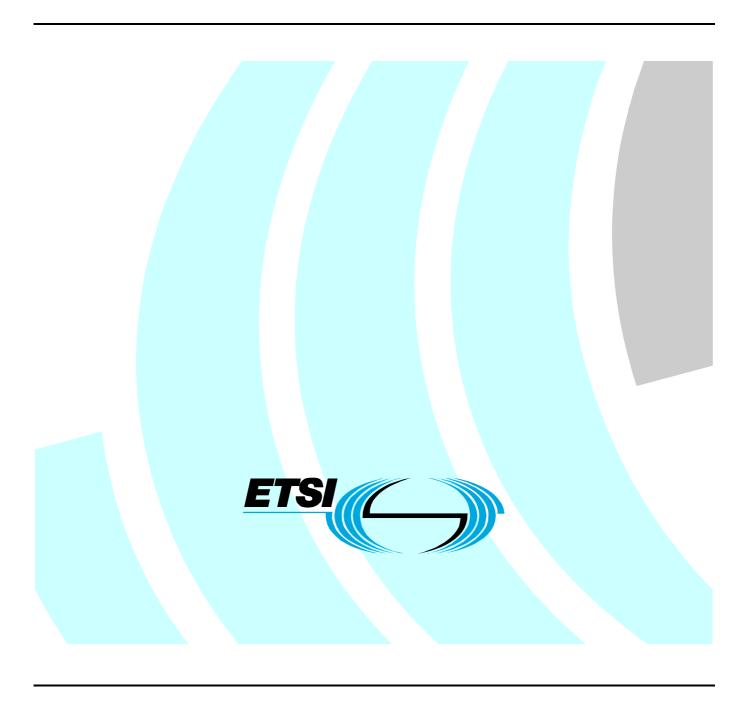
# ETSITS 186 014-2 V2.1.1 (2009-05)

Technical Specification

Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN);
PSTN/ISDN simulation services:
Communication Diversion (CDIV);
Part 2: Test Suite Structure and Test Purposes (TSS&TP)



# Reference DTS/TISPAN-06031-2-NGN-R2

Keywords
SIP, CDIV, testing, TSS&TP

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## **Foreword**

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

The present document is part 2 of a multi-part deliverable covering < Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services: 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 for the user".

## Introduction

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

## 1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) for Communications Diversion (CDIV) services, TS 183 004 [1].

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

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

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

## 2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.
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  - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
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## 2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

- [1] ETSI TS 183 004: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services: Communication Diversion (CDIV); Protocol specification".
- [2] ETSI TS 124 229: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.229 8.7.0 Release 8)".
- [3] RFC 4244: "An Extension to the Session Initiation Protocol for Request History Information".
- [4] RFC 4458: "Session Initiation Protocol (SIP) URIs for Applications such as Voicemail and Interactive Voice Response (IVR)".
- [5] IETF RFC 3261 (June 2002) "SIP: Session Initiation Protocol".

[6]	ETSI TS 183 007: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services; Originating Identification Presentation (OIP) and Originating Identification Restriction (OIR); Protocol specification".
[7]	ETSI TS 183 011: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services: Anonymous Communication Rejection (ACR) and Communication Barring (CB); Protocol specification".
[8]	ETSI TS 183 028: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Common Basic Communication procedures; Protocol specification".
[9]	ETSI TS 183 008: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services Terminating Identification Presentation (TIP) and Terminating Identification Restriction (TIR); Protocol specification".
[10]	ETSI TS 186 014-1: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services: Communication Diversion (CDIV); Part 1: Protocol Implementation conformance Statement (PICS)".
[11]	ETSI TS 183 029: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services: Explicit Communication Transfer (ECT); Protocol specification".
[12]	ISO/IEC 9646-1: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 1: General concepts".
[13]	ETSI TS 181 002: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Multimedia Telephony with PSTN/ISDN simulation services".
[14]	ETSI TS 181 006: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Direct Communication Service in NGN; Service Description [Endorsement of OMA-ERELD-PoC-V1]".

## 2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Not applicable.

## 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646-1 [12] apply.

## 3.2 Abbreviations

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

3GPP 3rd Generation Partnership Project; www.3gpp.org
ACR Anonymous Communication Rejection
AoC Advice of Charge
AS SIP Application Server
BGCF Border Gateway Control Function

CD Communication Deflection
CDIV Communication DIVersion

CFB Communication Forwarding Busy

Communication Forwarding on Not Logged-in **CFNL** 

**CFNR** Communication Forward No Reply Communication Forward Unconditional CFU

Communication Hold HOLD IFC Initial Filter Criteria **IMS** IP Multimedia Subsystem

IΡ Internet Protocol

**ISDN** Integrated Service Data Network **MCID** Malicious Communication IDentification

NGN Next Generation Network

OIP Originating Identification Presentation OIR Originating Identification Restriction **PSTN** Public Switched Telephone Network

Session Initiation Protocol SIP

**Terminating Identification Presentation** TIP TIR Terminating Identification Restriction

UA User Agent UE User Equipment

## Test Suite Structure (TSS) 4

## Table 1: Test suite structure

Netw		
	DivertigS-CSCF	CDIV_N01
	ASdivertingUser	CDIV_N02
	ASNotification	CDIV_N03
		CDIV_N04
		CDIV_N05
		CDIV_N06
		CDIV_N07
		CDIV_N08
		CDIV_N09
		CDIV_N10
	ASdiverted-to	CDIV_N11
User	OrigUE	CDIV_U01
	Diverted-toUE	CDIV_U02
	DivertingUE	CDIV_U03
Interaction		
	TIP	CDIV_N11_xxx
	TIR	CDIV_N12_xxx
	OIP	CDIV_N13_xxx
	OIR	CDIV_N14_xxx
	ACR-CB	CDIV_N15_xxx
	ECT	CDIV N16 xxx

#### Test Purposes (TP) 5

#### 5.1 Introduction

For each test requirement a TP is defined.

#### TP naming convention 5.1.1

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 1).

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

Figure 1: TP identifier naming convention scheme

#### 5.1.2 Test strategy

As the base standard TS 183 004 [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 TS 186 014-1 [10].

#### Configuration 5.1.3

For Application Server procedure testing, the ISC interface should be used. In case when the ISC interface is not explicitly available it is also applicable to use any NNI interface such as the Mw, Mg or the Mx interface. The use of the Gm interface is explicitly stated.

#### Signalling requirements 5.2

#### 5.2.1 Actions at the diverting S-CSCF

TSS		TP	Re	eference	Selection expression
Netw/DivertigS-CSC	F	CDIV_N01_001			•
Test purpose	<u>.</u>				
The S-CSCF forwards the requ subscribed to CFU simulation s		ased on the initial fi	lter criter	ria roles indicati	ng the UE B is
Ensure that the <b>S-CSCF</b> is able	to forward a re	quest to the AS ba	sed on th	ne initial filter cr	iteria for the CDIV service
if the called user is subscribed t		•			
SIP header values:					
Comments:					
SIP#1 (Mw)		S-CSCF		SIP#2 (ISC)	
INVITE 1	<b>→</b>		<b>→</b>	INVITE 1	
180 Ringing	<b>←</b>		<b>←</b>	180 Ringing	
200 OK (INVITE)	<b>←</b>		<b>←</b>	200 OK (INVI	TE)
ACK '	<b>→</b>		<b>→</b>	ACK `	,
DVE	_		_	DVE	
BYE	<b>→</b>		7	BYE	
200 OK (BYE)	<b>←</b>		<b>←</b>	200 OK (BYE	i.)

## 5.2.2 Actions at the AS of the diverting User

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_001	4.5.2.6.1	PICS 1/2

#### Test purpose

Served user has activated CFB, maximum number of diversion exceeded.

Ensure that the 486 (Busy here) final response 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.

## SIP header values:

INVITE: sip:SIP#n@ example.com SIP/2.0

History-Info: <sip: non significant uri value >;index=1,
Build additional entries with non significant uri values
<sip:SIP#n; cause=VA\_CAUSE>;index=1.n.1

Remark: for each redirection a history-entry is added the History-Info header and the relevant index is incremented according the rules described in 4.5.2.6.2.3/ [1]. In short: each redirection is represented by a "." (dot) in the latest history-entry.

motory critiy.					
Comments:					
SIP#1		AS		SIP#n	SIP#n+1
INVITE 1	<b>→</b>		<b>→</b>		
180 Ringing	<b>←</b>		<b>←</b>	180 Ringing	
200 OK INVITE	<b>←</b>		<b>←</b>	200 OK INVITE	
ACK	<b>→</b>		<b>→</b>	ACK	
INVITE 2	<b>→</b>		<b>→</b>	INVITE 2 486 (Busy here)	
486 (Busy here)	<b>←</b>		<b>→</b>	ACK	
ACK	<b>→</b>				
BYE 1	<b>→</b>		<b>→</b>	BYE 1	
200 OK BYE	<b>←</b>		<b>←</b>	200 OK BYE	

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_002	4.5.2.6.1	PICS 1/3

### Test purpose

Served user has activated CFNR, maximum number of diversion exceeded.

Ensure that the 480 (Temporarily unavailable) final response 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.

### SIP header values:

INVITE: sip:SIP#n@ example.com SIP/2.0

History-Info: <sip: non significant uri value>;index=1,

Build additional entries with non significant uri values <sip:SIP#n; cause=VA\_CAUSE>;index=1.n.1

Remark: for each redirection a history-entry is added the History-Info header and the relevant index is incremented according the rules described in 4.5.2.6.2.3/ [1]. In short: each redirection is represented by a "dot" in the latest history-entry.

metery errory.				
Comments:				
SIP#1	AS		SIP#n	SIP#n+1
INVITE	<b>→</b>	<b>→</b>	INVITE	
180 Ringing	<b>←</b>	<b>←</b>	180 Ringing	
	No reply timer ex	pires		
480 (Temporarily unavailable)	<b>←</b>	<b>→</b>	CANCEL	
ACK	<b>→</b>	<b>←</b>	200 OK CANCEL	
		<b>←</b>	487 Request Terminated	
		<b>→</b>	ACK	

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_003	4.5.2.6.1	PICS 1/1

Served user has activated CFU, maximum number of diversion exceeded.

Ensure that the 480 (Temporarily unavailable) final response 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.

## SIP header values:

INVITE: sip:SIP#n@ example.com SIP/2.0

History-Info: <sip: non significant uri value >;index=1,

Build additional entries with non significant uri values

<sip:SIP#n; cause=VA\_CAUSE>;index=1.n.1

Remark: for each redirection a history-entry is added the History-Info header and the relevant index is incremented according the rules described in 4.5.2.6.2.3/ [1]. In short: each redirection is represented by a "dot" in the latest history-entry.

Comments:

SIP#1 AS SIP#n SIP#n+1

INVITE → 480 (Temporarily unavailable) ←

ACK + ACK

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_004	4.5.2.6.1	PICS 1/4 OR

## **Test purpose**

Served user has activated CD, maximum number of diversion exceeded.

Ensure that the 480 (Temporarily unavailable) final response 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.

## SIP header values:

INVITE: sip:SIP#n@ example.com SIP/2.0

History-Info: <sip: non significant uri value >;index=1,

Build additional entries with non significant uri values <sip:SIP#n; cause=VA\_CAUSE>;index=1.n.1

Remark: for each redirection a history-entry is added the History-Info header and the relevant index is incremented according the rules described in 4.5.2.6.2.3/ [1]. In short: each redirection is represented by a "dot" in the latest history-entry.

Comments: SIP#1		AS		SIP#n	SIP#n+1
INVITE	<b>→</b>		<b>→</b>	INVITE	
180 Ringing	<b>←</b>		<b>←</b>	180 Ringing	
	<b>←</b>			302 Moved Temporarily ACK	
480 (Temporarily unavailable)	<b>←</b>				
ACK	<b>→</b>				

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_005	4.5.2.6.2.2/ [1]	-

Request URI is set to the diverted to destination History-info header contained in the INVITE.

The served user subscribes to the CDIV service defined as CDIV in table 2. The first diversion has already undergone, no History header has been received.

Ensure that the Request URI shall be set to the public user identity where the communication is to be diverted. Ensure that two hist-info entries shall be generated.

Ensure that the first entry shall include the hi-targeted-to-uri of the served user. The Index is set to index=1.

## SIP header values:

INVITE: sip:SIP#3@ example.com SIP/2.0

History-Info: <sip:SIP#2?Privacy=history>;index=1, <sip:SIP#3; cause=VA\_CAUSE>;index=1.1

Comments: SIP#1 AS SIP#2 SIP#3 INVITE 1 **→ →** INVITE 180 Ringing ← 180 Ringing 200 OK (INVITE) 200 OK (INVITE) ACK **ACK** Communication BYE **BYE** 200 OK BYE 200 OK BYE

	TSS Netw/ASdivertingUser	TP CDIV_N02_006	Reference 4.5.2.6.2.2/ [1]	Selection expression PICS 4/1 OR PICS 4/2		
Test purpose To header is sent unchanged.						
	The served user subscribes to the CDIV se	rvice defined as CDIV i	n table 2. The To head	der is sent unchanged if		

the user does not reveal its identity.

the does not reveal its identity.					
SIP header values:					
INVITE 1: To: userB@	domain				
INVITE 2: To: userB@	domain				
Comments:					
SIP#1		AS	SIP#2		SIP#3
INVITE 1	<b>→</b>				
				<b>→</b>	INVITE 2
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>			<b>→</b>	ACK
		Con	nmunication		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK BYE	<b>←</b>			<b>←</b>	200 OK BYE

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_007	4.5.2.6.2.2/ [1]	PICS 4/1 OR PICS 4/2

To header changed with respect to the OIR service.

The served user subscribes to the CDIV service defined as CDIV in table 2. The first diversion has already undergone, no History header has been received.

Ensure that when the served user wishes privacy, the served user is subscribed to the OIR Service, the "To header" shall be changed to the URI where the communication is diverted to.

## **OIP Subscription option values:**

Permanent mode = yes

or

Temporary mode default presentation restricted = yes

### SIP header values:

INVITE 1: To: userB@domain INVITE 2: To: userC@domain

Comments: SIP#1		AS	SIP#2		SIP#3
INVITE 1	<b>→</b>	7.0	OII		
	-			<b>→</b>	INVITE 2
180 Ringing	<b>←</b>			<del>-</del>	180 Ringing
200 OK (INVITE)	÷			÷	200 OK (INVITE)
ACK	<b>→</b>			<b>→</b>	ACK (
	_	Con	nmunication	_	7.0
BYE	<b>→</b>		·	<b>→</b>	BYE
200 OK BYE	<del>-</del>			<b>←</b>	200 OK BYE

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_008	4.5.2.6.2.2/ [1]	PICS 3/5

## Test purpose

To header changed with respect to the subscription option "Served user allows the presentation of his/her URI to diverted-to user" set to false.

The served user subscribes to the CDIV service defined as CDIV in table 2. The first diversion has already undergone, no History header has been received.

Ensure that if the served used has the subscription option "Served user allows the presentation of his/her URI to diverted-to user" set to false, then the "To header" shall be changed to the URI the URI where the communication is diverted to.

### Subscription options:

Served user allows the presentation of his/her URI to *diverted-to* user = no

## SIP header values:

INVITE 1: To: userB@domain INVITE 2: To: userC@domain

11 V 11 L 2. 10. 00010 @	aomam				
Comments:					
SIP#1		AS	SIP#2		SIP#3
INVITE 1	<b>→</b>				
				<b>→</b>	INVITE 2
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>			<b>→</b>	ACK `
		Con	nmunication		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK BYE	<b>←</b>			<b>←</b>	200 OK BYE

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV N02 009	4.5.2.6.2.3/ [1]	

The request-URI is set to the public user identity of the diverted to user multiple diversion.

The served user subscribes to the CDIV service defined as CDIV in table 2. Subsequent diversion has already undergone, a History header has been received.

When multiple diversions has undergone ensure that the **Request URI** – shall be set to the public user identity where the communication is diverted to.

### SIP header values:

INVITE 1:

History-Info: <sip:SIP#1?Privacy=history>;index=1,

<sip:SIP#n-1; cause=302?Privacy=history>;index=1.1

INVITE 2: INVITE sip:SIP#n@ example.com SIP/2.0

Comments: SIP#1		AS	SIP#n-1		SIP#n
INVITE 1	<b>→</b>				
				<b>→</b>	INVITE 2
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)
ACK `	<b>→</b>			<b>→</b>	ACK `
		Con	nmunication		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK BYE	<b>←</b>			<b>←</b>	200 OK BYE

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_010	4.5.2.6.2.3/ [1]	-

#### Test purpose

A new History-Info entry is added to the received History-Info header.

The served user subscribes to the CDIV service defined as CDIV in table 2. Subsequent diversion has already undergone, a History header has been received.

Ensure that when a multiple diversion has undergone, a new History-Info entry shall be added to the History-Info header field.

## SIP header values:

INVITE 1:

History-Info: <sip:SIP#1>;index=1,

<sip:SIP#n-1; cause=302>;index=1.1

INVITE 2:

History-Info: <sip:SIP#1>;index=1,

<sip:SIP#n-1; cause=302>;index=1.1

<sip:SIP#n; cause=VA CAUSE>;index=1.1.1

	<3iρ.0ii #	n, cause-va_cao	0L/,IIIU6X-1.1.1		
Comments: SIP#1	_	AS	SIP#n-1		SIP#n
INVITE 1	<b>→</b>				
				→	INVITE 2
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)
ACK `	<b>→</b>			<b>→</b>	ACK `
		Con	nmunication		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK BYE	<b>←</b>			<b>←</b>	200 OK BYE

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_011	4.5.2.6.2.3/ [1]	PICS 4/1 OR PICS 4/2

Additional History-Info entry with respect to the OIR service.

The served user subscribes to the CDIV service defined as CDIV in table 2. Subsequent diversion has already undergone, a History header has been received.

When a multiple diversion has undergone, a new History-Info entry shall be added to the History-Info header field.

Ensure that the history entry representing the served user privacy header "history" shall be escaped within the hi-targeted-to-uri, if the served user wishes privacy the served user is subscribed to the OIR Service.

## OIP Subscription option values:

Permanent mode = yes

Temporary mode default presentation restricted = yes

SIP header values:

**INVITE 1:** 

History-Info: <sip:SIP#1>;index=1,

<sip:SIP#n-1; cause=302>;index=1.1

**INVITE 2**:

History-Info: <sip:SIP#1>;index=1,

<sip:SIP#n-1; cause=302?Reason=history >;index=1.1

	<pre><sip:sip#n; cause="VA_CAUSE">;index=1.1.1</sip:sip#n;></pre>					
Comments: SIP#1		AS	SIP#n-1		SIP#n	
INVITE 1	<b>→</b>					
				<b>→</b>	INVITE 2	
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing	
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)	
ACK	<b>→</b>			<b>→</b>	ACK `	
		Com	nmunication			
BYE	<b>→</b>			<b>→</b>	BYE	
200 OK BYE	<b>←</b>			<b>←</b>	200 OK BYE	

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_012	4.5.2.6.2.3/ [1]	PICS 3/6

Additional History-Info entry with respect to the subscription option "Served user allows the presentation of his/her URI to diverted-to user" set to false.

The served user subscribes to the CDIV service defined as CDIV in table 2. Subsequent diversion has already undergone, a History header has been received.

When a multiple diversion has undergone, a new History-Info entry shall be added to the History-Info header field.

Ensure that the history entry representing the served user privacy header "history" shall be escaped within the hi-targeted-to-uri, if the served used has the subscription option "Served user allows the presentation of his/her URI to diverted-to user" set to false.

## Subscription options:

Served user allows the presentation of his/her URI to *diverted-to* user = no

#### SIP header values:

**INVITE 1:** 

History-Info: <sip:SIP#1>;index=1,

<sip:SIP#n-1; cause=302>;index=1.1

**INVITE 2**:

History-Info: <sip:SIP#1>;index=1,

<sip:SIP#n-1; cause=302?Reason: history >;index=1.1
<sip:SIP#n: cause=VA CAUSE>:index=1.1.1

	<alp.oii #<="" th=""><th>II, Cause-VA_CAU</th><th>3L2,110GX-1.1.1</th><th></th><th></th></alp.oii>	II, Cause-VA_CAU	3L2,110GX-1.1.1		
Comments: SIP#1		AS	SIP#n-1		SIP#n
INVITE 1	<b>→</b>				
				→	INVITE 2
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>			→	ACK
		Cor	mmunication		
BYE	<b>→</b>			→	BYE
200 OK BYE	<b>←</b>			<b>←</b>	200 OK BYE

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_013	4.5.2.6.2.3/ [1]	PICS 3/6

The To header is set with respect to the subscription option "Served user allows the presentation of his/her URI to diverted-to user" set to false.

The served user subscribes to the CDIV service defined as CDIV in table 2. Subsequent diversion has already undergone, a History header has been received.

When a multiple diversion the communication has undergone:

ensure that if the served user does not want to reveal its identity to the diverted-to party and the server used has the subscription option "Served user allows the presentation of his/her URI to diverted-to user" set to false, then the To header shall be changed the URI where the communication is diverted to. In all other cases the To header shall not be changed.

### **Subscription options:**

Served user allows the presentation of his/her URI to *diverted-to* user = no

## SIP header values:

**INVITE 1:** 

History-Info: <sip:SIP#1>;index=1,

<sip:SIP#n-1; cause=302>;index=1.1

**INVITE 2**:

To: To: user#n@domain

Comments: SIP#1		AS	SIP#n-1		SIP#n
INVITE 1	<b>→</b>				
				<b>→</b>	INVITE 2
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)
ACK `	<b>→</b>			<b>→</b>	ACK ` ´
		Con	nmunication		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK BYE	<b>←</b>			<b>←</b>	200 OK BYE

TSS	TP	Reference	Selection expression
Netw/ASdivertingUser	CDIV_N02_014	4.5.2.6.2.3/ [1]	PICS 4/1 OR PICS 4/2

## **Test purpose**

The To header is set with respect to the OIR service of the served user.

The served user subscribes to the CDIV service defined as CDIV in table 2. Subsequent diversion has already undergone, a History header has been received.

When this a multiple diversion the communication has undergone:

ensure that if the served user does not want to reveal its identity to the diverted-to party and the served user wishes privacy (e.g. the served user is subscribed to the OIR Service) then the To header shall be changed the URI where the communication is diverted to.

### OIP Subscription option values:

Permanent mode = yes

or

Temporary mode default presentation restricted = yes

## SIP header values:

INVITE 1:

History-Info: <sip:SIP#1>;index=1,

<sip:SIP#n-1; cause=302>;index=1.1

**INVITE 2**:

To: To: user#n@domain

Comments: SIP#1		AS	SIP#n-1		SIP#n
INVITE 1	<b>→</b>				
				<b>→</b>	INVITE 2
180 Ringing	<del>(</del>			<b>←</b>	180 Ringing
200 OK (INVITE)	<del>(</del>			<b>←</b>	200 OK (INVITE)
ACK `	<b>→</b>			<b>→</b>	ACK `
		Coi	mmunication		
BYE	<b>→</b>			→	BYE
200 OK BYE	<b>←</b>			+	200 OK BYE

Table 2

Cause Value in hi-	Cause value	Call diversion	Redirecting Reason
targeted-to-uri	302	information	Unconditional
VA_CAUSE	486		User busy
	408		No reply
	480		Deflection immediate
	404		Subscriber not Logged in
	487		Deflection during alerting
	503		Subscriber Not reachable

## 5.2.2.1 Notification procedure of the originating and terminating user

## 5.2.2.1.1 Communication Forwarding Unconditional (CFU)

TSS		TP	Reference	Selection expression
Netw/ASNotif	ication	CDIV_N03_001	4.5.2.6.4/ [1]	PICS 1/1 AND PICS 3/3
Tost nurnoss				PICS 3/3
Test purpose	oce to the CELL simi	ulation service; originating	usor is not notified	
THE SERVED USER SUBSCIIL	des to the CFO sinit	alalion service, originaling	user is not notined.	•
Ensure that the communi	ication is forwarded	to the diverted to user if the	he served user is s	ubscribed to the CFU
simulation service. The o	rigination user is no	ot notified.		
	J			
Subscription options:				
Originating user receives	notification that his	communication has been	diverted (forwarde	d or deflected) = no
SIP header values:				
Comments:				
SIP#1		SUT	SIP#2	SIP#3
			(served	
INVITE 1	<b>→</b>		user)	
····-	ication diversion i	s nerformed		
00	ioution divorcion i	o portormou		→ INVITE
				← 180 Ringing
180 Ringing	<b>←</b>			3 3
				← 200 OK (INVITE)
200 OK (INVITE)	<b>←</b>			
ACK	<b>→</b>			→ ACK
D) (E	_			<b>3</b> 5)/5
BYE	<del>)</del>			→ BYE
200 OK (BYE)	+			← 200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N03_002	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/1 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFU simulation service; 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. A Privacy header value history is escaped in the **first and the second entry** of the History-Info header.

## Subscription options:

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2

History-Info: <sip:SIP#2?Privacy=history>;index=1,

<sip:SIP#3; cause=302?Privacy=history>;index=1.1

<	sip:SiP#3; caus	<sip:sip#3; cause="302?Privacy=nistory">;index=1.1</sip:sip#3;>					
Comments:							
SIP#1		SUT	SIP#2 (served user)	SIP#3			
INVITE 1	<b>→</b>		,				
Communication	diversion is pe	erformed					
181 Call is Being Forwarded	<b>←</b>						
_				→ INVITE			
				← 180 Ringing			
180 Ringing	<b>←</b>			5 5			
3 3				← 200 OK (INVITE)			
200 OK (INVITE)	<b>←</b>			,			
ACK '	<b>→</b>			→ ACK			
BYE	<b>→</b>			→ BYE			
200 OK (BYE)	<b>←</b>			€ 200 OK (BYE)			

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N03_003	4.5.2.6.4/ [1]	PICS 1/1 AND PICS 3/3
			AND PICS 2/2

The served user subscribes to the CFU simulation service; originating user is notified. Additionally an announcement is played.

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.

Additional the AS initiates an announcement to be included towards the calling user in order to inform about the diversion. Announcements may be played.

## **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes

SIP header values:					
181 Call is Being Forwarded	: P-Asserted-Identi	ity SIP#2			
Comments:					
SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>				
Communicat 181 Call is Being Forwarded	ion diversion is p ←	erformed			
400 B: :				<b>→</b>	INVITE 180 Ringing
180 Ringing	<b>←</b>				
An announceme	ent toward the calli	ng user		-	014 (11 11 11 11 11 11 11 11 11 11 11 11 11
200 OK (INIVITE)	L			+	200 OK (INVITE)
200 OK (INVITE) ACK	<b>←</b> →			<b>→</b>	ACK
BYE 200 OK (BYE)	<b>→</b>			<b>→</b>	BYE 200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N03_004	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/1 AND PICS 3/3 AND PICS3/4 AND
			PICS3/4 AND
			PICS 3/5

The served user subscribes to the CFU simulation service; originating user is notified, the URI of the served user is received.

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.

The P-Asserted-Identity includes the URI of the diverting user. The served user allows the presentation of his/her URI to the originating user. The URI of the served user is contained in **first entry** of the History-Info header. A Privacy header value history is escaped in the **second entry** of the History-Info header.

### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = yes

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2

_	sip:SIP#2>;index=1, sip:SIP#3; cause=302?Priva	ncy=history>;index=1.1	
Comments: SIP#1	SUT	SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>	,	
Communication 181 Call is Being Forwarded	on diversion is performed <b>←</b>		<ul><li>→ INVITE</li><li>← 180 Ringing</li></ul>
180 Ringing	<b>←</b>		€ 200 OK (INVITE)
200 OK (INVITE) ACK	<b>←</b> →		→ ACK
BYE 200 OK (BYE)	<b>→</b>		→ BYE ← 200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N03_005	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/1 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFU simulation service; originating user is notified, the URI of the diverted-to user is received.

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. The 181 (Call Is Being Forwarded) response contains the P-Asserted-Identity header field and Privacy header field.

The P-Asserted-Identity includes the URI of the diverting user. The served user allows the presentation of diverted-to URI to the originating user. The URI of the diverted-to user is contained in **second entry** of the History-Info header. A Privacy header value history is escaped in the **first entry** of the History-Info header.

### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = yes Served user allows the presentation of his/her URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2

History-Info: <sip:SIP#2?Privacy=history >;index=1, <sip:SIP#3; cause=302>;index=1.1

Comments: SIP#1	SUT	SIP#2 (served	SIP#3
INVITE 1	<b>→</b>	user)	
Communication 181 Call is Being Forwarded	on diversion is performed ←		→ INVITE
180 Ringing	<b>←</b>		← 180 Ringing
	-		← 200 OK (INVITE)
200 OK (INVITE) ACK	<b>←</b> →		→ ACK
BYE 200 OK (BYE)	<b>→</b> ←		<ul><li>→ BYE</li><li>← 200 OK (BYE)</li></ul>

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N03_006	4.5.2.6.2/ [1]	PICS 1/1 AND
			PICS 3/6

The served user subscribes to the CFU simulation service; the diverted to user is not notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFU simulation service. The diverted to user is not notified. A Privacy header value history is escaped in the first entry of the History-Info header.

### **Subscription options:**

Served user allows the presentation of his/her URI to *diverted-to* user = no

## SIP header values:

INVITE

P-Asserted-Identity SIP#1

History-Info: <sip:SIP#2?**Privacy=history**>;index=1,

•	<sip:sip#3; cause="302">;inde</sip:sip#3;>	ex=1.1	
Comments: SIP#1	SUT	SIP#2 (served user)	SIP#3
INVITE 1			
	diversion is performed		→ INVITE ← 180 Ringing
180 Ringing	<b>+</b>		← 200 OK (INVITE)
200 OK (INVITE) ACK	<b>←</b> →		→ ACK
BYE 200 OK (BYE)	<b>→ ←</b>		<ul><li>→ BYE</li><li>← 200 OK (BYE)</li></ul>

TSS Netw/ASNotification	TP	Reference	Selection expression
	CDIV N03 007	4.5.2.6.2/ [1]	PICS 1/1 AND
	0211_1100_001		PICS 3/6

### Test purpose

The served user subscribes to the CFU simulation service; the diverted to user is notified. URI of served user is sent.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFU simulation service. The diverted to user is notified. Served user allows the presentation of his/her URI to the *diverted-to* user. No Privacy header is escaped in the first entry of the History-Info header.

## **Subscription options:**

Served user allows the presentation of his/her URI to *diverted-to* user = yes

## SIP header values:

INVITE

P-Asserted-Identity SIP#1

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3: cause=302>:index=1.1

101p.011 #0, 04400=0025 ,iiid	JX= 111	
SUT	SIP#2 (served	SIP#3
	•	
<b>→</b>	,	
_		
ioanon arronom lo porroninoa		→ INVITE
		← 180 Ringing
<b>←</b>		
-		← 200 OK (INVITE)
<b>←</b>		1 200 011 (111112)
		→ ACK
-		2 7.6.0
<b>→</b>		→ BYE
<del>-</del>		€ 200 OK (BYE)
	SUT  → ication diversion is performed  ←  ←  →	(served user)  → ication diversion is performed  ←  ←  →  →

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N03_008	4.5.2.6.5/ [1]	PICS 1/1 AND PICS 3/1

The served user subscribes to the CFU simulation service; Indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded Unconditional.

#### **Subscription options:**

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

SIP header values: N	MESSAGE (tex	t/plain)				
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>			•		
Communi	cation divers	ion is performed				
		-			<b>→</b>	INVITE
		MESSAGE •	<b>→</b> 1	MESSAGE		
		200 OK MESSAGE	←	200 OK MESSAGE		
					<b>←</b>	180 Ringing
180 Ringing	<b>←</b>					
	_				<b>←</b>	200 OK (INVITE)
200 OK (INVITE)	<b>←</b>				_	
ACK	<b>→</b>				<b>→</b>	ACK
D)/E	_					D)/E
BYE	<b>→</b>					BYE
200 OK (BYE)	+				+	200 OK (BYE)

TSS	TP	Reference	Selection expression PICS 1/1 AND PICS 2/1 AND
Netw/ASNotification	CDIV_N03_009	4.5.2.6.5/ [1]	
			PICS 3/1

## Test purpose

The served user subscribes to the CFU simulation service; Indication of communication diversion to the diverting user using the MESSAGE request triggered by a timer.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded Unconditional. The MESSAGE request that is be sent due to an timer value that can be provided by the user.

### Subscription options:

SIP header values: N	MESSAGE (text/	plain) triggered by a	imer value provided the ser	ved us	er
Comments: SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>				
Commun	ication diversio	n is performed			
	_	•		<b>→</b>	INVITE 180 Ringing
180 Ringing	<b>←</b>			<b>←</b>	200 OK (INVITE)
200 OK (INVITE)	<del>(</del>				, ,
ACK	<b>→</b>			<b>→</b>	ACK
			GE → MESSAGE		
		200 OK MESSAG	GE ← 200 OK MESSAG	E	
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<del>(</del>			<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N03_010	4.5.2.6.5/ [1]	PICS 1/1 AND
			PICS 2/4 AND
			PICS 3/1

The served user subscribes to the CFU simulation service; periodically indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded Unconditional. The diverting user will be informed periodically with a MESSAGE request the information where the call is diverted to.

## Subscription options:

to the diverting user)					
SIP header values: N	MESSAGE (te	xt/plain)			
Comments:					
SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	→		,		
	ication divers	sion is performed			
				<b>→</b>	INVITE 180 Ringing
180 Ringing	<b>←</b>			<b>←</b>	200 OK (INVITE)
200 OK (INVITE) ACK	<b>←</b> →			<b>→</b>	ACK
		200 OK MESSAGE Timer T <sub>CDIV_IND</sub>	→ MESSAGE 200 OK MESSAGE expired → MESSAGE		
BYE 200 OK (BYE)	<b>→</b>			<b>→</b>	BYE 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N03_011	4.5.2.6.5/ [1]	PICS 1/1 AND
			PICS 3/1 AND
			PICS 3/2

The served user subscribes to the CFU simulation service; Indication of communication diversion to the diverting user using the MESSAGE request when a new outgoing communication is requested.

Ensure that a diverting user will be informed with a MESSAGE request to the diverting user after the diverting user has initiated a new outgoing communication the information where the call is forwarded Unconditional.

## Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

Served user receives reminder indication on outgoing communication that CDIV is currently activated = yes

CID handar values A	AECCA CE (tout/plain)				
	MESSAGE (text/plain)				
Comments: SIP#1	SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		,		
Commun	ication diversion is performed				
	INVITE 2 MESSAGE 200 OK MESSAGE		MESSAGE 200 OK MESSAGE	<b>→</b>	INVITE
	180 Ringing	<b>←</b>	WEGGNGE	<b>←</b>	180 Ringing
180 Ringing	← 180 Ringing				3 3
200 OK (INVITE)	200 OK (INVITE) <b>←</b> 200 OK (INVITE)	<b>←</b>		<b>←</b>	200 OK (INVITE)
ACK (IIVITE)	→ 200 OK (NVIIL)			<b>→</b>	ACK
	MESSAGE 200 OK MESSAGE		INVITE 2 180 Ringing 200 OK (INVITE) ACK MESSAGE 200 OK MESSAGE	<b>→ ← ← →</b>	INVITE 180 Ringing 200 OK (INVITE) ACK
BYE 200 OK (BYE)	<b>→</b>		BYE	→ ← → ←	BYE 200 OK (BYE) BYE 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N03_012	4.5.2.6.5/ [1]	PICS 1/1 AND
			PICS 2/3 AND
			PICS 3/1

The served user subscribes to the CFU simulation service; Communication Diversion Notification applies.

Ensure that when the diverting user has subscribed the Communication Diversion Notification service, the served user receives a NOTIFY request containing the information regarding the current communication diversion unconditional.

```
Subscription options:
Served user receives notification that a communication has been forwarded (indication of communication diversion
to the diverting user) = yes
SIP header values:
SUBSCRIBE: Event:comm-div-info
              application/comm-div-info+xml
              <comm-div-info>
                   <comm-div-subs-info >
                       <comm-div-selection-criteria>
                            < originating-user-selection-criteria>SIP#1
                            <diverting-user-selection-criteria>SIP#2
                            <diverted-to-user-selection-criteria>SIP#3
                            < diversion-time-selection-criteria >(Date-time)
                            < diversion-reason-selection-criteria >302
                       <comm-div-ntfy-trigger-criteria>
                            <notification-time-selection-criteria>(Date/Time range PIXIT)
              </comm-div-info>
NOTIFY:
             Event:comm-div-info
              application/comm-div-info+xml
              <comm-div-info>
                   <comm-div-ntfy-info>
                       <originating-user-info>SIP#1
                       <diverting-user-info>SIP#2
                       <diverted-to-user-info>SIP#3
                       <diversion-time-info> (time range
                       <diversion-reason-info>302
                       <diversion-rule-info-type>
                            <diversion-rule> (any text)
          </comm-div-info>
```

Comments: SIP#1 SUT SIP#3 SIP#2 (served user) SUBSCRIBE SUBSCRIBE 200 OK SUBSCRIBE **→** 200 OK SUBSCRIBE NOTIFY → **NOTIFY** 200 OK NOTIFY ← 200 OK NOTIFY INVITE 1 Communication diversion is performed INVITE 180 Ringing 180 Ringing 200 OK (INVITE) 200 OK (INVITE) ACK ACK NOTIFY → **NOTIFY** 200 OK NOTIFY 200 OK NOTIFY → BYE **BYF** 200 OK (BYE) 200 OK (BYE)

## 5.2.2.1.2 Communication Forwarding on Busy user (CFB)

TSS Netw/ASNotification		TP CDIV_N04_001		Reference 4.5.2.6/ [1]	Se	lection expression PICS 1/2
Test purpose	the OFD o	institution comice			•	
The served user subscribes to	the CFB si	mulation service.				
Ensure that the communication simulation service.	n is forward	ed to the diverted to user	if the	e served user is su	bscri	bed to the CFB
SIP header values:						
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		_			
			<b>→</b>	INVITE		
			<b>←</b>	486 Busy Here ACK		
181 Call is Being Forwarded	<b>←</b>					
100 B: :	_					INVITE
180 Ringing 200 OK (INVITE)	<b>←</b> <b>←</b>				<b>+</b>	180 Ringing 200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	ACK
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	+				+	200 OK (BYE)

TSS Netw/ASNotification	C	TP :DIV_N04_002	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/2 AND PICS 3/3
Test purpose				
The served user subscribes to th	e CFB simulation s	service; originating ι	iser is not notified.	
Ensure that the communication is simulation service. The originatio			e served user is s	ubscribed to the CFB
Subscription options:				
Originating user receives notification	tion that his comm	unication has been	diverted (forwarde	d or deflected) = no
SIP header values:			•	,
Comments:				
SIP#1		JT	SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>	<b>→</b> ← →	INVITE 486 Busy Here ACK	
	CFB pe	erformed		
180 Ringing 200 OK (INVITE) ACK	<b>←</b> <b>←</b> <b>→</b>			<ul><li>→ INVITE</li><li>← 180 Ringing</li><li>← 200 OK (INVITE)</li><li>→ ACK</li></ul>
BYE 200 OK (BYE)	<b>→</b>			<ul><li>→ BYE</li><li>← 200 OK (BYE)</li></ul>

TSS Netw/ASNotification	TP CDIV_N04_003	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/2 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFB simulation service; originating user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFB simulation service. The originating user receives notification that a communication has been forwarded. A 181 (Call Is Being Forwarded) response shall be sent towards the originating user. A Privacy header value history is escaped in the first and the second entry of the History-Info header.

## Subscription options:

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to originating user in diversion notification = no Served user allows the presentation of his/her URI to originating user in diversion notification = no

## SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2

History-Info: <sip:SIP#2?Privacy=history>;index=1,

<:	sip:SIP#3;	; cause=486°?Privacy=ni	story>;	index=1.1	
Comments: SIP#1		SUT		SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>		→ ← →	INVITE 486 Busy Here ACK	
181 Call is Being Forwarded	<b>←</b>	CFB performed			
180 Ringing 200 OK (INVITE) ACK	<b>←</b> <b>←</b> <b>→</b>				→ INVITE ← 180 Ringing ← 200 OK (INVITE) → ACK
BYE 200 OK (BYE)	<b>→</b>				<ul><li>→ BYE</li><li>← 200 OK (BYE)</li></ul>

TSS Netw/ASNotification	TP CDIV_N04_004	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/2 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFB simulation service. The originating user receives the URI of the served user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFB simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of his/her URI to the originating user. A 181 (Call Is Being Forwarded) response shall be sent towards the originating user. The URI of the served user is contained in **first entry** of the History-Info header.

### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of his/her URI to *originating* user in diversion notification = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause=486?Privacy=history>;index=1.1

,	$sip.oii \pi s$	cause=+00:1 fivacy=fi	13101 y / ,	IIIUEX-I.I	
Comments: SIP#1		SUT		SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>		<b>→</b> ←	INVITE 486 Busy Here ACK	
181 Call is Being Forwarded	<b>←</b>	CFB performed	-	7.010	
180 Ringing 200 OK (INVITE) ACK	<b>←</b> <b>←</b> <b>→</b>				INVITE 180 Ringing 200 OK (INVITE) ACK
BYE 200 OK (BYE)	<b>→</b>				BYE 200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N04_005	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/2 AND PICS 3/3AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFB simulation service. The originating user receives the URI of the diverted-to user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFB simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of his/her URI to the originating user. A 181 (Call Is Being Forwarded) response shall be sent towards the originating user. The URI of the diverted-to user is contained in **second entry** of the History-Info header.

### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of his/her URI to *originating* user in diversion notification = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = yes

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause=486>;index=1.1

<:	sip.oir#3	, cause=400>,iiiuex= i	• •			
Comments: SIP#1		SUT		SIP#2 (served		SIP#3
				user)		
INVITE 1	<b>→</b>					
			<b>→</b>	INVITE		
			<b>←</b>	486 Busy Here ACK		
		CFB performed				
181 Call is Being Forwarded	<b>←</b>					
						INVITE
180 Ringing	<del>(</del>				÷	180 Ringing
200 OK (INVITE)	<del>(</del>					200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	ACK
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	<b>←</b>				<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N04_006	4.5.2.6.2/ [1]	PICS 1/2 AND
			PICS 3/6

The served user subscribes to the CFB simulation service; the diverted to user is not notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFB simulation service. The diverted to user is not notified. A Privacy header value history is escaped in the first entry of the History-Info header.

### **Subscription options:**

Served user allows the presentation of his/her URI to *diverted-to* user = no

## SIP header values:

INVITE 2

P-Asserted-Identity SIP#1

History-Info: <sip:SIP#2?Privacy=history>;index=1,

	<sip:< th=""><th>SIP#3; cause=486&gt;;inc</th><th>dex=1.1</th><th></th><th></th><th></th></sip:<>	SIP#3; cause=486>;inc	dex=1.1			
Comments: SIP#1	•	SUT		SIP#2 (served		SIP#3
	•			user)		G C
INVITE 1	<b>→</b>		<b>→</b>	INVITE		
			<b>←</b>	486 Busy Here ACK		
		CFB performed	_	TOR		
	-				<b>→</b>	INVITE 2
180 Ringing	<del>(</del>					
200 OK (INVITE) ACK	<b>→</b>					200 OK (INVITE) ACK
BYE	<b>&gt;</b>					BYE
200 OK (BYE)	<b>←</b>				←	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N04_007	4.5.2.6.2/ [1]	PICS 1/2 AND
			PICS 3/6

### Test purpose

The served user subscribes to the CFB simulation service; the diverted to user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFB simulation service. The diverted to user is notified. Served user allows the presentation of his/her URI to the diverted-to user. No Privacy header is escaped in the first entry of the History-Info header.

### Subscription options:

Served user allows the presentation of his/her URI to diverted-to user = yes

## SIP header values:

INVITE 2

P-Asserted-Identity SIP#1

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3: cause=486:>:index=1.1

	≺aiþ.	311 #3, cause=400,2,111	uex-1.		
Comments: SIP#1		SUT		SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>		→ ← →	INVITE 486 Busy Here ACK	
		CFB performed			
180 Ringing 200 OK (INVITE) ACK	<b>←</b> <b>←</b> <b>→</b>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			<ul> <li>→ INVITE 2</li> <li>← 180 Ringing</li> <li>← 200 OK (INVITE)</li> <li>→ ACK</li> </ul>
BYE 200 OK (BYE)	<b>→</b>				<ul><li>→ BYE</li><li>← 200 OK (BYE)</li></ul>

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N04_008	4.5.2.6.5/ [1]	PICS 1/2 AND
			PICS 3/1

The served user subscribes to the CFB simulation service; Indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded on busy user.

### Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

SIP header values: MESSAGE (text /plain)						
Comments:						
SIP#1		SUT	SIP#2 (served user)		SIP#3	
INVITE 1	<b>→</b>					
			→ INVITE ← 486 Busy Here → ACK			
		CFB performed				
		MESSAGE	→ MESSAGE			
		200 OK MESSAGE	← 200 OK MESSAGE			
				<b>→</b>	INVITE	
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing	
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)	
ACK	<b>→</b>			<b>→</b>	ACK	
BYE	<b>→</b>			<b>→</b>	BYE	
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)	

TSS Netw/ASNotification	TP CDIV N04 009	Reference 4.5.2.6.5/ [1]	Selection expression PICS 1/2 AND
	0211_1101_000		PICS 2/1 AND
			PICS 3/1

## Test purpose

The served user subscribes to the CFB simulation service; Indication of communication diversion to the diverting user using the MESSAGE request triggered by a timer.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded on busy user. The MESSAGE request that is be sent due to an timer value that can be provided by the user.

## Subscription options:

SIP header values:	SIP header values: MESSAGE (text /plain) triggered by a timer value provided the served user						
Comments:		·		<u> </u>		<u> </u>	
SIP#1		SUT		SIP#2 (served user)		SIP#3	
INVITE 1	<b>→</b>			•			
			<b>→</b>	INVITE			
			<b>←</b>	486 Busy Here			
			<b>→</b>	ACK			
	CFB perf	ormed					
	-				<b>→</b>	INVITE	
180 Ringing	<b>←</b>				<b>←</b>	180 Ringing	
200 OK (INVITE)	<b>←</b>				<b>←</b>	200 OK (INVITE)	
ACK	<b>→</b>				<b>→</b>	ACK `	
		Timer T <sub>CDI</sub> \	/ <sub>IND</sub> expi	red			
				MESSAGE			
		200 OK MESSA	GE 🗲	200 OK MESSAGE			
BYE	<b>→</b>				<b>→</b>	BYE	
200 OK (BYE)	<b>←</b>				<b>←</b>	200 OK (BYE)	

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N04_010	4.5.2.6.5/ [1]	PICS 1/2 AND
			PICS 2/4 AND
			PICS 3/1

The served user subscribes to the CFB simulation service; periodically indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded on busy user. The diverting user will be informed periodically with a MESSAGE request the information where the call is diverted to.

## Subscription options:

SIP header values: MI	ESSAGE (text	/plain)			
Comments:		-			
SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		•		
			→ INVITE		
			← 486 Busy Here		
			→ ACK		
		CFB performed			
		•		<b>→</b>	INVITE
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>				200 OK (INVITE)
ACK `	<b>→</b>				ACK `
		200 OK MESSAG Timer T <sub>CDIV_IND</sub> MESSAG	GE → MESSAGE GE ← 200 OK MESSAGE		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N04_011	4.5.2.6.5/ [1]	PICS 1/2 AND
			PICS 3/1 AND
			PICS 3/2

The served user subscribes to the CFB simulation service; Indication of communication diversion to the diverting user using the MESSAGE request when a new outgoing communication is requested.

Ensure that a diverting user will be informed with a MESSAGE request to the diverting user after the diverting user has initiated a new outgoing communication the information where the call is forwarded on busy user.

## Subscription options:

diversion to the divertir						
		tion on outgoing communic	catio	on that CDIV is curren	tly ac	ctivated = yes
SIP header values: M	ESSAGE (text	/plain)				
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>					
				INVITE		
				486 Busy Here ACK		
		CFB performed				
						INVITE
180 Ringing	<del>(</del>					180 Ringing
200 OK (INVITE)	<del>(</del>					200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	ACK
				INVITE		INVITE
				180 Ringing		180 Ringing
				200 OK (INVITE)		200 OK (INVITE)
				ACK		ACK
		MESSAGE	<b>→</b>	MESSAGE		
		200 OK MESSAGE	<b>←</b>	200 OK MESSAGE		
				BYE		BYE
				200 OK (BYE)		200 OK (BYE)
BYE	<b>→</b>					BYE
200 OK (BYE)	+				+	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N04_012	4.5.2.6.5/ [1]	PICS 1/2 AND
			PICS 2/3 AND
			PICS 3/1

The served user subscribes to the CFB simulation service; Communication Diversion Notification applies.

Ensure that when the diverting user has subscribed the Communication Diversion Notification service, the served user receives a NOTIFY request containing the information regarding the current communication diversion busy.

#### Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

```
SIP header values:
```

SUBSCRIBE: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-subs-info >

<comm-div-selection-criteria>

< originating-user-selection-criteria>SIP#1

<diverting-user-selection-criteria>SIP#2

<diverted-to-user-selection-criteria>SIP#3

< diversion-time-selection-criteria >(Date-time)

< diversion-reason-selection-criteria >486

<comm-div-ntfy-trigger-criteria>

<notification-time-selection-criteria>(Date/Time range PIXIT)

</comm-div-info>

NOTIFY: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-ntfy-info>

<originating-user-info>SIP#1
<diverting-user-info>SIP#2
<diverted-to-user-info>SIP#3

<diversion-rule-info-type>

<diversion-time-info> (time range
<diversion-reason-info> 486

<diversion-rule> (any text)

</comm-div-info>

	arv iiiio>					
Comments: SIP#1		SUT SUBSCRIBE 200 OK SUBSCRIBE				SIP#3
		NOTIFY 200 OK NOTIFY		-		
INVITE 1	<b>→</b>		<b>→</b> <b>←</b> <b>→</b>	INVITE 486 Busy Here ACK		
		<b>CFB performed</b> NOTIFY 200 OK NOTIFY		NOTIFY 200 OK NOTIFY	_	
180 Ringing 200 OK (INVITE) ACK	<b>←</b> <b>←</b> <b>→</b>				<b>&gt;++</b>	INVITE 180 Ringing 200 OK (INVITE) ACK
BYE 200 OK (BYE)	<b>→</b>				<b>→</b>	BYE 200 OK (BYE)

## 5.2.2.1.3 Communication Forwarding on no Reply (CFNR)

TSS Netw/ASNotification	TP CDIV_N05_001	Reference 4.5.2.6/ [1]	Selection expression PICS 1/3
Test purpose	•		•
The served user subscribes to the 0	CFNR simulation servic	e.	
Ensure that the communication is for	orwarded to the diverted	d to user if the served user is s	ubscribed to the CFNR
simulation service.			
SIP header values:			
Comments:			
SIP#1	SUT	SIP#2 (served user)	SIP#3
INVITE 1		,	
	<b>→</b>	INVITE	
180 Ringing ←	<b>←</b>	180 Ringing	
	<b>→</b>	CANCEL	
	<b>←</b>	200 OK CANCEL	
	<b>←</b>	487 Request Terminated ACK	
		IR performed	
	011	ar ponomica	→ INVITE
			← 180 Ringing
200 OK (INVITE) ←			€ 200 OK (INVITE)
ACK →			→ ACK
BYE →			<b>→</b> BYE
200 OK (BYE) ←			← 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N05_002	4.5.2.6.3/ [1]	PICS 1/3

#### Test purpose

The served user subscribes to the CFNR simulation service Forking is provided CFNR timer is not refreshed

Ensure that the communication is forwarded to multiple diverted to users (forking) if the served user is subscribed to the CFNR simulation service. After receiving the first 180 (Ringing) response the no reply timer shall be started. Ensure that a further received 180 (Ringing) response does not refresh the timer.

SIP header values	s:					
Comments: SIP#1		SUT	SIP#2 (served user)	SIP#2 forked		SIP#3
INVITE 1	<b>→</b>		,			
180 Ringing	<b>←</b>		<ul><li>→ INVITE</li><li>← 180 Ringing</li><li>CFNR performed after</li></ul>	<ul> <li>→ INVITE</li> <li>← 180 Ringing</li> <li>first 180 was received</li> <li>→ CANCEL</li> <li>← 200 OK CANCEL</li> <li>← 487 Request         Terminated</li> <li>→ ACK</li> </ul>		
200 OK (INVITE) ACK	<b>←</b> →			, were	<b>→</b> ← ←	INVITE 180 Ringing 200 OK (INVITE) ACK
BYE 200 OK (BYE)	<b>→</b>				<b>→</b>	BYE 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N05_003	4.5.2.6.3/ [1]	PICS 1/3

The served user subscribes to the CFNR simulation service the CFNR timer is terminated when a 200 OK was received.

Ensure that if the served user is subscribed to the *CFNR* simulation service when a 180 response is received. Ensure that with receiving a 200 (OK) response the no reply timer shall be terminated and the call follows the Basic call procedure. Other open early dialogs shall be terminated.

SIP header values:					
Comments:					
SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		•		
			→ INVITE		
180 Ringing	<b>←</b>		← 180 Ringing		
3 3		No C	FNR performed		
200 OK (INVITE)	<b>←</b>		← 200 OK (INVITE)		
ACK	<b>→</b>		→ ACK		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N05_004	4.5.2.6.3/ [1]	PICS 1/3

#### Test purpose

The served user subscribes to the CFNR simulation service. Dialogue to the served user is terminated.

Ensure that the served user is subscribed to the *CFNR* simulation service and the no reply timer expires. Ensure that if the dialog(s) to the diverting user shall be terminated e.g. by sending a CANCEL request.

Ensure that if the dialog(s	s) to the divertin	g user shall be te	rminated e.g. by sending a CAN	CEL request.
SIP header values:				
Comments:				
SIP#1		SUT	SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>			
			→ INVITE	
180 Ringing	<b>←</b>		← 180 Ringing	
	Т	no reply expired		
			→ CANCEL	
			← 200 OK CANCEL	
			← 487 Request Terminated	
			→ ACK	
		CF	NR performed	
				→ INVITE
				← 180 Ringing
200 OK (INVITE)	<b>←</b>			€ 200 OK (INVITE)
ACK	<b>→</b>			→ ACK
	•			2 7.010
BYE	<b>→</b>			→ BYE
200 OK (BYE)	<del>-</del>			€ 200 OK (BYE)

→ BYE← 200 OK (BYE)

TSS Netw/ASNot		CDIV_N	P 105_005	Reference 4.5.2.6.4/ [1]	Sel	ection expression PICS 1/3 AND PICS 3/3
Test purpose				•		
The served user subscr	ribes to the CFNR s	simulation servic	e; originating	user is not notifie	ed.	
Ensure that the commu	nication is forwards	ad to the diverter	d to usar if the	a carvad ucar ic c	uhecri	had to the CENR
simulation service. The			a to aser ii tiit	s serveu user is s	ubscri	bed to the Crivit
	5ga					
Subscription options:						
Originating user receive	es notification that h	nis communication	on has been o	diverted (forwarde	ed or c	leflected) = no
SIP header values:						
Comments:						
SIP#1	_	SUT	SIP#2 (	served user)		SIP#3
INVITE 1	<b>→</b>		> 150 //TE			
100 Dinging	<b>←</b>		→ INVITE	aina		
180 Ringing	_		← 180 Rin	ging		
I	T no	o reply expired				
			→ CANCE	· <del>-</del>		
			← 200 OK			
				quest Terminated		
			→ ACK			
		CF	NR performe	d	_	
					<b>→</b>	
OOO OK (INIVITE)					<del>-</del>	
200 OK (INVITE) ACK	<b>←</b>				<b>←</b>	200 OK (INVITE) ACK
AON	•				•	AOR

BYE

200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N05_006	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/3 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFNR simulation service; originating user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNR simulation service. The originating user receives notification that a communication has been forwarded. A 181 (Call Is Being Forwarded) response shall be sent towards the originating user. A Privacy header value history is escaped in the first and the second entry of the History-Info header.

# Subscription options:

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to originating user in diversion notification = no Served user allows the presentation of his/her URI to originating user in diversion notification = no

# SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2

History-Info: <sip:SIP#2?Privacy=history>;index=1, <sip:SIP#3; cause=408?Privacy=history>;index=1.1

sip.sir	#3, cause=400?F11vacy=111510	11 y > , 11 luex = 1 . 1	
	SUT SIF	P#2 (served user)	SIP#3
<b>→</b>			
	<b>→</b> IN\	/ITE	
<b>←</b>	<b>←</b> 180	O Ringing	
	T no reply expired		
		NCFL	
	_	-	
		•	
	_		
<b>←</b>	o port		INVITE
•		=	180 Ringing
<b>←</b>			200 OK (INVITE)
			ACK
		-	7.01
<b>→</b>		<b>→</b>	BYE
_		_	200 OK (BYE)
	<b>→</b>	SUT SIF  → IN\ ← 180  T no reply expired  → CA ← 200 ← 48 → AC  CFNR perfo	→ INVITE ← 180 Ringing  T no reply expired  → CANCEL ← 200 OK CANCEL ← 487 Request Terminated → ACK  CFNR performed  ← ← ← → →

TSS Netw/ASNotification	TP CDIV_N05_007	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/3 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFNR simulation service. The originating user receives the URI of the served user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the *CFNR* simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of his/her URI to the originating user. The URI of the served user is contained in **first entry** of the History-Info header.

# Subscription options:

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of his/her URI to *originating* user in diversion notification = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no

# SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3: cause=408?Privacv=historv>:index=1.1

<:	sıp.əir	7#3, Cause=406?Piiva	cy=i	115tory>,111dex=1.1		
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>					
			<b>→</b>	INVITE		
180 Ringing	<b>←</b>			180 Ringing		
100 Kinging			•	100 Kinging		
		T no reply expired				
			<b>→</b>	CANCEL		
				200 OK CANCEL		
				487 Request Terminated		
			<b>→</b>	ACK		
		CFI	NR p	erformed		
181 Call is Being Forwarded			•		<b>→</b>	INVITE
ror can le Bonig i ci waraca					_	180 Ringing
200 OK (INIVITE)	_					
200 OK (INVITE)	<b>←</b>					200 OK (INVITE)
ACK	<b>→</b>				→	ACK
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	<b>←</b>					200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N05_008	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/3 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFNR simulation service. The originating user receives the URI of the divertedto user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNR simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of diverted-to URI to the originating user. The URI of the diverted-to user is contained in **second entry** of the History-Info header.

# Subscription options:

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of his/her URI to originating user in diversion notification = yes Served user allows the presentation of diverted to URI to originating user in diversion notification = yes

# SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2>;index=1,

<:	sip:SII	P#3; cause=408>;inde	x=1.1		
Comments: SIP#1	-	SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		on #2 (86. 184 486.)		<b>3.1.</b> # <b>3</b>
			→ INVITE		
180 Ringing	<b>←</b>		← 180 Ringing		
		T no reply expired			
			→ CANCEL		
			← 200 OK CANCEL		
			← 487 Request Terminated		
			→ ACK		
		CFN	R performed		
181 Call is Being Forwarded				<b>→</b>	INVITE
				<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>				200 OK (INVITE)
ACK	<b>→</b>			<b>→</b>	ACK
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N05_009	4.5.2.6.2/ [1]	PICS 1/3 AND
			PICS 3/6

The served user subscribes to the CFNR simulation service; the diverted to user is not notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the *CFNR* simulation service. The diverted to user is not notified. A Privacy header value history is escaped in the first entry of the History-Info header.

# Subscription options:

Served user allows the presentation of his/her URI to *diverted-to* user = no

# SIP header values:

INVITE 2 P-Asserted-Identity SIP#1

History-Info: <sip:SIP#2?Privacy=history>;index=1,

	<sip:< th=""><th>SIP#3; cause=40</th><th>)8&gt;;index=1.1</th><th></th><th></th></sip:<>	SIP#3; cause=40	)8>;index=1.1		
Comments: SIP#1	•	SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>				
			→ INVITE		
180 Ringing	<b>←</b>		180 Ringing		
	Т	no reply expired			
		no repry	→ CANCEL		
			€ 200 OK CANCEL		
			← 487 Request Terminated		
			→ ACK		
		CI	FNR performed		
		O.	Wit performed	<b>→</b>	INVITE 2
				ŕ	180 Ringing
200 OK (INVITE)	<b>←</b>				200 OK (INVITE)
ACK	<b>→</b>				ACK
ACK	7			7	AUN
BYE	<b>→</b>			-	BYE
200 OK (BYE)	É			ŕ	200 OK (BYE)
ZUU ON (DIE)	_			~	200 ON (D1E)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N05_010	4.5.2.6.2/ [1]	PICS 1/3 AND
			PICS 3/6

The served user subscribes to the CFNR simulation service; the diverted to user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNR simulation service. Served user allows the presentation of his/her URI to the diverted-to user. No Privacy header is escaped in the first entry of the History-Info header.

# Subscription options:

Served user allows the presentation of his/her URI to *diverted-to* user = yes

# SIP header values:

P-Asserted-Identity SIP#1 INVITE 2

History-Info: <sip:SIP#2>;index=1,

	<sip:< th=""><th>:SIP#3; cause=40</th><th>08;&gt;;index=1.1</th><th></th><th></th></sip:<>	:SIP#3; cause=40	08;>;index=1.1		
Comments: SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		•		
			→ INVITE		
180 Ringing	<b>←</b>		<ul><li>180 Ringing</li></ul>		
	Т	no reply expired			
			→ CANCEL		
			← 200 OK CANCEL		
			← 487 Request Terminated		
			→ ACK		
		CI	FNR performed		
				<b>→</b>	INVITE 2
				<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>			<b>→</b>	ACK
DVE	_			_	DVE
BYE	<del>)</del>			_	BYE
200 OK (BYE)	<b>←</b>			←	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N05_011	4.5.2.6.5/ [1]	PICS 1/3 AND
			PICS 3/1

The served user subscribes to the CFNR simulation service; Indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded on no Reply.

# Subscription options:

SIP header values: MES	SSAGE (text /plain	)			
Comments:					
SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>				
		<b>→</b>	INVITE		
180 Ringing	<b>←</b>	<b>←</b>	180 Ringing		
	T no	reply expired			
			CANCEL		
		<b>←</b>	200 OK CANCEL		
			487 Request Terminated		
			ACK		
			performed		
		MESSAGE →			
	200		200 OK MESSAGE		
	200	OK MESSAGE *	200 OK WESSAGE	4	INVITE
200 OK (INIVITE)	<b>←</b>				
200 OK (INVITE)					(
ACK	<b>→</b>			7	ACK
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N05_012	4.5.2.6.5/ [1]	PICS 1/3 AND
			PICS 2/1 AND
			PICS 3/1

The served user subscribes to the CFNR simulation service; Indication of communication diversion to the diverting user using the MESSAGE request triggered by a timer.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded on no Reply. The MESSAGE request that is be sent due to an timer value that can be provided by the user.

# Subscription options:

SIP header values: MES	SSAGE (text /plain) triggered by	a timer value provided the serve	ed user
Comments:	· · · · · · · · · · · · · · · · · · ·		
SIP#1	SUT	SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>	,	
		→ INVITE	
180 Ringing	<b>←</b>	← 180 Ringing	
	T <sub>no reply</sub> expired	1	
	· no reply explicat	→ CANCEL	
		€ 200 OK CANCEL	
		€ 487 Request Terminated	
		→ ACK	•
	(	CFNR performed	
		ponomou	→ INVITE
			← 180 Ringing
200 OK (INVITE)	<b>←</b>		← 200 OK (INVITE)
ACK	<b>→</b>		→ ACK
	Timer T <sub>CD</sub>	<sub>IV_IND</sub> expired	
		SĒ → MESSAGE	
	200 OK MESSAC	GE ← 200 OK MESSAGE	
BYE	<b>→</b>		→ BYE
200 OK (BYE)	<b>←</b>		€ 200 OK (BYE)

TSS Netw/ASNotification	TP CDIV N05 013	Reference 4.5.2.6.5/ [1]	Selection expression PICS 1/3 AND
	000000000000000000000000000000000000000		PICS 2/4 AND
			PICS 3/1

The served user subscribes to the CFNR simulation service; periodically indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS send a MESSAGE request to the diverting user including the information where the call is forwarded on no Reply. The diverting user will be informed periodically with a MESSAGE request the information where the call is diverted to.

# Subscription options:

CID to an allow and the control MEC		-1			
SIP header values: MES	SAGE (text/plair	1)			
Comments:					
SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>				
			→ INVITE		
180 Ringing	<b>←</b>		← 180 Ringing		
100 1	_		1 100 mig.iig		
	ı n	<sub>o reply</sub> expired			
			→ CANCEL		
			← 200 OK CANCEL		
			← 487 Request Terminated		
			→ ACK		
		CFNI	R performed		
			•	<b>→</b>	INVITE
					180 Ringing
200 OK (INVITE)	<b>←</b>				200 OK (INVITE)
ACK	÷				ACK
ACK	7			7	ACK
		Time ou T	avaina d		
		Timer T <sub>CDIV_INE</sub>			
			→ MESSAGE		
	20		← 200 OK MESSAGE		
		Timer T <sub>CDIV_INE</sub>			
		MESSAGE	→ MESSAGE		
	20	0 OK MESSAGE	← 200 OK MESSAGE		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N05_014	4.5.2.6.5/ [1]	PICS 1/3 AND
			PICS 3/1 AND
			PICS 3/2

The served user subscribes to the CFNR simulation service; Indication of communication diversion to the diverting user using the MESSAGE request when a new outgoing communication is requested.

Ensure that a diverting user will be informed with a MESSAGE request to the diverting user after the diverting user has initiated a new outgoing communication the information where the call is forwarded on no Reply.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

Served user receives reminder indication on outgoing communication that CDIV is currently activated = yes

Derved user receives rer	minder malcation	i on oatgoing co		ıy acı	valeu – yes
SIP header values: MES	SSAGE (text/pla	iin)			
Comments:	` .	•			
SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		(11 11 11 11 )		
			→ INVITE		
180 Ringing	<b>←</b>		← 180 Ringing		
3 3	т	no reply expired			
	•	no reply expired	→ CANCEL		
			€ 200 OK CANCEL		
			← 487 Request Terminated		
			→ ACK		
		C	FNR performed		
		Ŭ	Trut ponomica	<b>→</b>	INVITE 2
					180 Ringing
200 OK (INVITE)	<b>←</b>				200 OK (INVITE)
ACK	<b>→</b>				ACK
			INVITE	<b>→</b>	INVITE 3
			180 Ringing	<b>←</b>	180 Ringing
			200 OK (INVITE)		200 OK (INVITE)
			ACK		ACK `
		MESSAG	E → MESSAGE		
	2	00 OK MESSAG	E ← 200 OK MESSAGE		
			BYE		BYE
			200 OK (BYE)		200 OK (BYE)
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N05_015	Reference 4.5.2.6.5/ [1]	Selection expression PICS 1/3 AND PICS 2/3 AND
			PICS 3/1

The served user subscribes to the CFNR simulation service; Communication Diversion Notification applies.

Ensure that when the diverting user has subscribed the Communication Diversion Notification service, the served user receives a NOTIFY request containing the information regarding the current communication forwarding no reply.

#### **Subscription options:**

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

```
SIP header values:
```

SUBSCRIBE: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-subs-info >

<comm-div-selection-criteria>

< originating-user-selection-criteria>SIP#1

<diverting-user-selection-criteria>SIP#2

<diverted-to-user-selection-criteria>SIP#3

< diversion-time-selection-criteria >(Date-time)

< diversion-reason-selection-criteria >408

<comm-div-ntfy-trigger-criteria>

<notification-time-selection-criteria>(Date/Time range PIXIT)

</comm-div-info>

NOTIFY: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-ntfy-info>

<originating-user-info>SIP#1

<diverting-user-info>SIP#2

<diverted-to-user-info>SIP#3

<diversion-time-info> (time range

<diversion-reason-info>408
<diversion-rule-info-type>

<diversion-rule> (any text)

</comm-div-info>

Comments: SIP#1	SUT SUBSCRIBE  200 OK SUBSCRIBE  200 OK SUBSCRIBE	SIP#3
	NOTIFY → NOTIFY 200 OK NOTIFY ← 200 OK NOTIFY	
INVITE 1 180 Ringing	→ INVITE ← 180 Ringing	
	T no reply expired  → CANCEL  ← 200 OK CANCEL  ← 487 Request Terminated  → ACK	
	CFNR performed NOTIFY → NOTIFY 200 OK NOTIFY ← 200 OK NOTIFY	→ INVITE
200 OK (INVITE) ACK	<b>←</b> →	<ul><li>← 180 Ringing</li><li>← 200 OK (INVITE)</li><li>→ ACK</li></ul>
BYE 200 OK (BYE)	<b>→</b> ←	<ul><li>→ BYE</li><li>← 200 OK (BYE)</li></ul>

BYE

200 OK (BYE)

#### 5.2.3.1.4 Communication Forwarding on no Reply (CFNR) ringing continues

TSS Netw/ASNotification	TP CDIV_N06_001	Reference 4.5.2.6.3/ [1]	Selection expression PICS 1/3 AND PICS 2/5
Test purpose			
The served user subscribes to the C	CFNR simulation service (ri	nging continues).	
Ensure that the communication is fo simulation service the early dialogue user.			
SIP header values:			
Comments:			
SIP#1	SUT	SIP#2 (served user)	SIP#3
INVITE 1 →			
		INVITE	
180 Ringing ←		180 Ringing	
	CFNR performed		
			→ INVITE 2
			← 180 Ringing
200 OK (INVITE)			€ 200 OK (INVITE)
ACK →		CANCEL	→ ACK
		CANCEL	
		200 OK CANCEL	
	~	487 Request Terminated	

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N06_002	4.5.2.6.3/ [1]	PICS 1/3 AND
			PICS 2/5

→ ACK

# Test purpose

200 OK (BYE)

BYE

The served user subscribes to the CFNR simulation service (ringing continues) Forking is provided the CFNR timer is not refreshed.

Ensure that the communication is forwarded to multiple diverted to user if the served user is subscribed to the CFNR simulation service. After receiving the first 180 (Ringing) response the no reply timer shall be started. Ensure that a further received 180 (Ringing) response does not refresh the timer.

SIP header values	s:						
Comments:							
SIP#1		SUT	SIP#2 (served user)		SIP#2 forked		SIP#3
INVITE 1	<b>→</b>						
		<b>→</b>	INVITE				
180 Ringing	<b>←</b>	←	180 Ringing				
				<b>→</b>	INVITE		
				<b>←</b>	180 Ringing		
		CFNR p	performed after first 180	) was	s received		
						<b>→</b>	INVITE
						<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>					<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>					<b>→</b>	ACK
		<b>→</b>	CANCEL	<b>→</b>	CANCEL		
		<b>←</b> :	200 OK CANCEL	<b>←</b>	200 OK CANCEL		
		← /	487 Request	←	487 Request		
		•	Terminated		Terminated		
		<b>→</b> .	ACK	<b>→</b>	ACK		
	_					_	
BYE	<b>→</b>						BYE
200 OK (BYE)	←					<b>←</b>	200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N06_003	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/3 AND PICS 2/5 AND PICS 3/3			
Test purpose The served user subscribes to the CFNR simulation service (ringing continues); originating user is not notified.						
Ensure that the communication is forwarded simulation service. The origination user is no		e served user is s	ubscribed to the CFNR			

# Subscription options:

Originating user receives	notification tha	t his communication	on has been diverted (forwarded	or de	eflected) = no
SIP header values:			,		,
Comments:					
SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		,		
			→ INVITE		
180 Ringing	<b>←</b>		← 180 Ringing		
3 3	С	FNR performed	0 0		
		•		<b>→</b>	INVITE 2
				<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)
ACK `	<b>→</b>			<b>→</b>	ACK
			→ CANCEL		
			← 200 OK CANCEL		
			<ul> <li>487 Request Terminated</li> </ul>		
			→ ACK		
BYE	<b>→</b>			→	BYE
200 OK (BYE)	+			+	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N06_004	4.5.2.6.4/ [1]	PICS 1/3 AND
			PICS 2/5 AND
			PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFNR simulation service (ringing continues); originating user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the *CFNR* simulation service. The originating user receives notification where the call is diverted to. A 181 (Call Is Being Forwarded) response shall be sent towards the originating user. The 181 (Call Is Being Forwarded) response contains the P-Asserted-Identity header field and Privacy header field. A Privacy header value history is escaped in the **first and the second entry** of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2?Privacy=history>;index=1,

<sip:SIP#3; cause=408?Privacy=history>;index=1.1

Ž,	sip.Sir	#3, cause=400 : Filva	acy=ilistory>,iridex=1.1		
Comments: SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		•		
			→ INVITE		
180 Ringing	<b>←</b>		← 180 Ringing		
		CFNR performed			
				<b>→</b>	INVITE 2
				<b>←</b>	180 Ringing
181 Call is Being Forwarded	<b>←</b>			<b>←</b>	200 OK (INVITE)
200 OK (INVITE)	<b>←</b>			<b>→</b>	ACK
ACK	<b>→</b>				
			→ CANCEL		
			← 200 OK CANCEL		
			<ul> <li>487 Request Terminated</li> </ul>		
			→ ACK		
	_			_	5.75
BYE	<b>→</b>				BYE
200 OK (BYE)	<b>←</b>			←	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N06_005	4.5.2.6.4/ [1]	PICS 1/3 AND
			PICS 2/5 AND
			PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFNR simulation service (ringing continues). The originating user receives the URI of the served user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the *CFNR* simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of his/her URI to the originating user The URI of the served user is contained in **first entry** of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = yes

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2>;index=1,

<sip:sip#3; cause="408?Privacy=history">;index=1.1</sip:sip#3;>					
Comments: SIP#1	•	SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		,		
			→ INVITE		
180 Ringing	<b>←</b>		← 180 Ringing		
		CFNR performed			
		·		<b>→</b>	INVITE 2
				<b>←</b>	180 Ringing
181 Call is Being Forwarded	<b>←</b>			<b>←</b>	200 OK (INVITE)
200 OK (INVITE)	<b>←</b>			<b>→</b>	ACK
ACK	<b>→</b>				
			→ CANCEL		
			← 200 OK CANCEL		
			← 487 Request Terminated		
			→ ACK		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N06_006	4.5.2.6.4/ [1]	PICS 1/3 AND
			PICS 2/5 AND
			PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFNR simulation service (ringing continues). The originating user receives the URI of the diverted-to user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNR simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of the diverted-to URI to the originating user The URI of the diverted-to user is contained in **second entry** of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to originating user in diversion notification = yes Served user allows the presentation of his/her URI to originating user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2?Privacy=history >;index=1,

<\$	<sip:sip#3; cause="408">;index=1.1</sip:sip#3;>					
Comments: SIP#1		SUT	SIP#2 (served user)		SIP#3	
INVITE 1	<b>→</b>					
			→ INVITE			
180 Ringing	<b>←</b>	CFNR performed	← 180 Ringing			
		or rare ponomica		<b>→</b>	INVITE 2 180 Ringing	
181 Call is Being Forwarded 200 OK (INVITE)	<b>+</b>			<b>←</b>	200 OK (INVITE) ACK	
ACK	<b>→</b>					
			<ul><li>→ CANCEL</li><li>← 200 OK CANCEL</li><li>← 487 Request Terminated</li><li>→ ACK</li></ul>			
BYE	<b>→</b>			<b>→</b>	BYE	
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)	

TSS Netw/ASNotification	TP CDIV_N06_007	Reference 4.5.2.6.2/ [1]	Selection expression PICS 1/3 AND PICS 2/5 AND
			PICS 3/6
Test nurnose			

The served user subscribes to the CFNR simulation service (ringing continues); the diverted to user is not notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNR simulation service. The diverted to user is not notified. A Privacy header value history is escaped in the first entry of the History-Info header.

# Subscription options:

Served user allows the presentation of his/her URI to *diverted-to* user = no

# SIP header values:

INVITE 2 P-Asserted-Identity SIP#1

History-Info: <sip:SIP#2?Privacy=history>:index=1

History-Info: <sip:sip#2?privacy=history>;index=1, <sip:sip#3; cause="408">;index=1.1</sip:sip#3;></sip:sip#2?privacy=history>					
Comments: SIP#1		SUT	SIP#2 (served user)	SIP#3	
INVITE 1	<b>→</b>				
			→ INVITE		
180 Ringing	<b>←</b>		180 Ringing		
	С	FNR performed			
				→ INVITE 2	
				<ul> <li>180 Ringing</li> </ul>	
200 OK (INVITE)	<b>←</b>			← 200 OK (INVITE	Ξ)
ACK	<b>→</b>			→ ACK	•
			→ CANCEL		
			← 200 OK CANCEL		
			← 487 Request Terminated		
			→ ACK		
BYE	<b>→</b>			→ BYE	
200 OK (BYE)	<b>←</b>			← 200 OK (BYE)	

TSS Netw/ASNotification	TP CDIV_N06_008	Reference 4.5.2.6.2/ [1]	Selection expression PICS 1/3 AND PICS 2/5 AND
			PICS 3/6

The served user subscribes to the CFNR simulation service (ringing continues); the diverted to user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNR simulation service. The diverted to user is notified. Served user allows the presentation of his/her URI to the diverted-to user. No Privacy header value history is escaped in the first entry of the History-Info header.

# Subscription options:

Served user allows the presentation of his/her URI to diverted-to user = yes

# SIP header values:

P-Asserted-Identity SIP#1 INVITE 2

History-Info: <sip:sip#2>;index=1, <sip:sip#3; cause="408;">;index=1.1</sip:sip#3;></sip:sip#2>				
Comments: SIP#1	-	SUT	SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>			
			→ INVITE	
180 Ringing	<b>←</b>		← 180 Ringing	
	CI	FNR performed		
				→ INVITE 2
				<ul><li>180 Ringing</li></ul>
200 OK (INVITE)	<b>←</b>			← 200 OK (INVITE)
ACK	<b>→</b>			→ ACK
			→ CANCEL	
			← 200 OK CANCEL	
			← 487 Request Terminated	
			→ ACK	
BYE	<b>→</b>			→ BYE
200 OK (BYE)	<b>←</b>			← 200 OK (BYE)

TSS		TP	Reference	Selection expression
Netw/ASNotifica	ition	CDIV_N06_009	/ 4.5.2.6.5/ [1]	PICS 1/3 AND
				PICS 2/5 AND
				PICS 3/1

The served user subscribes to the CFNR simulation service; Indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded on no Reply ringing continues.

# Subscription options:

to the diverting user) - y	50				
SIP header values: MES	SSAGE (text	/plain)			
Comments:					
SIP#1		SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		(		
	-		→ INVITE		
180 Ringing	<b>←</b>		← 180 Ringing		
180 Kinging	•		Too Kinging		
		CENID parformed			
		CFNR performed		_	IND //TE 0
					INVITE 2
	_				180 Ringing
200 OK (INVITE)	<b>←</b>				200 OK (INVITE)
ACK	<b>→</b>			<b>→</b>	ACK
			→ CANCEL		
			← 200 OK CANCEL		
			← 487 Request Terminated		
			→ ACK		
			-		
		MESSAGE	→ MESSAGE		
			€ 200 OK MESSAGE		
		200 OK WILOO/ (OL	- 200 OK MEGO/KGE		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	÷				200 OK (BYE)
-00 ON (DTL)	*			-	200 OK (DIL)

TSS Netw/ASNotification	TP CDIV_N06_010	Reference / [1] 4.5.2.6.5/ [1]	Selection expression PICS 1/3 AND PICS 2/5 AND
			PICS 2/1 AND
			PICS 3/1

The served user subscribes to the CFNR simulation service; Indication of communication diversion to the diverting user using the MESSAGE request triggered by a timer.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded on no Reply ringing continues. The MESSAGE request that is be sent due to an timer value that can be provided by the user.

# Subscription options:

Comments:		•			
SIP#1	•	SUT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		→ INVITE		
180 Ringing	<b>←</b>		← 180 Ringing		
		CFNR performed			
		·			INVITE 2
200 OK (INIVITE)	_				180 Ringing
200 OK (INVITE) ACK	<b>←</b> →				200 OK (INVITE) ACK
7.01	-		→ CANCEL	_	7.OR
			← 200 OK CANCEL		
			<ul><li>← 487 Request Terminated</li><li>→ ACK</li></ul>		
			7 ACK		
			_IND expired		
			E → MESSAGE		
		200 OK MESSAGI	E ← 200 OK MESSAGE		
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<del>(</del>			<b>←</b>	200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N06_011	Reference 4.5.2.6.5/ [1]	Selection expression PICS 1/3 AND PICS 2/5 AND
			PICS 2/4 AND
			PICS 3/1

The served user subscribes to the CFNR simulation service; periodically indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is forwarded on no Reply ringing continues. The diverting user will be informed periodically with a MESSAGE request the information where the call is diverted to.

# Subscription options:

to the diverting user) = yes				
SIP header values: MESSAGE (	text/plain)			
Comments:				
SIP#1	SUT	SIP#2 (served user)		SIP#3
INVITE 1	→			
		→ INVITE		
180 Ringing	<del>-</del>	← 180 Ringing		
	OFND (			
	CFNR performed			INIVITE O
				INVITE 2
200 OK (INVITE)	<del>-</del>			180 Ringing 200 OK (INVITE)
	· •			ACK
/ Cont	-	→ CANCEL	-	71011
		€ 200 OK CANCEL		
		← 487 Request Terminated		
		→ ACK		
	Timer T <sub>CDIV</sub>	IND expired		
		→ MESSAGE		
		€ 200 OK MESSAGE		
	Timer T <sub>CDIV</sub>			
		→ MESSAGE		
	200 OK MESSAGE	€ 200 OK MESSAGE		
BYE	<b>→</b>		<b>→</b>	BYE
200 OK (BYE)	<del>(</del>		<b>←</b>	200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N06_012	Reference 4.5.2.6.5/ [1]	Selection expression PICS 1/3 AND PICS 2/5 AND
			PICS 3/1 AND
			PICS 3/2

The served user subscribes to the CFNR simulation service; Indication of communication diversion to the diverting user using the MESSAGE request when a new outgoing communication is requested.

Ensure that a diverting user will be informed with a MESSAGE request to the diverting user after the diverting user has initiated a new outgoing communication the information where the call is forwarded on no Reply ringing continues.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

Served user receives reminder indication on outgoing communication that CDIV is currently activated = yes

SIP header values: MESSAGE (1	ext/plain)		
Comments: SIP#1	SUT	SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>	→ INVITE	
180 Ringing	<del>-</del>	← 180 Ringing	
	CFNR performed		
200 OK (INVITE)	<b>6</b>		→ INVITE 2 ← 180 Ringing ← 200 OK (INVITE)
	<del>}</del>		→ ACK
		<ul> <li>→ CANCEL</li> <li>← 200 OK CANCEL</li> <li>← 487 Request Terminated</li> <li>→ ACK</li> </ul>	7 //6/
		INVITE 180 Ringing 200 OK (INVITE) ACK → MESSAGE ← 200 OK MESSAGE	→ INVITE 3 ← 180 Ringing ← 200 OK (INVITE) → ACK
	Commun		
		BYE 3	→ BYE
DVE 4	•	200 OK (BYE)	← 200 OK (BYE)
1	<b>→</b> <del>-</del>		→ BYE ← 200 OK (BYF)
200 OK (BYE)			← 200 OK (BYE)

← 200 OK (BYE)

# 5.2.2.1.5 Communication Forwarding on Not Logged-in (CFNL)

TSS Netw/ASNotif	ication	TP CDIV_N07_001	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/6 AND PICS 3/3
Test purpose		•		•
The served user subscri	bes to the CFNL :	simulation service; origi	nating user is not noti	ified.
Ensure that the commun simulation service. The c			er if the served user is	s subscribed to the CFNL
Subscription options:				
Originating user receives	notification that	his communication has	been diverted (forwar	rded or deflected) = no
SIP header values:			,	,
Comments:				
SIP#1		SUT	SIP#2 (served	SIP#3
			user)	
INVITE 1	<b>→</b>			
Communica	tion diversion is	performed		
				→ INVITE
180 Ringing	<b>←</b>			180 Ringing
200 OK (INVITE)	<b>←</b>			← 200 OK (INVITE)
ACK	<b>→</b>			→ ACK
BYE	<b>→</b>			→ BYE

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N07_002	4.5.2.6.4/ [1]	PICS 1/6 AND
			PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

# Test purpose

200 OK (BYE)

The served user subscribes to the CFNL simulation service; originating user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNL simulation service. The originating user receives notification that a communication has been forwarded. In all entries in the History-Info header a Privacy parameter value history is escaped.

# Subscription options:

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2, Privacy id History-Info: <sip:SIP#2?Privacy=history>;index=1,

<sip:SIP#3: cause=404?Privacv=historv>:index=1.\*\*

<9	<sip:sip#3; cause="404?Privacy=history">;index=1.1</sip:sip#3;>				
Comments:					
SIP#1	SUT	SIP#2 (served user)	SIP#3		
INVITE 1	<b>→</b>	•			
Communication d	iversion is performed				
181 Call is Being Forwarded	<b>←</b>		→ INVITE		
180 Ringing	<b>←</b>		<ul> <li>180 Ringing</li> </ul>		
200 OK (INVITE)	<b>←</b>		← 200 OK (INVITE)		
ACK	<b>→</b>		→ ACK		
BYE	<b>→</b>		<b>→</b> BYE		
200 OK (BYE)	<b>←</b>		← 200 OK (BYE)		

TSS Netw/ASNotification	TP CDIV_N07_003	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/6 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFNL simulation service. The originating user receives the URI of the served user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNL simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of his/her URI to the originating user. The URI of the served user is contained in first entry of the History-Info header. A Privacy header value history is escaped in the second entry of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to originating user in diversion notification = yes

#### SIP header values:

181 Call is Being Forwarded:

P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2>;index=1,

<sip< th=""><th>:SIP#3; cause=404?Privac</th><th>y=history&gt;;index=1.1</th><th></th></sip<>	:SIP#3; cause=404?Privac	y=history>;index=1.1	
Comments:			
SIP#1	SUT	SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>	•	
Communication dive	ersion is performed		
181 Call is Being Forwarded	<b>←</b>		→ INVITE
180 Ringing	<b>←</b>		← 180 Ringing
200 OK (INVITE)	<b>←</b>		← 200 OK (INVITE)
ACK	<b>→</b>		→ ACK
BYE	<b>→</b>		→ BYE
200 OK (BYE)	<b>←</b>		← 200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N07_004	Reference 4.5.2.6.3/ [1]	Selection expression PICS 1/6 AND PICS 3/3 AND PICS 3/4 AND
			PICS 3/5

The served user subscribes to the CFNL simulation service. The originating user receives the URI of the diverted-to user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNL simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of the diverted-to URI to the originating user. The URI of the diverted-to user is contained in **second entry** of the History-Info header. A Privacy header value history is escaped in the **first entry** of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = yes Served user allows the presentation of his/her URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded:

P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2?Privacy=history >;index=1, <sip:SIP#3; cause=404 >;index=1.1

Comments: SIP#1 SUT SIP#2 (served SIP#3 user) **INVITE 1** Communication diversion is performed 181 Call is Being Forwarded INVITE 180 Ringing 180 Ringing 200 OK (INVITE) 200 OK (INVITE) **ACK ACK** BYE BYE 200 OK (BYE) 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N07_005	4.5.2.6.2/ [1]	PICS 1/6 AND

#### **Test purpose**

The served user subscribes to the CFNL simulation service; the diverted to user is not notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFNL simulation service. The diverted to user is not notified. The URI of the served user is contained in **first entry** of the History-Info header. A Privacy header value history is escaped in the **first** entry of the History-Info header.

#### **Subscription options:**

Served user allows the presentation of his/her URI to diverted-to user = no

# SIP header values:

INVITE 2 P-Asserted-Identity SIP#1

History-Info: <sip:SIP#2?Privacy=history>;index=1,

	<sip.5ip#3, cause="404">,index=1.1</sip.5ip#3,>					
Comments:						
SIP#1		SUT	SIP#2 (served user)		SIP#3	
INVITE 1	<b>→</b>					
Communica	tion diversion is pe	rformed				
	•			<b>→</b>	INVITE 2	
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing	
200 OK (INVITE)	<b>←</b>			<b>←</b>	200 OK (INVITE)	
ACK	<b>→</b>			<b>→</b>	,	
BYE	<b>→</b>			<b>→</b>	BYE	
200 OK (BYE)	+			+	200 OK (BYE)	

INVITE 2

→ BYE← 200 OK (BYE)

180 Ringing 200 OK (INVITE) ACK

Ne	TSS etw/ASNotification	TP CDIV_N07	_006	Reference 4.5.2.6.2/ [1]	Selection expression PICS 1/6 AND PICS 3/6
Test purpos	е	•	<u>'</u>		
The served u	iser subscribes to the CFNL sir	mulation service;	the diverte	d to user is not n	otified.
simulation se diverted-to us					
Subscription	•		_		
Served user	allows the presentation of his/h	er URI to diverte	ed-to user =	: yes	
SIP header v	/alues:				
INVITE 2	P-Asserted-Identity SIP#1				
	History-Info: <sip:sif< td=""><td>P#2&gt;:index=1,</td><td></td><th></th><th></th></sip:sif<>	P#2>:index=1,			
	•	P#3; cause=404;	>;index=1.1		
Comments:	,		•		
SIP#1		SUT	SIP use	#2 (served er)	SIP#3
INVITE 1	<b>→</b>			,	

Communication diversion is performed

180 Ringing 200 OK (INVITE) ACK

BYE 200 OK (BYE)

TSS Netw/ASNotification	CDIV_N07_007	Reference 4.5.2.6.5/ [1]	Selection expression PICS 1/6 AND PICS 2/3 AND PICS 3/1
 act murness			

The served user subscribes to the CFNL simulation service; Communication Diversion Notification applies.

Ensure that when the diverting user has subscribed the Communication Diversion Notification service, the served user receives a NOTIFY request containing the information regarding the current communication deflection.

#### **Subscription options:**

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

```
SIP header values:
```

SUBSCRIBE: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-subs-info >

<comm-div-selection-criteria>

< originating-user-selection-criteria>SIP#1

<diverting-user-selection-criteria>SIP#2
<diverted-to-user-selection-criteria>SIP#3

< diversion-time-selection-criteria >(Date-time)

diversion time selection criteria > (Bate time)diversion-reason-selection-criteria > 487

<comm-div-ntfy-trigger-criteria>

<notification-time-selection-criteria>(Date/Time range PIXIT)

</comm-div-info>

NOTIFY: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-ntfy-info>

<originating-user-info>SIP#1

<diverting-user-info>SIP#2

<diverted-to-user-info>SIP#3

<diversion-time-info> (time range

<diversion-reason-info>487

<diversion-rule-info-type>

<diversion-rule> (any text)

</comm-div-info>

Comments:		
SIP#1	SUT SUBSCRIBE SUBSCRIBE  200 OK SUBSCRIBE  → 200 OK SUBSCRIE	
	NOTIFY → NOTIFY 200 OK NOTIFY ← 200 OK NOTIFY	
INVITE 1	REGISTER(Expires: 0) ← REGISTER(Expires 200 OK REGISTER → 200 OK REGISTER	
	CFNL performed	
180 Ringing 200 OK (INVITE) ACK	← ← →	<ul> <li>→ INVITE</li> <li>← 180 Ringing</li> <li>← 200 OK (INVITE)</li> <li>→ ACK</li> </ul>
BYE 200 OK (BYE)	<b>→ ←</b>	<ul><li>→ BYE</li><li>← 200 OK (BYE)</li></ul>
	REGISTER(Expires: x) ← REGISTER(Expires 200 OK REGISTER → 200 OK REGISTER	
	NOTIFY → NOTIFY 200 OK NOTIFY ← 200 OK NOTIFY	

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N07_008	4.5.2.6.5/ [1]	PICS 1/6 AND
			PICS 2/3 AND
			PICS 3/1

The served user subscribes to the CFNL simulation service; Communication Diversion Notification does not apply.

Ensure that when the diverting user has subscribed the Communication Diversion Notification service, the served user receives no NOTIFY request after the T CDIVN Buffer was expired and the user is logged in again.

#### **Subscription options:**

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

# SIP header values:

SUBSCRIBE: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-subs-info >

<comm-div-selection-criteria>

< originating-user-selection-criteria>SIP#1

<diverting-user-selection-criteria>SIP#2

<diverted-to-user-selection-criteria>SIP#3

< diversion-time-selection-criteria >(Date-time)

< diversion-reason-selection-criteria >487

<comm-div-ntfy-trigger-criteria>

<notification-time-selection-criteria>(Date/Time range PIXIT)

</comm-div-info>

SUT SIP#2 (served user)  SUBSCRIBE ← SUBSCRIBE  200 OK SUBSCRIBE → 200 OK SUBSCRIBE		SIP#3
NOTIFY → NOTIFY 200 OK NOTIFY ← 200 OK NOTIFY		
REGISTER(Expires: 0) ← REGISTER(Expires: 0) 200 OK REGISTER → 200 OK REGISTER		
CFNL performed Start T <sub>CDIVN Buffer</sub>		
	<del>(</del>	INVITE 180 Ringing 200 OK (INVITE) ACK
		BYE 200 OK (BYE)
Timeout T CDIVN Buffer		
REGISTER(Expires: x) ← REGISTER(Expires: x) 200 OK REGISTER → 200 OK REGISTER		
No NOTIFY!		
	SUBSCRIBE ← SUBSCRIBE  200 OK SUBSCRIBE → 200 OK SUBSCRIBE  NOTIFY → NOTIFY  200 OK NOTIFY ← 200 OK NOTIFY  REGISTER(Expires: 0) ← REGISTER(Expires: 0)  200 OK REGISTER → 200 OK REGISTER  CFNL performed  Start T CDIVN Buffer  Timeout T CDIVN Buffer  REGISTER(Expires: x) ← REGISTER(Expires: x)  200 OK REGISTER → 200 OK REGISTER	SUBSCRIBE ← SUBSCRIBE  200 OK SUBSCRIBE → 200 OK SUBSCRIBE  NOTIFY → NOTIFY  200 OK NOTIFY ← 200 OK NOTIFY  REGISTER(Expires: 0) ← REGISTER(Expires: 0)  200 OK REGISTER → 200 OK REGISTER  CFNL performed  Start T CDIVN Buffer  Timeout T CDIVN Buffer  REGISTER(Expires: x) ← REGISTER(Expires: x)  200 OK REGISTER → 200 OK REGISTER

← 200 OK (BYE)

# 5.2.2.1.6 Communication Deflection immediate response (CDi)

TSS		TP	_	Reference	Se	lection expression
Netw/ASNotification		CDIV_N08_00	1	4.5.2.6/ [1]		PICS 1/4
Test purpose						
The served user subscribes to	the Comn	nunication Deflecti	ion im	mediate response simulat	ion s	ervice.
Ensure that the communication	is forward	ded to the diverted	d to us	ser if the served user is su	bscril	bed to the
Communication Defection imm	ediate res	ponse simulation	servic	e.		
SIP header values:						
302 Moved Temporarily: Conta	ct: < <b>SIP#</b>	3>				
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	→ INV	'ITE		· ·		
			→	INVITE		
			+	302 Moved Temporarily		
			<b>→</b>	ACK		
	(	CDi performed				
181 Call is Being Forwarded	<del>(</del>	•			<b>→</b>	INVITE
180 Ringing	<b>←</b>				<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>					200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	` ,
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	<b>←</b>				<b>←</b>	200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N08_002	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/4 AND PICS 3/3
Test purpose			
The served user subscribes to the C user is not notified.	ommunication Defection im	nmediate response simula	tion service; originating
Ensure that the communication is for	rwarded to the diverted to u	ser if the served user is su	ubscribed to the
Communication Defection immediate			
	,	S	
Subscription options:			
Originating user receives notification	that his communication ha	s been diverted (forwarde	d or deflected) = no
SIP header values:			,
302 Moved Temporarily: Contact: < \$	SIP#3>		
Comments:			
SIP#1	SUT	SIP#2 (served user)	SIP#3
INVITE 1 →	INVITE		
	<b>→</b>		
	<b>←</b>	302 Moved Temporarily	
	<b>→</b>	ACK	
	CDi performed		<b>&gt;</b>
400 B: :			→ INVITE
180 Ringing <b>—</b>			← 180 Ringing
200 OK (INVITE) ←			<ul><li>← 200 OK (INVITE)</li><li>→ ACK</li></ul>
ACK →			→ ACK
DVE -			→ DVE

200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N08_003	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/4 AND PICS 3/3 AND PICS 3/4 AND PICS 3/5
			PICS 3/5

The served user subscribes to the Communication Defection immediate response simulation service; originating user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the *Communication Defection immediate response* simulation service. The originating user receives notification that a communication has been forwarded. A Privacy header value history is escaped in the **first and the second entry** of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2, Privacy id

History-Info: <sip:SIP#2?Privacy=history>;index=1,

<sip:SIP#3; cause=480?Privacy=history>;index=1.1

302 Moved Temporarily: Contact: < SIP#3>

30= 111010		• II II II I				
Comments:		OUT		OID#0 ()		010.40
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	→	INVITE				
			<b>→</b>	INVITE		
				302 Moved Temporarily		
			7	ACK		
		CDi performed				
181 Call is Being Forwarded	←				<b>→</b>	INVITE
180 Ringing	+				4	180 Ringing
0 0	÷					0 0
200 OK (INVITE)						200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	ACK
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	<b>+</b>					200 OK (BYE)
1200 UN (D I E)	_				~	200 ON (D1E)

TSS Netw/ASNotification	TP CDIV_N08_004	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/4 AND PICS 3/3 AND PICS 3/4 AND
			PICS 3/5

The served user subscribes to the Communication Defection immediate response simulation service. The originating user receives the URI of the served user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the *Communication Defection immediate response* simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of his/her URI to the originating user. The URI of the served user is contained in **first entry** of the History-Info header. A Privacy header value history is escaped in the **second entry** of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of **his/her** URI to *originating* user in diversion notification = yes

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause=480?Privacy=history>;index=1.1

302 Moved Temporarily: Contact: < SIP#3>

Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>	INVITE				
			<b>→</b>	INVITE		
			<b>←</b>	302 Moved Temporarily		
			<b>→</b>	ACK		
		CDi performed				
181 Call is Being Forwarded	<b>←</b>	•			<b>→</b>	INVITE
180 Ringing	+				+	180 Ringing
200 OK (INVITE)	+					200 OK (INVITE)
ACK	<b>→</b>					ACK
7.0.0	-				-	71011
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	É					200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N08_005	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/4 AND PICS 3/3 AND PICS 3/4 AND
			PICS 3/5

The served user subscribes to the Communication Defection immediate response simulation service. The originating user receives the URI of the diverted-to user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the Communication Defection immediate response simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of the diverted-to URI to the originating user. The URI of the diverted-to user is contained in second entry of the History-Info header. A Privacy header value history is escaped in the first entry of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = yes Served user allows the presentation of his/her URI to originating user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2?Privacy=history >;index=1, <sip:SIP#3; cause=480 >;index=1.1

302 Moved Temporarily: Conta	ict: <	SIP#3>				
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>	INVITE		,		
			<b>→</b>	INVITE		
			<b>←</b>	302 Moved Temporarily		
			<b>→</b>	ACK		
		CDi performed				
181 Call is Being Forwarded	<b>←</b>	•			<b>→</b>	INVITE
180 Ringing	<b>←</b>				<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>					200 OK (INVITE)
ACK	<b>→</b>					ACK ` ´
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYF)	+				<b>←</b>	200 OK (BYE)

TSS Netw/ASNotification	TP CDIV N08 006	Reference 4.5.2.6.2/ [1]	Selection expression PICS 1/4 AND
			PICS 3/6

The served user subscribes to the Communication Defection immediate response simulation service; the diverted to user is not notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the Communication Defection immediate response simulation service. The diverted to user is not notified. A Privacy header value history is escaped in the first entry of the History-Info header.

# Subscription options:

Served user allows the presentation of his/her URI to diverted-to user = no

#### SIP header values:

INVITE 2 P-Asserted-Identity SIP#1

History-Info: <sip:SIP#2?Privacy=history>;index=1, <sip:SIP#3; cause=480>;index=1.1

302 Moved Temporarily: Contact: < SIP#3>

302 Moved Temporarily, Conta	101. <	31F#3>				
Comments:	·		·			
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>	INVITE				
			<b>→</b>	INVITE		
			<b>←</b>	302 Moved Temporarily		
			<b>→</b>	ACK		
		CDi performed				
181 Call is Being Forwarded	<b>←</b>				<b>→</b>	INVITE 2
180 Ringing	<b>←</b>				<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>				<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	ACK `
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYF)	<b>←</b>				<b>←</b>	200 OK (BYF)

			1
TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N08_007	4.5.2.6.2/ [1]	PICS 1/4 AND
			PICS 3/6

# Test purpose

The served user subscribes to the Communication Defection immediate response simulation service; the diverted to user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the Communication Defection immediate response simulation service. The diverted to user is notified. Served user allows the presentation of his/her URI to the diverted-to user.

# **Subscription options:**

Served user allows the presentation of his/her URI to *diverted-to* user = yes

#### SIP header values:

INVITE 2 P-Asserted-Identity

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause=480;>;index=1.1

302 Moved Temporarily: Conta	act: <	SIP#3>				
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>	INVITE		,		
			<b>→</b>	INVITE		
			<b>←</b>	302 Moved Temporarily		
			<b>→</b>	ACK		
		CDi performed				
181 Call is Being Forwarded	<b>←</b>	•			<b>→</b>	INVITE 2
180 Ringing	<b>←</b>				<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>					200 OK (INVITE)
ACK	<b>→</b>					ACK `
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	<b>←</b>				<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N08_008	4.5.2.6.5/ [1]	PICS 1/4 AND
			PICS 3/1

The served user subscribes to the CDi simulation service; Indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is deflected immediate response.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

SIP header values: MESSAGE (text/plain)

SIP header values: MESSAGE (text/plain) 302 Moved Temporarily: Contact: < SIP#3>						
Comments: SIP#1 INVITE 1	<b>→</b>	SUT INVITE		SIP#2 (served user)		SIP#3
	-		<b>→</b> <b>←</b> <b>→</b>	INVITE 302 Moved Temporarily ACK		
		CDi performed MESSAGE 200 OK MESSAGE		MESSAGE 200 OK MESSAGE	_	
180 Ringing 200 OK (INVITE) ACK	<b>←</b> <b>←</b> <b>→</b>				<b>←</b>	INVITE 180 Ringing 200 OK (INVITE) ACK
BYE 200 OK (BYE)	<b>→</b>				<b>→</b>	BYE 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N08_009	4.5.2.6.5/ [1]	PICS 1/4 AND
			PICS 2/1 AND
			PICS 3/1

The served user subscribes to the CDi simulation service; Indication of communication diversion to the diverting user using the MESSAGE request triggered by a timer.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is deflected immediate response. The MESSAGE request that is be sent due to an timer value that can be provided by the user.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

SIP header values: MESSAGE (text/plain) triggered by a timer value provided the served user 302 Moved Temporarily: Contact: < SIP#3>

Comments: SIP#1  SUT SIP#2 (served user)  NVITE  INVITE  INVITE  INVITE  INVITE  302 Moved Temporarily  ACK  CDi performed  INVITE  180 Ringing 200 OK (INVITE)  ACK  Timer T <sub>CDIV_IND</sub> expired  MESSAGE → MESSAGE  200 OK MESSAGE	
INVITE 1  → INVITE  → INVITE  ← 302 Moved Temporarily → ACK  CDi performed  → INVITE  ← 180 Ringing ← 180 Ringing ← 200 OK (INVITE) ← 200 OK (INVITE) ← ACK  Timer T <sub>CDIV_IND</sub> expired MESSAGE → MESSAGE	
→ INVITE	
← 302 Moved Temporarily → ACK  CDi performed  → INVITE  180 Ringing ← 180 Ringing ← 200 OK (INVITE) ← ACK  Timer T <sub>CDIV_IND</sub> expired MESSAGE → MESSAGE	
→ ACK CDi performed  → INVITE  180 Ringing 200 OK (INVITE) ← 4 200 OK (INV → ACK  Timer T <sub>CDIV_IND</sub> expired MESSAGE → MESSAGE	
CDi performed  → INVITE  180 Ringing 200 OK (INVITE) ← 200 OK (INV → ACK  Timer T <sub>CDIV_IND</sub> expired MESSAGE → MESSAGE	
→ INVITE  180 Ringing 200 OK (INVITE) ← 4	
## INVITE  180 Ringing  200 OK (INVITE)  ACK      ACK	
180 Ringing 200 OK (INVITE) ← ACK  Timer T <sub>CDIV_IND</sub> expired MESSAGE → MESSAGE  ### 180 Ringing ← 200 OK (INV → ACK	
200 OK (INVITE) ← 200 OK (INVITE) ← ACK → ACK  Timer T <sub>CDIV_IND</sub> expired MESSAGE → MESSAGE	
ACK  → ACK  Timer T <sub>CDIV_IND</sub> expired  MESSAGE → MESSAGE	(ITE)
Timer T <sub>CDIV_IND</sub> expired MESSAGE → MESSAGE	11 = )
MESSAGE → MESSAGE	
MESSAGE → MESSAGE	
200 OK # 200 OK MESSACE	
200 OK ← 200 OK MESSAGE	
MESSAGE	
BYE → BYE	
200 OK (BYE)	=\

← 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N08_010	4.5.2.6.5/ [1]	PICS 1/4 AND
			PICS 2/4 AND
			PICS 3/1

# Test purpose

200 OK (BYE)

The served user subscribes to the CDi simulation service; periodically indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is deflected immediate response. The diverting user will be informed periodically with a MESSAGE request the information where the call is diverted to.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

to and antenancy deed,						
SIP header values: MESSAG						
302 Moved Temporarily: Conta	ict: <	SIP#3>				
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>	INVITE		,		
		i	<b>→</b>	INVITE		
			←	302 Moved Temporarily		
		•	<b>→</b>	ACK		
		CDi performed				
181 Call is Being Forwarded	+	•			<b>→</b>	INVITE
180 Ringing	+				+	180 Ringing
200 OK (INVITE)	<b>←</b>				<b>←</b>	200 OK (INVITE)
ACK '	<b>→</b>				<b>→</b>	` ,
		Timer T <sub>CDIV_IN</sub>	ип е	expired		
		MESSAGE				
				200 OK MESSAGE		
		MESSAGE				
		Timer T <sub>CDIV_IN</sub>	ип е	expired		
		MESSAGE				
BYE	<b>→</b>	2007.102			<b>→</b>	BYE

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N08_011	4.5.2.6.5/ [1]	PICS 1/4 AND
			PICS 3/1 AND
			PICS 3/2

The served user subscribes to the CDi simulation service; Indication of communication diversion to the diverting user using the MESSAGE request when a new outgoing communication is requested.

Ensure that a diverting user will be informed with a MESSAGE request to the diverting user after the diverting user has initiated a new outgoing communication the information where the call is deflected immediate response.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

Served user receives reminder indication on outgoing communication that CDIV is currently activated = yes

SIP header values: MESSAGE (text/plain) 302 Moved Temporarily: Contact: < SIP#3>

Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>	INVITE				
			<b>→</b>	INVITE		
			<b>←</b>	302 Moved Temporarily		
			<b>→</b>	ACK		
		CDi performed				
181 Call is Being Forwarded	<b>←</b>					INVITE 2
180 Ringing	<b>←</b>					180 Ringing
200 OK (INVITE)	<del>(</del>					200 OK (INVITE)
ACK	<b>→</b>				7	ACK
				INVITE	_	INVITE 3
				180 Ringing		180 Ringing
				200 OK (INVITE)		200 OK (INVITE)
				ACK		ACK
		MESSAGE	<b>→</b>	-	-	71011
		200 OK				
		MESSAGE	_	200 011 1112001102		
				BYE 3	<b>→</b>	BYE
				200 OK (BYE)	<b>←</b>	200 OK (BYE)
BYE 1	<b>→</b>			` ,		BYE
200 OK (BYE)	<b>←</b>				<b>←</b>	200 OK (BYE)

#### 5.2.2.1.7 Communication Deflection during alerting (CDa)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N09_001	4.5.2.6/ [1]	PICS 1/5
Test purpose			
The served user subscribes to the Co	ommunication Deflection du	ıring alerting simulation se	rvice.
Ensure that the communication is for	warded to the diverted to us	sor if the served user is sul	pscribed to the
Communication Defection immediate			oscribed to trie
Communication Defection immediate	response simulation service	.ᠸ.	
SIP header values:			
302 Moved Temporarily: Contact: < S	SIP#3>		
Comments:			
SIP#1	SUT	SIP#2 (served user)	SIP#3
INVITE 1 →			
	→	INVITE	
180 Ringing ←	<b>←</b>	180 Ringing	
	<b>+</b>	302 Moved Temporarily	
	• →	ACK	
	CDa performed	7.0.1	
	02 a po		→ INVITE
			← 180 Ringing
200 OK (INVITE) ←			← 200 OK (INVITE)
ACK →			→ ACK
BYE →			→ BYE
200 OK (BYE) ←			← 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N09_002	4.5.2.6.4/ [1]	PICS 1/5 AND
			PICS 3/3

# Test purpose

The served user subscribes to the Communication Defection during alerting simulation service; originating user is not notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the Communication Defection immediate response simulation service. The origination user is not notified.

# Subscription options:

Originating user receives notification that his communication has been diverted (forwarded or deflected) = no

# SIP header values:

302 Moved Temporarily: Contact: < SIP#3>

Comments: SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		_			
180 Ringing	<b>←</b>		<b>→</b>	INVITE 180 Ringing		
			<b>←</b>	302 Moved Temporarily ACK		
		CDa performed	•	A COR		
						INVITE
000 014 (151) (175)	_					180 Ringing
200 OK (INVITE) ACK	<b>←</b> →					200 OK (INVITE) ACK
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	+				<b>←</b>	200 OK (BYE)

TSS Netw/ASNotificati	ion	TP CDIV_N09_003	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/5 AND PICS 3/3 AND
				PICS 3/4 AND
				PICS 3/5

The served user subscribes to the Communication Defection during alerting simulation service; originating user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the *Communication Defection immediate response* simulation service. The originating user receives notification that a communication has been forwarded. A Privacy header value history is escaped in the **first and the second entry** of the History-Info header.

# Subscription options:

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity, Privacy id

History-Info: <sip:SIP#2?Privacy=history>;index=1,

<sip:SIP#3; cause=487?Privacy=history>;index=1.1

302 Moved Temporarily: Contact: < SIP#3>

302 Moved Temporarily. Conta	iot. • <b>O</b> i	11 #10/				
Comments: SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>	• • • • • • • • • • • • • • • • • • • •		on == (oor roa aoor)		<b>3.1.</b> <i>11.</i> <b>3.</b>
			<b>→</b>	INVITE		
180 Ringing	+		<b>←</b>	180 Ringing		
			<b>←</b>	302 Moved Temporarily		
			<b>→</b>	ACK		
404 Oallia Bairan Famorandad	,	CDa performed				INIV/ITE
181 Call is Being Forwarded	<b>←</b>				<b>→</b>	INVITE
200 OK (INI\/ITE)	+					180 Ringing
200 OK (INVITE) ACK	<b>→</b>					200 OK (INVITE) ACK
ACK	7				7	ACK
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	÷					200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N09_004	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/5 AND PICS 3/3 AND PICS 3/4 AND
			PICS 3/5

The served user subscribes to the Communication Defection during alerting simulation service. The originating user receives the URI of the served user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the *Communication Defection immediate response* simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of his/her URI to the originating user. The URI of the served user is contained in **first entry** of the History-Info header. A Privacy header value history is escaped in the **second entry** of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = yes

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3: cause=487?Privacv=historv>:index=1.1

302 Moved Temporarily: Contact: < SIP#3>						
Comments:	Ct. < 31	P#3>				
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>	<b>55</b> .		511		o
180 Ringing	<b>←</b>		<b>→</b>	INVITE 180 Ringing		
			<b>←</b>	302 Moved Temporarily ACK		
181 Call is Being Forwarded	<b>←</b>	CDa performed			<b>→</b>	INVITE 180 Ringing
200 OK (INVITE) ACK	<b>←</b> →				<b>←</b>	200 OK (INVITE) ACK
BYE 200 OK (BYE)	<b>→</b>				<b>→</b>	BYE 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N09_005	4.5.2.6.4/ [1]	PICS 1/5 AND
			PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the Communication Defection during alerting simulation service. The originating user receives the URI of the diverted-to user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the Communication Defection immediate response simulation service. The originating user receives notification that a communication has been forwarded and the served user allows the presentation of diverted-to URI to the originating user. The URI of the diverted-to user is contained in second entry of the History-Info header. A Privacy header value history is escaped in the first entry of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = yes Served user allows the presentation of his/her URI to originating user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity: SIP#2

History-Info: <sip:SIP#2?Privacy=history >;index=1,

<sip:SIP#3; cause=487 >;index=1.1

302 Moved Temporarily: Conta	ct: < <b>SI</b>	P#3>				
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>			,		
			<b>→</b>	INVITE		
180 Ringing	<del>(</del>		<b>←</b>	180 Ringing		
			<b>←</b>	302 Moved Temporarily		
			<b>→</b>	ACK		
		CDa performed				
181 Call is Being Forwarded	<b>←</b>				<b>→</b>	INVITE
					<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>					200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	ACK
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	+				+	200 OK (BYE)

	Selection expression 6.2/ [1] PICS 1/5 AND PICS 3/6
--	---

The served user subscribes to the Communication Defection during alerting simulation service; the diverted to user is not notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the Communication Defection immediate response simulation service. The diverted to user is not notified. A Privacy header value history is escaped in the first entry of the History-Info header.

# Subscription options:

Served user allows the presentation of his/her URI to *diverted-to* user = no

# SIP header values:

INVITE 2 P-Asserted-Identity SIP#1

History-Info: <sip:SIP#2?Privacy=history>;index=1,

<sip:SIP#3; cause=487>;index=1.1
302 Moved Temporarily: Contact: < SIP#3>

302 Moved Temporarily:	Contact: < SIP	#3>				
Comments: SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>					
180 Ringing	<b>←</b>		<b>→</b>	INVITE 180 Ringing		
			<b>←</b>	302 Moved Temporarily ACK		
		CDa performed				
		·			<b>→</b>	INVITE 2
					←	180 Ringing
200 OK (INVITE)	<b>←</b>				←	200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	ACK
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	<b>←</b>				<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N09_007	4.5.2.6.2/ [1]	PICS 1/5 AND
			PICS 3/6
Test nurnose			

The served user subscribes to the Communication Defection during alerting simulation service; the diverted to user is notified.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the Communication Defection immediate response simulation service. The diverted to user is not notified. Served user allows the presentation of his/her URI to the diverted-to user.

# Subscription options:

Served user allows the presentation of his/her URI to diverted-to user = yes

# SIP header values:

INVITE 2 P-Asserted-Identity

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause=487;>;index=1.1

302 Moved Temporarily:	Contact: < SI	P#3>				
Comments: SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		_			
180 Ringing	<b>←</b>		<b>→</b>	INVITE 180 Ringing		
			<b>←</b>	302 Moved Temporarily ACK		
		CDa performed				
					<b>→</b>	INVITE 2
200 OK (INVITE) ACK	<b>←</b> →				<b>←</b>	180 Ringing 200 OK (INVITE) ACK
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	÷					200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N09_008	4.5.2.6.5/ [1]	PICS 1/5 AND
			PICS 3/1

The served user subscribes to the CDa simulation service; Indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is deflected during alerting.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

SIP header values: MESSAGE (text/plain) 302 Moved Temporarily: Contact: < SIP#3>

302 Moved Tem	porarily. Co	maci. < <b>317#3&gt;</b>				
Comments: SIP#1 INVITE 1	<b>→</b>	SUT		SIP#2 (served user)		SIP#3
180 Ringing	<b>←</b>		<b>→</b>	INVITE 180 Ringing		
		OD- martament	<b>←</b> <b>→</b>	302 Moved Temporarily ACK		
		CDa performed MESSAGE 200 OK MESSAGE	<b>→</b>	MESSAGE 200 OK MESSAGE	_	12 N 47 T
200 OK	<b>←</b>				<b>→</b> ←	INVITE 180 Ringing 200 OK (INVITE)
(INVITE) ACK	<b>→</b>				<b>→</b>	ACK
BYE 200 OK (BYE)	<b>→</b>				<b>→</b>	BYE 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N09_009	4.5.2.6.5/ [1]	PICS 1/5 AND
			PICS 2/1 AND
			PICS 3/1

The served user subscribes to the CDa simulation service; Indication of communication diversion to the diverting user using the MESSAGE request triggered by a timer.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is deflected during alerting. The MESSAGE request that is be sent due to an timer value that can be provided by the user.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

SIP header values: MESSAGE (text/plain) triggered by a timer value provided the served user 302 Moved Temporarily: Contact: < SIP#3>

Comments:						
SIP#1	;	SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>			,		
			<b>→</b>	INVITE		
180 Ringing	<b>←</b>		<b>←</b>	180 Ringing		
			<b>←</b>	302 Moved Temporarily		
			<b>→</b>	ACK		
	CDa p	performed				
					<b>→</b>	INVITE
					<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>				<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	ACK
		Timer T <sub>CDI</sub>	V IND	expired		
		MESSAGE				
	200 Oł	K MESSAGE	<b>←</b>	200 OK MESSAGE		
BYE	<b>→</b>				<b>→</b>	BYE
200 OK (BYE)	<del>(</del>				<b>←</b>	200 OK (BYE)

← 200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N09_010	4.5.2.6.5/ [1]	PICS 1/5 AND
			PICS 2/4 AND
			PICS 3/1

# Test purpose

200 OK (BYE)

←

The served user subscribes to the CDa simulation service; periodically indication of communication diversion to the diverting user using the MESSAGE request.

Ensure that when the diverting user is registering the AS sends a MESSAGE request to the diverting user including the information where the call is deflected during alerting. The diverting user will be informed periodically with a MESSAGE request the information where the call is deflected during alerting.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

SIP header values: M	ESSAGE (te	ext/plain)				
302 Moved Temporaril	y: Contact:	< SIP#3>				
Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>					
			<b>→</b>	INVITE		
180 Ringing	<b>←</b>		<b>←</b>	180 Ringing		
			<b>←</b>	302 Moved Temporarily		
			<b>→</b>	ACK		
		CDa performed				
					<b>→</b>	INVITE
	_				<b>←</b>	180 Ringing
200 OK (INVITE)	<del>(</del>				É	200 OK (INVITE)
ACK	<b>→</b>				<b>→</b>	ACK
		Timer T <sub>CDI</sub>	∨ IND <b>e</b>	xpired		
				MESSAGE		
		200 OK MESSAGE	<b>←</b>	200 OK MESSAGE		
		Timer T <sub>CDI</sub>	<sub>V_IND</sub> e	xpired		
				MESSAGE		
		200 OK MESSAGE	<b>←</b>	200 OK MESSAGE		
BYE	<b>→</b>				<b>→</b>	BYE

TSS	TP	Reference	Selection expression
Netw/ASNotification	CDIV_N09_011	4.5.2.6.5/ [1]	PICS 1/5 AND PICS 3/1 AND
			PICS 3/2

The served user subscribes to the CDa simulation service; Indication of communication diversion to the diverting user using the MESSAGE request when a new outgoing communication is requested.

Ensure that a diverting user will be informed with a MESSAGE request to the diverting user after the diverting user has initiated a new outgoing communication the information where the call is deflected during alerting.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

Served user receives reminder indication on outgoing communication that CDIV is currently activated = yes

SIP header values: MESSAGE (text/plain) 302 Moved Temporarily: Contact: < SIP#3>

Comments:						
SIP#1		SUT		SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>		<b>→</b>	INVITE		
180 Ringing	<del>(</del>		<del>-</del>	180 Ringing		
		OD	<b>←</b> <b>→</b>	302 Moved Temporarily ACK		
		CDa performed			<b>→</b>	INVITE 2
						180 Ringing
200 OK (INVITE) ACK	<b>←</b> →				<b>←</b>	200 OK (INVITE) ACK
				INVITE		INVITE 3
				180 Ringing 200 OK (INVITE)		180 Ringing 200 OK (INVITE)
				ACK		ACK (IIVIII)
		MESSAGE	<b>→</b>	MESSAGE		
		200 OK MESSAGE	<b>←</b>	200 OK MESSAGE		
				BYE 3	<b>→</b>	BYE
				200 OK (BYE)		200 OK (BYE)
BYE 1	<b>→</b>			, ,		BYE
200 OK (BYE)	<b>←</b>				<b>←</b>	200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N09_012	Reference 4.5.2.6.5/ [1]	Selection expression PICS 1/5 AND PICS 2/3 AND PICS 3/1
			1100 0/1

The served user subscribes to the CDa simulation service; Communication Diversion Notification applies.

Ensure that when the diverting user has subscribed the Communication Diversion Notification service, the served user receives a NOTIFY request containing the information regarding the current communication deflection.

#### **Subscription options:**

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

```
SIP header values:
```

SUBSCRIBE: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-subs-info >

<comm-div-selection-criteria>

< originating-user-selection-criteria>SIP#1

<diverting-user-selection-criteria>SIP#2

<diverted-to-user-selection-criteria>SIP#3

< diversion-time-selection-criteria >(Date-time)

< diversion-reason-selection-criteria >487

<comm-div-ntfy-trigger-criteria>

<notification-time-selection-criteria>(Date/Time range PIXIT)

</comm-div-info>

NOTIFY: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-ntfy-info>

<originating-user-info>SIP#1

<diverting-user-info>SIP#2

<diverted-to-user-info>SIP#3

<diversion-time-info> (time range

<diversion-reason-info>487

<diversion-rule-info-type>

<diversion-rule> (any text)

</comm-div-info>

Comments: SIP#1		SUT SUBSCRIBE 200 OK SUBSCRIBE		SIP#2 (served user) SUBSCRIBE 200 OK SUBSCRIBE		SIP#3
		NOTIFY 200 OK NOTIFY		NOTIFY 200 OK NOTIFY		
INVITE 1	→ IN	CDi performed NOTIFY 200 OK NOTIFY	<b>←</b> →	INVITE 302 Moved Temporarily ACK NOTIFY 200 OK NOTIFY	<b>→</b>	IND//TE
180 Ringing 200 OK (INVITE) ACK	<b>←</b> <b>←</b> <b>→</b>				<b>←</b>	INVITE 180 Ringing 200 OK (INVITE) ACK
BYE 200 OK (BYE)	<b>→</b>				<b>→</b>	BYE 200 OK (BYE)

# 5.2.2.1.8 Communication Forwarding on Subscriber Not Reachable (CFNRc)

TSS Netw/Netw/ASN	otification	TP CDIV_N10_001	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/7 AND PICS 3/3
Test purpose				<u>.</u>
The served user subso	cribes to the (CFNF	Rc) simulation service;	originating user is not	notified.
				s subscribed to the <b>(CFNRc)</b> sent in the CFNRc_VA final
Subscription options	<b>:</b>			
		his communication ha	s been diverted (forwa	rded or deflected) = no
SIP header values:			,	•
Comments:				
SIP#1	SU	JT SIP#2 (s	erved user)	SIP#3
INVITE 1	<b>→</b>	→ INVITE	,	
		← CFNRc	VA	
İ		→ ACK		
Communication	diversion is perf	ormed		
	•			→ INVITE
180 Ringing	<b>←</b>			← 180 Ringing
200 OK (INVITE)	<b>←</b>			← 200 OK (INVITE)
ACK `	<b>→</b>			→ ACK
BYE	<b>→</b>			→ BYE
200 OK (BYE)	<b>←</b>			← 200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N10_002	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/7 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the (CFNRc) simulation service; originating user is notified.

The served user is subscribed to the **(CFNRc)** simulation service. 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. A Privacy header value history is escaped in the **first and the second entry** of the History-Info header.

# **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2

History-Info: <sip:SIP#2?Privacy=history>:index=1

	History-info:		/acy=nistory>;inde) ise=503?Privacy=h	dex=1.1		
Comments:		10.010.11 11 0, 00.0	•			
SIP#1			SUT	SIP#2 (served user)		SIP#3
INVITE 1		<b>→</b>		INVITE CFNRc_VA ACK		
		on diversion is p	performed			
	eing Forwarde	d <b>←</b>			<b>→</b>	INVITE 180 Ringing
180 Ringing		<b>←</b>			<b>←</b>	200 OK (INVITE)
200 OK (INV ACK	TITE)	<b>←</b> →			<b>→</b>	,
BYE 200 OK (BYE	≣)	<b>→</b>			<b>→</b>	BYE 200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N10_003	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/7 AND PICS 3/3 AND
			PICS 3/4 AND
			PICS 3/5

The served user subscribes to the (CFNRc) simulation service; originating user is notified, the URI of the served user is received.

The served user is subscribed to the (CFNRc) simulation service. 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.

The P-Asserted-Identity includes the URI of the diverting user. The served user allows the presentation of his/her URI to the originating user. The URI of the served user is contained in first entry of the History-Info header. A Privacy header value history is escaped in the **second entry** of the History-Info header.

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to originating user in diversion notification = no Served user allows the presentation of his/her URI to *originating* user in diversion notification = yes

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2

History-Info: <sip:SIP#2>;index=1,

	<sip:sip#3; cause="503?Pri&lt;/th"><th>vacy=history&gt;;index=1.1</th><th></th></sip:sip#3;>	vacy=history>;index=1.1	
Comments:			
SIP#1	SUT	SIP#2	SIP#3
		(served	
IND 0777 4		user)	
INVITE 1	<b>→</b>	→ INVITE	
		← CFNRc_VA	
Cammuniant	lan divanalan la nanfanna	→ ACK	
	ion diversion is performed	1	
181 Call is Being Forwarded	<b>←</b>		<b>&gt;</b> 0.00
			→ INVITE
400 Discriptor	<b>7</b>		← 180 Ringing
180 Ringing	<b>←</b>		- 200 OK (INIVITE)
200 OK (INVITE)	<del>(</del>		← 200 OK (INVITE)
ACK	<b>→</b>		→ ACK
ACK	7		→ AUN
BYE	<b>→</b>		→ BYE
200 OK (BYE)	<b>É</b>		€ 200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N10_004	Reference 4.5.2.6.4/ [1]	Selection expression PICS 1/7 AND PICS 3/3 AND
			PICS 3/4 AND PICS 3/5

The served user subscribes to the (CFNRc) simulation service; originating user is notified, the URI of the diverted-to user is received.

The served user is subscribed to the **(CFNRc)** simulation service. 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. The 181 (Call Is Being Forwarded) response contains the P-Asserted-Identity header field and Privacy header field.

The P-Asserted-Identity includes the URI of the diverting user. The served user allows the presentation of diverted-to URI to the originating user. The URI of the diverted-to user is contained in **second entry** of the History-Info header. A Privacy header value history is escaped in the **first entry** of the History-Info header.

# **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = yes Served user allows the presentation of his/her URI to *originating* user in diversion notification = no

#### SIP header values:

181 Call is Being Forwarded: P-Asserted-Identity SIP#2

History-Info: <sip:SIP#2?Privacy=history >;index=1,

<sip:SIP#3; cause=503>;index=1.1

Comments:	0117		OID#O		010.40
SIP#1	SUT		SIP#2 (served		SIP#3
			user)		
INVITE 1	<b>→</b>	<b>→</b>	INVITE		
			CFNRc_VA		
		<b>→</b>	ACK		
	n diversion is performed				
181 Call is Being Forwarded	<b>←</b>			_	
				<b>→</b>	INVITE
180 Ringing	<b>←</b>			<b>←</b>	180 Ringing
160 Kinging	•			4	200 OK (INVITE)
200 OK (INVITE)	<b>←</b>			•	200 OK (INVITE)
ACK	<del>`</del>			<b>→</b>	ACK
	-			-	
BYE	<b>→</b>			<b>→</b>	BYE
200 OK (BYE)	<b>←</b>			<b>←</b>	200 OK (BYE)

→ BYE

← 200 OK (BYE)

TSS Netw/ASNot		TP CDIV_N10_00	5	Reference 4.5.2.6.2/ [1]	Selection expression PICS 1/7 AND PICS 3/6
<b>Test purpose</b> The served user subsci	ribes to the (CFNRc)	simulation service; ti	he diver	ted to user is no	t notified.
	diverted to user is no				subscribed to the (CFNRc) escaped in the first entry
Subscription options: Served user allows the		er URI to diverted-to	user = r	10	
	ed-Identity SIP#1 istory-Info: <sip:sip#< td=""><td>#2?<b>Privacy=history</b> #3; cause=503&gt;;inde</td><td></td><td>=1,</td><td></td></sip:sip#<>	#2? <b>Privacy=history</b> #3; cause=503>;inde		=1,	
Comments:	<8ip.3iF#	rs, cause=505>,iiiue	<del>-</del> λ= 1.1		
SIP#1		SUT		SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>		<b>←</b>	INVITE CFNRc_VA ACK	
	nication diversion is	s pertormed			→ INVITE ← 180 Ringing
180 Ringing	<b>←</b>				← 200 OK (INVITE)
200 OK (INVITE) ACK	<b>←</b> →				→ ACK

BYE

200 OK (BYE)

TSS Netw/ASNotification	TP CDIV_N10_006	Reference 4.5.2.6.2/ [1]	Selection expression PICS 1/7 AND PICS 3/6
Test purpose		<b>'</b>	
The served user subscribes to the (CFN is sent.	NRc) simulation service; the div	erted to user is no	tified. URI of served user
Ensure that the communication is forwa simulation service. The diverted to user diverted-to user. No Privacy header is e	is notified. Served user allows	the presentation of	of his/her URI to the
Subscription options:			
Served user allows the presentation of l	his/her URI to <i>diverted-to</i> user :	= yes	
SIP header values:			
INVITE P-Asserted-Identity SIP#	1		
History-Info: <sir< td=""><th>o:SIP#2&gt;;index=1,</th><td></td><td></td></sir<>	o:SIP#2>;index=1,		
, <sip< td=""><th>o:SIP#3; cause=503&gt;;index=1.1</th><td></td><td></td></sip<>	o:SIP#3; cause=503>;index=1.1		
Comments:	·		
SIP#1	SUT	SIP#2 (served user)	SIP#3
IND (ITE 4		•	

INVITE 1

→ INVITE
← 180 Ringing

180 Ringing

← 200 OK (INVITE)

200 OK (INVITE)

ACK

→ ACK

BYE
200 OK (BYE)

→ BYE
← 200 OK (BYE)

→ INVITE← CFNRc\_VA→ ACK

	TSS Netw/ASNotification	TP CDIV_N10_007	Reference 4.5.2.6.5/ [1]	Selection expression PICS 1/7 AND PICS 2/3 AND PICS 3/1		
Too	Took numneed					

The served user subscribes to the CFNRc simulation service; Communication Diversion Notification applies.

Ensure that when the diverting user has subscribed the Communication Diversion Notification service, the served user receives a NOTIFY request containing the information regarding the current communication forwarding not reachable.

# Subscription options:

Served user receives notification that a communication has been forwarded (indication of communication diversion to the diverting user) = yes

```
SIP header values:
```

```
SUBSCRIBE: Event:comm-div-info
```

application/comm-div-info+xml

<comm-div-info>

<comm-div-subs-info >

<comm-div-selection-criteria>

< originating-user-selection-criteria>SIP#1

<diverting-user-selection-criteria>SIP#2

<diverted-to-user-selection-criteria>SIP#3

< diversion-time-selection-criteria >(Date-time)

< diversion-reason-selection-criteria >503

<comm-div-ntfy-trigger-criteria>

<notification-time-selection-criteria>(Date/Time range PIXIT)

</comm-div-info>

NOTIFY: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-ntfy-info>

<originating-user-info>SIP#1

<diverting-user-info>SIP#2

<diverted-to-user-info>SIP#3

<diversion-time-info> (time range

<diversion-reason-info>503

<diversion-rule-info-type>

<diversion-rule> (any text)

</comm-div-info>

Comments					
Comments: SIP#1			SIP#2 (served user) SUBSCRIBE 200 OK SUBSCRIBE		SIP#3
	NOTIFY 200 OK NOTIFY		NOTIFY 200 OK NOTIFY		
INVITE 1	→ INVITE	<b>→</b> ← →	INVITE CFNRc_VA ACK		
Communicati	on diversion is performed NOTIFY 200 OK NOTIFY		NOTIFY 200 OK NOTIFY	<b>→</b>	INVITE
180 Ringing 200 OK (INVITE) ACK	<b>←</b> <b>←</b> <b>→</b>			<b>←</b>	180 Ringing 200 OK (INVITE)
BYE 200 OK (BYE)	<b>→</b> ←			<b>→</b>	BYE 200 OK (BYE)

Selection expression

Table 3

CFNRc_VA	Not reachable indication	
CFNRc_VA_01	408 Request timeout response	
CFNRc_VA_02	503 Service unavailable	
CFNRc_VA_03	500 Server internal error	

TP

Reference

BYE

200 OK (BYE)

# 5.2.3 Actions at the AS of the diverted to User

TSS

Netw/Netw/ASdiverted-to	CDIV_N11_001	4.5.2.7/ [1]	р				
Test purpose	Test purpose						
Previous stored History-Info header returned	l in a 180 Ringing.						
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 the table 4, 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.							
SIP header values:							
INVITE:							
History-Info header: hi-targeted-to-uri of dive	rted-to user; cause=CAUSE_	VAL, index=1.	X				
180 Ringing							
History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE_VAL, index=1.x							
Comments:							
SIP#1	SUT	SIP#2					
INVITE 1 →		→ INVITE	2				
180 Ringing ←		← 180 Rin	ging				
200 OK (INVITE)		← 200 OK	(INVITE)				
ACK →		→ ACK					

TSS	TP	Reference	Selection expression
Netw/ASdiverted-to	CDIV_N11_002	4.5.2.7/ [1]	-

#### **Test purpose**

200 OK (BYE)

Previous stored History-Info header returned in a 181 Being Forwarded.

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 the table 4, 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.

# SIP header values: SIP header values:

# INVITE:

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL, index=1.x

#### 181 Being Forwarded

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL, index=1.x

Comments:	to-un or dive	iteu-to user, cause	-CAUSL_\	VAL, IIIUEX=1.X
Comments:				
SIP#1		SUT		SIP#2
INVITE 1	<b>→</b>		→	INVITE 2
181 Call is Being Forwarded	<b>←</b>		<b>←</b>	181 Call is Being Forwarded
180 Ringing	<b>←</b>		<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>		<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>		<b>→</b>	ACK
BYE	<b>→</b>		<b>→</b>	BYE
200 OK (BYE)	<b>←</b>		<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASdiverted-to	CDIV_N11_003	4.5.2.7/ [1]	-

Previous stored History-Info header returned in a 200 OK response.

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 the table 4, 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.

#### SIP header values: SIP header values:

#### INVITE:

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL, index=1.x

# 200 OK INVITED

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL, index=1.x

SIP#1		SUT		SIP#2
INVITE 1	<b>→</b>		<b>→</b>	INVITE 2
180 Ringing	<b>←</b>		<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>		<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>		<b>→</b>	ACK
BYE	<b>→</b>		<b>→</b>	BYE
200 OK (BYE)	<del>(</del>		+	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASdiverted-to	CDIV_N11_004	4.5.6.2.7/ [1],	PICS 4/3
		4.6.3/ [1]	

#### Test purpose

Diverted to user is subscribed to the TIR service.

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 the table 4, 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.

# SIP header values: SIP header values:

#### INVITE:

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL, index=1.x

# 180 Ringing

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL; ?Privacy=history, index=1.x

IP#1	SUT	SIP#2
NVITE 1 →	<b>→</b>	INVITE 2
80 Ringing ←	<b>←</b>	180 Ringing
00 OK (INVITE)		200 OK (INVITE)
CK	<b>→</b>	ACK
YE →	<b>→</b>	BYE
00 OK (BYE) ←	<b>←</b>	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASdiverted-to	CDIV_N11_005	4,5,6,2,7/ [1],	PICS 4/3
		4.6.3/ [1]	

Diverted to user is subscribed to the TIR service.

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 the table 4. 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.

# SIP header values: SIP header values:

#### INVITE:

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL, index=1.x

# 181 Being Forwarded

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL; ?Privacy=history, index=1.x

# Comments:

SIP#1		SUT		SIP#2
INVITE 1	<b>→</b>		<b>→</b>	INVITE 2
181 Call is Being Forwarded	<b>←</b>		<b>←</b>	181 Call is Being Forwarded
180 Ringing	<b>←</b>		<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>		<b>←</b>	200 OK (INVITE)
ACK	<b>→</b>		<b>→</b>	ACK
BYE	<b>→</b>		<b>→</b>	BYE
200 OK (BYE)	<b>←</b>		+	200 OK (BYE)

TSS	TP	Reference	Selection expression
Netw/ASdiverted-to	CDIV_N11_006	4,5,6,2,7/ [1]	PICS 4/3
		4.6.3/ [1]	

#### Test purpose

Diverted to user is subscribed to the TIR service.

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 the table 4, 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.

# SIP header values: SIP header values:

# INVITE:

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL, index=1.x

#### **200 OK INVITE**

History-Info header: hi-targeted-to-uri of diverted-to user; cause=CAUSE\_VAL; ?Privacy=history, index=1.x

# Comments:

SIP#1		SUT		SIP#2
INVITE 1	<b>→</b>		<b>→</b>	INVITE 2
180 Ringing	<b>←</b>		<b>←</b>	180 Ringing
200 OK (INVITE)	<b>←</b>		<b>←</b>	200 OK (INVITE)
ACK '	<b>→</b>		<b>→</b>	ACK
BYE	<b>→</b>		<b>→</b>	BYE
200 OK (BYE)	+		+	200 OK (BYE)

Table 4

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

# 5.2.4 Void

# 5.2.5 Actions at the user equipment

# 5.2.5.1 Actions at the originating UE

	·				
TSS	TP	Reference	Selection expression		
OrigUE	CDIV_U01_001	4.5.2.1	PICS 5/1		
Test purpose		•			
Communication diversion information receive	ed in a 181 Call is Being For	warded.			
Ensure that an User Equipment is able to re History-Info header.	· ·		·		
Ensure that the information contained in the device. The Cause Value in the latest Histor					
SIP header values: SIP header values: 181 Call is Being Forwarded					
History-Info: <sip:sip#2>;inc</sip:sip#2>	dex=1				
,	use= CAUSE VAL>;index=1.	1			
Comments:	400- 07 (001 <u>-</u> 17 (12 ),1140x-11	•			
UE		Test Equipn	nent		
INVITE →	-	NVITE			
181 Call is Being Forwarded	•		eing Forwarded		
180 Ringing	•		onig i orwardod		
200 OK (INVITE)					
ACK +	ì		112)		
AUR 7	7	AUN			
BYE →	-	BYE			
200 OK (BYE)	<del>(</del>		=)		
ZOU OIT (DTL)		200 OR (B11	- <i>J</i>		

**Test Equipment** 

200 OK (INVITE)

181 Call is Being Forwarded

INVITE

**ACK** 

**BYE** 

180 Ringing

200 OK (BYE)

TSS	TP	Reference	Selection expression
OrigUE	CDIV_U01_002	4.5.2.1/ [1]	PICS 5/2

#### Test purpose

Communication diversion information received in a 180 Ringing.

Ensure that an User Equipment is able to receive a 180 Ringing and the 180 Response contains a History-Info header.

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 the table 5.

#### SIP header values: SIP header values:

180 Ringing

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause= CAUSE\_VAL>;index=1.1

## Comments: UE INVITE

181 Call is Being Forwarded
180 Ringing
200 OK (INVITE)
ACK

#### Test purpose

200 OK (BYE)

Communication diversion information received in a 200 OK INVITE.

Ensure that an User Equipment is able to receive a 200 OK INVITE and the 200 OK final Response contains a History-Info header.

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 the table 5.

# SIP header values: SIP header values:

200 OK (INVITE)

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause= CAUSE\_VAL>;index=1.1

# Comments:

UE		Test Equipment
INVITE	<b>→</b>	→ INVITE
181 Call is Being Forwarded	<b>←</b>	<ul> <li>181 Call is Being Forwarded</li> </ul>
180 Ringing	<b>←</b>	← 180 Ringing
200 OK (INVITE)	<b>←</b>	← 200 OK (INVITE)
ACK '	<b>→</b>	→ ACK
BYE	<b>→</b>	→ BYE
200 OK (BYE)	<del>-</del>	← 200 OK (BYE)

# 5.2.5.2 Action at the diverted to UE

TSS Diverted-toUE	TP CDIV_U02_001	Reference 4.5.2.15/ [1]	Selection expression PICS 5/4
<b>Test purpose</b> Communication diversion information receiv	red in an INVITE request.		
Ensure that an User Equipment is able to re	ceive a INVITE request and	the INVITE conta	ains a History-Info header.

Ensure that an oser Equipment is able to receive a INVITE request and the INVITE contains a 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 the table 5.

#### SIP header values: SIP header values: INVITE: History-Info: <sip:SIP#2>;index=1, <sip:SIP#3; cause= CAUSE\_VAL>;index=1.1 Comments: UE **Test Equipment** INVITE INVITE **← ←** 180 Ringing **→** 180 Ringing 200 OK (INVITE) 200 OK (INVITE) **ACK ACK** BYE **BYE**

TSS	TP	Reference	Selection expression PICS 5/5
Diverted-toUE	CDIV_U02_002	4.5.2.6.2/ [1],	
		4.5.2.7/ [1]	

200 OK (BYE)

## Test purpose

200 OK (BYE)

The User Equipment is able to sent a History-Info header in 180 response.

Ensure that an User Equipment is able to sent a History-Info header in a 180 provisional response containing a History-Info header received in the initial INVITE.

The Cause Value in the latest History Index; cause-param =CAUSE\_VAL defined in the table 5.

# SIP header values: SIP header values:

INVITE: History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause= CAUSE\_VAL>;index=1.1

180 Ringing: History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause= CAUSE\_VAL>;index=1.1

## Comments:

UE INVITE 180 Ringing 200 OK (INVITE) ACK	<b>←</b> <b>→</b> <b>←</b>	Test Equipment  ← INVITE  → 180 Ringing  → 200 OK (INVITE)  ← ACK
BYE 200 OK (BYE)	<b>←</b> →	<ul><li>← BYE</li><li>→ 200 OK (BYE)</li></ul>

TSS Diverted-toUE		TP CDIV_U0	2_003	Reference 4.5.2.6.2/ [1], 4.5.2.7/ [1]	Selection expression PICS 5/6		
Test purpos	e						
The User Eq	uipment is able	to sent a Histor	y-Info header in	200 OK INVI	TE final respons	e.	
History-Info h	Ensure that an User Equipment is able to sent a History-Info header in a 200 OK final response containing a History-Info header received in the initial INVITE.  The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in the table 5.						
SIP header	values: SIP he	ader values:					
INVITE:	History-Info:	<sip:sip#2>;inc</sip:sip#2>	dex=1,				
		. ,	use= CAUSE_V	AL>;index=1.1			
200 OK:	History-Info:		,				
		<sip:sip#3; cau<="" td=""><td>use= CAUSE_V</td><th>AL&gt;;index=1.1</th><td></td><th></th></sip:sip#3;>	use= CAUSE_V	AL>;index=1.1			
Comments:					T( F		
UE		-		_	Test Equipm	nent	
INVITE		<del>(</del>		<del>-</del>	INVITE		
180 Ringing	UTC\	<b>→</b> →		→ →		ITE\	
200 OK (INV ACK	116)	<del>7</del>		<del>-</del>	200 OK (INV ACK	116)	
ACK		~		~	AUN		
BYE		<b>←</b>		<b>←</b>	BYE		
200 OK (BYE	≣)	÷		÷	200 OK (BYE	≣)	

#### 5.2.5.3 Actions at the diverting UE

TSS	TP	Reference	Selection expression			
DivertingUE	CDIV_U03_001	4.5.2.6.4/ [1]	PICS 5/7			
Test purpose						
Communication diversion using the MESSA	GE request method.					
Ensure that the User Equipment is able to receive a MESSAGE request containing the notification about a performed communication diversion by the network.  Ensure that the text contained in the text/plain MIME extension is displayed.  The Cause Value in the latest History Index; cause-param =CAUSE_VAL defined in the table 5.						
SIP header values: SIP header values:						
MESSAGE						
Content-Type: text/plain						
text (PIXIT)	text (PIXIT)					
Comments:						
UE		Test Equipn	nent			
MESSAGE ←	<del>&lt;</del>	MESSAGE				

TSS	TP	Reference	Selection expression
DivertingUE	CDIV_U03_002	4.5.2.6.5/ [1],	PICS 5/8
		4.10/ [1]	

Communication diversion using the CDIVN service, subscription of the service.

Ensure that the User Equipment is able to subscribe the communication diversion notification service (CDIVN). A SUBSCRIBE request is sent. The Event header contains the package name "comm-div-info" and a MIME body containing a XML instance of <a href="http://uri.etsi.org/ngn/params/xml/comm-div-info">http://uri.etsi.org/ngn/params/xml/comm-div-info</a>.

The Cause Value in the latest History Index; cause-param =CAUSE\_VAL defined in the table 5.

# SIP header values: SIP header values:

SUBSCRIBE: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-subs-info >

<comm-div-selection-criteria>

< originating-user-selection-criteria >

<diverting-user-selection-criteria>

<diverted-to-user-selection-criteria>
< diversion-time-selection-criteria >

< diversion-reason-selection-criteria > CAUSE\_VAL

<comm-div-ntfy-trigger-criteria>

<notification-time-selection-criteria>

</comm-div-info>

NOTIFY: Event:comm-div-info

#### Comments:

UE		Test Equipment
SUBSCRIBE 200 OK (SUBSCRIBE)	<b>→</b>	SUBSCRIBE 200 OK (SUBSCRIBE)
NOTIFY 200 OK (NOTIFY)	<b>← ← ← → →</b>	NOTIFY 200 OK (NOTIFY)

TSS	TP	Reference	Selection expression
DivertingUE	CDIV_U03_003	4.5.2.6.5/ [1],	PICS 5/8
		4.10/ [1]	

Communication diversion using the CDIVN service, notification applies.

Ensure that the User Equipment is able to receive notification based on the communication diversion notification service (CDIVN).

A NOTIFY request is received. The Event header contains the package name "comm-div-info". 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".

Ensure that the notification is displayed at the User Equipment.

The Cause Value in the latest History Index; cause-param =CAUSE\_VAL defined in the table 5.

#### SIP header values: SIP header values:

NOTIFY: Event:comm-div-info

application/comm-div-info+xml

<comm-div-info>

<comm-div-ntfy-info>

<originating-user-info>

<diverting-user-info>
<diverted-to-user-info>

<diversion-time-info>

<diversion-reason-info> CAUSE\_VAL

<diversion-rule-info-type>

<diversion-rule> (any text)

</comm-div-info>

Comments:

UE Test Equipment

**CDIVN** is activated

NOTIFY ← NOTIFY

200 OK (NOTIFY) → 200 OK (NOTIFY)

Cause Value in History	Cause value	Call diversion	Redirecting Reason
Index; cause-param = "cause" EQUAL	404	information	Unknown
	1302		Unconditional
CAUSE_VAL			User busy
			No reply
	480		Deflection immediate
	503 487		Mobile subscriber not reachable
			Deflection during alerting
	503		Subscriber not reachable

# 5.3 Interaction with other services

# 5.3.1 Terminating Identification Presentation (TIP)

Interaction/TIP	CDIV_N12_001	4.6.2	PICS 4/3		
Test purpose The served user subscribes to the CDIV simulation service; the P-Asserted header is passed on unchanged.					
Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CDIV simulation service.					

Ensure that a P-Asserted-Identity and History header field received in the diverting AS is passed unmodified to the originating entity.

The Cause Value in the latest History Index; cause-param =CAUSE\_VAL defined in the table 6.

#### SIP header values:

180: Ringing: P-Asserted-Identity with the URI of the diverted-to user, Privacy is not "id" and not "header" History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause= CAUSE\_VAL>;index=1.1

200 OK: P-Asserted-Identity with the URI of the diverted-to user, Privacy is not "id" and not "header" History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause= CAUSE\_VAL ;index=1.1

Comments: SIP#1 INVITE 1	SUT	SIP#2 (served user)		SIP#3
	<del>-</del>	B, CFNR, CD, CFNL, CFNRc)		
		<b>→</b>	<b>→</b>	INVITE 180 Ringing
180 Ringing	<b>←</b>	<b>←</b>	<b>←</b>	200 OK (INVITE)
200 OK (INVITE)	<b>←</b>	•	•	200 OK (INVITE)
ACK	<b>→</b>		<b>→</b>	ACK
BYE 200 OK (BYE)	<b>→</b>		<b>→</b>	BYE 200 OK (BYE)

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

# 5.3.2 Terminating Identification Restriction (TIR)

TSS	TP	Reference	Selection expression
Interaction/TIR	CDIV_N13_001	4.6.3	PICS 4/3 AND
			PICS 4/4

#### **Test purpose**

The served user subscribes to the CDIV simulation service; the diverted-to URI is not sent to the originating user.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CDIV simulation service.

A P-Asserted-Identity and History header field received in the diverting AS is passed unmodified to the originating entity.

Ensure that if the served (diverting) user selects the option that the originating user is notified, but without the diverted-to number, then the AS shall not send the connected user's identity when the communication is answered. The Cause Value in the latest History Index; cause-param =CAUSE\_VAL defined in the table 7.

## **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to *originating* user in diversion notification = no

**TIR subscription**: Originating user has the override category = no

# SIP header values:

200 OK 1: P-Asserted-Identity with the URI of the diverted-to user

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause=302>;index=1.1

200 OK 2: P-Asserted-Identity with the URI of the diverted-to user

History-Info: <sip:SIP#2>;index=1

Comments: SIP#1 INVITE 1	<b>→</b>	SUT	SIP#2 (served user)		SIP#3
Communication diversi		d (CFU, CFB, CF	NR, CD, CFNL, CFNRc)	<b>→</b>	INVITE 180 Ringing
180 Ringing 200 OK 2(INVITE) ACK	<b>←</b> <b>←</b>				200 OK 1 (INVITE) ACK
BYE 200 OK (BYE)	<b>→</b>				BYE 200 OK (BYE)

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

TSS	TP	Reference	Selection expression
Interaction/TIR	CDIV_N13_002	4.6.3	PICS 4/3 AND
			PICS 4/4

The served user subscribes to the CDIV simulation service, the diverted-to URI is sent to the originating user if the terminating user has the override category.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CDIV simulation service.

A P-Asserted-Identity and History header field received in the diverting AS is passed unmodified to the originating entity. The originating user has the "Override category".

Ensure that if the served (diverting) user selects the option that the originating user is notified, but without the diverted-to number, then the AS shall send the connected user's identity when the communication is answered. The Cause Value in the latest History Index; cause-param =CAUSE\_VAL defined in the table 8

#### **Subscription options:**

Originating user receives notification that his communication has been diverted (forwarded or deflected) = yes Served user allows the presentation of diverted to URI to originating user in diversion notification = no

**TIR subscription**: Originating user has the override category = yes

#### SIP header values:

200 OK 1: P-Asserted-Identity with the URI of the diverted-to user

History-Info: <sip:SIP#2>;index=1,

<sip:SIP#3; cause=302>;index=1.1

200 OK 2: P-Asserted-Identity with the URI of the diverted-to user

History-Info: <sip:SIP#2>;index=1

<sip:SIP#3; cause=302>;index=1.1

	1010101	,	,		
Comments: SIP#1 INVITE 1	<b>→</b>	SUT	SIP#2 (served user)		SIP#3
	<del>=</del>	ed (CFU, CFB, (	CFNR, CD, CFNL, CFNRc)		
	<b>←</b>	(0: 0, 0: 2,	, e., e <b>.</b> , e,	<b>→</b>	INVITE 180 Ringing
180 Ringing	~			+	200 OK 1 (INVITE)
200 OK 2(INVITE)	<b>←</b>			•	200 OK 1 (IIIVI1L)
ACK	<b>→</b>			<b>→</b>	ACK
BYE 200 OK (BYE)	<b>→</b> ←			<b>→</b>	BYE 200 OK (BYE)

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

# 5.3.3 Originating Identification Presentation (OIP)

TSS		TP	Reference	S	election expression
Interaction	/OIP	CDIV_N14_001	4.6.4		PICS 4/1
Test purpose					
The diverted-to user sub	scribes to the OIP	simulation service.			
When a communication identification presentatio original originating user, restriction simulation ser The Cause Value in the	n simulation service if this originating us vice.	e, the S-CSCF of the ser has not subscribe	diverted-to user shall send to or invoked the origin	ent th	e number of the g identification
•	fo: <sip:sip#2>;in</sip:sip#2>		•	ader'	or "user" not present
Comments:					
SIP#1	<b>→</b>	SUT	SIP#2 (served user)		SIP#3
INVITE 1 Communication dive	_	d (CELL CER CENR	CD CENI CENRC)		
180 Ringing	€	a (01 0, 01 B, 01 MX)	, <i>05</i> , 01 N2, 01 N(0)	<b>→</b>	INVITE 180 Ringing
100 Kinging	•			<b>←</b>	200 OK (INVITE)
200 OK (INVITE) ACK	<b>←</b> →			<b>→</b>	ACK
BYE	<b>→</b>			_	BYE

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

#### 5.3.4 Originating Identification Restriction (OIR)

TSS Interaction/OIR	TP CDIV_N15_001	Reference 4.6.5	Selection expression PICS 4/1 AND PICS 4/2
Test purpose	•		
The served user subscribes to the category.	CDIV simulation service; the	erminating user does n	ot have the override
Ensure that the communication is f simulation service.	orwarded to the diverted to us	er if the served user is	subscribed to the CFU
When the originating identification	restriction simulation service l	nas been invoked, the c	originating user's address
shall not be presented to the divert		,	3 3
The Cause Value in the latest History	ory Index; cause-param =CAL	ISE_VAL defined in the	table 10.
SIP header values:			
INVITE 1: P-Asserted-Identity, Priv	acy "id"		
INVITE 2: P-Asserted-Identity, Priv	acy "id"		
History-Info: <sip:s< td=""><th>SIP#2&gt;;index=1</th><td></td><th></th></sip:s<>	SIP#2>;index=1		
	SIP#3; cause= CAUSE_VAL>;	index=1.1	
Comments:			
SIP#1	SUT	SIP#2 (served user)	SIP#3

SIP#1	SUT	SIP#2 (served user)	SIP#3
Communication diversi	on is performed (CFU, CFB, (	CFNR, CD, CFNL, CFNRc)	
180 Ringing 200 OK (INVITE)	<b>←</b>	•	= 200 OK (INVITE)
ACK '	<b>→</b>		<b>ACK</b>
BYE 200 OK (BYE)	<b>→</b> ←		BYE 200 OK (BYE)

TSS	TP	Reference	Selection expression
Interaction/OIR	CDIV_N15_002	4.6.5	PICS 4/1 AND
			PICS 4/2

# Test purpose

The served user subscribes to the CDIV simulation service, the terminating user has the override category.

Ensure that the communication is forwarded to the diverted to user if the served user is subscribed to the CFU simulation service.

When the originating identification restriction simulation service has been invoked, the originating user's address shall be presented to the diverted-to user, the diverted-to user has an override capability.

The Cause Value in the latest History Index; cause-param =CAUSE\_VAL defined in the table 10.

# SIP header values:

INVITE 1: P-Asserted-Identity, Privacy "id"

INVITE 2: P-Asserted-Identity

History-Info: <sip:SIP#2>;index=1

	<sip:sip#3; cause="&lt;/th"><th>CAUSE_</th><th>_VAL&gt;;index=1.1</th><th></th><th></th></sip:sip#3;>	CAUSE_	_VAL>;index=1.1		
Comments: SIP#1	_	UT	SIP#2 (served user)		SIP#3
INVITE 1	<b>→</b>				
Communication diver	sion is performed (CF	FU, CFB,	CFNR, CD, CFNL, CFNRc)		
				<b>→</b>	INVITE 2 180 Ringing
180 Ringing	<b>←</b>			_	200 OK (INIVITE)
200 OK (INVITE)	<b>←</b>			_	200 OK (INVITE)
ACK	<b>→</b>			<b>→</b>	ACK
BYE 200 OK (BYE)	<b>→</b> ←			<b>→</b>	BYE 200 OK (BYE)

# Table 10

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

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

TSS		TP	Reference	Selection expression
Interaction/ACR-CB		CDIV_N16_001	4.6.9	PICS 4/6
Test purpose				
CDIV the diverted-to user has sul communication".	bscribed to a d	call barring service	inhibition of incoming"	forwarded
Ensure that the communication is service "inhibition of incoming for indication this call is a forwarded. The Cause Value in the latest His	warded comm	unication" and the r	received INVITE conta	nins a History-Info header
SIP header values:				
INVITE: History-Info: <sip:< td=""><th>SIP#1;index=</th><th>1.</th><th></th><th></th></sip:<>	SIP#1;index=	1.		
	•	= CAUSE_VAL>;inc	dex=1.1	
Comments:				
SIP#1		Terminating AS	SIP#2	
INVITE 1	<b>→</b>			
603 (Decline)	<b>←</b>			
ACK	<b>→</b>			

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

TSS	0.0	TP	Reference	Selection expression
Interaction/ACR	-CB	CDIV_N16_002	4.6.9	PICS 4/5
Test purpose				
The served user has subsc	ibed to a call b	parring service Outgoing	Communication Barrin	g (OCB).
Ensure that the communica service Outgoing Communicathe Cause Value in the late	ation Barring (	(OCB) if the forwarded t	o number is restricted.	· ·
SIP header values:				
Comments:				
SIP#1		SUT	SIP#2 (served user)	SIP#3
INVITE 1	<b>→</b>			
603 (Decline)	<b>←</b>			
ACK	<b>→</b>			

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

Transferred communication

→ BYE← 200 OK BYE

**←** BYE

→ 200 OK BYE

# 5.3.6 Explicit Communication Transfer (ECT)

Int	TSS eraction/ECT		TP CDIV_N17_001		eference 6.10.1.2	Sele	ction expression PICS 4/7
Test purpose			•				
Forwarded Con	nmunication, ha	andling of Re	efer-To header.				
Ensure that a fo	rwarded comm	unication is	able to transfer and th	e Refer	-To header of the	RFF	R request sent to
			containing the CDIV S				
CFNL and CFN		. To moduo.	containing the obive	20001011	idonamon ino o	. 0, 0.	5, 5, 65
o a a o							
SIP header val							
REFER 1: Refe							
REFER 2: Refe		ession Identi	fier>				
Configuration:							
SIP#1: originati							
SIP#2: CDIV se							
SIP#3: CDIV div		i ransteree					
SIP#4: Transfer	target						
Comments: SIP#1	SUT		SIP#2 (served user)		SIP#3		SIP#4
31F#1	301	Forv	varded communication				31F#4
REFER 1	<b>→</b>		REFER 2	)			
IXEI EIX I	•	•	ILLI LIV Z	<b>→</b>	REFER 2		
				<b>–</b>	202 Accepted		
202 Accepted	<b>←</b>	<del>(</del>	202 Accepted				
			INVITE	<b>←</b>	INVITE		
		INVITE →				<b>→</b>	INVITE
1		<del>-</del>	180 Ringing			←	180 Ringing
	180	Ringing -		<b>→</b>	180 Ringing		
		<b>←</b>	200 OK			<b>←</b>	200 OK
		200 OK →		<b>→</b>	200 OK		
BYE 200 OK BYE	<b>→</b>			<b>←</b>	ACK	_	ACK
	<b>←</b>					→	

TSS	TP	Reference	Selection expression
Interaction/TIP	CDIV_N17_002	4.6.10.1.3	PICS 4/7

Forwarded Communication, handling of Refer-To header.

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.

# SIP header values:

INVITE 1: Request URI: <CDIV Session Identifier>

INVITE 2: Request URI:<SIP#4>

History-Info: <sip:SIP#2 >;index=1,

<sip:SIP#3; cause=302>;index=1.1

#### Configuration:

SIP#1: originating user, Transferer SIP#2: CDIV served user, (Transferee) SIP#3: CDIV diverted-to user, Transferee

SIP#4: Transfer target

Comments: SIP#1	•	SUT	SIP#2 (served user)		SIP#3		SIP#4
		Fo	rwarded communication	is ac	tive		
REFER	<b>→</b>		→ REFER				
				<b>→</b>	REFER		
				<b>←</b>	202 Accepted		
202 Accepted	<b>←</b>	•	€ 202 Accepted		•		
		•	← INVITE 1	<b>←</b>	INVITE 1		
		INVITE 2	<b>→</b>			→	INVITE 2
		•	← 180 Ringing			<b>←</b>	180 Ringing
		180 Ringing	→	<b>→</b>	180 Ringing		3 3
			€ 200 OK		3 3	+	200 OK
BYE	<b>→</b>	200 OK	<b>→</b>	<b>→</b>	200 OK		
200 OK BYE	<b>←</b>			<b>←</b>	ACK		
						<b>→</b>	ACK
					Transferred	comr	-
				<b>←</b>	BYE		
						<b>→</b>	BYE
						+	200 OK BYE
				<b>→</b>	200 OK BYE		

# History

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