and   | l a remote use  | r according to the 'basic |
| Call' procedures  |                             |                |                 |                           |
| The media stream was previou                            | usly set to 'sendrecv'      |                |                 |                           |
| <ul> <li>The originating party sets the sets</li> </ul> | session on HOLD             |                |                 |                           |
| Comments:   |                             |                |                 |                           |
| Test Equipment (Gm)                                     | SUT                         |                | Test Ed         | quipment (Gm)             |
|   | Establish a confirm         | ed dialogue    |                 |                           |
| CASE A  |                             |                |                 |                           |
| INVITE(sendonly)  | <b>→</b>                    |                | CASE            | a                         |
| 200 OK (recvonly)                                       | ←                           | <b>→</b>       |                 | (sendonly)                |
| ACK   | +                           | ÷              |                 | < (recvonly)              |
|   |                             | <b>→</b>       | ACK             |                           |
|   |                             |                |                 |                           |
|   |                             |                | CASE            |                           |
|   |                             | <b>→</b>       |                 | ΓE(sendonly)              |
|   |                             | ←              | 200 Oł          | < (recvonly)              |
| 0.07 D  |                             |                |                 |                           |
| CASEB   |                             |                | 0.05            |                           |
| UPDATE( <b>sendonly</b> )                               | <b>→</b>                    | •              | CASE            |                           |
| 200 OK (recvonly)                                       | +                           | <b>→</b>       |                 | TE(sendonly)              |
|   |                             | ÷              | 200 OF          | < (recvonly)              |
|   |                             |                | CASE            | h                         |
|   |                             | →              |                 | b<br>(sendonly)           |
|   |                             | →<br>←         |                 | (recvonly)                |
|   |                             | <b>←</b><br>→  | ACK             |                           |
|   | Apply post test             | -              | AUN             |                           |

| TSS   | ТР                   | HOLD re           | ference         | Selection expression    |  |
|---|----------------------|-------------------|-----------------|-------------------------|--|
| Network   | CH_N01_0             | _005 4.5.2.1      |                 | PICS 4.5.1/2            |  |
| Test purpose:   |                      |                   |                 |                         |  |
| Session hold in a confirmed dialogue. The r                                 |                      |                   |                 |                         |  |
| Ensure that the SUT transfers the HOLD red                                  | quest from the ter   | minating party in | a confirmed di  | alogue. The 200 OK      |  |
| response containing an SDP body with an a                                   | ttribute line indica | iting 'a=recvonly |                 |                         |  |
| Precondition:   |                      |                   |                 |                         |  |
| <ul> <li>A confirmed dialogue was establish<br/>Call' procedures</li> </ul> |                      | served user and   | a remote user a | according to the basic  |  |
| <ul> <li>The media stream was previously stream</li> </ul>                  |                      |                   |                 |                         |  |
| <ul> <li>The terminating party sets the sess</li> </ul>                     | sion on HOLD         |                   |                 |                         |  |
| Comments:   |                      |                   | _               |                         |  |
| Test Equipment (Gm)   | SUT                  |                   | Test Eq         | uipment (Gm)            |  |
|   | Establish a confi    | rmed dialogue     |                 |                         |  |
| CASE A<br>CASE a  |                      |                   |                 |                         |  |
| INVITE(sendonly)  | ÷                    | ←<br>→            |                 | sendonly)<br>(recvonly) |  |
| 200 OK (recvonly)   | $\rightarrow$        | <del>,</del>      | ACK             | (recvority)             |  |
| ACK   | <del>,</del>         | <b>V</b>          | AUK             |                         |  |
| Non   | •                    |                   |                 |                         |  |
| CASE b  |                      |                   |                 |                         |  |
| UPDATE(sendonly)  | ←                    |                   |                 |                         |  |
| 200 OK (recvonly)   | <b>→</b>             |                   |                 |                         |  |
|   |                      |                   |                 |                         |  |
| CASE B  |                      |                   |                 |                         |  |
| CASE a  |                      | +                 |                 | (sendonly)              |  |
| UPDATE(sendonly)  | +                    | <b>→</b>          | 200 OK          | (recvonly)              |  |
| 200 OK (recvonly)   | <b>→</b>             |                   |                 |                         |  |
| CASE b  |                      |                   |                 |                         |  |
| INVITE(sendonly)  | ÷                    |                   |                 |                         |  |
| 200 OK (recvonly)   | ÷                    |                   |                 |                         |  |
| ACK   | ÷                    |                   |                 |                         |  |
|   | Apply post te        | est 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 dial                               |                            |  |                                |  |
| Ensure that the SUT is able support the                                |                            |  |                                |  |
| originating party. The originating party s                             | ends an INVITE or UPDA     | TE request. The 'a' attrik               | oute in the SDP is set to      |  |
| 'sendrecv' or this attribute is absent.                                |                            |  |                                |  |
| Precondition:  |                            |  |                                |  |
| <ul> <li>A confirmed dialogue was esta<br/>Call' procedures</li> </ul> | blished between the serve  | ed user and a remote us                  | er according to the 'basic     |  |
| <ul> <li>The media stream was previou</li> </ul>                       | sly set to 'sendonly' HOLE | D requested by the origin                | nating party                   |  |
| The originating party retrieves  | the held session           |  |                                |  |
| Comments:  |                            |  |                                |  |
| Test Equipment (Gm)  | SUT                        |  | t Equipment (Gm)               |  |
| _  | Establish a confirme       |  |                                |  |
|  | ssion on HOLD by the o     | riginating party                         |                                |  |
|  |                            |  |                                |  |
| INVITE(sendrecv)   | $\rightarrow$              | CAS                                      |                                |  |
| 200 OK (sendrecv)<br>ACK   | <b>←</b>                   |  | ITE(sendrecv)<br>OK (sendrecv) |  |
| ACK  | Ŧ                          | <ul> <li>₹ 200</li> <li>★ ACh</li> </ul> |                                |  |
|  |                            |  | Υ.                             |  |
|  |                            | CAS                                      | SE b                           |  |
|  |                            |  | DATE(sendrecv)                 |  |
|  |                            |  | OK (sendrecv)                  |  |
|  |                            |  | · · · · ·                      |  |
| CASE B   |                            |  |                                |  |
| UPDATE( <b>sendrecv</b> )  | <b>→</b>                   | CAS                                      |                                |  |
| 200 OK (sendrecv)  | <del>(</del>               |  | DATE(sendrecv)                 |  |
|  |                            | ← 200                                    | OK (sendrecv)                  |  |
|  |                            | ~~~                                      |                                |  |
|  |                            |  |                                |  |
|  |                            |  | ITE(sendrecv)<br>OK (sendrecv) |  |
|  |                            | <ul> <li>₹ 200</li> <li>★ ACh</li> </ul> |                                |  |
|  | Apply post test re         | 2 //01                                   | X                              |  |

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| TSS  | TP HOLD referenc   |                                       | rence Selection expression             |
|--|--------------------|---------------------------------------|--|
| Network  | CH_N0 <sup>2</sup> | _007 4.5.2.1                          | PICS 4.5.1/2                           |
| Test purpose:  |                    |                                       |  |
| Retrieve the session in a confirmed dial                 |                    |                                       |  |
| Ensure that the SUT is able support the                  |                    |                                       |  |
| terminating party. The terminating party                 | sends an INVITE of | or UPDATE request.                    | The 'a' attribute in the SDP is set to |
| 'sendrecv' or this attribute is absent.<br>Precondition: |                    |                                       |  |
|  |                    |                                       |  |
| Call' procedures   |                    |                                       | remote user according to the 'basic    |
| <ul> <li>The media stream was previou</li> </ul>         |                    | ' HOLD requested b                    | y the terminating party                |
| <ul> <li>The terminating party retrieves</li> </ul>      | the held session   |                                       |  |
| Comments:  | -                  |                                       |  |
| Test Equipment (Gm)                                      | •                  | UT                                    | Test Equipment (Gm)                    |
| 60   |                    | nfirmed dialogue / the terminating pa |  |
| CASE A Se  | SSION ON HOLD by   | the terminating pa                    | arty                                   |
| CASE a   |                    | ←                                     | INVITE(sendrecv)                       |
| INVITE(sendrecv)   | ←                  | ÷                                     | 200 OK (sendrecv)                      |
| 200 OK (sendrecv)  | <b>→</b>           | +                                     | ACK                                    |
| ACK  | +                  |                                       |  |
|  |                    |                                       |  |
| CASE b   | -                  |                                       |  |
| UPDATE(sendrecv)   | <b>←</b><br>→      |                                       |  |
| 200 OK ( <b>sendrecv</b> )                               | 7                  |                                       |  |
| CASE B   |                    |                                       |  |
| CASE a   |                    | ←                                     | UPDATE(sendrecv)                       |
| UPDATE(sendrecv)   | +                  | <b>→</b>                              | 200 OK (sendrecv)                      |
| 200 OK (sendrecv)  | <b>→</b>           |                                       | · · · · ·                              |
| CASE b   |                    |                                       |  |
| INVITE(sendrecv)   | +                  |                                       |  |
| 200 OK (sendrecv)  | <b>→</b>           |                                       |  |
| ACK  | <del>(</del>       |                                       |  |
|  | Apply pos          | t test routine                        |  |

| TSS   | TP                         | HOLD reference            | Selection expression         |
|---|----------------------------|---------------------------|------------------------------|
| Network   | CH_N01_00                  | 08 4.5.2.1                | PICS 4.5.1/2                 |
| Test purpose:                                     |                            |                           |                              |
| Session hold in a confirmed dialogue.             |                            |                           |                              |
| Ensure that the SUT transfers the hold            |                            |                           | dialogue. The 200 OK         |
| response containing an SDP body with              | an attribute line indicati | ng 'a= inactive.          |                              |
| Precondition:                                     |                            |                           |                              |
| <ul> <li>A confirmed dialogue was esta</li> </ul> | ablished between the se    | erved user and a remote u | user according to the 'basic |
| Call' procedures                                  |                            |                           |                              |
| <ul> <li>The media stream was previou</li> </ul>  |                            | LD requested by the term  | ninating party               |
| The originating party sets the                    | session on HOLD            |                           |                              |
| Comments:   | -··                        | _                         |                              |
| Test Equipment (Gm)                               | SUT                        |                           | Test Equipment (Gm)          |
|   | Establish a confiri        |                           |                              |
|   | ession on HOLD by the      | e terminating party       |                              |
| CASE A<br>INVITE(inactive)                        | <b>→</b>                   |                           | CASE a                       |
| 200 OK (inactive)                                 | <del>,</del>               |                           | INVITE(inactive)             |
| ACK   | <del>,</del>               |                           | 200 OK (inactive)            |
| ACK   | <b>C</b>                   |                           | ACK                          |
|   |                            |                           | AGIC                         |
|   |                            |                           | CASE b                       |
|   |                            |                           | UPDATE(inactive)             |
|   |                            |                           | 200 OK (inactive)            |
|   |                            |                           |                              |
| CASE B  |                            |                           |                              |
| UPDATE(inactive)                                  | <b>→</b>                   |                           | CASE a                       |
| 200 OK (inactive)                                 | +                          |                           | UPDATE(inactive)             |
|   |                            | ← 2                       | 200 OK (inactive)            |
|   |                            |                           |                              |
|   |                            |                           | CASE b                       |
|   |                            |                           | INVITE(inactive)             |
|   |                            |                           | 200 OK (inactive)            |
|   | A                          |                           | ACK                          |
|   | Apply post tes             | at routine                |                              |

| TSS   | TP                     | HOLD referen            |                                   |
|---|------------------------|-------------------------|-----------------------------------|
| Network   | CH_N01_0               | 09 4.5.2.1              | PICS 4.5.1/2                      |
| Test purpose:   |                        |                         |                                   |
| Session hold in a confirmed dialogue. The   |                        |                         |                                   |
| The session in a confirmed dialogue is s  |                        |                         |                                   |
| terminating party. The 200 OK response  | e containing an SDP bo | ody with an attribute I | line indicating 'a=inactive'.     |
| Precondition:   |                        |                         |                                   |
| •   | blished between the se | erved user and a rem    | note user according to the 'basic |
| Call' procedures  |                        |                         |                                   |
| <ul> <li>The media stream was previou</li> </ul>  | • •                    | DLD requested by the    | e originating party               |
| The terminating party sets the set | session on HOLD        |                         |                                   |
| Comments:   |                        |                         |                                   |
| Test Equipment (Gm)   | SUT                    |                         | Test Equipment (Gm)               |
| -   | Establish a confir     |                         |                                   |
|   | ssion on HOLD by th    | e originating party     |                                   |
| CASE A  |                        |                         |                                   |
|   |                        | <del>(</del>            | INVITE(inactive)                  |
| INVITE(inactive)  | ←<br>→                 | →<br>←                  | 200 OK (inactive)<br>ACK          |
| 200 OK ( <b>inactive</b> )<br>ACK   |                        | ~                       | ACK                               |
| ACK   | Γ                      |                         |                                   |
| CASE b  |                        |                         |                                   |
| UPDATE(inactive)  | ÷                      |                         |                                   |
| 200 OK (inactive)   | ÷                      |                         |                                   |
|   | -                      |                         |                                   |
| CASE B  |                        |                         |                                   |
| CASE a  |                        | +                       | UPDATE(inactive)                  |
| UPDATE(inactive)  | ÷                      | <b>→</b>                | 200 OK (inactive)                 |
| 200 OK (inactive)   | →                      |                         |                                   |
|   |                        |                         |                                   |
| CASE b  |                        |                         |                                   |
| INVITE(inactive)  | +                      |                         |                                   |
| 200 OK (inactive)   | <b>→</b>               |                         |                                   |
| ACK   | ÷                      |                         |                                   |
|   | Apply post tes         | st routine              |                                   |

| TSS   | TP                    | HOLD refer                  |                                     |
|---|-----------------------|-----------------------------|-------------------------------------|
| Network   | CH_N01                | _010                        | PICS 4.5.1/2                        |
| Test purpose:   |                       |                             |                                     |
| Retrieve the session in a confirmed dialo                               | gue. The media st     | reams were previous         | ly set to inactive.                 |
| Ensure that the SUT transfers the RETR                                  | IVE request from t    | he terminating party i      | n a confirmed dialogue. The 200 OK  |
| response containing an SDP body with a                                  | n attribute line ind  | cating 'a=sendonly'.        |                                     |
| Precondition:   |                       |                             |                                     |
| <ul> <li>An confirmed dialogue was esta<br/>Call' procedures</li> </ul> | ablished between t    | he served user and a        | remote user according to the 'basic |
| The media stream was previous   | sly set to 'recvonly' |                             |                                     |
| <ul> <li>The media stream was previous</li> </ul>                       | sly set to 'inactive' |                             |                                     |
| The terminating party retrieves   | the held session      |                             |                                     |
| Comments:   |                       |                             |                                     |
| Test Equipment (Gm)   | -                     | JT                          | Test Equipment (Gm)                 |
|   |                       | nfirmed dialogue            |                                     |
|   |                       | ets the session on H        |                                     |
|   | rminating party s     | ets the session on <b>H</b> | IOLD                                |
| CASE A  |                       |                             |                                     |
|   |                       | ←<br>→                      | INVITE( <b>recvonly</b> )           |
| INVITE(recvonly)<br>200 OK ( <b>sendonly</b> )                          | <i>←</i><br>→         | 7<br><del>(</del>           | 200 OK (sendonly)<br>ACK            |
| ACK   | →<br>←                | ~                           | ACK                                 |
| ACK   | T                     |                             |                                     |
| CASE b  |                       |                             |                                     |
| UPDATE(recvonly)  | +                     |                             |                                     |
| 200 OK (sendonly)   | <b>→</b>              |                             |                                     |
|   |                       |                             |                                     |
| CASE B  |                       |                             |                                     |
| CASE a  |                       | +                           | UPDATE( <b>recvonly</b> )           |
| UPDATE(recvonly)  | ÷                     | <b>→</b>                    | 200 OK (sendonly)                   |
| 200 OK ( <b>sendonly</b> )  | <b>→</b>              |                             |                                     |
| 04051   |                       |                             |                                     |
|   | L                     |                             |                                     |
| INVITE(recvonly)<br>200 OK ( <b>sendonly</b> )                          | ←<br>→                |                             |                                     |
| ACK   | 7                     |                             |                                     |
|   | Annly nost            | test routine                |                                     |

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| 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 dialog                | ue. The media stream      | s were previously set to | o inactive.                    |
| Ensure that the SUT transfers the RETRIN                  |                           |                          |                                |
| response containing an SDP body with ar                   | attribute line indicating | g 'a=recvonly'.          | č                              |
| Precondition:   |                           | -                        |                                |
| <ul> <li>An confirmed dialogue was established</li> </ul> | blished between the se    | rved user and a remote   | e user according to the 'basic |
| Call' procedures  |                           |                          | 0                              |
| The media stream was previousl                            | y set to 'recvonly'       |                          |                                |
| <ul> <li>The media stream was previousl</li> </ul>        | • •                       |                          |                                |
| <ul> <li>The originating party retrieves th</li> </ul>    | 5                         |                          |                                |
| Comments:   |                           |                          |                                |
| Test Equipment (Gm)                                       | SUT                       |                          | Test Equipment (Gm)            |
|   | Establish a confirme      | ed dialoque              |                                |
| The ori   | ginating party sets th    |                          |                                |
|   | minating party sets th    |                          |                                |
| CASE A  |                           |                          |                                |
| INVITE( <b>sendonly</b> )                                 | <b>→</b>                  |                          | CASE a                         |
| 200 OK (recvonly)   | +                         | <b>→</b>                 | INVITE(sendonly)               |
| ACK   | +                         | ←                        | 200 OK (recvonly)              |
|   |                           | <b>→</b>                 | ACK                            |
|   |                           |                          |                                |
|   |                           |                          | CASE b                         |
|   |                           | <b>→</b>                 | UPDATE(sendonly)               |
|   |                           | +                        | 200 OK (recvonly)              |
|   |                           |                          |                                |
| CASE B  | _                         |                          |                                |
| UPDATE(sendonly)  | <b>&gt;</b>               | _                        | CASE a                         |
| 200 OK (recvonly)   | ÷                         | <b>→</b>                 | UPDATE(sendonly)               |
|   |                           | ←                        | 200 OK (recvonly)              |
|   |                           |                          |                                |
|   |                           | `                        | CASE b                         |
|   |                           | <b>→</b>                 | INVITE(sendonly)               |
|   |                           | ←<br>→                   | 200 OK (recvonly)              |
|   | Annhungettest             | -                        | ACK                            |
|   | Apply post test           | louline                  |                                |

| TSS   | TP                      | HOLD refer            |  |
|---|-------------------------|-----------------------|--|
| Network   | CH_N01_                 | 012 4.5.2.1           | PICS 4.5.1/2                                   |
| Test purpose:   |                         |                       |  |
| Retrieve the session in a confirmed dialo                               |                         |                       |  |
| Ensure that the SUT transfers the RETRI                                 | VE request from the     | e terminating party i | n a confirmed dialogue. The 200 OK             |
| response containing an SDP body with a                                  | n attribute line indica | ating 'a=recvonly'.   |  |
| Precondition:   |                         |                       |  |
| <ul> <li>An confirmed dialogue was esta<br/>Call' procedures</li> </ul> | blished between the     | e served user and a   | remote user according to the 'basic            |
| The media stream was previous   | ly set to 'sendonly'    |                       |  |
| <ul> <li>The media stream was previous</li> </ul>                       | ly set to 'inactive'    |                       |  |
| <ul> <li>The terminating party retrieves t</li> </ul>                   | he held session         |                       |  |
| Comments:   |                         |                       |  |
| Test Equipment (Gm)   | SUT                     |                       | Test Equipment (Gm)                            |
|   | Establish a confi       |                       |  |
|   | minating party set      |                       |  |
|   | iginating party set     | s the session on F    | IOLD   |
| CASE A<br>CASE a  |                         |                       |  |
| INVITE(sendonly)  | +                       | <b>←</b><br>→         | INVITE( <b>sendonly</b> )<br>200 OK (recvonly) |
| 200 OK ( <b>recvonly</b> )  | ←<br>→                  | <del>4</del>          | ACK  |
| ACK   | <i>+</i>                | <b>C</b>              | ACK  |
| AGIC  | •                       |                       |  |
| CASE b  |                         |                       |  |
| UPDATE(sendonly)  | +                       |                       |  |
| 200 OK (recvonly)   | <b>→</b>                |                       |  |
|   |                         |                       |  |
| CASE B  |                         |                       |  |
| CASE a  | _                       | +                     | UPDATE(sendonly)                               |
| UPDATE(sendonly)  | <b>+</b>                | <b>→</b>              | 200 OK (recvonly)                              |
| 200 OK ( <b>recvonly</b> )  | <b>→</b>                |                       |  |
| CASE b  |                         |                       |  |
| INVITE(sendonly)  | ←                       |                       |  |
| 200 OK ( <b>recvonly</b> )  | ←<br>→                  |                       |  |
| ACK   | ,<br>+                  |                       |  |
|   | Apply post to           | est routine           |  |

| TSS  | ТР                                     | HOLD reference                          | Selection expression        |
|--|--|---|-----------------------------|
| Network  | CH_N01_01                              |   | PICS 4.5.1/2                |
| fest purpose:                                  |  |   |                             |
|  | ned dialogue. The media strea          | ms were previously set to i             | nactive.                    |
| Ensure that the SUT transfers the              | ne RETRIVE request from the c          | priginating party in a confirm          | ned dialogue. The 200 OK    |
|  | dy with an attribute line indicati     |   |                             |
| Precondition:                                  |  |   |                             |
|  | was established between the s          | served user and a remote u              | ser according to the 'basic |
| Call' procedures                               |  |   | iser according to the basic |
|  | previously set to 'sendonly'           |   |                             |
|  | previously set to 'inactive'           |   |                             |
|  |  |   |                             |
|  | etrieves the held session              |   |                             |
| Comments:<br>Test Equipment (Gn                | n) SUT                                 |   | Test Equipment (Gm)         |
| Test Equipment (On                             | Establish a confirr                    | ned dialogue                            | rest Equipment (Om)         |
|  | The terminating party sets             | the session on HOLD                     |                             |
|  | The originating party sets             | the session on HOLD                     |                             |
|  |  |   |                             |
| INVITE( <b>recvonly</b> )                      | <b>→</b>                               |   | CASE a                      |
| 200 OK (sendonly)                              | ÷                                      | <b>→</b>                                | INVITE(recvonly)            |
| ACK  | +                                      | <b>+</b>                                | 200 OK (sendonly)           |
|  |  | <b>→</b>                                | ACK                         |
|  |  |   |                             |
|  |  | ->                                      |                             |
|  |  | <b>→</b>                                | UPDATE(recvonly)            |
|  |  | +                                       | 200 OK (sendonly)           |
|  |  |   |                             |
|  |  |   |                             |
| UPDATE( <b>recvonly</b> )                      | <b>→</b>                               |   | CASE a                      |
| 200 OK (sendonly)                              | <del>~</del>                           | <b>→</b>                                | UPDATE(recvonly)            |
|  |  | +                                       | 200 OK (sendonly)           |
|  |  |   |                             |
|  |  | _                                       | CASE b                      |
|  |  | <b>→</b>                                | INVITE(recvonly)            |
|  |  | +                                       | 200 OK (sendonly)           |
|  |  | <b>→</b>                                | ACK                         |
|  | Apply post tes                         | st routine                              |                             |
|  |  |   |                             |
| TSS  | TP                                     | HOLD reference                          | Selection expression        |
| Network  | CH_N01_01                              | 4.5.2.4                                 | PICS 4.5.1/2                |
|  |  |   | AND PICS 4.7.1/3            |
| Test purpose:                                  |  |   |                             |
| The network provides an annou                  | ncement to the originating user        | r when set the session on H             | HOLD.                       |
| Ensure that the SUT provides a                 |  |   |                             |
| Precondition:                                  | <b>Y</b>                               | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |                             |
|  | vas established between the se         | erved user and a remote us              | er according to the 'basic  |
| Call' procedures                               |  |   |                             |
| The media stream is set                        | et on HOLD                             |   |                             |
| The SUT provides an a                          |  |   |                             |
| Comments:                                      |  |   |                             |
| Test Equipment (Gn                             | n) SUT                                 | Тас                                     | st Equipment (Gm)           |
|  | Establish a confirm                    |   |                             |
| CASE A   |  | 3                                       |                             |
| INVITE(sendonly)                               | <b>→</b>                               |   |                             |
| 200 OK (recvonly)                              | ÷                                      |   |                             |
| ACK  | €                                      |   |                             |
|  | x                                      |   |                             |
|  | Announcer                              | ment                                    |                             |
|  |  |   |                             |
|  |  |   |                             |
|  |  |   |                             |
| 200 OK (recvonly)                              | +                                      |   |                             |
|  | A ==================================== | mont                                    |                             |
|  |  | ment<br>st routine                      |                             |
| UPDATE( <b>sendonly</b> )<br>200 OK (recvonly) | →<br>←<br>Announcer                    |   |                             |

| 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               |                            |                         |                           |
| Ensure that the SUT provides an announce              | ement to the terminating u | iser when setting the s | ession on HOLD.           |
| Precondition:   |                            |                         |                           |
| <ul> <li>A confirmed dialogue was establis</li> </ul> | shed between the served    | user and a remote use   | r according to the 'basic |
| Call' procedures                                      |                            |                         |                           |
| <ul> <li>The media stream is set on HOLD</li> </ul>   | )                          |                         |                           |
| <ul> <li>The SUT provides an announcem</li> </ul>     | ent                        |                         |                           |
| Comments:   |                            |                         |                           |
| Test Equipment (Gm)                                   | SUT                        |                         | quipment (Gm)             |
|   | Establish a confirmed d    |                         | -                         |
|   |                            | CASE                    |                           |
|   |                            |                         | (sendonly)                |
|   |                            |                         | (recvonly)                |
|   |                            | ← ACK                   |                           |
|   | Announcement               |                         |                           |
|   |                            | CASE                    | В                         |
|   |                            | ← UPDAT                 | ΓE( <b>sendonly</b> )     |
|   |                            |                         | (recvonly)                |
|   | Announcem                  | ent                     |                           |

Apply post test routine

| TSS           | ТР                                    | 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)       | S              | UT               | Test Equipment (Gm) |
|                           | Establish a co | nfirmed dialogue |                     |
| CASE A                    |                |                  |                     |
| INVITE(sendonly)          | <b>→</b>       |                  | CASE a              |
| 200 OK (recvonly)         | ←              | <b>→</b>         | INVITE(sendonly)    |
| ACK                       | ←              | ←                | 200 OK (recvonly)   |
|                           |                | <b>→</b>         | ACK                 |
|                           |                |                  | CASE b              |
|                           |                | <b>→</b>         | UPDATE(sendonly)    |
|                           |                | +                | 200 OK (recvonly)   |
| CASE B                    |                |                  |                     |
| UPDATE( <b>sendonly</b> ) | <b>→</b>       |                  | CASE a              |
| 200 OK (recvonly)         | ←              | <b>→</b>         | UPDATE(sendonly)    |
|                           |                | +                | 200 OK (recvonly)   |
|                           |                |                  | CASE b              |
|                           |                | <b>→</b>         | INVITE(sendonly)    |
|                           |                | +                | 200 OK (recvonly)   |
|                           |                | <b>→</b>         | ACK                 |
|                           | Apply pos      | t test routine   |                     |

| TSS                                      | TP                     | HOLD refe        | rence Selection expression            |
|--|------------------------|------------------|---------------------------------------|
| Network                                  | CH_N01_0 <sup>4</sup>  | 4.5.2.4          | PICS 4.5.1/2                          |
|  |                        |                  | AND PICS 4.7.1/4                      |
| Test purpose:                            |                        |                  |                                       |
| The SUT lower the bandwidth by setting   |                        |                  |                                       |
| Ensure that the SUT shall for each med   |                        |                  |                                       |
| "recvonly" lower the bandwidth by settir |                        |                  |                                       |
| "b=RS:" parameters shall be set to valu  | es large enough to ena | ble 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)                   |
| 0.0F.A                                   | Establish a confir     | ned dialogue     |                                       |
| CASEA                                    |                        |                  |                                       |
|  |                        | ÷                | INVITE(sendonly)                      |
| INVITE(sendonly)                         | ←<br>→                 | →<br>←           | 200 OK (recvonly)                     |
| 200 OK ( <b>recvonly</b> )<br>ACK        | →<br>←                 | ~                | ACK                                   |
| ACK                                      | ~                      |                  |                                       |
| CASE b                                   |                        |                  |                                       |
| UPDATE(sendonly)                         | ←                      |                  |                                       |
| 200 OK (recvonly)                        | $\rightarrow$          |                  |                                       |
|  | 2                      |                  |                                       |
| CASE B                                   |                        |                  |                                       |
| CASE a                                   |                        | ÷                | UPDATE(sendonly)                      |
| UPDATE(sendonly)                         | +                      | <b>→</b>         | 200 OK (recvonly)                     |
| 200 OK (recvonly)                        | <b>→</b>               |                  |                                       |
| · · · ·                                  |                        |                  |                                       |
| CASE b                                   |                        |                  |                                       |
| INVITE(sendonly)                         | ÷                      |                  |                                       |
| 200 OK (recvonly)                        | <b>→</b>               |                  |                                       |
| ACK                                      | ←                      |                  |                                       |
|  | Apply post tes         | st routine       |                                       |

| TSS                                  | ТР                           | HOLD reference               | Selection expression         |
|--------------------------------------|------------------------------|------------------------------|------------------------------|
| Network                              | CH_N01_01                    | 8 4.5.2.1                    | PICS 4.5.1/2                 |
| Test purpose:                        |                              |                              |                              |
| The SUT lower the bandwidth by se    | tting the b=AS to a small va | alue.                        |                              |
| Ensure that the SUT shall for each r |                              |                              |                              |
| "inactive" lower the bandwidth by se | tting the "b=AS:" parameter  | r to a small value, e.g. "b= | AS:0". The "b=RR:" and       |
| "b=RS:" parameters shall be set to v | values large enough to enab  | ole continuation of the RT   | CP 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 confirm          | ned dialogue                 |                              |
|                                      | Session on HOLD by the       | terminating party            |                              |
| CASE A                               |                              |                              |                              |
| INVITE(inactive)                     | <b>→</b>                     |                              | CASE a                       |
| 200 OK (inactive)                    | +                            | →                            | INVITE(inactive)             |
| ACK                                  | +                            | +                            | 200 OK (inactive)            |
|                                      |                              | <b>→</b>                     | ACK                          |
|                                      |                              |                              |                              |
|                                      |                              |                              | CASE b                       |
|                                      |                              | <b>→</b>                     | UPDATE(inactive)             |
|                                      |                              | +                            | 200 OK (inactive)            |
|                                      |                              |                              |                              |
| CASEB                                |                              |                              |                              |
| UPDATE(inactive)                     | <b>→</b>                     |                              | CASEa                        |
| 200 OK (inactive)                    | ÷                            |                              | UPDATE(inactive)             |
|                                      |                              | +                            | 200 OK (inactive)            |
|                                      |                              |                              |                              |
|                                      |                              |                              | CASE b                       |
|                                      |                              |                              | INVITE(inactive)             |
|                                      |                              |                              | 200 OK (inactive)<br>ACK     |
|                                      |                              |                              |                              |

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| TSS                                       | ТР                      | HOLD referen           |                                   |
|---|-------------------------|------------------------|-----------------------------------|
| Network                                   | CH_N01_0 <sup>-</sup>   | 19 4.5.2.1             | PICS 4.5.1/2                      |
| Test purpose:                             |                         |                        |                                   |
| The SUT lower the bandwidth by setting    | g the b=AS to a small v | alue.                  |                                   |
| Ensure that the SUT shall for each medi   |                         |                        |                                   |
| "inactive" lower the bandwidth by setting | the "b=AS:" parameter   | er to a small value, e | .g. "b=AS:0". The "b=RR:" and     |
| "b=RS:" parameters shall be set to value  | es large enough to ena  | ble continuation of t  | he RTCP flow, e.g. "b=RR:800" and |
| "b=RS:800".                               |                         |                        |                                   |
| SIP header values                         |                         |                        |                                   |
| 200 OK (recvonly)                         |                         |                        |                                   |
| b=AS:<>                                   |                         |                        |                                   |
| b=RR:<>                                   |                         |                        |                                   |
| b=RS:<>                                   |                         |                        |                                   |
| Comments:                                 |                         |                        |                                   |
| Test Equipment (Gm)                       | SUT                     |                        | Test Equipment (Gm)               |
|   | Establish a confir      |                        |                                   |
|   | ssion on HOLD by th     | e originating party    |                                   |
| CASE A                                    |                         |                        |                                   |
| CASE a                                    |                         | +                      | INVITE( <b>inactive</b> )         |
| INVITE(inactive)                          | +                       | <b>→</b>               | 200 OK (inactive)                 |
| 200 OK (inactive)                         | →                       | +                      | ACK                               |
| ACK                                       | +                       |                        |                                   |
|   |                         |                        |                                   |
| CASE b                                    |                         |                        |                                   |
| UPDATE(inactive)                          | <b>+</b>                |                        |                                   |
| 200 OK (inactive)                         | <b>→</b>                |                        |                                   |
| CASE B                                    |                         |                        |                                   |
| CASE a                                    |                         | ÷                      | UPDATE(inactive)                  |
| UPDATE(inactive)                          | +                       | À                      | 200 OK (inactive)                 |
| 200 OK (inactive)                         | ÷                       | 2                      |                                   |
|   |                         |                        |                                   |
| CASE b                                    |                         |                        |                                   |
| INVITE(inactive)                          | ÷                       |                        |                                   |
| 200 OK (inactive)                         | →<br>→                  |                        |                                   |
| ACK                                       | ÷                       |                        |                                   |
|   | Apply post tes          | st routine             |                                   |

# History

| Document history |               |             |
|------------------|---------------|-------------|
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| V3.1.1           | August 2011   | Publication |
| V4.1.1           | October 2015  | Publication |
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