



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

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Reference

RTS/INT-00144-2

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Keywords

CDIV, conformance, SIP, testing, TSS&TP

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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 Communication Diversion (CDIV), 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".

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## Modal verbs terminology

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## Introduction

The Communications Diversion (CDIV) services enables the diverting user, to divert the communications addressed to diverting user to another destination.

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# 1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) for Communications Diversion (CDIV) services, ETSI TS 124 604 [1].

The Communications Diversion (CDIV) services enables diverting user, to divert the communications addressed to diverting user to another destination.

---

## 2 References

### 2.1 Normative references

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

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

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

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

- [1] ETSI TS 124 604: "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Communication Diversion (CDIV) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.604 Release 12)".
- [2] ETSI TS 186 014-1: "Core Network and Interoperability Testing (INT); Communication Diversion (CDIV) using IP Multimedia (IM) Core Network (CN) subsystem; (3GPP™ Release 12); Part 1: Protocol Implementation Conformance Statement (PICS)".
- [3] ISO/IEC 9646-1:1994: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [4] IETF RFC 7044: "An Extension to the Session Initiation Protocol (SIP) for Request History Information".

### 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.

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

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

Not applicable.

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## 3 Definitions, symbols and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI TS 124 604 [1] and the following apply:

**Abstract Test Suite (ATS):** Refer to ISO/IEC 9646-1 [3].

**Implementation Under Test (IUT):** Refer to ISO/IEC 9646-1 [3].

**PICS pro forma:** Refer to ISO/IEC 9646-1 [3].

**Point of control and observation:** Refer to ISO/IEC 9646-1 [3].

**Protocol Implementation Conformance Statement (PICS):** Refer to ISO/IEC 9646-1 [3].

**System Under Test (SUT):** Refer to ISO/IEC 9646-1 [3].

**Test Purpose (TP):** Refer to ISO/IEC 9646-1 [3].

### 3.2 Symbols

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

|    |   |
|----|---|
| Gm | Reference Point between a UE and a P-CSCF       |
| Mg | Reference Point between an MGCF and a CSCF      |
| Mw | Reference Point between a CSCF and another CSCF |
| Mx | Reference Point between a CSCF/BGCF and IBCF    |

### 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI TS 124 604 [1] and the following apply:

|      |   |
|------|---|
| ISC  | IP Multimedia Subsystem Service Control |
| NDUB | Network Determined User Busy            |
| NNI  | Network - Network Interface             |
| TSS  | Test Suite Structure                    |
| UDUB | User Determined User Busy               |

## 4 Test Suite Structure (TSS)

### 4.0 Table of Test suite Structure

**Table 1: Test suite structure**

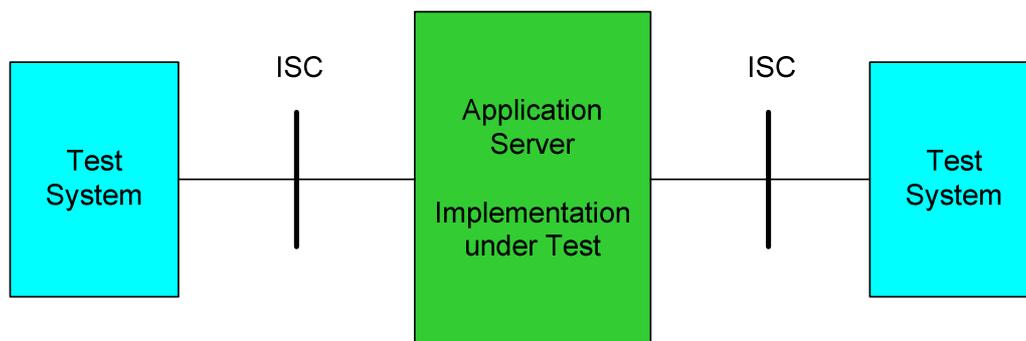
| Netw        |                               |              |
|-------------|-------------------------------|--------------|
|             | ASdivertingUser/DivProcedures | CDIV_N01_xxx |
|             | ASdivertingUser/NotOrigUser   | CDIV_N02_xxx |
|             | ASdivertingUser/NotTermUser   | CDIV_N03_xxx |
|             | ASdivertingUser/NotDivUser    | CDIV_N04_xxx |
|             | ASdiverted-to                 | CDIV_N05_xxx |
| User        |                               |              |
|             | OrigUE                        | CDIV_U01_xxx |
|             | Diverted-toUE                 | CDIV_U02_xxx |
|             | DivertingUE                   | CDIV_U03_xxx |
| Interaction |                               |              |
|             | TIP                           | CDIV_N06_xxx |
|             | TIR                           | CDIV_N07_xxx |
|             | OIR                           | CDIV_N08_xxx |
|             | ACR-CB                        | CDIV_N09_xxx |
|             | ECT                           | CDIV_N10_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 124 604 [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 Application Server:** This entity is responsible to perform the service. Hence the ISC interface is the appropriate access point. Figure 1 points to this.



**Figure 1: Applicable interface to test AS functionalities**

If the ISC interface is not accessible it is also applicable to perform the test of the AS using any NNI (Mw, Mg, Mx) interface (consider figure 2). 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.

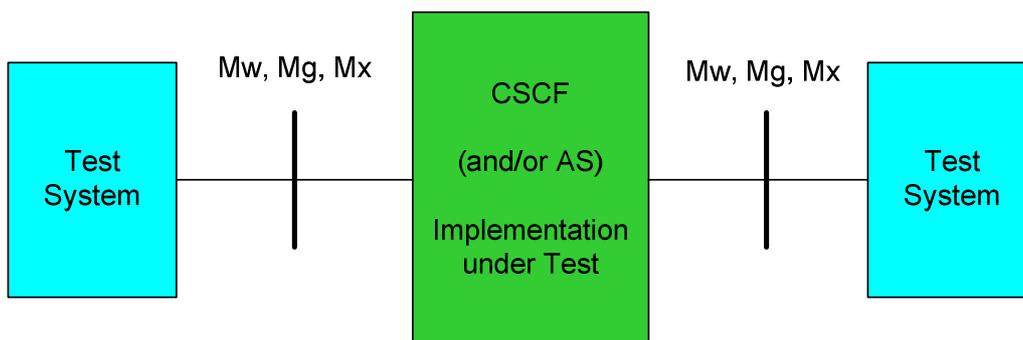


Figure 2: Applicable interfaces to test using the (generic) NNI interface

Figure 3 illustrates the usage of any NNI interface.

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

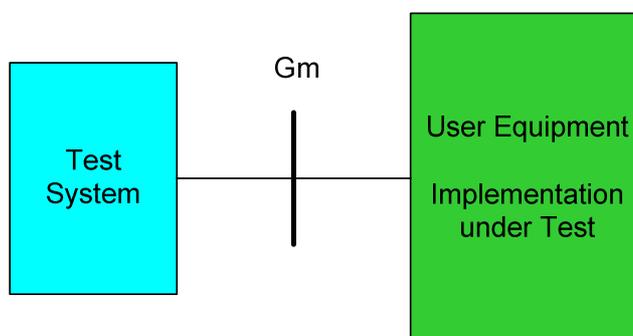


Figure 3: Applicable configuration to test the User Equipment

## 5 Test Purposes (TP)

### 5.1 Introduction

#### 5.1.1 TP naming convention

Tps are numbered, starting at 001, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite and whether it applies to the network or the user (see figure 4).

|             |  |   |         |
|-------------|--|---|---------|
| Identifier: | <b>&lt;ss&gt;_&lt;iut&gt;&lt;group&gt;_&lt;nnn&gt;</b> |   |         |
| <ss>        | = supplementary service:                               | e.g. "CDIV"   |         |
| <iut>       | = type of IUT:   | U   | User    |
|             |  | N   | Network |
|             |  | yyy   | service |
| <group>     | = group  | 2 digit field representing group reference according to TSS |         |
| <nnn>       | = sequential number                                    | (001-999)   |         |

Figure 4: TP identifier naming convention scheme

## 5.1.2 Test strategy

As the base standard ETSI TS 124 604 [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 186 014-1 [2].

## 5.2 Signalling requirements

### 5.2.1 Actions at the AS of the diverting User

#### 5.2.1.1 Diversion procedures

| TSS<br>Netw/ASdivertingUser/DivProcedures  | TP<br>CDIV_N01_001 | Reference [1],<br>4.5.2.6.1 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/2 |       |    |       |         |          |   |   |          |                 |   |   |               |     |   |   |     |
|--|--------------------|-----------------------------|--|-------|----|-------|---------|----------|---|---|----------|-----------------|---|---|---------------|-----|---|---|-----|
| <p><b>Test purpose</b><br/>Served user has activated CFB, maximum number of diversion exceeded.</p> <p>Ensure that the 486 (Busy here) final response with a Warning header is sent to the original user if the served user has activated the CFB simulation service and the served user is busy and if the maximum number of diversions is exceeded.</p> <p><b>SIP header values:</b><br/>INVITE: sip:SIP#n@ example.com SIP/2.0<br/>History-Info: &lt;sip: <b>non significant uri</b> value &gt;;index=1,<br/>Build additional entries with <b>non significant uri</b> values<br/>&lt;sip:SIP#n; cause=VA_CAUSE&gt;;index=1.n.1<br/>Warning: is present</p> <p>NOTE: For each redirection a history-entry is added the History-Info header and the relevant index is incremented according the rules described in clause 4.5.2.6.2.3 of [1]. In short: each redirection is represented by a "." (dot) in the latest history-entry.</p> |                    |                             |  |       |    |       |         |          |   |   |          |                 |   |   |               |     |   |   |     |
| <p><b>Comments:</b></p> <table border="0"> <thead> <tr> <th>SIP#1</th> <th>AS</th> <th>SIP#n</th> <th>SIP#n+1</th> </tr> </thead> <tbody> <tr> <td>INVITE 1</td> <td>→</td> <td>→</td> <td>INVITE 1</td> </tr> <tr> <td>486 (Busy here)</td> <td>←</td> <td>←</td> <td>486 Busy Here</td> </tr> <tr> <td>ACK</td> <td>→</td> <td>→</td> <td>ACK</td> </tr> </tbody> </table>   |                    |                             |  | SIP#1 | AS | SIP#n | SIP#n+1 | INVITE 1 | → | → | INVITE 1 | 486 (Busy here) | ← | ← | 486 Busy Here | ACK | → | → | ACK |
| SIP#1  | AS                 | SIP#n                       | SIP#n+1  |       |    |       |         |          |   |   |          |                 |   |   |               |     |   |   |     |
| INVITE 1   | →                  | →                           | INVITE 1   |       |    |       |         |          |   |   |          |                 |   |   |               |     |   |   |     |
| 486 (Busy here)  | ←                  | ←                           | 486 Busy Here  |       |    |       |         |          |   |   |          |                 |   |   |               |     |   |   |     |
| ACK  | →                  | →                           | ACK  |       |    |       |         |          |   |   |          |                 |   |   |               |     |   |   |     |

| TSS<br>Netw/ASdivertingUser/DivProcedures  | TP<br>CDIV_N01_002     | Reference [1],<br>4.5.2.6.1 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/3 |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
|--|------------------------|-----------------------------|--|-------|----|-------|---------|--------|---|---|--------|-------------|---|---|-------------|--|------------------------|--|--|-------------------------------|---|---|--------|-----|---|---|---------------|--|--|---|------------------------|--|--|---|-----|
| <p><b>Test purpose</b><br/>Served user has activated CFNR, maximum number of diversion exceeded.</p> <p>Ensure that the 480 (Temporarily unavailable) final response with a Warning header is sent to the original user if the served user does not answer the communication request and if the maximum number of diversions is exceeded.</p>  |                        |                             |  |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
| <p><b>SIP header values:</b><br/>INVITE: sip:SIP#n@ example.com SIP/2.0<br/>History-Info: &lt;sip: non significant uri value&gt;;index=1,<br/>Build additional entries with non significant uri values<br/>&lt;sip:SIP#n; cause=VA_CAUSE&gt;;index=1.n.1<br/>Warning: is present</p> <p>NOTE: For each redirection a history-entry is added the History-Info header and the relevant index is incremented according the rules described in clause 4.5.2.6.2.3 of [1]. In short: each redirection is represented by a "dot" in the latest history-entry.</p>  |                        |                             |  |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: center;">SIP#n</th> <th style="text-align: right;">SIP#n+1</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td style="text-align: center;">→</td> <td>INVITE</td> </tr> <tr> <td>180 Ringing</td> <td style="text-align: center;">←</td> <td style="text-align: center;">←</td> <td>180 Ringing</td> </tr> <tr> <td></td> <td colspan="2" style="text-align: center;">No reply timer expires</td> <td></td> </tr> <tr> <td>480 (Temporarily unavailable)</td> <td style="text-align: center;">←</td> <td style="text-align: center;">→</td> <td>CANCEL</td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td style="text-align: center;">←</td> <td>200 OK CANCEL</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">←</td> <td>487 Request Terminated</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">→</td> <td>ACK</td> </tr> </tbody> </table> |                        |                             |  | SIP#1 | AS | SIP#n | SIP#n+1 | INVITE | → | → | INVITE | 180 Ringing | ← | ← | 180 Ringing |  | No reply timer expires |  |  | 480 (Temporarily unavailable) | ← | → | CANCEL | ACK | → | ← | 200 OK CANCEL |  |  | ← | 487 Request Terminated |  |  | → | ACK |
| SIP#1  | AS                     | SIP#n                       | SIP#n+1  |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
| INVITE   | →                      | →                           | INVITE   |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
| 180 Ringing  | ←                      | ←                           | 180 Ringing  |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
|  | No reply timer expires |                             |  |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
| 480 (Temporarily unavailable)  | ←                      | →                           | CANCEL   |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
| ACK  | →                      | ←                           | 200 OK CANCEL  |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
|  |                        | ←                           | 487 Request Terminated                                   |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |
|  |                        | →                           | ACK  |       |    |       |         |        |   |   |        |             |   |   |             |  |                        |  |  |                               |   |   |        |     |   |   |               |  |  |   |                        |  |  |   |     |

| TSS<br>Netw/ASdivertingUser/DivProcedures   | TP<br>CDIV_N01_003 | Reference [1],<br>4.5.2.6.1 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/1 |       |    |       |         |        |   |  |  |                               |   |  |  |     |   |  |  |
|---|--------------------|-----------------------------|--|-------|----|-------|---------|--------|---|--|--|-------------------------------|---|--|--|-----|---|--|--|
| <p><b>Test purpose</b><br/>Served user has activated CFU, maximum number of diversion exceeded.</p> <p>Ensure that the 480 (Temporarily unavailable) final response with a Warning header is sent to the original user if the served user has activated the CFU simulation service and if the maximum number of diversions is exceeded.</p>   |                    |                             |  |       |    |       |         |        |   |  |  |                               |   |  |  |     |   |  |  |
| <p><b>SIP header values:</b><br/>INVITE: sip:SIP#n@ example.com SIP/2.0<br/>History-Info: &lt;sip: <b>non significant uri value</b> &gt;;index=1,<br/>Build additional entries with <b>non significant uri</b> values<br/>&lt;sip:SIP#n; cause=VA_CAUSE&gt;;index=1.n.1<br/>Warning: is present</p> <p>NOTE: For each redirection a history-entry is added the History-Info header and the relevant index is incremented according the rules described in clause 4.5.2.6.2.3 of [1]. In short: each redirection is represented by a "dot" in the latest history-entry.</p>          |                    |                             |  |       |    |       |         |        |   |  |  |                               |   |  |  |     |   |  |  |
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| SIP#1   | AS                 | SIP#n                       | SIP#n+1  |       |    |       |         |        |   |  |  |                               |   |  |  |     |   |  |  |
| INVITE  | →                  |                             |  |       |    |       |         |        |   |  |  |                               |   |  |  |     |   |  |  |
| 480 (Temporarily unavailable)   | ←                  |                             |  |       |    |       |         |        |   |  |  |                               |   |  |  |     |   |  |  |
| ACK   | →                  |                             |  |       |    |       |         |        |   |  |  |                               |   |  |  |     |   |  |  |

| TSS<br>Netw/ASdivertingUser/DivProcedures   | TP<br>CDIV_N01_004 | Reference [1],<br>4.5.2.6.1 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/4 OR<br>PICS 4.7.1/5 |
|---|--------------------|-----------------------------|---|
| <b>Test purpose</b><br><i>Served user has activated CD, maximum number of diversion exceeded.</i>   |                    |                             |   |
| Ensure that the 480 (Temporarily unavailable) final response with a Warning header is sent to the original user if the served user has activated the CD simulation service and if the maximum number of diversions is exceeded.                                 |                    |                             |   |
| <b>SIP header values:</b><br>INVITE: sip:SIP#n@ example.com SIP/2.0<br>History-Info: <sip: non significant uri value >;index=1,<br>Build additional entries with non significant uri values<br><sip:SIP#n; cause=VA_CAUSE>;index=1.n.1<br>Warning: is present   |                    |                             |   |
| NOTE: For each redirection a history-entry is added the History-Info header and the relevant index is incremented according the rules described in clause 4.5.2.6.2.3 of [1]. In short: each redirection is represented by a "dot" in the latest history-entry. |                    |                             |   |
| <b>Comments:</b>  |                    |                             |   |
| <b>SIP#1</b>  | <b>AS</b>          | <b>SIP#n</b>                | <b>SIP#n+1</b>  |
| INVITE  | →                  | → INVITE                    |   |
| 180 Ringing   | ←                  | ← 180 Ringing               |   |
|   | ←                  | ← 302 Moved Temporarily     |   |
|   |                    | → ACK                       |   |
| 480 (Temporarily unavailable)   | ←                  |                             |   |
| ACK   | →                  |                             |   |

## 5.2.1.2 Notification procedure of the originating terminating and diverting user

### 5.2.1.2.1 Originating user

| TSS<br>Netw/ASdivertingUser/NotOrigUser  | TP<br>CDIV_N02_001 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.3/3 AND<br>(PICS 4.7.1/1 OR PICS<br>4.7.1/2 OR PICS 4.7.1/6<br>OR PICS 4.7.1/7) |
|--|--------------------|-----------------------------|--|
| <b>Test purpose</b><br><i>Communication forwarding using CFU or using CFB NDUB, CFNL or CFNRc with applying diversion condition; originating user is <b>not</b> notified.</i>  |                    |                             |  |
| When Communication Diversion occurs and if the notification procedures of the originating user is supported then no 181 (Call Is Being Forwarded) response shall be sent towards the originating user if the served users subscription option is set to: <i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = no. |                    |                             |  |
| <b>Subscription options:</b><br><i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = no   |                    |                             |  |
| <b>Comments:</b>   |                    |                             |  |
| <b>SIP#1</b>   | <b>AS</b>          | <b>SIP#2</b>                | <b>SIP#3</b>   |
| INVITE   | →                  |                             | → INVITE   |

| TSS<br>Netw/ASdivertingUser/NotOrigUser  | TP<br>CDIV_N02_002 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.3/3 AND PICS<br>4.7.3/4 AND PICS 4.7.3/5<br>AND (PICS 4.7.1/1 OR<br>PICS1/2 OR PICS 4.7.1/6<br>OR PICS 4.7.1/7) |       |    |       |       |        |   |  |  |                             |   |  |          |
|--|--------------------|-----------------------------|--|-------|----|-------|-------|--------|---|--|--|-----------------------------|---|--|----------|
| <b>Test purpose</b><br>Communication forwarding using CFU or using CFB NDUB, CFNL or CFNRc with applying diversion condition;<br>originating user is notified.   |                    |                             |  |       |    |       |       |        |   |  |  |                             |   |  |          |
| When Communication Diversion occurs and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing: <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = CAU_VA and escaped Privacy header set to 'history', index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |                             |  |       |    |       |       |        |   |  |  |                             |   |  |          |
| <b>Subscription options:</b><br>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes<br>Served user allows the presentation of diverted to URI to originating user in diversion notification = yes<br>Served user allows the presentation of his/her URI to originating user in diversion notification = yes   |                    |                             |  |       |    |       |       |        |   |  |  |                             |   |  |          |
| <b>SIP header values:</b><br>181 Call is Being Forwarded:<br>P-Asserted-Identity: SIP#2<br>History-Info: <sip:SIP#2 >;index=1,<br><sip:SIP#3;cause=CAU_VA?Privacy=history>;index=1.1;mp=1.1  |                    |                             |  |       |    |       |       |        |   |  |  |                             |   |  |          |
| <b>Comments:</b><br><table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: center;">SIP#2</th> <th style="text-align: right;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table>  |                    |                             |  | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → |  |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| SIP#1  | AS                 | SIP#2                       | SIP#3  |       |    |       |       |        |   |  |  |                             |   |  |          |
| INVITE   | →                  |                             |  |       |    |       |       |        |   |  |  |                             |   |  |          |
| 181 Call is Being Forwarded  | ←                  |                             | → INVITE   |       |    |       |       |        |   |  |  |                             |   |  |          |

| <p style="text-align: center;"><b>TSS</b><br/>Netw/ASdivertingUser/NotOrigUser</p>  | <p style="text-align: center;"><b>TP</b><br/>CDIV_N02_003</p> | <p style="text-align: center;">Reference [1],<br/>4.5.2.6.4</p> | <p style="text-align: center;">Selection expression<br/>PICS 4.5.1/2 AND<br/>PICS 4.7.3/3 AND<br/>(PICS 4.7.3/5<br/>OR PICS 4.7.4/3) AND<br/>PICS 4.7.3/4<br/>AND (PICS 4.7.1/1 OR<br/>PICS1/2 OR PICS 4.7.1/6<br/>OR PICS 4.7.1/7)</p> |       |    |       |       |        |   |  |  |                             |   |  |          |
|---|---|---|---|-------|----|-------|-------|--------|---|--|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/><i>Communication forwarding using CFU or using CFB NDUB, CFNL or CFNRc with applying diversion condition; originating user is notified.</i></p> <p>When Communication Diversion occurs and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user with a Privacy header set to "history", cause = CAU_VA, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |   |   |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br/><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = no</i><br/><i>Served user allows the presentation of his/her URI to originating user in diversion notification = no OR</i><br/><i>Served user has subscribed to TIR in permanent mode</i></p>   |   |   |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>Privacy: id<br/>History-Info: &lt;sip:SIP#2?Privacy=history&gt;;index=1,<br/>&lt;sip:SIP#3;cause=CAU_VA?Privacy=history&gt;;index=1.1;mp=1.1</p>   |   |   |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>Comments:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: center;">SIP#2</th> <th style="text-align: center;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table>  |   |   |   | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → |  |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| SIP#1   | AS  | SIP#2   | SIP#3   |       |    |       |       |        |   |  |  |                             |   |  |          |
| INVITE  | →   |   |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| 181 Call is Being Forwarded   | ←   |   | → INVITE  |       |    |       |       |        |   |  |  |                             |   |  |          |

| <p style="text-align: center;"><b>TSS</b><br/>Netw/ASdivertingUser/NotOrigUser</p>   | <p style="text-align: center;"><b>TP</b><br/>CDIV_N02_004</p> | <p style="text-align: center;">Reference [1],<br/>4.5.2.6.4</p> | <p style="text-align: center;">Selection expression<br/>PICS 4.5.1/2 AND<br/>PICS 4.7.3/3 AND<br/>(PICS 4.7.3/5<br/>OR PICS 4.7.4/3) AND<br/>PICS 4.7.3/4<br/>AND (PICS 4.7.1/1 OR<br/>PICS1/2 OR PICS 4.7.1/6<br/>OR PICS 4.7.1/7)</p> |       |    |       |       |        |   |  |  |                             |   |  |          |
|--|---|---|---|-------|----|-------|-------|--------|---|--|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/><i>Communication forwarding using CFU or using CFB NDUB, CFNL or CFNRc with applying diversion condition; originating user is notified.</i></p> <p>When Communication Diversion occurs and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = CAU_VA and escaped Privacy header set to 'history', index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |   |   |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br/><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = yes</i><br/><i>Served user allows the presentation of his/her URI to originating user in diversion notification = no OR</i><br/><i>Served user has subscribed to TIR in permanent mode</i></p>   |   |   |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>Privacy: id<br/>History-Info: &lt;sip:SIP#2?Privacy=history&gt;;index=1,<br/>&lt;sip:SIP#3;cause=CAU_VA?Privacy=history&gt;;index=1.1;mp=1.1</p>  |   |   |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>Comments:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: center;">SIP#2</th> <th style="text-align: center;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table>   |   |   |   | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → |  |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| SIP#1  | AS  | SIP#2   | SIP#3   |       |    |       |       |        |   |  |  |                             |   |  |          |
| INVITE   | →   |   |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| 181 Call is Being Forwarded  | ←   |   | → INVITE  |       |    |       |       |        |   |  |  |                             |   |  |          |

|   |                                  |   |   |              |           |              |              |        |   |  |  |                             |   |  |          |
|---|----------------------------------|---|---|--------------|-----------|--------------|--------------|--------|---|--|--|-----------------------------|---|--|----------|
| <b>TSS</b><br><b>Netw/ASdivertingUser/NotOrigUser</b>   | <b>TP</b><br><b>CDIV_N02_005</b> | <b>Reference [1],</b><br><b>4.5.2.6.4</b> | <b>Selection expression</b><br><b>PICS 4.5.1/2 AND</b><br><b>PICS 4.7.3/3 AND</b><br><b>(PICS 4.7.3/5</b><br><b>OR PICS 4.7.4/3) AND</b><br><b>PICS 4.7.3/4</b><br><b>AND (PICS 4.7.1/1 OR</b><br><b>PICS1/2 OR PICS 4.7.1/6</b><br><b>OR PICS 4.7.1/7)</b> |              |           |              |              |        |   |  |  |                             |   |  |          |
| <b>Test purpose</b><br><i>Communication forwarding using CFU or using CFB NDUB, CFNL or CFNRc with applying diversion condition; originating user is notified.</i><br><br>When Communication Diversion occurs and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing: <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user, index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user with a Privacy header set to "history", cause = CAU_VA, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                                  |   |   |              |           |              |              |        |   |  |  |                             |   |  |          |
| <b>Subscription options:</b><br><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = no</i><br><i>Served user allows the presentation of his/her URI to originating user in diversion notification = yes</i>  |                                  |   |   |              |           |              |              |        |   |  |  |                             |   |  |          |
| <b>SIP header values:</b><br>181 Call is Being Forwarded:<br>P-Asserted-Identity: SIP#2<br>History-Info: <sip:SIP#2>;index=1,<br><sip:SIP#3;cause=CAU_VA?Privacy=history>;index=1.1;mp=1.1  |                                  |   |   |              |           |              |              |        |   |  |  |                             |   |  |          |
| <b>Comments:</b><br><table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>SIP#1</b></td> <td style="width: 30%; text-align: center;"><b>AS</b></td> <td style="width: 30%; text-align: center;"><b>SIP#2</b></td> <td style="width: 10%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </table>  |                                  |   |   | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → |  |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| <b>SIP#1</b>  | <b>AS</b>                        | <b>SIP#2</b>                              | <b>SIP#3</b>  |              |           |              |              |        |   |  |  |                             |   |  |          |
| INVITE  | →                                |   |   |              |           |              |              |        |   |  |  |                             |   |  |          |
| 181 Call is Being Forwarded   | ←                                |   | → INVITE  |              |           |              |              |        |   |  |  |                             |   |  |          |

**Table 2: Communication diversion cause, used in CDIV\_N02\_001-005**

| CAU_VA | Communication diversion | Value |
|--------|-------------------------|-------|
| 1      | CFU                     | 302   |
| 2      | CFB NDUB                | 486   |
| 3      | CFNL                    | 404   |
| 4      | CFNRc                   | 503   |

| TSS<br>Netw/ASdivertingUser/NotOrigUser   | TP<br>CDIV_N02_006 | Reference [1],<br>4.5.2.6.4          | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.3/3 AND<br>PICS 4.7.1/2 |              |           |              |              |        |   |                                      |  |  |  |  |          |
|---|--------------------|--------------------------------------|--|--------------|-----------|--------------|--------------|--------|---|--------------------------------------|--|--|--|--|----------|
| <p><b>Test purpose</b><br/>Communication forwarding using CFB UDUB with applying diversion condition; originating user is <b>not</b> notified.</p> <p>When Communication Diversion occurs (served user sends 486 response) and if the notification procedures of the originating user is supported then no 181 (Call Is Being Forwarded) response shall be sent towards the originating user if the served users subscription option is set to: <i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = no.</p> |                    |                                      |  |              |           |              |              |        |   |                                      |  |  |  |  |          |
| <p><b>Subscription options:</b><br/><i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = no</p>  |                    |                                      |  |              |           |              |              |        |   |                                      |  |  |  |  |          |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"><b>SIP#1</b></td> <td style="width: 30%; text-align: center;"><b>AS</b></td> <td style="width: 20%; text-align: center;"><b>SIP#2</b></td> <td style="width: 20%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE<br/>← 486 Busy Here<br/>→ ACK</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </table>                                    |                    |                                      |  | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → | → INVITE<br>← 486 Busy Here<br>→ ACK |  |  |  |  | → INVITE |
| <b>SIP#1</b>  | <b>AS</b>          | <b>SIP#2</b>                         | <b>SIP#3</b>   |              |           |              |              |        |   |                                      |  |  |  |  |          |
| INVITE  | →                  | → INVITE<br>← 486 Busy Here<br>→ ACK |  |              |           |              |              |        |   |                                      |  |  |  |  |          |
|   |                    |                                      | → INVITE   |              |           |              |              |        |   |                                      |  |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotOrigUser   | TP<br>CDIV_N02_007 | Reference [1],<br>4.5.2.6.4          | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/2<br>AND PICS 4.7.3/3<br>AND PICS 4.7.3/4<br>AND PICS 4.7.3/5 |              |           |              |              |        |   |                                      |  |                             |   |  |          |
|---|--------------------|--------------------------------------|--|--------------|-----------|--------------|--------------|--------|---|--------------------------------------|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/>Communication forwarding using CFB UDUB with applying diversion condition; originating user is notified.</p> <p>When Communication Diversion occurs (served user sends 486 response) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 486 and escaped Privacy header set to 'history', index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |                                      |  |              |           |              |              |        |   |                                      |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/><i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = yes<br/>Served user allows the presentation of diverted to URI to <i>originating</i> user in diversion notification = yes<br/>Served user allows the presentation of his/her URI to <i>originating</i> user in diversion notification = yes</p>   |                    |                                      |  |              |           |              |              |        |   |                                      |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>History-Info: &lt;sip:SIP#2?Reason=SIP%3Bcause%3D486&gt;;index=1,<br/>&lt;sip:SIP#3;cause=486?Privacy=history&gt;;index=1.1;mp=1.1</p> <p>NOTE: According to ETSI TS 124 604 [1], clause 4.5.2.6.2.2.b: "If the diversion is based on a SIP response from the served user, a Reason header in escaped form shall be included in accordance with IETF RFC 7044 [4]".</p>  |                    |                                      |  |              |           |              |              |        |   |                                      |  |                             |   |  |          |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"><b>SIP#1</b></td> <td style="width: 30%; text-align: center;"><b>AS</b></td> <td style="width: 20%; text-align: center;"><b>SIP#2</b></td> <td style="width: 20%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE<br/>← 486 Busy Here<br/>→ ACK</td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </table>  |                    |                                      |  | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → | → INVITE<br>← 486 Busy Here<br>→ ACK |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| <b>SIP#1</b>  | <b>AS</b>          | <b>SIP#2</b>                         | <b>SIP#3</b>   |              |           |              |              |        |   |                                      |  |                             |   |  |          |
| INVITE  | →                  | → INVITE<br>← 486 Busy Here<br>→ ACK |  |              |           |              |              |        |   |                                      |  |                             |   |  |          |
| 181 Call is Being Forwarded   | ←                  |                                      | → INVITE   |              |           |              |              |        |   |                                      |  |                             |   |  |          |

| <p style="text-align: center;"><b>TSS</b><br/>Netw/ASdivertingUser/NotOrigUser</p>   | <p style="text-align: center;"><b>TP</b><br/>CDIV_N02_008</p> | <p style="text-align: center;">Reference [1],<br/>4.5.2.6.4</p> | <p style="text-align: center;">Selection expression<br/>PICS 4.5.1/2 AND<br/>PICS 4.7.3/3 AND<br/>(PICS 4.7.3/5<br/>OR PICS 4.7.4/3) AND<br/>PICS 4.7.3/4<br/>AND PICS 4.7.1/2</p> |       |    |       |       |        |   |                                      |  |                             |   |  |          |
|--|---|---|--|-------|----|-------|-------|--------|---|--------------------------------------|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/><i>Communication forwarding using CFB UDUB with applying diversion condition; originating user is notified.</i></p> <p>When Communication Diversion occurs (served user sends 486 response) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user with a Privacy header set to "history", cause = 486, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |   |   |  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br/><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = no</i><br/><i>Served user allows the presentation of his/her URI to originating user in diversion notification = no OR</i><br/><i>Served user has subscribed to TIR in permanent mode</i></p>  |   |   |  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>Privacy: id<br/>History-Info: &lt;sip:SIP#2?Privacy=history&amp;Reason=SIP%3Bcause%3D486&gt;;index=1,<br/>&lt;sip:SIP#3;cause=486?Privacy=history&gt;;index=1.1;mp=1.1</p> <p>NOTE: According to ETSI TS 124 604 [1], clause 4.5.2.6.2.2.b: "If the diversion is based on a SIP response from the served user, a Reason header in escaped form shall be included in accordance with IETF RFC 7044 [4]."</p>   |   |   |  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
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| SIP#1  | AS  | SIP#2   | SIP#3  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| INVITE   | →   | → INVITE<br>← 486 Busy Here<br>→ ACK                            |  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| 181 Call is Being Forwarded  | ←   |   | → INVITE   |       |    |       |       |        |   |                                      |  |                             |   |  |          |

| <p style="text-align: center;"><b>TSS</b><br/>Netw/ASdivertingUser/NotOrigUser</p>  | <p style="text-align: center;"><b>TP</b><br/>CDIV_N02_009</p> | <p style="text-align: center;">Reference [1],<br/>4.5.2.6.4</p> | <p style="text-align: center;">Selection expression<br/>PICS 4.5.1/2 AND<br/>PICS 4.7.3/3 AND<br/>(PICS 4.7.3/5<br/>OR PICS 4.7.4/3) AND<br/>PICS 4.7.3/4<br/>AND PICS 4.7.1/2</p> |       |    |       |       |        |   |                                      |  |                             |   |  |          |
|---|---|---|--|-------|----|-------|-------|--------|---|--------------------------------------|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/><i>Communication forwarding using CFB UDUB with applying diversion condition; originating user is notified.</i></p> <p>When Communication Diversion occurs (served user sends 486 response) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 486 and escaped Privacy header set to 'history', index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |   |   |  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br/><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = yes</i><br/><i>Served user allows the presentation of his/her URI to originating user in diversion notification = no OR</i><br/><i>Served user has subscribed to TIR in permanent mode</i></p>  |   |   |  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>Privacy: id<br/>History-Info: &lt;sip:SIP#2?Privacy=history&amp;Reason=SIP%3Bcause%3D486&gt;;index=1,<br/>&lt;sip:SIP#3;cause=486?Privacy=history&gt;;index=1.1;mp=1.1</p> <p>NOTE: According to ETSI TS 124 604 [1], clause 4.5.2.6.2.2.b: "If the diversion is based on a SIP response from the served user, a Reason header in escaped form shall be included in accordance with IETF RFC 7044 [4]."</p>  |   |   |  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| <p><b>Comments:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: left;">SIP#2</th> <th style="text-align: left;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE<br/>← 486 Busy Here<br/>→ ACK</td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table>  |   |   |  | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → | → INVITE<br>← 486 Busy Here<br>→ ACK |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| SIP#1   | AS  | SIP#2   | SIP#3  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| INVITE  | →   | → INVITE<br>← 486 Busy Here<br>→ ACK                            |  |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| 181 Call is Being Forwarded   | ←   |   | → INVITE   |       |    |       |       |        |   |                                      |  |                             |   |  |          |

| TSS<br>Netw/ASdivertingUser/NotOrigUser   | TP<br>CDIV_N02_010 | Reference [1],<br>4.5.2.6.4          | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.3/3 AND<br>(PICS 4.7.3/5<br>OR PICS 4.7.4/3) AND<br>PICS 4.7.3/4<br>AND PICS 4.7.1/2 |       |    |       |       |        |   |                                      |  |                             |   |  |          |
|---|--------------------|--------------------------------------|---|-------|----|-------|-------|--------|---|--------------------------------------|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/>Communication forwarding using CFB UDUB with applying diversion condition; originating user is notified.</p> <p>When Communication Diversion occurs (served user sends 486 response) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header <ul style="list-style-type: none"> <li>including a first entry with the hi-targeted-to-URI of the served user, index = 1</li> <li>and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user, with a Privacy header set to "history", cause = 486, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> </li> </ul> |                    |                                      |   |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/> <i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = yes<br/> Served user allows the presentation of diverted to URI to <i>originating</i> user in diversion notification = no<br/> Served user allows the presentation of his/her URI to <i>originating</i> user in diversion notification = yes</p>   |                    |                                      |   |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/> 181 Call is Being Forwarded:<br/> P-Asserted-Identity: SIP#2<br/> History-Info: &lt;sip:SIP#2?Reason=SIP%3Bcause%3D486&gt;;index=1,<br/> &lt;sip:SIP#3;cause=486?Privacy=history&gt;;index=1.1;mp=1.1</p> <p>NOTE: According to ETSI TS 124 604 [1], clause 4.5.2.6.2.2.b: "If the diversion is based on a SIP response from the served user, a Reason header in escaped form shall be included in accordance with IETF RFC 7044 [4]."</p>  |                    |                                      |   |       |    |       |       |        |   |                                      |  |                             |   |  |          |
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| SIP#1   | AS                 | SIP#2                                | SIP#3   |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| INVITE  | →                  | → INVITE<br>← 486 Busy Here<br>→ ACK |   |       |    |       |       |        |   |                                      |  |                             |   |  |          |
| 181 Call is Being Forwarded   | ←                  |                                      | → INVITE  |       |    |       |       |        |   |                                      |  |                             |   |  |          |

| TSS<br>Netw/ASdivertingUser/NotOrigUser   | TP<br>CDIV_N02_011 | Reference [1],<br>4.5.2.6.4  | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/3 AND<br>PICS 4.7.3/3 |
|---|--------------------|--|--|
| <b>Test purpose</b>   |                    |  |  |
| <i>Communication forwarding using CFNR with applying diversion condition; originating user is <b>not</b> notified.</i>  |                    |  |  |
| When Communication Diversion occurs (served user does not respond) and if the notification procedures of the originating user is supported then no 181 (Call Is Being Forwarded) response shall be sent towards the originating user if the served users subscription option is set to: <i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = no. |                    |  |  |
| <b>Subscription options:</b>  |                    |  |  |
| <i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = no  |                    |  |  |
| <b>Comments:</b>  |                    |  |  |
| <b>SIP#1</b><br>INVITE →<br>180 Alerting ←  | <b>AS</b>          | <b>SIP#2</b><br>→ INVITE<br>← 180 Alerting<br>No reply timer expires<br>→ CANCEL/BYE<br>← 200 OK CANCEL/BYE<br>← 487 Request Terminated<br>→ ACK | <b>SIP#3</b><br><br><br><br><br><br><br><br><br><br>→ INVITE                 |

| TSS<br>Netw/ASdivertingUser/NotOrigUser  | TP<br>CDIV_N02_011A | Reference [1],<br>4.5.2.6.4  | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/3 AND<br>PICS 4.7.3/3 |
|--|---------------------|--|--|
| <b>Test purpose</b>  |                     |  |  |
| <i>Communication forwarding using CFNR with applying diversion condition; Reason header in BYE or CANCEL</i>   |                     |  |  |
| When Communication Diversion occurs (served user does not respond) the initial communication to the served user is terminated with a CANCEL or a BYE request with a Reason header with protocol set to SIP and the cause set to 408. |                     |  |  |
| <b>SIP header values:</b>  |                     |  |  |
| CANCEL/BYE:<br>Reason: SIP; cause=408  |                     |  |  |
| <b>SIP#1</b><br>INVITE →<br>180 Alerting ←   | <b>AS</b>           | <b>SIP#2</b><br>→ INVITE<br>← 180 Alerting<br>No reply timer expires<br>→ CANCEL/BYE<br>← 200 OK CANCEL/BYE<br>← 487 Request Terminated<br>→ ACK | <b>SIP#3</b><br><br><br><br><br><br><br><br><br><br>→ INVITE                 |

| TSS<br>Netw/ASdivertingUser/NotOrigUser  | TP<br>CDIV_N02_012 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/3<br>AND PICS 4.7.3/3<br>AND PICS 4.7.3/4<br>AND PICS 4.7.3/5 |
|--|--------------------|-----------------------------|--|
| <b>Test purpose</b>  |                    |                             |  |
| <i>Communication forwarding using CFNR with applying diversion condition; originating user is notified.</i>  |                    |                             |  |
| <p>When Communication Diversion occurs (served user does not respond) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 408 and escaped Privacy header set to 'history', index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |                             |  |
| <b>Subscription options:</b>   |                    |                             |  |
| <i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = yes  |                    |                             |  |
| Served user allows the presentation of diverted to URI to <i>originating</i> user in diversion notification = yes  |                    |                             |  |
| Served user allows the presentation of his/her URI to <i>originating</i> user in diversion notification = yes  |                    |                             |  |
| <b>SIP header values:</b>  |                    |                             |  |
| 181 Call is Being Forwarded:<br>P-Asserted-Identity: SIP#2<br>History-Info: <sip:SIP#2 >;index=1,<br><sip:SIP#3;cause=408?Privacy=history>;index=1.1;mp=1.1  |                    |                             |  |
| <b>Comments:</b>   |                    |                             |  |
| <b>SIP#1</b>   | <b>AS</b>          | <b>SIP#2</b>                | <b>SIP#3</b>   |
| INVITE   | →                  | → INVITE                    |  |
| 180 Alerting   | ←                  | ← 180 Alerting              |  |
|  |                    | No reply timer expires      |  |
| 181 Call is Being Forwarded  | ←                  |                             |  |
|  |                    | → CANCEL/BYE                |  |
|  |                    | ← 200 OK CANCEL/BYE         |  |
|  |                    | ← 487 Request Terminated    |  |
|  |                    | → ACK                       |  |
|  |                    |                             | → INVITE   |

| TSS<br>Netw/ASNotification/Originating user   | TP<br>CDIV_N02_013 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/3 AND PICS<br>4.7.3/3 AND<br>(PICS 4.7.3/5<br>OR PICS 4.7.4/3) AND<br>PICS 4.7.3/4 |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|---|--------------------|-----------------------------|---|-------|----|-------|-------|--------|---|----------|--|--------------|---|---------------|--|--|--|------------------------|--|-----------------------------|---|--|--|--|--|--------------|--|--|--|---------------------|--|--|--|--------------------------|--|--|--|-------|--|--|--|--|----------|
| <p><b>Test purpose</b><br/>Communication forwarding using CFNR with applying diversion condition; originating user is notified.</p> <p>When Communication Diversion occurs (served user does not respond) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user, with a Privacy header set to "history", cause = 408, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul>  |                    |                             |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| <p><b>Subscription options:</b><br/>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes<br/>Served user allows the presentation of diverted to URI to originating user in diversion notification = no<br/>Served user allows the presentation of his/her URI to originating user in diversion notification = no OR<br/>Served user has subscribed to TIR in permanent mode</p>   |                    |                             |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>Privacy: id<br/>History-Info: &lt;sip:SIP#2?Privacy=history&gt;;index=1,<br/>&lt;sip:SIP#3;cause=408?Privacy=history&gt;;index=1.1;mp=1.1</p>  |                    |                             |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
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| SIP#1   | AS                 | SIP#2                       | SIP#3   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| INVITE  | →                  | → INVITE                    |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| 180 Alerting  | ←                  | ← 180 Ringing               |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|   |                    | No reply timer expires      |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| 181 Call is Being Forwarded   | ←                  |                             |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|   |                    | → CANCEL/BYE                |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|   |                    | ← 200 OK CANCEL/BYE         |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|   |                    | ← 487 Request Terminated    |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|   |                    | → ACK                       |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|   |                    |                             | → INVITE  |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |

| TSS<br>Netw/ASNotification/Originating user   | TP<br>CDIV_N02_014 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/3 AND PICS<br>4.7.3/3 AND<br>(PICS 4.7.3/5<br>OR PICS 4.7.4/3) AND<br>PICS 4.7.3/4 |                        |                        |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
|---|--------------------|-----------------------------|---|------------------------|------------------------|----|--|-------|-------|--------|---|--|---|--------|--|--------------|---|--|---|-------------|--|--|--|--|--|------------------------|--|-----------------------------|---|--|--|--|--|--|--|--|--|---|------------|--|--|--|--|---|-------------------|--|--|--|--|---|------------------------|--|--|--|--|---|-----|--|--|--|--|--|----------|
| <b>Test purpose</b><br><i>Communication forwarding using CFNR with applying diversion condition; originating user is notified.</i>  |                    |                             |   |                        |                        |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
| <p>When Communication Diversion occurs (served user does not respond) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 408 and escaped Privacy header set to 'history', index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul>  |                    |                             |   |                        |                        |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
| <b>Subscription options:</b><br><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = yes</i><br><i>Served user allows the presentation of his/her URI to originating user in diversion notification = no OR</i><br><i>Served user has subscribed to TIR in permanent mode</i>   |                    |                             |   |                        |                        |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
| <b>SIP header values:</b><br>181 Call is Being Forwarded:<br>P-Asserted-Identity: SIP#2<br>Privacy: id<br>History-Info: <sip:SIP#2?Privacy=history>;index=1,<br><sip:SIP#3;cause=408?Privacy=history>;index=1.1;mp=1.1  |                    |                             |   |                        |                        |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
| <b>Comments:</b><br><table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">SIP#1</th> <th style="width: 10%;"></th> <th style="width: 20%;">AS</th> <th style="width: 10%;"></th> <th style="width: 20%;">SIP#2</th> <th style="width: 10%;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td style="text-align: center;">→</td> <td>INVITE</td> <td></td> </tr> <tr> <td>180 Alerting</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: center;">←</td> <td>180 Ringing</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td colspan="2" style="text-align: center;">No reply timer expires</td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">→</td> <td>CANCEL/BYE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">←</td> <td>200 OK CANCEL/BYE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">←</td> <td>487 Request Terminated</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">→</td> <td>ACK</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table> |                    |                             |   | SIP#1                  |                        | AS |  | SIP#2 | SIP#3 | INVITE | → |  | → | INVITE |  | 180 Alerting | ← |  | ← | 180 Ringing |  |  |  |  |  | No reply timer expires |  | 181 Call is Being Forwarded | ← |  |  |  |  |  |  |  |  | → | CANCEL/BYE |  |  |  |  | ← | 200 OK CANCEL/BYE |  |  |  |  | ← | 487 Request Terminated |  |  |  |  | → | ACK |  |  |  |  |  | → INVITE |
| SIP#1   |                    | AS                          |   | SIP#2                  | SIP#3                  |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
| INVITE  | →                  |                             | →   | INVITE                 |                        |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
| 180 Alerting  | ←                  |                             | ←   | 180 Ringing            |                        |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
|   |                    |                             |   | No reply timer expires |                        |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
| 181 Call is Being Forwarded   | ←                  |                             |   |                        |                        |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
|   |                    |                             |   | →                      | CANCEL/BYE             |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
|   |                    |                             |   | ←                      | 200 OK CANCEL/BYE      |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
|   |                    |                             |   | ←                      | 487 Request Terminated |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
|   |                    |                             |   | →                      | ACK                    |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |
|   |                    |                             |   |                        | → INVITE               |    |  |       |       |        |   |  |   |        |  |              |   |  |   |             |  |  |  |  |  |                        |  |                             |   |  |  |  |  |  |  |  |  |   |            |  |  |  |  |   |                   |  |  |  |  |   |                        |  |  |  |  |   |     |  |  |  |  |  |          |

| TSS<br>Netw/ASNotification/Originating user  | TP<br>CDIV_N02_015 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/3 AND PICS<br>4.7.3/3 AND<br>(PICS 4.7.3/5<br>OR PICS 4.7.4/3) AND<br>PICS 4.7.3/4 |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|--|--------------------|-----------------------------|---|-------|----|-------|-------|--------|---|----------|--|--------------|---|---------------|--|--|--|------------------------|--|-----------------------------|---|--|--|--|--|--------------|--|--|--|---------------------|--|--|--|--------------------------|--|--|--|-------|--|--|--|--|----------|
| <p><b>Test purpose</b><br/>Communication forwarding using CFNR with applying diversion condition; originating user is notified.</p> <p>When Communication Diversion occurs (served user does not respond) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user, index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user, with a Privacy header set to "history", cause = 408, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul>  |                    |                             |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| <p><b>Subscription options:</b><br/>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes<br/>Served user allows the presentation of diverted to URI to originating user in diversion notification = no<br/>Served user allows the presentation of his/her URI to originating user in diversion notification = yes</p>  |                    |                             |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>History-Info: &lt;sip:SIP#2&gt;;index=1,<br/>&lt;sip:SIP#3;cause=408?Privacy=history&gt;;index=1.1;mp=1.1</p>   |                    |                             |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
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| SIP#1  | AS                 | SIP#2                       | SIP#3   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| INVITE   | →                  | → INVITE                    |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| 180 Alerting   | ←                  | ← 180 Ringing               |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | No reply timer expires      |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| 181 Call is Being Forwarded  | ←                  |                             |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | → CANCEL/BYE                |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | ← 200 OK CANCEL/BYE         |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | ← 487 Request Terminated    |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | → ACK                       |   |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    |                             | → INVITE  |       |    |       |       |        |   |          |  |              |   |               |  |  |  |                        |  |                             |   |  |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotOrigUser   | TP<br>CDIV_N02_016 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/4 AND PICS<br>4.7.3/3 |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|---|--------------------|-----------------------------|--|-------|----|-------|-------|--------|---|----------|--|--|--|-------------------------|--|--|--|-------|--|--|--|--|----------|
| <p><b>Test purpose</b><br/>Communication forwarding using CD (immediate response); originating user is <b>not</b> notified.</p> <p>When Communication Diversion occurs (served user deflects call immediately) and if the notification procedures of the originating user is supported then no 181 (Call Is Being Forwarded) response shall be sent towards the originating user if the served users subscription option is set to: Originating user receives notification that his communication has been diverted (forwarded or deflected) = no.</p>  |                    |                             |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| <p><b>Subscription options:</b><br/>Originating user receives notification that his communication has been diverted (forwarded or deflected) = no</p>   |                    |                             |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: center;">SIP#2</th> <th style="text-align: right;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td style="text-align: center;">→ INVITE</td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">← 302 Moved Temporarily</td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">→ ACK</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table> |                    |                             |  | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → | → INVITE |  |  |  | ← 302 Moved Temporarily |  |  |  | → ACK |  |  |  |  | → INVITE |
| SIP#1   | AS                 | SIP#2                       | SIP#3  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| INVITE  | →                  | → INVITE                    |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|   |                    | ← 302 Moved Temporarily     |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|   |                    | → ACK                       |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|   |                    |                             | → INVITE   |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotOrigUser  | TP<br>CDIV_N02_017 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/4 AND<br>PICS 4.7.3/3<br>AND PICS 4.7.3/4<br>AND PICS 4.7.3/5 |
|--|--------------------|-----------------------------|--|
| <b>Test purpose</b>  |                    |                             |  |
| <i>Communication forwarding using CD (immediate response); originating user is notified.</i>   |                    |                             |  |
| <p>When Communication Diversion occurs (served user deflects call immediately) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 480 and escaped Privacy header set to 'history', index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |                             |  |
| <b>Subscription options:</b>   |                    |                             |  |
| <i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i>  |                    |                             |  |
| <i>Served user allows the presentation of diverted to URI to <i>originating</i> user in diversion notification = yes</i>   |                    |                             |  |
| <i>Served user allows the presentation of his/her URI to <i>originating</i> user in diversion notification = yes</i>   |                    |                             |  |
| <b>SIP header values:</b>  |                    |                             |  |
| <p>181 Call is Being Forwarded:</p> <ul style="list-style-type: none"> <li>P-Asserted-Identity: SIP#2</li> <li>History-Info: &lt;sip:SIP#2?Reason=SIP%3Bcause%3D302&gt;;index=1,<br/>&lt;sip:SIP#3;cause=480?Privacy=history&gt;;index=1.1;mp=1.1</li> </ul>   |                    |                             |  |
| <p>NOTE: According to ETSI TS 124 604 [1], clause 4.5.2.6.2.2.b: "If the diversion is based on a SIP response from the served user, a Reason header in escaped form shall be included in accordance with IETF RFC 7044 [4]".</p>   |                    |                             |  |
| <b>Comments:</b>   |                    |                             |  |
| <b>SIP#1</b><br>INVITE   | →                  | <b>AS</b>                   | <b>SIP#2</b><br>→ INVITE<br>← 302 Moved Temporarily<br>→ ACK   |
| 181 Call is Being Forwarded  | ←                  |                             | → INVITE   |

| TSS<br>Netw/ASdivertingUser/NotOrigUser   | TP<br>CDIV_N02_018 | Reference [1],<br>4.5.2.6.4                  | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/4 AND PICS<br>4.7.3/3 AND<br>(PICS 4.7.3/5<br>OR PICS 4.7.4/3) AND<br>PICS 4.7.3/4 |       |    |       |       |        |   |  |  |                             |   |  |          |
|---|--------------------|--|---|-------|----|-------|-------|--------|---|--|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/>Communication forwarding using CD (immediate response); originating user is notified.</p> <p>When Communication Diversion occurs (served user deflects call immediately) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user with a Privacy header set to "history", cause = 480, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |  |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes<br/>Served user allows the presentation of diverted to URI to <i>originating</i> user in diversion notification = no<br/>Served user allows the presentation of his/her URI to <i>originating</i> user in diversion notification = no OR<br/>Served user has subscribed to TIR in permanent mode</p>   |                    |  |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>Privacy: id<br/>History-Info: &lt;sip:SIP#2?Privacy=history&amp;Reason=SIP%3Bcause%3D302&gt;;index=1,<br/>&lt;sip:SIP#3;cause=480?Privacy=history&gt;;index=1.1;mp=1.1</p> <p>NOTE: According to ETSI TS 124 604 [1], clause 4.5.2.6.2.2.b: "If the diversion is based on a SIP response from the served user, a Reason header in escaped form shall be included in accordance with IETF RFC 7044 [4]."</p>  |                    |  |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: left;">SIP#2</th> <th style="text-align: left;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE<br/>← 302 Moved Temporarily<br/>→ ACK</td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table>  |                    |  |   | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → | → INVITE<br>← 302 Moved Temporarily<br>→ ACK |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| SIP#1   | AS                 | SIP#2  | SIP#3   |       |    |       |       |        |   |  |  |                             |   |  |          |
| INVITE  | →                  | → INVITE<br>← 302 Moved Temporarily<br>→ ACK |   |       |    |       |       |        |   |  |  |                             |   |  |          |
| 181 Call is Being Forwarded   | ←                  |  | → INVITE  |       |    |       |       |        |   |  |  |                             |   |  |          |

| <p style="text-align: center;"><b>TSS</b><br/>Netw/ASdivertingUser/NotOrigUser</p>   | <p style="text-align: center;"><b>TP</b><br/>CDIV_N02_019</p> | <p style="text-align: center;">Reference [1],<br/>4.5.2.6.4</p> | <p style="text-align: center;">Selection expression<br/>PICS 4.5.1/2 AND<br/>PICS 4.7.1/4 AND PICS<br/>4.7.3/3 AND<br/>(PICS 4.7.3/5<br/>OR PICS 4.7.4/3) AND<br/>PICS 4.7.3/4</p> |       |    |       |       |        |   |  |  |                             |   |  |          |
|--|---|---|--|-------|----|-------|-------|--------|---|--|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/><i>Communication forwarding using CD (immediate response); originating user is notified.</i></p> <p>When Communication Diversion occurs (served user deflects call immediately) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user with a Privacy header set to "history", cause = 480, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |   |   |  |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br/><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = yes</i><br/><i>Served user allows the presentation of his/her URI to originating user in diversion notification = no OR</i><br/><i>Served user has subscribed to TIR in permanent mode</i></p>   |   |   |  |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>Privacy: id<br/>History-Info: &lt;sip:SIP#2?Privacy=history&gt;;index=1,<br/>&lt;sip:SIP#3 ;cause=480?Privacy=history&gt;;index=1.1;mp=1.1</p>  |   |   |  |       |    |       |       |        |   |  |  |                             |   |  |          |
| <p><b>Comments:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: left;">SIP#2</th> <th style="text-align: left;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE<br/>← 302 Moved Temporarily<br/>→ ACK</td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table>   |   |   |  | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → | → INVITE<br>← 302 Moved Temporarily<br>→ ACK |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| SIP#1  | AS  | SIP#2   | SIP#3  |       |    |       |       |        |   |  |  |                             |   |  |          |
| INVITE   | →   | → INVITE<br>← 302 Moved Temporarily<br>→ ACK                    |  |       |    |       |       |        |   |  |  |                             |   |  |          |
| 181 Call is Being Forwarded  | ←   |   | → INVITE   |       |    |       |       |        |   |  |  |                             |   |  |          |

| TSS<br>Netw/ASdivertingUser/NotOrigUser   | TP<br>CDIV_N02_020 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/4 AND PICS<br>4.7.3/3 AND<br>(PICS 4.7.3/5<br>OR PICS 4.7.4/3) AND<br>PICS 4.7.3/4 |              |           |              |              |        |   |          |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|---|--------------------|-----------------------------|---|--------------|-----------|--------------|--------------|--------|---|----------|--|--|--|-------------------------|--|--|--|-------|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/>Communication forwarding using CD (immediate response); originating user is notified.</p> <p>When Communication Diversion occurs (served user deflects call immediately) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user with a Privacy header set to "history", cause = 480, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |                             |   |              |           |              |              |        |   |          |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes<br/>Served user allows the presentation of diverted to URI to originating user in diversion notification = no<br/>Served user allows the presentation of his/her URI to originating user in diversion notification = yes</p>   |                    |                             |   |              |           |              |              |        |   |          |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>History-Info: &lt;sip:SIP#2&gt;;index=1,<br/>&lt;sip:SIP#;cause=4803?Privacy=history&gt;;index=1.1;mp=1.1</p>  |                    |                             |   |              |           |              |              |        |   |          |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"><b>SIP#1</b></td> <td style="width: 30%; text-align: center;"><b>AS</b></td> <td style="width: 30%; text-align: center;"><b>SIP#2</b></td> <td style="width: 10%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE</td> <td></td> </tr> <tr> <td></td> <td></td> <td>← 302 Moved Temporarily</td> <td></td> </tr> <tr> <td></td> <td></td> <td>→ ACK</td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </table>  |                    |                             |   | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → | → INVITE |  |  |  | ← 302 Moved Temporarily |  |  |  | → ACK |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| <b>SIP#1</b>  | <b>AS</b>          | <b>SIP#2</b>                | <b>SIP#3</b>  |              |           |              |              |        |   |          |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| INVITE  | →                  | → INVITE                    |   |              |           |              |              |        |   |          |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|   |                    | ← 302 Moved Temporarily     |   |              |           |              |              |        |   |          |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|   |                    | → ACK                       |   |              |           |              |              |        |   |          |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| 181 Call is Being Forwarded   | ←                  |                             | → INVITE  |              |           |              |              |        |   |          |  |  |  |                         |  |  |  |       |  |                             |   |  |          |

| TSS<br>Netw/ASdivertingUser/NotOrigUser  | TP<br>CDIV_N02_021 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/5 AND PICS<br>4.7.3/3 |              |           |              |              |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|--|--------------------|-----------------------------|--|--------------|-----------|--------------|--------------|--------|---|----------|--|-------------|---|---------------|--|--|--|-------------------------|--|--|--|-------|--|--|--|--|----------|
| <p><b>Test purpose</b><br/>Communication forwarding using CD during alerting; originating user is not notified.</p> <p>When Communication Diversion occurs (served user deflects call during alerting) and if the notification procedures of the originating user is supported then no 181 (Call Is Being Forwarded) response shall be sent towards the originating user if the served users subscription option is set to: Originating user receives notification that his communication has been diverted (forwarded or deflected) = no.</p>   |                    |                             |  |              |           |              |              |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| <p><b>Subscription options:</b><br/>Originating user receives notification that his communication has been diverted (forwarded or deflected) = no</p>  |                    |                             |  |              |           |              |              |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"><b>SIP#1</b></td> <td style="width: 30%; text-align: center;"><b>AS</b></td> <td style="width: 30%; text-align: center;"><b>SIP#2</b></td> <td style="width: 10%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE</td> <td></td> </tr> <tr> <td>180 Ringing</td> <td style="text-align: center;">←</td> <td>← 180 Ringing</td> <td></td> </tr> <tr> <td></td> <td></td> <td>← 302 Moved Temporarily</td> <td></td> </tr> <tr> <td></td> <td></td> <td>→ ACK</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </table> |                    |                             |  | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → | → INVITE |  | 180 Ringing | ← | ← 180 Ringing |  |  |  | ← 302 Moved Temporarily |  |  |  | → ACK |  |  |  |  | → INVITE |
| <b>SIP#1</b>   | <b>AS</b>          | <b>SIP#2</b>                | <b>SIP#3</b>   |              |           |              |              |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| INVITE   | →                  | → INVITE                    |  |              |           |              |              |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| 180 Ringing  | ←                  | ← 180 Ringing               |  |              |           |              |              |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|  |                    | ← 302 Moved Temporarily     |  |              |           |              |              |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|  |                    | → ACK                       |  |              |           |              |              |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|  |                    |                             | → INVITE   |              |           |              |              |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotOrigUser  | TP<br>CDIV_N02_022 | Reference [1],<br>4.5.2.6.4   | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/5<br>AND PICS 4.7.3/3<br>AND PICS 4.7.3/4<br>AND PICS 4.7.3/5 |
|--|--------------------|---|--|
| <b>Test purpose</b>  |                    |   |  |
| <i>Communication forwarding using CD during alerting; originating user is notified.</i>  |                    |   |  |
| <p>When Communication Diversion occurs (served user deflects call during alerting) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 487 and escaped Privacy header set to 'history', index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |   |  |
| <b>Subscription options:</b>   |                    |   |  |
| <i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = yes  |                    |   |  |
| Served user allows the presentation of diverted to URI to <i>originating</i> user in diversion notification = yes  |                    |   |  |
| Served user allows the presentation of his/her URI to <i>originating</i> user in diversion notification = yes  |                    |   |  |
| <b>SIP header values:</b>  |                    |   |  |
| 181 Call is Being Forwarded:<br>P-Asserted-Identity: SIP#2<br>History-Info: <sip:SIP#2>;index=1,<br><sip:SIP#3; cause=487?Privacy=history>;index=1.1   |                    |   |  |
| <b>Comments:</b>   |                    |   |  |
| <b>SIP#1</b><br>INVITE →<br>180 Ringing ←<br><br>181 Call is Being Forwarded ←   | <b>AS</b>          | <b>SIP#2</b><br>→ INVITE<br>← 180 Ringing<br>← 302 Moved Temporarily<br>→ ACK | <b>SIP#3</b><br><br><br>→ INVITE   |

| TSS<br>Netw/ASdivertingUser/NotOrigUser  | TP<br>CDIV_N02_023 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/5 AND PICS<br>4.7.3/3 AND<br>(PICS 4.7.3/5<br>OR PICS 4.7.4/3) AND<br>PICS 4.7.3/4 |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|--|--------------------|-----------------------------|---|-------|----|-------|-------|--------|---|----------|--|-------------|---|---------------|--|--|--|-------------------------|--|--|--|-------|--|-----------------------------|---|--|----------|
| <b>Test purpose</b><br><i>Communication forwarding using CD during alerting; originating user is notified.</i>   |                    |                             |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p>When Communication Diversion occurs (served user deflects call during alerting) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user with a Privacy header set to "history", cause = 487, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |                             |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <b>Subscription options:</b><br><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = no</i><br><i>Served user allows the presentation of his/her URI to originating user in diversion notification = no OR</i><br><i>Served user has subscribed to TIR in permanent mode</i>   |                    |                             |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <b>SIP header values:</b><br>181 Call is Being Forwarded:<br>P-Asserted-Identity: SIP#2<br>Privacy: id<br>History-Info: <sip:SIP#2?Privacy=history>;index=1,<br><sip:SIP#3;cause=487?Privacy=history>;index=1.1  |                    |                             |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <b>Comments:</b><br><table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: left;">SIP#2</th> <th style="text-align: left;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE</td> <td></td> </tr> <tr> <td>180 Ringing</td> <td style="text-align: center;">←</td> <td>← 180 Ringing</td> <td></td> </tr> <tr> <td></td> <td></td> <td>← 302 Moved Temporarily</td> <td></td> </tr> <tr> <td></td> <td></td> <td>→ ACK</td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table>   |                    |                             |   | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → | → INVITE |  | 180 Ringing | ← | ← 180 Ringing |  |  |  | ← 302 Moved Temporarily |  |  |  | → ACK |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| SIP#1  | AS                 | SIP#2                       | SIP#3   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| INVITE   | →                  | → INVITE                    |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| 180 Ringing  | ←                  | ← 180 Ringing               |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|  |                    | ← 302 Moved Temporarily     |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|  |                    | → ACK                       |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| 181 Call is Being Forwarded  | ←                  |                             | → INVITE  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |

| <p style="text-align: center;"><b>TSS</b><br/>Netw/ASdivertingUser/NotOrigUser</p>   | <p style="text-align: center;"><b>TP</b><br/>CDIV_N02_024</p> | <p style="text-align: center;">Reference [1],<br/>4.5.2.6.4</p> | <p style="text-align: center;">Selection expression<br/>PICS 4.5.1/2 AND<br/>PICS 4.7.1/5 AND PICS<br/>4.7.3/3 AND<br/>(PICS 4.7.3/5<br/>OR PICS 4.7.4/3) AND<br/>PICS 4.7.3/4</p> |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|--|---|---|--|-------|----|-------|-------|--------|---|----------|--|-------------|---|---------------|--|--|--|-------------------------|--|--|--|-------|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b><br/><i>Communication forwarding using CD during alerting; originating user is notified.</i></p> <p>When Communication Diversion occurs (served user deflects call during alerting) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a Privacy header set to "id" and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1 and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 487 and escaped Privacy header set to 'history', index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |   |   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p><b>Subscription options:</b><br/><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br/><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = yes</i><br/><i>Served user allows the presentation of his/her URI to originating user in diversion notification = no OR</i><br/><i>Served user has subscribed to TIR in permanent mode</i></p>   |   |   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p><b>SIP header values:</b><br/>181 Call is Being Forwarded:<br/>P-Asserted-Identity: SIP#2<br/>Privacy: id<br/>History-Info: &lt;sip:SIP#2?Privacy=history&gt;;index=1,<br/>&lt;sip:SIP#3;cause=487?Privacy=history&gt;;index=1.1;mp=1.1</p>   |   |   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p><b>Comments:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: left;">SIP#2</th> <th style="text-align: left;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE</td> <td></td> </tr> <tr> <td>180 Ringing</td> <td style="text-align: center;">←</td> <td>← 180 Ringing</td> <td></td> </tr> <tr> <td></td> <td></td> <td>← 302 Moved Temporarily</td> <td></td> </tr> <tr> <td></td> <td></td> <td>→ ACK</td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table>   |   |   |  | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → | → INVITE |  | 180 Ringing | ← | ← 180 Ringing |  |  |  | ← 302 Moved Temporarily |  |  |  | → ACK |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| SIP#1  | AS  | SIP#2   | SIP#3  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| INVITE   | →   | → INVITE  |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| 180 Ringing  | ←   | ← 180 Ringing   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|  |   | ← 302 Moved Temporarily   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|  |   | → ACK   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| 181 Call is Being Forwarded  | ←   |   | → INVITE   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |

| <p style="text-align: center;"><b>TSS</b></p> <p style="text-align: center;"><b>Netw/ASdivertingUser/NotOrigUser</b></p>   | <p style="text-align: center;"><b>TP</b></p> <p style="text-align: center;"><b>CDIV_N02_025</b></p> | <p style="text-align: center;"><b>Reference [1],</b></p> <p style="text-align: center;"><b>4.5.2.6.4</b></p> | <p style="text-align: center;"><b>Selection expression</b></p> <p style="text-align: center;"><b>PICS 4.5.1/2 AND</b></p> <p style="text-align: center;"><b>PICS 4.7.1/5 AND PICS</b></p> <p style="text-align: center;"><b>4.7.3/3 AND</b></p> <p style="text-align: center;"><b>(PICS 4.7.3/5</b></p> <p style="text-align: center;"><b>OR PICS 4.7.4/3) AND</b></p> <p style="text-align: center;"><b>PICS 4.7.3/4</b></p> |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|--|---|--|---|-------|----|-------|-------|--------|---|----------|--|-------------|---|---------------|--|--|--|-------------------------|--|--|--|-------|--|-----------------------------|---|--|----------|
| <p><b>Test purpose</b></p> <p><i>Communication forwarding using CD during alerting; originating user is notified.</i></p> <p>When Communication Diversion occurs (served user deflects call during alerting) and if the notification procedures of the originating user is supported then a 181 (Call Is Being Forwarded) response shall be sent towards the originating user containing:</p> <ul style="list-style-type: none"> <li>a P-Asserted-Identity header with the URI of the served user and</li> <li>a History-Info header including a first entry with the hi-targeted-to-URI of the served user, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user with a Privacy header set to "history", cause = 487, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |   |  |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p><b>Subscription options:</b></p> <p><i>Originating</i> user receives notification that his communication has been diverted (forwarded or deflected) = yes</p> <p>Served user allows the presentation of diverted to URI to <i>originating</i> user in diversion notification = no</p> <p>Served user allows the presentation of his/her URI to <i>originating</i> user in diversion notification = yes OR</p> <p>Served user has subscribed to TIR in permanent mode</p>  |   |  |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p><b>SIP header values:</b></p> <p>181 Call is Being Forwarded:</p> <ul style="list-style-type: none"> <li>P-Asserted-Identity: SIP#2</li> <li>History-Info: &lt;sip:SIP#&gt;;index=1, &lt;sip:SIP#3;cause=487?Privacy=history&gt;;index=1.1;mp=1.1</li> </ul>  |   |  |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| <p><b>Comments:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">AS</th> <th style="text-align: center;">SIP#2</th> <th style="text-align: right;">SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>→ INVITE</td> <td></td> </tr> <tr> <td>180 Ringing</td> <td style="text-align: center;">←</td> <td>← 180 Ringing</td> <td></td> </tr> <tr> <td></td> <td></td> <td>← 302 Moved Temporarily</td> <td></td> </tr> <tr> <td></td> <td></td> <td>→ ACK</td> <td></td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </tbody> </table>  |   |  |   | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → | → INVITE |  | 180 Ringing | ← | ← 180 Ringing |  |  |  | ← 302 Moved Temporarily |  |  |  | → ACK |  | 181 Call is Being Forwarded | ← |  | → INVITE |
| SIP#1  | AS  | SIP#2  | SIP#3   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| INVITE   | →   | → INVITE   |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| 180 Ringing  | ←   | ← 180 Ringing  |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|  |   | ← 302 Moved Temporarily  |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
|  |   | → ACK  |   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |
| 181 Call is Being Forwarded  | ←   |  | → INVITE  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |                             |   |  |          |

## 5.2.1.2.2 Diverted-to user

| TSS<br>Netw/ASdivertingUser/NotTermUser  | TP<br>CDIV_N03_001 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/1 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |              |  |           |              |              |        |   |  |  |          |
|--|--------------------|---|--|--------------|--|-----------|--------------|--------------|--------|---|--|--|----------|
| <p><b>Test purpose</b><br/><i>Communication Forwarding using CFU.</i></p> <p>The served user subscribes to the CFU service. The served user does <b>not</b> subscribe to OIR in permanent mode <b>and</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value <b>"yes"</b>.</p> <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user (not) including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "302" in the Request URI and containing a History-Info header including a first entry with the hi-targeted-to-URI of the served user, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 302, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</p> <p><b>SIP header values:</b><br/>INVITE: sip:SIP#3@ example.com; cause = 302 SIP/2.0<br/>History-Info: &lt;sip:SIP#2&gt;;index=1,<br/>&lt;sip:SIP#3; cause=302&gt;;index=1.1;mp=1.1</p> |                    |   |  |              |  |           |              |              |        |   |  |  |          |
| <p><b>Comments:</b></p> <table border="0"> <tr> <td><b>SIP#1</b></td> <td></td> <td><b>AS</b></td> <td><b>SIP#2</b></td> <td><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td>→</td> <td></td> <td></td> <td>→ INVITE</td> </tr> </table>  |                    |   |  | <b>SIP#1</b> |  | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → |  |  | → INVITE |
| <b>SIP#1</b>   |                    | <b>AS</b>                                     | <b>SIP#2</b>   | <b>SIP#3</b> |  |           |              |              |        |   |  |  |          |
| INVITE   | →                  |   |  | → INVITE     |  |           |              |              |        |   |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser   | TP<br>CDIV_N03_002 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/2 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |              |  |           |              |              |        |   |  |  |          |
|---|--------------------|---|--|--------------|--|-----------|--------------|--------------|--------|---|--|--|----------|
| <p><b>Test purpose</b><br/><i>Communication Forwarding using CFB NDUB.</i></p> <p>The served user subscribes to the CFB service and is in NDUB condition. The served user does <b>not</b> subscribe to OIR in permanent mode <b>and</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value <b>"yes"</b>.</p> <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which is NDUB (not) including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "486" in the Request URI and containing a History-Info header including a first entry with the hi-targeted-to-URI of the served user, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 486, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</p> <p><b>SIP header values:</b><br/>INVITE: sip:SIP#3@ example.com; cause = 486 SIP/2.0<br/>History-Info: &lt;sip:SIP#2&gt;;index=1,<br/>&lt;sip:SIP#3; cause=486&gt;;index=1.1;mp=1.1</p> <p>NOTE: According to ETSI TS 124 604 [1], clause 4.5.2.6.2.2.b: "If the diversion is based on a SIP response from the served user, a Reason header in escaped form shall be included in accordance with IETF RFC 7044 [4]".</p> |                    |   |  |              |  |           |              |              |        |   |  |  |          |
| <p><b>Comments:</b></p> <table border="0"> <tr> <td><b>SIP#1</b></td> <td></td> <td><b>AS</b></td> <td><b>SIP#2</b></td> <td><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td>→</td> <td></td> <td></td> <td>→ INVITE</td> </tr> </table>   |                    |   |  | <b>SIP#1</b> |  | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → |  |  | → INVITE |
| <b>SIP#1</b>  |                    | <b>AS</b>                                     | <b>SIP#2</b>   | <b>SIP#3</b> |  |           |              |              |        |   |  |  |          |
| INVITE  | →                  |   |  | → INVITE     |  |           |              |              |        |   |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser  | TP<br>CDIV_N03_003 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/6 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |              |           |              |              |        |   |  |          |
|--|--------------------|---|--|--------------|-----------|--------------|--------------|--------|---|--|----------|
| <p><b>Test purpose</b><br/><i>Communication Forwarding using CFNL.</i></p> <p>The served user subscribes to the CFNL service and has not logged in. The served user does <b>not</b> subscribe to OIR in permanent mode <b>and</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value "<b>yes</b>".</p> <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which is not logged in (not) including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "404" in the Request URI and containing a History-Info header<br/> including a first entry with the hi-targeted-to-URI of the served user, index = 1<br/> and<br/> including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 404, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</p> |                    |   |  |              |           |              |              |        |   |  |          |
| <p><b>SIP header values:</b><br/> INVITE: sip:SIP#3@ example.com; cause = 404 SIP/2.0<br/> History-Info: &lt;sip:SIP#2&gt;;index=1,<br/> &lt;sip:SIP#3; cause=404&gt;;index=1.1;mp=1.1</p>   |                    |   |  |              |           |              |              |        |   |  |          |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;"><b>SIP#1</b></td> <td style="width: 25%; text-align: center;"><b>AS</b></td> <td style="width: 25%; text-align: center;"><b>SIP#2</b></td> <td style="width: 25%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td style="text-align: center;">→ INVITE</td> </tr> </table>   |                    |   |  | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → |  | → INVITE |
| <b>SIP#1</b>   | <b>AS</b>          | <b>SIP#2</b>                                  | <b>SIP#3</b>   |              |           |              |              |        |   |  |          |
| INVITE   | →                  |   | → INVITE   |              |           |              |              |        |   |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser  | TP<br>CDIV_N03_004 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/2 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |              |           |              |              |        |   |                                      |          |
|--|--------------------|---|--|--------------|-----------|--------------|--------------|--------|---|--------------------------------------|----------|
| <p><b>Test purpose</b><br/><i>Communication Forwarding using CFB UDUB.</i></p> <p>The served user subscribes to the CFB service and is in UDUB condition. The served user does <b>not</b> subscribe to OIR in permanent mode <b>and</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value "<b>yes</b>".</p> <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which is UDUB (not) including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "486" in the Request URI and containing a History-Info header<br/> including a first entry with the hi-targeted-to-URI of the served user and a Reason header indicating cause 486, index = 1<br/> and<br/> including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 486, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</p> |                    |   |  |              |           |              |              |        |   |                                      |          |
| <p><b>SIP header values:</b><br/> INVITE: sip:SIP#3@ example.com; cause = 486 SIP/2.0<br/> History-Info: &lt;sip:SIP#2?Reason=SIP%3Bcause%3D486&gt;;index=1,<br/> &lt;sip:SIP#3;cause=486&gt;;index=1.1;mp=1.1</p> <p>NOTE: According to ETSI TS 124 604 [1], clause 4.5.2.6.2.2.b: "If the diversion is based on a SIP response from the served user, a Reason header in escaped form shall be included in accordance with IETF RFC 7044 [4]".</p>  |                    |   |  |              |           |              |              |        |   |                                      |          |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;"><b>SIP#1</b></td> <td style="width: 25%; text-align: center;"><b>AS</b></td> <td style="width: 25%; text-align: center;"><b>SIP#2</b></td> <td style="width: 25%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td style="text-align: center;">→ INVITE<br/>← 486 Busy Here<br/>→ ACK</td> <td style="text-align: center;">→ INVITE</td> </tr> </table>   |                    |   |  | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → | → INVITE<br>← 486 Busy Here<br>→ ACK | → INVITE |
| <b>SIP#1</b>   | <b>AS</b>          | <b>SIP#2</b>                                  | <b>SIP#3</b>   |              |           |              |              |        |   |                                      |          |
| INVITE   | →                  | → INVITE<br>← 486 Busy Here<br>→ ACK          | → INVITE   |              |           |              |              |        |   |                                      |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser  | TP<br>CDIV_N03_005 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/3 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|--|--------------------|---|--|-------|----|-------|-------|--------|---|----------|--|-------------|---|---------------|--|--|--|------------------------|--|--|--|--------------|--|--|--|---------------------|--|--|--|--------------------------|--|--|--|-------|--|--|--|--|----------|
| <p><b>Test purpose</b><br/><i>Communication Forwarding using CFNR.</i></p> <p>The served user subscribes to the CFNR and does not reply. The served user does <b>not</b> subscribe to OIR in permanent mode <b>and</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value "<b>yes</b>".</p> <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which does not reply (not) including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "408" in the Request URI and containing a History-Info header<br/> including a first entry with the hi-targeted-to-URI of the served user, index = 1<br/> and<br/> including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 408, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.<br/> The initial communication to the served user is terminated with a CANCEL or a BYE request with a Reason header with protocol set to SIP and the cause set to 408.</p>   |                    |   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| <p><b>SIP header values:</b><br/> INVITE: sip:SIP#3@ example.com; cause = 408 SIP/2.0<br/> History-Info: &lt;sip:SIP#2;index=1,<br/> &lt;sip:SIP#3;cause=408&gt;;index=1.1;mp=1.1<br/> CANCEL/BYE:<br/> Reason: SIP; cause=408</p>   |                    |   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| <p><b>Comments:</b></p> <table border="0"> <thead> <tr> <th data-bbox="172 994 633 1021">SIP#1</th> <th data-bbox="633 994 847 1021">AS</th> <th data-bbox="847 994 1139 1021">SIP#2</th> <th data-bbox="1139 994 1417 1021">SIP#3</th> </tr> </thead> <tbody> <tr> <td data-bbox="172 1021 633 1048">INVITE</td> <td data-bbox="633 1021 847 1048">→</td> <td data-bbox="847 1021 1139 1048">→ INVITE</td> <td data-bbox="1139 1021 1417 1048"></td> </tr> <tr> <td data-bbox="172 1048 633 1075">180 Ringing</td> <td data-bbox="633 1048 847 1075">←</td> <td data-bbox="847 1048 1139 1075">← 180 Ringing</td> <td data-bbox="1139 1048 1417 1075"></td> </tr> <tr> <td data-bbox="172 1075 633 1102"></td> <td data-bbox="633 1075 847 1102"></td> <td data-bbox="847 1075 1139 1102">No reply timer expires</td> <td data-bbox="1139 1075 1417 1102"></td> </tr> <tr> <td data-bbox="172 1102 633 1128"></td> <td data-bbox="633 1102 847 1128"></td> <td data-bbox="847 1102 1139 1128">→ CANCEL/BYE</td> <td data-bbox="1139 1102 1417 1128"></td> </tr> <tr> <td data-bbox="172 1128 633 1155"></td> <td data-bbox="633 1128 847 1155"></td> <td data-bbox="847 1128 1139 1155">← 200 OK CANCEL/BYE</td> <td data-bbox="1139 1128 1417 1155"></td> </tr> <tr> <td data-bbox="172 1155 633 1182"></td> <td data-bbox="633 1155 847 1182"></td> <td data-bbox="847 1155 1139 1182">← 487 Request Terminated</td> <td data-bbox="1139 1155 1417 1182"></td> </tr> <tr> <td data-bbox="172 1182 633 1209"></td> <td data-bbox="633 1182 847 1209"></td> <td data-bbox="847 1182 1139 1209">→ ACK</td> <td data-bbox="1139 1182 1417 1209"></td> </tr> <tr> <td data-bbox="172 1209 633 1236"></td> <td data-bbox="633 1209 847 1236"></td> <td data-bbox="847 1209 1139 1236"></td> <td data-bbox="1139 1209 1417 1236">→ INVITE</td> </tr> </tbody> </table> |                    |   |  | SIP#1 | AS | SIP#2 | SIP#3 | INVITE | → | → INVITE |  | 180 Ringing | ← | ← 180 Ringing |  |  |  | No reply timer expires |  |  |  | → CANCEL/BYE |  |  |  | ← 200 OK CANCEL/BYE |  |  |  | ← 487 Request Terminated |  |  |  | → ACK |  |  |  |  | → INVITE |
| SIP#1  | AS                 | SIP#2   | SIP#3  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| INVITE   | →                  | → INVITE                                      |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
| 180 Ringing  | ←                  | ← 180 Ringing                                 |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | No reply timer expires                        |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | → CANCEL/BYE                                  |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | ← 200 OK CANCEL/BYE                           |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | ← 487 Request Terminated                      |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    | → ACK   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |
|  |                    |   | → INVITE   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                          |  |  |  |       |  |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser   | TP<br>CDIV_N03_006 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4,<br>Reference [4], 4.3.3.1.2 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/4 AND<br>PICS 4.7.4/1 AND<br>PICS 4.7.3/6 |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|---|--------------------|--|--|-------|----|-------|-------|--------|---|----------|--|--|--|-------------------------|--|--|--|-------|--|--|--|--|----------|
| <b>Test purpose</b><br><i>Communication Forwarding using CD (immediate response),</i><br><br>The served user subscribes to the CD service and immediately diverts the communication. The served user does <b>not</b> subscribe to OIR in permanent mode <b>and</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value " <b>yes</b> ".<br><br>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which immediately diverts the communication (not) including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "480" in the Request URI and containing a History-Info header<br>including a first entry with the hi-targeted-to-URI of the served user and a Reason header indicating cause 302, index = 1<br>and<br>including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 480, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI. |                    |  |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| <b>SIP header values:</b><br>INVITE: sip:SIP#3@ example.com; cause = 480 SIP/2.0<br>History-Info: <sip:SIP#2?Reason=SIP%3Bcause%3D302>;index=1,<br><sip:SIP#3;cause=480>;index=1.1;mp=1.1   |                    |  |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
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| SIP#1   | AS                 | SIP#2  | SIP#3  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| INVITE  | →                  | → INVITE   |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|   |                    | ← 302 Moved Temporarily  |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|   |                    | → ACK  |  |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|   |                    |  | → INVITE   |       |    |       |       |        |   |          |  |  |  |                         |  |  |  |       |  |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser  | TP<br>CDIV_N03_007 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4,<br>Reference [4], 4.3.3.1.2 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/5 AND<br>PICS 4.7.4/1 AND<br>PICS 4.7.3/6 |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|--|--------------------|--|--|-------|----|-------|-------|--------|---|----------|--|-------------|---|---------------|--|--|--|-------------------------|--|--|--|-------|--|--|--|--|----------|
| <b>Test purpose</b><br><i>Communication Forwarding using CD during alerting.</i><br><br>The served user subscribes to the CD service and diverts the communication during alerting. The served user does <b>not</b> subscribe to OIR in permanent mode <b>and</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value " <b>yes</b> ".<br><br>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which diverts the communication during alerting (not) including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "487" in the Request URI and containing a History-Info header<br>including a first entry with the hi-targeted-to-URI of the served user and a Reason header indicating cause 302, index = 1<br>and<br>including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 487, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI. |                    |  |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| <b>SIP header values:</b><br>INVITE: sip:SIP#3@ example.com; cause = 487 SIP/2.0<br>History-Info: <sip:SIP#2?Reason=SIP%3Bcause%3D302>;index=1,<br><sip:SIP#3;cause=487>;index=1.1;mp=1.1  |                    |  |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
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| SIP#1  | AS                 | SIP#2  | SIP#3  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| INVITE   | →                  | → INVITE   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
| 180 Ringing  | ←                  | ← 180 Ringing  |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|  |                    | ← 302 Moved Temporarily  |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|  |                    | → ACK  |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |
|  |                    |  | → INVITE   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                         |  |  |  |       |  |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser  | TP<br>CDIV_N03_008 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/7 AND<br>PICS 4.7.4/1 AND<br>PICS 4.7.3/6 |              |           |              |              |        |   |  |          |
|--|--------------------|---|--|--------------|-----------|--------------|--------------|--------|---|--|----------|
| <p><b>Test purpose</b><br/><i>Communication Forwarding using CFNRc.</i></p> <p>The served user subscribes to the CFNRc service and is not reachable. The served user does <b>not</b> subscribe to OIR in permanent mode <b>and</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value "<b>yes</b>".</p> <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which is not reachable (not) including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "503" in the Request URI and containing a History-Info header<br/> including a first entry with the hi-targeted-to-URI of the served user, index = 1<br/> and<br/> including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 503, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</p> <p>NOTE: According to ETSI TS 124 604 [1], clause 4.5.2.6.2.2.b: "If the diversion is based on a SIP response from the served user, a Reason header in escaped form shall be included in accordance with IETF RFC 7044 [4]".</p> |                    |   |  |              |           |              |              |        |   |  |          |
| <p><b>SIP header values:</b><br/> INVITE: sip:SIP#3@ example.com; cause = 503 SIP/2.0<br/> History-Info: &lt;sip:SIP#2;index=1,<br/> &lt;sip:SIP#3;cause=503&gt;;index=1.1;mp=1.1</p>  |                    |   |  |              |           |              |              |        |   |  |          |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 25%;"><b>SIP#1</b></td> <td style="width: 25%; text-align: center;"><b>AS</b></td> <td style="width: 25%; text-align: center;"><b>SIP#2</b></td> <td style="width: 25%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td style="text-align: center;">→ INVITE</td> </tr> </table>   |                    |   |  | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → |  | → INVITE |
| <b>SIP#1</b>   | <b>AS</b>          | <b>SIP#2</b>                                  | <b>SIP#3</b>   |              |           |              |              |        |   |  |          |
| INVITE   | →                  |   | → INVITE   |              |           |              |              |        |   |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser   | TP<br>CDIV_N03_009 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/1 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |              |           |              |              |        |   |  |          |
|---|--------------------|---|--|--------------|-----------|--------------|--------------|--------|---|--|----------|
| <p><b>Test purpose</b><br/><i>Communication Forwarding using CFU.</i></p> <p>The served user subscribes to the CFU service. The served user subscribes to OIR in permanent mode <b>or</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value "<b>no</b>".</p> <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user (not) including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "302" in the Request URI, indicating in the To header the diverted-to URI and containing a History-Info header<br/> including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1<br/> and<br/> including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 302, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</p> <p><b>SIP header values:</b><br/> INVITE: sip:SIP#3@ example.com; cause = 302 SIP/2.0<br/> To: &lt;sip:SIP#3&gt;<br/> History-Info: &lt;sip:SIP#2?Privacy=history&gt;;index=1,<br/> &lt;sip:SIP#3;cause=302&gt;;index=1.1;mp=1.1</p> |                    |   |  |              |           |              |              |        |   |  |          |
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| <b>SIP#1</b>  | <b>AS</b>          | <b>SIP#2</b>                                  | <b>SIP#3</b>   |              |           |              |              |        |   |  |          |
| INVITE  | →                  |   | → INVITE   |              |           |              |              |        |   |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser   | TP<br>CDIV_N03_010 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/2 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |              |           |              |              |        |   |  |          |
|---|--------------------|---|--|--------------|-----------|--------------|--------------|--------|---|--|----------|
| <b>Test purpose</b><br><i>Communication Forwarding using CFB NDUB.</i>  |                    |   |  |              |           |              |              |        |   |  |          |
| <p>The served user subscribes to the CFB service and is in NDUB condition. The served user subscribes to OIR in permanent mode <b>or</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value <b>"no"</b>.</p>  |                    |   |  |              |           |              |              |        |   |  |          |
| <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which is NDUB not including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "486" in the Request URI, indicating in the To header the diverted-to URI and containing a History-Info header</p> <ul style="list-style-type: none"> <li>including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1</li> <li>and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 486, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |   |  |              |           |              |              |        |   |  |          |
| <b>SIP header values:</b><br>INVITE: sip:SIP#3@ example.com; cause = 486 SIP/2.0<br>To: <sip:SIP#3><br>History-Info: <sip:SIP#2?Privacy=history>;index=1,<br><sip:SIP#3;cause=486>;index=1.1;mp=1.1   |                    |   |  |              |           |              |              |        |   |  |          |
| <b>Comments:</b><br><table style="width: 100%; border: none;"> <tr> <td style="width: 25%;"><b>SIP#1</b></td> <td style="width: 25%; text-align: center;"><b>AS</b></td> <td style="width: 25%; text-align: center;"><b>SIP#2</b></td> <td style="width: 25%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td style="text-align: center;">→ INVITE</td> </tr> </table>   |                    |   |  | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → |  | → INVITE |
| <b>SIP#1</b>  | <b>AS</b>          | <b>SIP#2</b>                                  | <b>SIP#3</b>   |              |           |              |              |        |   |  |          |
| INVITE  | →                  |   | → INVITE   |              |           |              |              |        |   |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser  | TP<br>CDIV_N03_011 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/6 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |              |           |              |              |        |   |  |          |
|--|--------------------|---|--|--------------|-----------|--------------|--------------|--------|---|--|----------|
| <b>Test purpose</b><br><i>Communication Forwarding using CFNL.</i>   |                    |   |  |              |           |              |              |        |   |  |          |
| <p>The served user subscribes to the CFNL service and has not logged in. The served user subscribes to OIR in permanent mode <b>or</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value <b>"no"</b>.</p>   |                    |   |  |              |           |              |              |        |   |  |          |
| <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which is not logged in not including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "404" in the Request URI, indicating in the To header the diverted-to URI and containing a History-Info header</p> <ul style="list-style-type: none"> <li>including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", index = 1</li> <li>and</li> <li>including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 404, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</li> </ul> |                    |   |  |              |           |              |              |        |   |  |          |
| <b>SIP header values:</b><br>INVITE: sip:SIP#3@ example.com; cause = 404 SIP/2.0<br>To: <sip:SIP#3><br>History-Info: <sip:SIP#2;privacy=history>;index=1,<br><sip:SIP#3;cause=404>;index=1.1;mp=1.1  |                    |   |  |              |           |              |              |        |   |  |          |
| <b>Comments:</b><br><table style="width: 100%; border: none;"> <tr> <td style="width: 25%;"><b>SIP#1</b></td> <td style="width: 25%; text-align: center;"><b>AS</b></td> <td style="width: 25%; text-align: center;"><b>SIP#2</b></td> <td style="width: 25%; text-align: center;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td style="text-align: center;">→ INVITE</td> </tr> </table>  |                    |   |  | <b>SIP#1</b> | <b>AS</b> | <b>SIP#2</b> | <b>SIP#3</b> | INVITE | → |  | → INVITE |
| <b>SIP#1</b>   | <b>AS</b>          | <b>SIP#2</b>                                  | <b>SIP#3</b>   |              |           |              |              |        |   |  |          |
| INVITE   | →                  |   | → INVITE   |              |           |              |              |        |   |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser   | TP<br>CDIV_N03_012 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/2 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |                 |  |              |  |              |  |              |        |   |  |  |          |  |  |  |  |  |  |                 |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |          |
|---|--------------------|---|--|-----------------|--|--------------|--|--------------|--|--------------|--------|---|--|--|----------|--|--|--|--|--|--|-----------------|--|--|--|--|--|--|-------|--|--|--|--|--|--|--|--|----------|
| <p><b>Test purpose</b><br/><i>Communication Forwarding using CFB UDUB.</i></p> <p>The served user subscribes to the CFB service and is in UDUB condition. The served user subscribes to OIR in permanent mode <b>or</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value <b>"no"</b>.</p> <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which is UDUB not including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "486" in the Request URI, indicating in the To header the diverted-to URI and containing a History-Info header<br/> including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history" and a Reason header indicating cause 486, index = 1<br/> and<br/> including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 486, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</p> |                    |   |  |                 |  |              |  |              |  |              |        |   |  |  |          |  |  |  |  |  |  |                 |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |          |
| <p><b>SIP header values:</b><br/> INVITE: sip:SIP#3@ example.com; cause = 486 SIP/2.0<br/> To: &lt;sip:SIP#3&gt;<br/> History-Info: &lt;sip:SIP#2?Privacy=history&amp;Reason=SIP=cause%3D486&gt;;index=1,<br/> &lt;sip:SIP#3;cause=486&gt;;index=1.1;mp=1.1</p>   |                    |   |  |                 |  |              |  |              |  |              |        |   |  |  |          |  |  |  |  |  |  |                 |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |          |
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| <b>SIP#1</b>  |                    | <b>AS</b>                                     |  | <b>SIP#2</b>    |  | <b>SIP#3</b> |  |              |  |              |        |   |  |  |          |  |  |  |  |  |  |                 |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |          |
| INVITE  | →                  |   |  | → INVITE        |  |              |  |              |  |              |        |   |  |  |          |  |  |  |  |  |  |                 |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |          |
|   |                    |   |  | ← 486 Busy Here |  |              |  |              |  |              |        |   |  |  |          |  |  |  |  |  |  |                 |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |          |
|   |                    |   |  | → ACK           |  |              |  |              |  |              |        |   |  |  |          |  |  |  |  |  |  |                 |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |          |
|   |                    |   |  |                 |  | → INVITE     |  |              |  |              |        |   |  |  |          |  |  |  |  |  |  |                 |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser  | TP<br>CDIV_N03_013 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/3 AND PICS<br>4.7.4/1 AND<br>PICS 4.7.3/6 |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
|--|--------------------|---|--|-------|----|-------|-------|--------|---|----------|--|-------------|---|---------------|--|--|--|------------------------|--|--|--|--------------|--|--|--|---------------------|--|--|--|---------------------------------|--|--|--|-------|--|--|--|--|----------|
| <p><b>Test purpose</b><br/><i>Communication Forwarding using CFNR.</i></p> <p>The served user subscribes to the CFNR and does not reply. The served user subscribes to OIR in permanent mode <b>or</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value <b>"no"</b>.</p> <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which does not reply not including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "408" in the Request URI, indicating in the To header the diverted-to URI and containing a History-Info header<br/> including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history",<br/> index = 1<br/> and<br/> including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 408, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.<br/> The initial communication to the served user is terminated with a CANCEL or a BYE request with a Reason header with protocol set to SIP and the cause set to 408.</p> |                    |   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
| <p><b>SIP header values:</b><br/> INVITE: sip:SIP#3@ example.com; cause = 408 SIP/2.0<br/> To: &lt;sip:SIP#3&gt;<br/> History-Info: &lt;sip:SIP#2;index=1,<br/> &lt;sip:SIP#3;cause=408&gt;;index=1.1;mp=1.1<br/> CANCEL/BYE:<br/> Reason: SIP; cause=408</p>  |                    |   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
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| SIP#1  | AS                 | SIP#2   | SIP#3  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
| INVITE   | →                  | → INVITE                                      |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
| 180 Ringing  | ←                  | ← 180 Ringing                                 |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
|  |                    | No reply timer expires                        |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
|  |                    | → CANCEL/BYE                                  |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
|  |                    | ← 200 OK CANCEL/BYE                           |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
|  |                    | ← 487 Request Terminated (Note)               |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
|  |                    | → ACK   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
|  |                    |   | → INVITE   |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |
| <p><b>NOTE:</b> The 487 Request Terminated will only be sent, if a CANCEL request had been used to terminate the initial communication.</p>  |                    |   |  |       |    |       |       |        |   |          |  |             |   |               |  |  |  |                        |  |  |  |              |  |  |  |                     |  |  |  |                                 |  |  |  |       |  |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser   | TP<br>CDIV_N03_014 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4,<br>Reference [4], 4.3.3.1.2 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/4 AND<br>PICS 4.7.4/1 AND<br>PICS 4.7.3/6 |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
|---|--------------------|--|--|--------------|-----------|--|--------------|--------|---|--|--|--|--|---|--------|--|--|---|-----------------------|--|--|---|-----|--|--|--|----------|
| <b>Test purpose</b><br><i>Communication Forwarding using CD (immediate response).</i>   |                    |  |  |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
| <p>The served user subscribes to the CD service and immediately diverts the communication. The served user subscribes to OIR in permanent mode <b>or</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value "<b>no</b>".</p>  |                    |  |  |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
| <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which immediately diverts the communication not including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "480" in the Request URI, indicating in the To header the diverted-to URI and containing a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history", and a Reason header indicating cause 302, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 480, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</p> |                    |  |  |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
| <b>SIP header values:</b><br>INVITE: sip:SIP#3@ example.com; cause = 480 SIP/2.0<br>To: <sip:SIP#3><br>History-Info: <sip:SIP#2?Privacy=history&Reason=SIP=cause%3D302>;index=1,<br><sip:SIP#3;cause=480>;index=1.1;mp=1.1  |                    |  |  |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
| <b>Comments:</b><br><table border="0" style="width: 100%;"> <tr> <td style="width: 25%;"><b>SIP#1</b></td> <td style="width: 25%; text-align: center;"><b>AS</b></td> <td style="width: 25%;"></td> <td style="width: 25%; text-align: right;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">→</td> <td>INVITE</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">←</td> <td>302 Moved Temporarily</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">→</td> <td>ACK</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </table>   |                    |  |  | <b>SIP#1</b> | <b>AS</b> |  | <b>SIP#3</b> | INVITE | → |  |  |  |  | → | INVITE |  |  | ← | 302 Moved Temporarily |  |  | → | ACK |  |  |  | → INVITE |
| <b>SIP#1</b>  | <b>AS</b>          |  | <b>SIP#3</b>   |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
| INVITE  | →                  |  |  |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
|   |                    | →  | INVITE   |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
|   |                    | ←  | 302 Moved Temporarily  |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
|   |                    | →  | ACK  |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |
|   |                    |  | → INVITE   |              |           |  |              |        |   |  |  |  |  |   |        |  |  |   |                       |  |  |   |     |  |  |  |          |

| TSS<br>Netw/ASdivertingUser/NotTermUser   | TP<br>CDIV_N03_015 | Reference [1],<br>4.5.2.6.2.2,<br>4.5.2.6.2.4,<br>Reference [4], 4.3.3.1.2 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.1/5 AND<br>PICS 4.7.4/1 AND<br>PICS 4.7.3/6 |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
|---|--------------------|--|--|--------------|-----------|--|--------------|--------|---|--|--|-------------|---|--|--|--|--|---|--------|--|--|---|-------------|--|--|---|-----------------------|--|--|---|-----|--|--|--|----------|
| <b>Test purpose</b><br><i>Communication Forwarding using CD during alerting.</i>  |                    |  |  |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
| <p>The served user subscribes to the CD service and diverts the communication during alerting. The served user subscribes to OIR in permanent mode <b>or</b> the subscription option "Served user allows the presentation of his/her URI to diverted-to user" is set to value "<b>no</b>".</p>  |                    |  |  |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
| <p>Ensure that the IUT, on receipt of an INVITE request (diversion status DIV_VA, see table 3) for the served user which diverts the communication during alerting not including a History-Info header, applies communication diversion and forwards the INVITE request towards the diverted-to user containing the cause value "487" in the Request URI, indicating in the To header the diverted-to URI and containing a History-Info header including a first entry with the hi-targeted-to-URI of the served user with a Privacy header set to "history" and a Reason header indicating cause 302, index = 1 and including a second entry with the hi-targeted-to-URI of the diverted-to user, cause = 487, index = 1.1 and including the 'mp-param' hi-target-param set to the index-val of this second hi-targeted-to-URI.</p>  |                    |  |  |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
| <b>SIP header values:</b><br>INVITE: sip:SIP#3@ example.com; cause = 487 SIP/2.0<br>To: <sip:SIP#3><br>History-Info: <sip:SIP#2?Privacy=history&Reason=SIP=cause%3D302>;index=1,<br><sip:SIP#3;cause=487>;index=1.1;mp=1.1  |                    |  |  |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
| <b>Comments:</b><br><table border="0" style="width: 100%;"> <tr> <td style="width: 25%;"><b>SIP#1</b></td> <td style="width: 25%; text-align: center;"><b>AS</b></td> <td style="width: 25%;"></td> <td style="width: 25%; text-align: right;"><b>SIP#3</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> <td></td> </tr> <tr> <td>180 Ringing</td> <td style="text-align: center;">←</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">→</td> <td>INVITE</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">←</td> <td>180 Ringing</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">←</td> <td>302 Moved Temporarily</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">→</td> <td>ACK</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">→ INVITE</td> </tr> </table> |                    |  |  | <b>SIP#1</b> | <b>AS</b> |  | <b>SIP#3</b> | INVITE | → |  |  | 180 Ringing | ← |  |  |  |  | → | INVITE |  |  | ← | 180 Ringing |  |  | ← | 302 Moved Temporarily |  |  | → | ACK |  |  |  | → INVITE |
| <b>SIP#1</b>  | <b>AS</b>          |  | <b>SIP#3</b>   |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
| INVITE  | →                  |  |  |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
| 180 Ringing   | ←                  |  |  |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
|   |                    | →  | INVITE   |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
|   |                    | ←  | 180 Ringing  |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
|   |                    | ←  | 302 Moved Temporarily  |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
|   |                    | →  | ACK  |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |
|   |                    |  | → INVITE   |              |           |  |              |        |   |  |  |             |   |  |  |  |  |   |        |  |  |   |             |  |  |   |                       |  |  |   |     |  |  |  |          |



## 5.2.1.2.3 Diverting user

| TSS<br>Netw/ASdivertingUser/NotDivUser  | TP<br>CDIV_N04_001 | Reference [1],<br>4.5.2.6.5.0 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.3/1 |
|---|--------------------|-------------------------------|--|
| <b>Test purpose</b><br><i>Communication forwarding using CDIV_VA; Indication of communication diversion to the diverting user using the MESSAGE request.</i>  |                    |                               |  |
| Ensure that when call diversion of type CDIV_VA is activated and when the diverting user has registered, the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded to. |                    |                               |  |
| <b>Subscription options:</b><br><i>Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes</i>                                    |                    |                               |  |
| <b>SIP header values:</b> MESSAGE (text/plain)  |                    |                               |  |
| <b>Comments:</b>  |                    |                               |  |
| <b>SIP#1</b>  | <b>SUT</b>         | <b>SIP#2</b>                  | <b>SIP#3</b>   |
| Diverting user registers  |                    |                               |  |
| MESSAGE → MESSAGE   |                    |                               |  |
| 200 OK MESSAGE ← 200 OK MESSAGE   |                    |                               |  |
| NOTE 1: In case of CFNRc and CFNL the served user needs to become reachable/log in before the MESSAGE request can be delivered.   |                    |                               |  |
| NOTE 2: The CDIV indication timer may need to expire before the MESSAGE request is delivered.   |                    |                               |  |

| TSS<br>Netw/ASdivertingUser/NotDivUser  | TP<br>CDIV_N04_002 | Reference [1],<br>4.5.2.6.5.0 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.3/2 |
|---|--------------------|-------------------------------|--|
| <b>Test purpose</b><br><i>Communication forwarding using CDIV_VA; Indication of communication diversion to the diverting user using the MESSAGE request when a new outgoing communication is requested.</i>   |                    |                               |  |
| Ensure that when communication diversion service CDIV_VA is activated and the diverting user has initiated a new outgoing communication, the AS will send a MESSAGE request containing the forwarded-to address of the activated communication to the diverting user. |                    |                               |  |
| <b>Subscription options:</b><br><i>Served user receives reminder indication on outgoing communication that CDIV is currently activated = yes</i>  |                    |                               |  |
| <b>SIP header values:</b> MESSAGE (text/plain)  |                    |                               |  |
| <b>Comments:</b>  |                    |                               |  |
| <b>SIP#1</b>  | <b>SUT</b>         | <b>SIP#2</b>                  | <b>SIP#3</b>   |
| <b>Communication diversion is activated</b>   |                    |                               |  |
| ← INVITE  |                    |                               |  |
| MESSAGE → MESSAGE   |                    |                               |  |
| 200 OK MESSAGE ← 200 OK MESSAGE   |                    |                               |  |

Table 4: Communication diversion in use, used in CDIV\_N04\_001-002

| CDIV_VA | Communication diversion | Diversion Reason DIV_VAL |
|---------|-------------------------|--------------------------|
| 1       | CFU                     | 302                      |
| 2       | CFB                     | 486                      |
| 3       | CFNRy                   | 408                      |
| 4       | CFNRc                   | 503                      |
| r       | CFNL                    | 404                      |

## 5.2.2 Actions at the AS of the diverted to User

| TSS<br>Netw/ASdiverted-to   | TP<br>CDIV_N05_001 | Reference [1],<br>4.5.2.7 | Selection expression<br>PICS 4.5.1/2 |
|---|--------------------|---------------------------|--------------------------------------|
| <b>Test purpose</b><br><i>Previous stored History-Info header returned in a 180 Ringing.</i>  |                    |                           |                                      |
| The SUT in the Idle state, receives an INVITE message for the diverted-to-user without TIR with Cause Value in the last History Index; cause-param =CAUSE_VAL defined in table 5, the History-Info header is stored. When the SUT receives a 180 Ringing, the stored History-Info header is covered in this response without escaped Privacy header in the last index if the response does not contain a History-Info header. |                    |                           |                                      |
| <b>SIP header values:</b>   |                    |                           |                                      |
| <b>INVITE 1:</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x   |                    |                           |                                      |
| <b>180 Ringing 2</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x   |                    |                           |                                      |
| <b>Comments:</b>  |                    |                           |                                      |
| <b>SIP#1</b>  | <b>SUT</b>         |                           | <b>SIP#2</b>                         |
| INVITE 1  | →                  |                           | → INVITE 2                           |
| 180 Ringing 2   | ←                  |                           | ← 180 Ringing 1                      |
| 200 OK (INVITE)   | ←                  |                           | ← 200 OK (INVITE)                    |
| ACK   | →                  |                           | → ACK                                |
| BYE   | →                  |                           | → BYE                                |
| 200 OK (BYE)  | ←                  |                           | ← 200 OK (BYE)                       |

| TSS<br>Netw/ASdiverted-to   | TP<br>CDIV_N05_002 | Reference [1],<br>4.5.2.7 | Selection expression<br>PICS 4.5.1/2 |
|---|--------------------|---------------------------|--------------------------------------|
| <b>Test purpose</b><br><i>Previous stored History-Info header returned in a 181 Being Forwarded.</i>  |                    |                           |                                      |
| The SUT in the Idle state, receives an INVITE message for the diverted-to-user without TIR with Cause Value in the last History Index; cause-param =CAUSE_VAL defined in table 5, the History-Info header is stored. When the SUT receives a 181 Being Forwarded, the stored History-Info header is covered in this response without escaped Privacy header in the last index if the response does not contain a History-Info header. |                    |                           |                                      |
| <b>SIP header values: SIP header values:</b>  |                    |                           |                                      |
| <b>INVITE 1:</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x   |                    |                           |                                      |
| <b>181 Being Forwarded 2</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x   |                    |                           |                                      |
| <b>Comments:</b>  |                    |                           |                                      |
| <b>SIP#1</b>  | <b>SUT</b>         |                           | <b>SIP#2</b>                         |
| INVITE 1  | →                  |                           | → INVITE 2                           |
| 181 Call is Being Forwarded 2   | ←                  |                           | ← 181 Call is Being Forwarded 1      |
| 180 Ringing   | ←                  |                           | ← 180 Ringing                        |
| 200 OK (INVITE)   | ←                  |                           | ← 200 OK (INVITE)                    |
| ACK   | →                  |                           | → ACK                                |
| BYE   | →                  |                           | → BYE                                |
| 200 OK (BYE)  | ←                  |                           | ← 200 OK (BYE)                       |

| TSS<br>Netw/ASdiverted-to  | TP<br>CDIV_N05_003 | Reference [1],<br>4.5.2.7 | Selection expression<br>PICS 4.5.1/2 |
|--|--------------------|---------------------------|--------------------------------------|
| <b>Test purpose</b><br><i>Previous stored History-Info header returned in a 200 OK response.</i>   |                    |                           |                                      |
| The SUT in the Idle state, receives an INVITE message for the diverted-to-user without TIR with Cause Value in the last History Index; cause-param = CAUSE_VAL defined in table 5, the History-Info header is stored. When the SUT receives a 200 OK INVITE, the stored History-Info header is covered in this response without escaped Privacy header in the last index if the response does not contain a History-Info header. |                    |                           |                                      |
| <b>SIP header values: SIP header values:</b>   |                    |                           |                                      |
| <b>INVITE 1:</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x  |                    |                           |                                      |
| <b>200 OK INVITE 2</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x  |                    |                           |                                      |
| <b>Comments:</b>   |                    |                           |                                      |
| <b>SIP#1</b>   | <b>SUT</b>         |                           | <b>SIP#2</b>                         |
| INVITE 1   | →                  |                           | → INVITE 2                           |
| 180 Ringing  | ←                  |                           | ← 180 Ringing                        |
| 200 OK (INVITE) 2  | ←                  |                           | ← 200 OK (INVITE) 1                  |
| ACK  | →                  |                           | → ACK                                |
| BYE  | →                  |                           | → BYE                                |
| 200 OK (BYE)   | ←                  |                           | ← 200 OK (BYE)                       |

| TSS<br>Netw/ASdiverted-to  | TP<br>CDIV_N05_004 | Reference [1]<br>4.5.6.2.7, 4.6.3 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.4/3 |
|--|--------------------|-----------------------------------|--|
| <b>Test purpose</b><br><i>Diverted to user is subscribed to the TIR service.</i>   |                    |                                   |  |
| The SUT in the Idle state, receives an INVITE message for the diverted-to-user with TIR with Cause Value in the last History Index; cause-param = CAUSE_VAL defined in table 5, the History-Info header is stored. When the SUT receives a 180 Ringing, the stored History-Info header is covered in this response with escaped Privacy=history header in the last index if the response does not contain a History-Info header. |                    |                                   |  |
| <b>SIP header values: SIP header values:</b>   |                    |                                   |  |
| <b>INVITE 1:</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x  |                    |                                   |  |
| <b>180 Ringing 2</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL; Privacy=history, index=1.x   |                    |                                   |  |
| <b>Comments:</b>   |                    |                                   |  |
| <b>SIP#1</b>   | <b>SUT</b>         |                                   | <b>SIP#2</b>   |
| INVITE 1   | →                  |                                   | → INVITE 2   |
| 180 Ringing 2  | ←                  |                                   | ← 180 Ringing 1  |
| 200 OK (INVITE)  | ←                  |                                   | ← 200 OK (INVITE)  |
| ACK  | →                  |                                   | → ACK  |
| BYE  | →                  |                                   | → BYE  |
| 200 OK (BYE)   | ←                  |                                   | ← 200 OK (BYE)   |

| TSS<br>Netw/ASdiverted-to  | TP<br>CDIV_N05_005 | Reference [1]<br>4.5.6.2.7, 4.6.3 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.4/3 |
|--|--------------------|-----------------------------------|--|
| <b>Test purpose</b><br><i>Diverted to user is subscribed to the TIR service.</i>   |                    |                                   |  |
| The SUT in the Idle state, receives an INVITE message for the diverted-to-user with TIR with Cause Value in the last History Index; cause-param = CAUSE_VAL defined in table 5. The History-Info header is stored. When the SUT receives a 181 Being Forwarded, the stored History-Info header is covered in this response with escaped Privacy=history header in the last index if the response does not contain a History-Info header. |                    |                                   |  |
| <b>SIP header values: SIP header values:</b>   |                    |                                   |  |
| <b>INVITE 1:</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x  |                    |                                   |  |
| <b>181 Being Forwarded 2</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL; Privacy=history, index=1.x   |                    |                                   |  |
| <b>Comments:</b>   |                    |                                   |  |
| <b>SIP#1</b>   | <b>SUT</b>         |                                   | <b>SIP#2</b>   |
| INVITE 1   | →                  |                                   | → INVITE 2   |
| 181 Call is Being Forwarded 2  | ←                  |                                   | ← 181 Call is Being Forwarded 1                          |
| 180 Ringing  | ←                  |                                   | ← 180 Ringing  |
| 200 OK (INVITE)  | ←                  |                                   | ← 200 OK (INVITE)  |
| ACK  | →                  |                                   | → ACK  |
| BYE  | →                  |                                   | → BYE  |
| 200 OK (BYE)   | ←                  |                                   | ← 200 OK (BYE)   |

| TSS<br>Netw/ASdiverted-to  | TP<br>CDIV_N05_006 | Reference [1]<br>4.5.6.2.7, 4.6.3 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.4/3 |
|--|--------------------|-----------------------------------|--|
| <b>Test purpose</b><br><i>Diverted to user is subscribed to the TIR service.</i>   |                    |                                   |  |
| The SUT in the Idle state, receives an INVITE message for the diverted-to-user with TIR with Cause Value in the last History Index; cause-param = CAUSE_VAL defined in table 5, the History-Info header is stored. When the SUT receives a 200 OK INVITE, the stored History-Info header is covered in this response with escaped Privacy=history header in the last index if the response does not contain a History-Info header. |                    |                                   |  |
| <b>SIP header values: SIP header values:</b>   |                    |                                   |  |
| <b>INVITE 1:</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x  |                    |                                   |  |
| <b>200 OK INVITE 2</b><br>History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL; Privacy=history, index=1.x   |                    |                                   |  |
| <b>Comments:</b>   |                    |                                   |  |
| <b>SIP#1</b>   | <b>SUT</b>         |                                   | <b>SIP#2</b>   |
| INVITE 1   | →                  |                                   | → INVITE 2   |
| 180 Ringing  | ←                  |                                   | ← 180 Ringing  |
| 200 OK (INVITE) 2  | ←                  |                                   | ← 200 OK (INVITE) 1                                      |
| ACK  | →                  |                                   | → ACK  |
| BYE  | →                  |                                   | → BYE  |
| 200 OK (BYE)   | ←                  |                                   | ← 200 OK (BYE)   |

**Table 5: Cause values the "cause" parameter in the History-Info header, used in CDIV\_N05\_001-006**

| Cause Value in History Index; cause-param = "cause" EQUAL CAUSE_VAL | Cause value | Call diversion information | Redirecting Reason              |
|---|-------------|----------------------------|---------------------------------|
|   | 404         |                            | Unknown                         |
|   | 302         |                            | Unconditional                   |
|   | 486         |                            | User busy                       |
|   | 408         |                            | No reply                        |
|   | 480         |                            | Deflection immediate            |
|   | 503         |                            | Mobile subscriber not reachable |
|   | 487         |                            | Deflection during alerting      |
|   |             |                            |                                 |

## 5.2.3 Actions at the user equipment

### 5.2.3.1 Actions at the originating UE

| TSS<br>OrigUE   | TP<br>CDIV_U01_001 | Reference [1]<br>4.5.2.1 | Selection expression<br>PICS 4.5.1/1 AND<br>PICS 4.6.1/1 |
|---|--------------------|--------------------------|--|
| <b>Test purpose</b><br><i>Communication diversion information received in a 181 Call is Being Forwarded.</i>  |                    |                          |  |
| Ensure that a User Equipment is able to receive a 181 Call is Being Forwarded and the 181 Response contains a History-Info header.<br>Ensure that the information contained in the History-Info header (identities, reason of CDIV) is displayed at the device. The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 6. |                    |                          |  |
| <b>SIP header values: SIP header values:</b><br><b>INVITE</b><br>Supported: histinfo  |                    |                          |  |
| <b>181 Call is Being Forwarded</b><br>History-Info: <sip:SIP#2>;index=1   |                    |                          |  |
| <b>Comments:</b>  |                    |                          |  |
| <b>UE</b>   |                    | <b>Test Equipment</b>    |  |
| INVITE  | →                  | →                        | INVITE   |
| 181 Call is Being Forwarded   | ←                  | ←                        | 181 Call is Being Forwarded                              |
| 180 Ringing   | ←                  | ←                        | 180 Ringing  |
| 200 OK (INVITE)   | ←                  | ←                        | 200 OK (INVITE)  |
| ACK   | →                  | →                        | ACK  |
| BYE   | →                  | →                        | BYE  |
| 200 OK (BYE)  | ←                  | ←                        | 200 OK (BYE)   |

| TSS<br>OrigUE   | TP<br>CDIV_U01_002 | Reference [1],<br>4.5.2.1 | Selection expression<br>PICS 4.5.1/1 AND<br>PICS 4.6.1/2 |
|---|--------------------|---------------------------|--|
| <b>Test purpose</b><br><i>Communication diversion information received in a 180 Ringing.</i>  |                    |                           |  |
| Ensure that a User Equipment is able to receive a 180 Ringing and the 180 Response contains a History-Info header.<br>Ensure that the information contained in the History-Info header (identities, reason of CDIV) is displayed at the device. The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 6. |                    |                           |  |
| <b>SIP header values: SIP header values:</b><br><b>INVITE</b><br>Supported: histinfo  |                    |                           |  |
| <b>180 Ringing</b><br>History-Info: <sip:SIP#2>;index=1,<br><sip:SIP#3; cause=CAUSE_VAL>;index=1.1  |                    |                           |  |
| <b>Comments:</b>  |                    |                           |  |
| <b>UE</b>   |                    | <b>Test Equipment</b>     |  |
| INVITE  | →                  | →                         | INVITE   |
| 181 Call is Being Forwarded   | ←                  | ←                         | 181 Call is Being Forwarded                              |
| 180 Ringing   | ←                  | ←                         | 180 Ringing  |
| 200 OK (INVITE)   | ←                  | ←                         | 200 OK (INVITE)  |
| ACK   | →                  | →                         | ACK  |
| BYE   | →                  | →                         | BYE  |
| 200 OK (BYE)  | ←                  | ←                         | 200 OK (BYE)   |

| TSS<br>OrigUE   | TP<br>CDIV_U01_003 | Reference [1],<br>4.5.2.1     | Selection expression<br>PICS 4.5.1/1 AND<br>PICS 4.6.1/3 |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
|---|--------------------|-------------------------------|--|----|--|----------------|--------|---|----------|-----------------------------|---|-------------------------------|-------------|---|---------------|-----------------|---|-------------------|-----|---|-------|-----|---|-------|--------------|---|----------------|
| <b>Test purpose</b><br><i>Communication diversion information received in a 200 OK INVITE.</i>  |                    |                               |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| Ensure that a User Equipment is able to receive a 200 OK INVITE and the 200 OK final Response contains a History-Info header.<br>Ensure that the information contained in the History-Info header (identities, reason of CDIV) is displayed at the device. The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 6.  |                    |                               |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| <b>SIP header values: SIP header values:</b><br><b>INVITE</b><br>Supported: histinfo<br><br><b>200 OK (INVITE)</b><br>History-Info: <sip:SIP#2>;index=1,<br><sip:SIP#3; cause=CAUSE_VAL>;index=1.1  |                    |                               |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| <b>Comments:</b><br><table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">UE</th> <th></th> <th style="text-align: right;">Test Equipment</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td style="text-align: right;">→ INVITE</td> </tr> <tr> <td>181 Call is Being Forwarded</td> <td style="text-align: center;">←</td> <td style="text-align: right;">← 181 Call is Being Forwarded</td> </tr> <tr> <td>180 Ringing</td> <td style="text-align: center;">←</td> <td style="text-align: right;">← 180 Ringing</td> </tr> <tr> <td>200 OK (INVITE)</td> <td style="text-align: center;">←</td> <td style="text-align: right;">← 200 OK (INVITE)</td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td style="text-align: right;">→ ACK</td> </tr> <tr> <td>BYE</td> <td style="text-align: center;">→</td> <td style="text-align: right;">→ BYE</td> </tr> <tr> <td>200 OK (BYE)</td> <td style="text-align: center;">←</td> <td style="text-align: right;">← 200 OK (BYE)</td> </tr> </tbody> </table> |                    |                               |  | UE |  | Test Equipment | INVITE | → | → INVITE | 181 Call is Being Forwarded | ← | ← 181 Call is Being Forwarded | 180 Ringing | ← | ← 180 Ringing | 200 OK (INVITE) | ← | ← 200 OK (INVITE) | ACK | → | → ACK | BYE | → | → BYE | 200 OK (BYE) | ← | ← 200 OK (BYE) |
| UE  |                    | Test Equipment                |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| INVITE  | →                  | → INVITE                      |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| 181 Call is Being Forwarded   | ←                  | ← 181 Call is Being Forwarded |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| 180 Ringing   | ←                  | ← 180 Ringing                 |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| 200 OK (INVITE)   | ←                  | ← 200 OK (INVITE)             |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| ACK   | →                  | → ACK                         |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| BYE   | →                  | → BYE                         |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| 200 OK (BYE)  | ←                  | ← 200 OK (BYE)                |  |    |  |                |        |   |          |                             |   |                               |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |

### 5.2.3.2 Action at the diverted to UE

| TSS<br>Diverted-toUE   | TP<br>CDIV_U02_001 | Reference [1]<br>4.5.2.15 | Selection expression<br>PICS 4.5.1/1 AND<br>PICS 4.6.1/4 |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
|--|--------------------|---------------------------|--|----|--|----------------|--------|---|----------|-------------|---|---------------|-----------------|---|-------------------|-----|---|-------|-----|---|-------|--------------|---|----------------|
| <b>Test purpose</b><br><i>Communication diversion information received in an INVITE request.</i>   |                    |                           |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| Ensure that a User Equipment is able to receive an INVITE request and the INVITE contains a History-Info header.<br>Ensure that the information contained in the History-Info header (identities, reason of CDIV) is displayed at the device. The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 6.  |                    |                           |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| <b>SIP header values: SIP header values:</b><br>INVITE: History-Info: <sip:SIP#2>;index=1,<br><sip:SIP#3; cause=CAUSE_VAL>;index=1.1   |                    |                           |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| <b>Comments:</b><br><table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">UE</th> <th></th> <th style="text-align: right;">Test Equipment</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td style="text-align: center;">←</td> <td style="text-align: right;">← INVITE</td> </tr> <tr> <td>180 Ringing</td> <td style="text-align: center;">→</td> <td style="text-align: right;">→ 180 Ringing</td> </tr> <tr> <td>200 OK (INVITE)</td> <td style="text-align: center;">→</td> <td style="text-align: right;">→ 200 OK (INVITE)</td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">←</td> <td style="text-align: right;">← ACK</td> </tr> <tr> <td>BYE</td> <td style="text-align: center;">←</td> <td style="text-align: right;">← BYE</td> </tr> <tr> <td>200 OK (BYE)</td> <td style="text-align: center;">→</td> <td style="text-align: right;">→ 200 OK (BYE)</td> </tr> </tbody> </table> |                    |                           |  | UE |  | Test Equipment | INVITE | ← | ← INVITE | 180 Ringing | → | → 180 Ringing | 200 OK (INVITE) | → | → 200 OK (INVITE) | ACK | ← | ← ACK | BYE | ← | ← BYE | 200 OK (BYE) | → | → 200 OK (BYE) |
| UE   |                    | Test Equipment            |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| INVITE   | ←                  | ← INVITE                  |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| 180 Ringing  | →                  | → 180 Ringing             |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| 200 OK (INVITE)  | →                  | → 200 OK (INVITE)         |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| ACK  | ←                  | ← ACK                     |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| BYE  | ←                  | ← BYE                     |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |
| 200 OK (BYE)   | →                  | → 200 OK (BYE)            |  |    |  |                |        |   |          |             |   |               |                 |   |                   |     |   |       |     |   |       |              |   |                |



## 5.2.3.3 Actions at the diverting UE

| TSS<br>DivertingUE   | TP<br>CDIV_U03_001 | Reference [1],<br>4.5.2.6.4 | Selection expression<br>PICS 4.5.1/1 AND<br>PICS 4.6.1/7 |
|--|--------------------|-----------------------------|--|
| <b>Test purpose</b><br><i>Communication diversion using the MESSAGE request method.</i>  |                    |                             |  |
| Ensure that the User Equipment is able to receive a MESSAGE request containing the notification about a performed communication diversion by the network.<br>The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 6. |                    |                             |  |
| <b>SIP header values: SIP header values:</b><br>MESSAGE<br>Content-Type: text/plain<br>... text (PIXIT) ...  |                    |                             |  |
| <b>Comments:</b>   |                    |                             |  |
| <b>UE</b>  |                    |                             | <b>Test Equipment</b>                                    |
| MESSAGE  | ←                  |                             | ← MESSAGE  |

| TSS<br>DivertingUE  | TP<br>CDIV_U03_002 | Reference [1],<br>4.5.2.6.5,<br>4.10 | Selection expression<br>PICS 4.5.1/1 AND<br>PICS 4.6.1/8 |
|---|--------------------|--------------------------------------|--|
| <b>Test purpose</b><br><i>Communication diversion using the CDIVN service, subscription of the service.</i>   |                    |                                      |  |
| Ensure that the User Equipment is able to subscribe the communication diversion notification service (CDIVN).<br>A SUBSCRIBE request is sent. The Event header contains the package name "comm-div-info" and a MIME body containing a XML instance of "http://uri.etsi.org/ngn/params/xml/comm-div-info".<br>The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 6.  |                    |                                      |  |
| <b>SIP header values: SIP header values:</b><br><b>SUBSCRIBE:</b> Event:comm-div-info<br>application/comm-div-info+xml<br><comm-div-info><br><comm-div-sub-info ><br><comm-div-selection-criteria><br>< originating-user-selection-criteria ><br><diverting-user-selection-criteria><br><diverted-to-user-selection-criteria><br>< diversion-time-selection-criteria ><br>< diversion-reason-selection-criteria > CAUSE_VAL<br><comm-div-ntfy-trigger-criteria><br><notification-time-selection-criteria><br></comm-div-info> |                    |                                      |  |
| <b>NOTIFY:</b> Event:comm-div-info  |                    |                                      |  |
| <b>Comments:</b>  |                    |                                      |  |
| <b>UE</b>   |                    |                                      | <b>Test Equipment</b>                                    |
| SUBSCRIBE   | →                  |                                      | → SUBSCRIBE  |
| 200 OK (SUBSCRIBE)  | ←                  |                                      | ← 200 OK (SUBSCRIBE)                                     |
| NOTIFY  | ←                  |                                      | ← NOTIFY   |
| 200 OK (NOTIFY)   | →                  |                                      | → 200 OK (NOTIFY)  |



## 5.3 Interaction with other services

### 5.3.1 Terminating Identification Presentation (TIP)

| TSS<br>Interaction/TIP   | TP<br>CDIV_N06_001 | Reference [1]<br>4.6.2     | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.4/3 |
|--|--------------------|----------------------------|--|
| <b>Test purpose</b><br><i>The served user subscribes to the CDIV simulation service; the P-Asserted header is passed on unchanged.</i>   |                    |                            |  |
| Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CDIV simulation service.<br>Ensure that a P-Asserted-Identity and History header field received in the diverting AS is passed unmodified to the originating entity.<br>The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 7.  |                    |                            |  |
| <b>Subscription options:</b><br><i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br><i>Served user allows the presentation of diverted to URI to originating user in diversion notification = yes</i>   |                    |                            |  |
| <b>SIP header values:</b><br>180 Ringing: P-Asserted-Identity with the URI of the diverted-to user, Privacy is not "id" and not "header"<br>History-Info: <sip:SIP#2>;index=1,<br><sip:SIP#3; cause=CAUSE_VAL>;index=1.1<br><br>200 OK: P-Asserted-Identity with the URI of the diverted-to user, Privacy is not "id" and not "header"<br>History-Info: <sip:SIP#2>;index=1,<br><sip:SIP#3; cause=CAUSE_VAL>;index=1.1 |                    |                            |  |
| <b>Comments:</b>   |                    |                            |  |
| <b>SIP#1</b>   | <b>SUT</b>         | <b>SIP#2 (served user)</b> | <b>SIP#3</b>   |
| INVITE   | →                  |                            |  |
| <b>Communication diversion is performed (CFU, CFB, CFNR, CD, CFNL, CFNRc)</b>  |                    |                            |  |
|  |                    | →                          | → INVITE   |
|  |                    | ←                          | ← 180 Ringing  |
| 180 Ringing  | ←                  |                            |  |
|  |                    | ←                          | ← 200 OK (INVITE)  |
| 200 OK (INVITE)  | ←                  |                            |  |
| ACK  | →                  |                            | → ACK  |
| BYE  | →                  |                            | → BYE  |
| 200 OK (BYE)   | ←                  |                            | ← 200 OK (BYE)   |

**Table 7: Cause values the "cause" parameter in the History-Info header, used in CDIV\_N06\_001**

| Cause Value in History Index; cause-param = "cause" EQUAL CAUSE_VAL | Cause value | Call diversion information | Redirecting Reason              |
|---|-------------|----------------------------|---------------------------------|
|   | 404         |                            | Subscriber not Logged-In        |
|   | 302         |                            | Unconditional                   |
|   | 486         |                            | User busy                       |
|   | 408         |                            | No reply                        |
|   | 480         |                            | Deflection immediate            |
|   | 503         |                            | Mobile subscriber not reachable |
|   | 487         |                            | Deflection during alerting      |

### 5.3.2 Terminating Identification Restriction (TIR)

| TSS<br>Interaction/TIR  | TP<br>CDIV_N07_001 | Reference [1]<br>4.6.3 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.4/3 AND<br>PICS 4.7.4/4 |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
|---|--------------------|------------------------|--|-------|-----|---------------------|-------|----------|---|--|--|---|--|--|--|--|--|--|----------|-------------|---|--|---------------|--|--|--|---------------------|------------------|---|--|--|-----|---|--|-------|-----|---|--|-------|--------------|---|--|----------------|
| <p><b>Test purpose</b><br/> <i>The served user subscribes to the CDIV simulation service; the diverted-to URI is restricted to the originating user.</i></p> <p>Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CDIV simulation service.<br/>           A P-Asserted-Identity and History header field received in the diverting AS is passed unmodified to the originating entity.<br/>           Ensure that if the served (diverting) user selects the option that the originating user is notified, with the diverted-to number and the diverted-to user indicates the restriction of his identity by sending an escaped Privacy header set to history in the History-Info header in any response, then the AS shall not send the diverted-to user's identity when the communication is answered.<br/>           The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 8.</p> |                    |                        |  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| <p><b>Subscription options:</b><br/> <i>Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes</i><br/> <i>Served user allows the presentation of diverted to URI to originating user in diversion notification = yes</i><br/> <b>TIR subscription:</b> Terminating user has TIR Temporary mode, default restricted<br/>           Originating user has the override category = no</p>  |                    |                        |  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| <p><b>SIP header values:</b><br/>           200 OK 1: P-Asserted-Identity with the URI of the diverted-to user<br/>           History-Info: &lt;sip:SIP#2&gt;;index=1,<br/>                             &lt;sip:SIP#3; cause=CAUSE_VAL?Privacy=history&gt;;index=1.1<br/><br/>           200 OK 2: P-Asserted-Identity with the URI of the diverted-to user<br/>           History-Info: &lt;sip:SIP#2&gt;;index=1<br/>                             &lt;sip:SIP#3; cause= CAUSE_VAL?Privacy=history&gt;;index=1.1</p>   |                    |                        |  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| <p><b>Comments:</b></p> <table border="1"> <thead> <tr> <th>SIP#1</th> <th>SUT</th> <th>SIP#2 (served user)</th> <th>SIP#3</th> </tr> </thead> <tbody> <tr> <td>INVITE 1</td> <td>→</td> <td></td> <td></td> </tr> <tr> <td colspan="4"><b>Communication diversion is performed (CFU, CFB, CFNR, CD, CFNL, CFNRc)</b></td> </tr> <tr> <td></td> <td></td> <td></td> <td>→ INVITE</td> </tr> <tr> <td>180 Ringing</td> <td>←</td> <td></td> <td>← 180 Ringing</td> </tr> <tr> <td></td> <td></td> <td></td> <td>← 200 OK 1 (INVITE)</td> </tr> <tr> <td>200 OK 2(INVITE)</td> <td>←</td> <td></td> <td></td> </tr> <tr> <td>ACK</td> <td>→</td> <td></td> <td>→ ACK</td> </tr> <tr> <td>BYE</td> <td>→</td> <td></td> <td>→ BYE</td> </tr> <tr> <td>200 OK (BYE)</td> <td>←</td> <td></td> <td>← 200 OK (BYE)</td> </tr> </tbody> </table>   |                    |                        |  | SIP#1 | SUT | SIP#2 (served user) | SIP#3 | INVITE 1 | → |  |  | <b>Communication diversion is performed (CFU, CFB, CFNR, CD, CFNL, CFNRc)</b> |  |  |  |  |  |  | → INVITE | 180 Ringing | ← |  | ← 180 Ringing |  |  |  | ← 200 OK 1 (INVITE) | 200 OK 2(INVITE) | ← |  |  | ACK | → |  | → ACK | BYE | → |  | → BYE | 200 OK (BYE) | ← |  | ← 200 OK (BYE) |
| SIP#1   | SUT                | SIP#2 (served user)    | SIP#3  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| INVITE 1  | →                  |                        |  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| <b>Communication diversion is performed (CFU, CFB, CFNR, CD, CFNL, CFNRc)</b>   |                    |                        |  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
|   |                    |                        | → INVITE   |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| 180 Ringing   | ←                  |                        | ← 180 Ringing  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
|   |                    |                        | ← 200 OK 1 (INVITE)  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| 200 OK 2(INVITE)  | ←                  |                        |  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| ACK   | →                  |                        | → ACK  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| BYE   | →                  |                        | → BYE  |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |
| 200 OK (BYE)  | ←                  |                        | ← 200 OK (BYE)   |       |     |                     |       |          |   |  |  |   |  |  |  |  |  |  |          |             |   |  |               |  |  |  |                     |                  |   |  |  |     |   |  |       |     |   |  |       |              |   |  |                |

**Table 8: Cause values the "cause" parameter in the History-Info header, used in CDIV\_N07\_001**

| Cause Value in History Index; cause-param = "cause" EQUAL CAUSE_VAL | Cause value | Call diversion information | Redirecting Reason              |
|---|-------------|----------------------------|---------------------------------|
|   | 404         |                            | Subscriber not Logged-In        |
|   | 302         |                            | Unconditional                   |
|   | 486         |                            | User busy                       |
|   | 408         |                            | No reply                        |
|   | 480         |                            | Deflection immediate            |
|   | 503         |                            | Mobile subscriber not reachable |
|   | 487         |                            | Deflection during alerting      |

## 5.3.3 Originating Identification Restriction (OIR)

| TSS<br>Interaction/OIR  | TP<br>CDIV_N08_001 | Reference [1],<br>4.6.5               | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.3/1 |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
|---|--------------------|---------------------------------------|--|-------|-----|---------------------|-------|--|-----------|-------------|--|--|------------------|--------------------|--|--|--------|----------|--|--|---------------|-----------------|--|--------|---|---------------------------------------|--|--|--|-----------------|--|--|--|-------------------------------|--|
| <p><b>Test purpose</b><br/> <i>Diversion Notification applies. Originating users address is not presented to the served user</i></p> <p>Ensure that when the diverting user has subscribed the Communication Diversion Notification service and call diversion occurred, the served user receives a NOTIFY request containing the information regarding the current communication diversion and the URI of the originating user is not present if a Privacy header was present in the initial INVITE request the value set to 'id'.</p>   |                    |                                       |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
| <p><b>Subscription options:</b><br/> <i>Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes</i></p>   |                    |                                       |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
| <p><b>SIP header values:</b><br/> <b>INVITE: Privacy: id</b></p> <p><b>SUBSCRIBE:</b> Event:comm-div-info<br/> application/comm-div-info+xml<br/> &lt;comm-div-info&gt;<br/>   &lt;comm-div-sub-info &gt;<br/>     &lt;comm-div-selection-criteria&gt;<br/>       &lt; originating-user-selection-criteria&gt;SIP#1<br/>       &lt;diverting-user-selection-criteria&gt;SIP#2<br/>       &lt;diverted-to-user-selection-criteria&gt;SIP#3<br/>       &lt; diversion-time-selection-criteria &gt;(Date-time)<br/>       &lt; diversion-reason-selection-criteria &gt;DIV_VAL<br/>     &lt;comm-div-ntfy-trigger-criteria&gt;<br/>       &lt;notification-time-selection-criteria&gt;(Date/Time range)<br/>   &lt;/comm-div-info&gt;</p> <p><b>NOTIFY:</b> Event:comm-div-info<br/> application/comm-div-info+xml<br/> &lt;comm-div-info&gt;<br/>   &lt;comm-div-ntfy-info&gt;<br/>     &lt;diverting-user-info&gt;SIP#2<br/>     &lt;diverted-to-user-info&gt;SIP#3<br/>     &lt;diversion-time-info&gt; (time range)<br/>     &lt;diversion-reason-info&gt;DIV_VAL<br/>     &lt;diversion-rule-info-type&gt;<br/>       &lt;diversion-rule&gt; (any text)<br/>   &lt;/comm-div-info&gt;</p>                             |                    |                                       |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
| <p><b>Comments:</b></p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: center;">SUT</th> <th style="text-align: center;">SIP#2 (served user)</th> <th style="text-align: right;">SIP#3</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">SUBSCRIBE</td> <td style="text-align: center;">← SUBSCRIBE</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">200 OK SUBSCRIBE</td> <td style="text-align: center;">→ 200 OK SUBSCRIBE</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">NOTIFY</td> <td style="text-align: center;">→ NOTIFY</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">200 OK NOTIFY</td> <td style="text-align: center;">← 200 OK NOTIFY</td> <td></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td style="text-align: center;"><b>Communication diversion occurs</b></td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">NOTIFY → NOTIFY</td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">200 OK NOTIFY ← 200 OK NOTIFY</td> <td></td> </tr> </tbody> </table> |                    |                                       |  | SIP#1 | SUT | SIP#2 (served user) | SIP#3 |  | SUBSCRIBE | ← SUBSCRIBE |  |  | 200 OK SUBSCRIBE | → 200 OK SUBSCRIBE |  |  | NOTIFY | → NOTIFY |  |  | 200 OK NOTIFY | ← 200 OK NOTIFY |  | INVITE | → | <b>Communication diversion occurs</b> |  |  |  | NOTIFY → NOTIFY |  |  |  | 200 OK NOTIFY ← 200 OK NOTIFY |  |
| SIP#1   | SUT                | SIP#2 (served user)                   | SIP#3  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
|   | SUBSCRIBE          | ← SUBSCRIBE                           |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
|   | 200 OK SUBSCRIBE   | → 200 OK SUBSCRIBE                    |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
|   | NOTIFY             | → NOTIFY                              |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
|   | 200 OK NOTIFY      | ← 200 OK NOTIFY                       |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
| INVITE  | →                  | <b>Communication diversion occurs</b> |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
|   |                    | NOTIFY → NOTIFY                       |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |
|   |                    | 200 OK NOTIFY ← 200 OK NOTIFY         |  |       |     |                     |       |  |           |             |  |  |                  |                    |  |  |        |          |  |  |               |                 |  |        |   |                                       |  |  |  |                 |  |  |  |                               |  |

| TSS<br>Interaction/OIR   | TP<br>CDIV_N08_002 | Reference [1],<br>4.6.5   | Selection expression<br>PICS 4.5.1/2 |
|--|--------------------|---|--------------------------------------|
| <b>Test purpose</b><br><i>Diversion Notification applies. Originating users address is not presented to the diverted.to user</i>   |                    |   |                                      |
| Ensure that when originating user has subscribed to the OIR service and Call diversion occurs the URI of the originating user is not present to the diverted-to user if a Privacy header was present the value set to 'id' in the initial INVITE request received from the originating user. |                    |   |                                      |
| <b>Subscription options:</b><br>Served user allows the presentation of his/her URI to <i>originating</i> user in diversion notification=yes  |                    |   |                                      |
| <b>SIP header values:</b><br><b>INVITE 1:</b> Privacy: id<br><br><b>INVITE 2:</b> Privacy: id  |                    |   |                                      |
| <b>Comments:</b>   |                    |   |                                      |
| <b>SIP#1</b>   | <b>SUT</b>         | <b>SIP#2 (served user)</b>  | <b>SIP#3</b>                         |
| INVITE 1   | →                  |   |                                      |
| <b>CASE A</b>  |                    |   | → INVITE 2                           |
| <b>CASE B</b>  |                    | → INVITE<br>← 486 Busy Here<br>→ ACK  | → INVITE 2                           |
| <b>CASE C</b>  |                    | → INVITE<br>← 180 Ringing<br>→ CANCEL<br>← 200 OK CANCEL<br>← 487 Request Terminated<br>→ ACK | → INVITE 2                           |

Table 9: Void

### 5.3.4 Anonymous Communication Rejection and Communication Barring (ACR/CB)

| TSS<br>Interaction/ACR-CB  | TP<br>CDIV_N09_001    | Reference [1],<br>4.6.9 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.4/6 |
|--|-----------------------|-------------------------|--|
| <b>Test purpose</b><br><i>CDIV the diverted-to user has subscribed to a call barring service "inhibition of incoming forwarded communication".</i>   |                       |                         |  |
| Ensure that the communication is rejected with 603 (Decline) if the diverted-to user has subscribed to the call barring service "inhibition of incoming forwarded communication" and the received INVITE contains a History-Info header indication this call is a forwarded.<br>The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 10. |                       |                         |  |
| <b>SIP header values:</b><br><b>INVITE:</b> History-Info: <sip:SIP#1;index=1,<br><sip:SIP#2; cause=CAUSE_VAL>;index=1.1  |                       |                         |  |
| <b>Comments:</b>   |                       |                         |  |
| <b>SIP#1</b>   | <b>Terminating AS</b> | <b>SIP#2</b>            |  |
| INVITE 1   | →                     |                         |  |
| 603 (Decline)  | ←                     |                         |  |
| ACK  | →                     |                         |  |

**Table 10: Cause values the "cause" parameter in the History-Info header, used in CDIV\_N09\_001**

| Cause Value in History Index; cause-param = "cause" EQUAL CAUSE_VAL | Cause value | Call diversion information | Redirecting Reason              |
|---|-------------|----------------------------|---------------------------------|
|   | 404         |                            | Subscriber not Logged-in        |
|   | 302         |                            | Unconditional                   |
|   | 486         |                            | User busy                       |
|   | 408         |                            | No reply                        |
|   | 480         |                            | Deflection immediate            |
|   | 503         |                            | Mobile subscriber not reachable |
|   | 487         |                            | Deflection during alerting      |
|   |             |                            |                                 |

| TSS<br>Interaction/ACR-CB  | TP<br>CDIV_N09_002 | Reference [1],<br>4.6.9    | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.4/5 |
|--|--------------------|----------------------------|--|
| <b>Test purpose</b><br><i>The served user has subscribed to a call barring service Outgoing Communication Barring (OCB).</i>   |                    |                            |  |
| Ensure that the communication is rejected with 603 (Decline) if the diverting user has subscribed to the call barring service Outgoing Communication Barring (OCB) if the forwarded to number is restricted.<br>The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in table 11. |                    |                            |  |
| <b>SIP header values:</b>  |                    |                            |  |
| <b>Comments:</b>   |                    |                            |  |
| <b>SIP#1</b>   | <b>SUT</b>         | <b>SIP#2 (served user)</b> | <b>SIP#3</b>   |
| INVITE 1   | →                  |                            |  |
| 603 (Decline)  | ←                  |                            |  |
| ACK  | →                  |                            |  |

**Table 11: Cause values the "cause" parameter in the History-Info header**

| Cause Value in History Index; cause-param = "cause" EQUAL CAUSE_VAL | Cause value | Call diversion information | Redirecting Reason              |
|---|-------------|----------------------------|---------------------------------|
|   | 404         |                            | Subscriber not Logged-in        |
|   | 302         |                            | Unconditional                   |
|   | 486         |                            | User busy                       |
|   | 408         |                            | No reply                        |
|   | 480         |                            | Deflection immediate            |
|   | 503         |                            | Mobile subscriber not reachable |
|   | 487         |                            | Deflection during alerting      |

## 5.3.5 Explicit Communication Transfer (ECT)

| TSS<br>Interaction/ECT  | TP<br>CDIV_N10_001 | Reference [1],<br>4.6.10.1.2 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.4/7 |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|---|--------------------|------------------------------|--|---------------|-----|---------------------|-------|-------|--|--|--|--|--|---------|---|-----------|-----------|--|--|--|--|----------------|--|--------------|---|----------------|----------|--|--|--|----------|----------|----------|--|--|----------|--|---------------|--|-------------|---------------|---------------|--|--|--|----------|--|----------|--|--------|---|----------|--|-----|---|--|-------|--|------------|---|--|--|-------|----------------------------------|--|--|--|--|--|--|--|-------|--|--|--|--|--|-------|--|--|--|--|--------------|--|--|--|--------------|--|
| <b>Test purpose</b><br><i>Forwarded Communication, handling of Refer-To header.</i>   |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| Ensure that a forwarded communication is able to transfer and the Refer-To header of the REFER request sent to the Transferee contains a Refer-To header containing the CDIV Session Identifier. The CFU, CFB, CFNR, CD CFNL and CFNRc apply.   |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| <b>SIP header values:</b><br>REFER 1: Refer-To:<SIP#4><br>REFER 2: Refer-To: <CDIV Session Identifier>  |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| <b>Configuration:</b><br>SIP#1: originating user, Transferee<br>SIP#2: CDIV served user, (Transferee)<br>SIP#3: CDIV diverted-to user, Transferee<br>SIP#4: Transfer target   |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| <b>Comments:</b> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">SIP#1</th> <th style="text-align: left;">SUT</th> <th style="text-align: left;">SIP#2 (served user)</th> <th style="text-align: left;">SIP#3</th> <th style="text-align: left;">SIP#4</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;"><b>Forwarded communication is active</b></td> </tr> <tr> <td>REFER 1</td> <td>→</td> <td>→ REFER 2</td> <td>→ REFER 2</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>← 202 Accepted</td> <td></td> </tr> <tr> <td>202 Accepted</td> <td>←</td> <td>← 202 Accepted</td> <td>← INVITE</td> <td></td> </tr> <tr> <td></td> <td></td> <td>← INVITE</td> <td>→ INVITE</td> <td>→ INVITE</td> </tr> <tr> <td></td> <td></td> <td>→ INVITE</td> <td></td> <td>← 180 Ringing</td> </tr> <tr> <td></td> <td>180 Ringing</td> <td>→ 180 Ringing</td> <td>→ 180 Ringing</td> <td></td> </tr> <tr> <td></td> <td></td> <td>← 200 OK</td> <td></td> <td>← 200 OK</td> </tr> <tr> <td></td> <td>200 OK</td> <td>→</td> <td>→ 200 OK</td> <td></td> </tr> <tr> <td>BYE</td> <td>→</td> <td></td> <td>← ACK</td> <td></td> </tr> <tr> <td>200 OK BYE</td> <td>←</td> <td></td> <td></td> <td>→ ACK</td> </tr> <tr> <td colspan="5" style="text-align: center;"><b>Transferred communication</b></td> </tr> <tr> <td></td> <td></td> <td></td> <td>← BYE</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>→ BYE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>← 200 OK BYE</td> </tr> <tr> <td></td> <td></td> <td></td> <td>→ 200 OK BYE</td> <td></td> </tr> </tbody> </table> |                    |                              |  | SIP#1         | SUT | SIP#2 (served user) | SIP#3 | SIP#4 | <b>Forwarded communication is active</b> |  |  |  |  | REFER 1 | → | → REFER 2 | → REFER 2 |  |  |  |  | ← 202 Accepted |  | 202 Accepted | ← | ← 202 Accepted | ← INVITE |  |  |  | ← INVITE | → INVITE | → INVITE |  |  | → INVITE |  | ← 180 Ringing |  | 180 Ringing | → 180 Ringing | → 180 Ringing |  |  |  | ← 200 OK |  | ← 200 OK |  | 200 OK | → | → 200 OK |  | BYE | → |  | ← ACK |  | 200 OK BYE | ← |  |  | → ACK | <b>Transferred communication</b> |  |  |  |  |  |  |  | ← BYE |  |  |  |  |  | → BYE |  |  |  |  | ← 200 OK BYE |  |  |  | → 200 OK BYE |  |
| SIP#1   | SUT                | SIP#2 (served user)          | SIP#3  | SIP#4         |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| <b>Forwarded communication is active</b>  |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| REFER 1   | →                  | → REFER 2                    | → REFER 2  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   |                    |                              | ← 202 Accepted   |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| 202 Accepted  | ←                  | ← 202 Accepted               | ← INVITE   |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   |                    | ← INVITE                     | → INVITE   | → INVITE      |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   |                    | → INVITE                     |  | ← 180 Ringing |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   | 180 Ringing        | → 180 Ringing                | → 180 Ringing  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   |                    | ← 200 OK                     |  | ← 200 OK      |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   | 200 OK             | →                            | → 200 OK   |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| BYE   | →                  |                              | ← ACK  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| 200 OK BYE  | ←                  |                              |  | → ACK         |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
| <b>Transferred communication</b>  |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   |                    |                              | ← BYE  |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   |                    |                              |  | → BYE         |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   |                    |                              |  | ← 200 OK BYE  |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |
|   |                    |                              | → 200 OK BYE   |               |     |                     |       |       |  |  |  |  |  |         |   |           |           |  |  |  |  |                |  |              |   |                |          |  |  |  |          |          |          |  |  |          |  |               |  |             |               |               |  |  |  |          |  |          |  |        |   |          |  |     |   |  |       |  |            |   |  |  |       |                                  |  |  |  |  |  |  |  |       |  |  |  |  |  |       |  |  |  |  |              |  |  |  |              |  |

| TSS<br>Interaction/TIP   | TP<br>CDIV_N10_002 | Reference [1],<br>4.6.10.1.3 | Selection expression<br>PICS 4.5.1/2 AND<br>PICS 4.7.4/7 |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|--|--------------------|------------------------------|--|---------------|-----|---------------------|-------|-------|--|--|--|--|--|-------|---|---------|---------|--|--|--|--|----------------|--|--------------|---|----------------|------------|--|--|--|----------|------------|------------|--|--|---------------|---------------|---------------|--|--|-------------|---------------|--|--|--|----------|----------|----------|-----|---|--------|----------|--|------------|---|--|-------|--|--|--|--|-------|--|----------------------------------|--|--|--|--|--|--|--|-------|--|--|--|--|-------|-------|--|--|--|--------------|--------------|--|--|--|--------------|--|
| <b>Test purpose</b><br><i>Forwarded Communication, handling of Request-Line of the INVITE.</i>   |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
| <p>Ensure that a forwarded communication is able to transfer and the AS replaces the Request URI (CDIV Session Identifier) of the INVITE request received from the Transferee with the value of the Transfer target previously stored from the Refer-To header received in the REFER request and sends the INVITE request toward the Transfer target. The INVITE request contains also the History-Info header. The CFU, CFB, CFNR, CD CFNL and CFNRc apply.</p>   |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
| <b>SIP header values:</b><br>INVITE 1: Request URI: <CDIV Session Identifier><br>INVITE 2: Request URI:<SIP#4><br>History-Info: <sip:SIP#2 >;index=1,<br><sip:SIP#3;cause=302>;index=1.1   |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
| <b>Configuration:</b><br>SIP#1: originating user, transferee<br>SIP#2: CDIV served user, (Transferee)<br>SIP#3: CDIV diverted-to user, Transferee<br>SIP#4: Transfer target  |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
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| SIP#1  | SUT                | SIP#2 (served user)          | SIP#3  | SIP#4         |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
| <b>Forwarded communication is active</b>   |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
| REFER  | →                  | → REFER                      | → REFER  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    |                              | ← 202 Accepted   |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
| 202 Accepted   | ←                  | ← 202 Accepted               | ← INVITE 1   |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    | INVITE 2                     | → INVITE 2   | → INVITE 2    |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    | → 180 Ringing                | ← 180 Ringing  | ← 180 Ringing |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    | 180 Ringing                  | → 180 Ringing  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    | ← 200 OK                     | ← 200 OK   | ← 200 OK      |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
| BYE  | →                  | 200 OK                       | → 200 OK   |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
| 200 OK BYE   | ←                  |                              | ← ACK  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    |                              | → ACK  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
| <b>Transferred communication</b>   |                    |                              |  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    |                              | ← BYE  |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    |                              | → BYE  | → BYE         |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    |                              | ← 200 OK BYE   | ← 200 OK BYE  |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |
|  |                    |                              | → 200 OK BYE   |               |     |                     |       |       |  |  |  |  |  |       |   |         |         |  |  |  |  |                |  |              |   |                |            |  |  |  |          |            |            |  |  |               |               |               |  |  |             |               |  |  |  |          |          |          |     |   |        |          |  |            |   |  |       |  |  |  |  |       |  |                                  |  |  |  |  |  |  |  |       |  |  |  |  |       |       |  |  |  |              |              |  |  |  |              |  |

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# History

| <b>Document history</b> |               |             |
|-------------------------|---------------|-------------|
| V2.1.1                  | May 2009      | Publication |
| V3.1.1                  | July 2011     | Publication |
| V3.2.1                  | June 2015     | Publication |
| V4.1.1                  | December 2017 | Publication |
|                         |               |             |