

TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU



SERIES Q: SWITCHING AND SIGNALLING Testing specifications – Testing specifications for SIP-IMS

Explicit communication transfer using IP multimedia core network subsystem; Conformance testing – Part 2: Network side; Test structure and test purposes

Recommendation ITU-T Q.4007.2

1-0-1



ITU-T Q-SERIES RECOMMENDATIONS SWITCHING AND SIGNALLING

SIGNALLING IN THE INTERNATIONAL MANUAL SERVICE	Q.1–Q.3
INTERNATIONAL AUTOMATIC AND SEMI-AUTOMATIC WORKING	Q.4–Q.59
FUNCTIONS AND INFORMATION FLOWS FOR SERVICES IN THE ISDN	Q.60–Q.99
CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS	Q.100-Q.119
SPECIFICATIONS OF SIGNALLING SYSTEMS No. 4, 5, 6, R1 AND R2	Q.120-Q.499
DIGITAL EXCHANGES	Q.500-Q.599
INTERWORKING OF SIGNALLING SYSTEMS	Q.600–Q.699
SPECIFICATIONS OF SIGNALLING SYSTEM No. 7	Q.700-Q.799
Q3 INTERFACE	Q.800-Q.849
DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 1	Q.850-Q.999
PUBLIC LAND MOBILE NETWORK	Q.1000–Q.1099
INTERWORKING WITH SATELLITE MOBILE SYSTEMS	Q.1100–Q.1199
INTELLIGENT NETWORK	Q.1200-Q.1699
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR IMT-2000	Q.1700–Q.1799
SPECIFICATIONS OF SIGNALLING RELATED TO BEARER INDEPENDENT CALL CONTROL (BICC)	Q.1900–Q.1999
BROADBAND ISDN	Q.2000–Q.2999
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR THE NGN	Q.3000-Q.3709
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR SDN	Q.3710–Q.3899
TESTING SPECIFICATIONS	Q.3900-Q.4099
Testing specifications for next generation networks	Q.3900-Q.3999
Testing specifications for SIP-IMS	Q.4000-Q.4039
Testing specifications for Cloud computing	Q.4040-Q.4059

For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T Q.4007.2

Explicit communication transfer using IP multimedia core network subsystem; Conformance testing – Part 2: Network side; Test suite structure and test purposes

Summary

Recommendation ITU-T Q.4007.2 is Part 2 of the testing specifications for explicit communication transfer (ECT) using IP multimedia core network subsystem for the network side. The standard specifies the test suite structure and test purposes (TSS&TP) for the network side which can be used for testing against Recommendation ITU-T Q.3623 v.1.

The version number, v.1, indicates that this is version one of Recommendation ITU-T Q.4007.2, and that it relates to Release 10 of the relevant 3GPP/ETSI standard.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T Q.4007.2 v.1	2016-08-29	11	11.1002/1000/12994

Keywords

Explicit communication transfer, ECT, IP multimedia subsystem, IMS, network side, PICS, session description protocol, SDP, session initiation protocol, SIP, testing, user side.

i

^{*} To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, <u>http://handle.itu.int/11.1002/1000/11</u> <u>830-en</u>.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <u>http://www.itu.int/ITU-T/ipr/</u>.

© ITU 2017

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

Table of Contents

Page

1	Scope		1
2	Referen	ces	1
3	Definiti	ons	1
4	Abbrevi	ations and acronyms	1
5	Test sui	te structure and configuration	2
	5.1	Configuration	2
6	Test pur	poses	3
	6.1	Introduction	3
	6.2	Signalling requirements	3

Recommendation ITU-T Q.4007.2

Explicit communication transfer (ECT) using IP multimedia core network subsystem; Conformance testing – Part 2: Network side; Test suite structure and test purposes

1 Scope

This Recommendation provides the test suite structure and test purposes (TSS&TP) for the protocol specification as defined in explicit communication transfer (ECT) using IP multimedia (IM) core network (CN) subsystem in compliance with the relevant requirements.

This Recommendation is Part 2 of a multi-part deliverable covering the explicit communication transfer (ECT) using IP multimedia (IM) core network (CN) subsystem; conformance test specification, as identified below:

Part 1: "Protocol implementation conformance statement (PICS)";

Part 2: "Network side; Test suite structure and test purposes (TSS&TP)";

Part 3: "User side; Test suite structure and test purposes (TSS&TP)".

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T Q.3623 v.1]	Recommendation ITU-T Q.3623 v.1 (2016), <i>Explicit communication</i> transfer using IP multimedia core network subsystem – Protocol specification.
[ITU-T Q.4007.1 v.1]	Recommendation ITU-T Q.4007.1 v.1 (2016), <i>Explicit communication transfer using IP multimedia core network subsystem; Conformance testing – Part 1: Network side and user side; Protocol implementation conformance statement.</i>
[ETSI TS 124 628]	ETSI TS 124 628 (2011), Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Common Basic Communication procedures using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.628 version 10.3.0 Release 10).

3 Definitions

None.

4 Abbreviations and acronyms

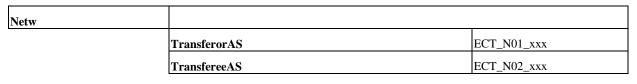
This Recommendation uses the following abbreviations and acronyms:

- ACR-CB Anonymous Communication Rejection- Communication Barring
- AS Application Server

1

CN	Core Network
ISC	IM-CN Service Control
IM	IP Multimedia
IUT	Implementation Under Test
NNI	Network Network Interface
PIXIT	Protocol Implementation extra Information for Testing
SIP	Session Initiation Protocol
SUT	System Under Test
TP	Test Purpose
UE	User Equipment
URI	Uniform Resource Identifier

5 Test suite structure and configuration



Interaction	OIR	ECT_N03_xxx
	ACR-CB	ECT_N04_xxx
	CONF	ECT_N05_xxx
	ЕСТ	ECT_N06_xxx

Figure 5-1 – **Test suite structure**

5.1 Configuration

The scope of this Recommendation is to test the signalling and procedural aspects of the stage 3 requirements as described in [ITU-T Q.3623 v.1]. The stage 3 description respects the requirements of several network entities and also requirements regarding end devices. Therefore several interfaces (reference points) are addressed to satisfy the test of the different entities.

To test the appropriate entities the configurations below are applicable:

Testing of the application server (AS): The application server performs the service. Hence the IM-CN service control (ISC) interface is the appropriate access point as shown in Figure 5.1-1.

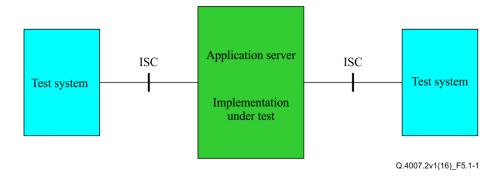
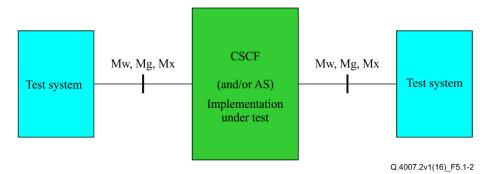


Figure 5.1-1 – Applicable interface to test AS functionalities

If the ISC interface is not accessible the test can be done using any NNI (Mw, Mg, Mx) (see Figure 5.1-2). The Gm interface shall be used instead, if it is the only interface available. In this case, be aware that verification of several requirements is impeded.



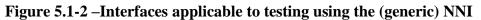


Figure 5.1-2 illustrates the usage of any NNI.

6 Test purposes

6.1 Introduction

For each test requirement a test purpose (TP) is defined.

6.1.1 TP naming convention

Test purposes (TPs) are numbered, starting at 001, within each group. Groups are organized according to the test suite structure (TSS). Additional references are added to identify the actual test suite and whether it applies to the network or the user (see Table 6.1-1).

Table 6.1-1 – TP identifier naming convention scheme

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

6.1.2 Test strategy

As the base standard [ITU-T Q.3623 v.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 [ITU-T Q.4007.1 v.1].

6.2 Signalling requirements

6.2.1 Actions at the transferor application server

TSS Netw/TransferorAS		TP ECT_N01_001	Reference Clause 4.5.2.4 of [ITU-T Q.3623 v.1]	Selection ex PICS 5.5.1/2 PICS 5.7.1/2 NOT (PICS [ITU-T Q.40	2 AND 2 AND 5.7.1/4 OR PICS 5.7.1/5)
Test purpose					
Communication transfer: A	ssured transfer. Tr	ansferor was origin	nator of the originating	call.	
Ensure that a transferor can notified about the process communication between communication.	ing. After the com	munication betwe	en the transferee and	the transfer tar	rget is confirmed, the
SIP header values:					
REFER 2: Refer-To contai Refer INVITE 3:Request URI = 1 INVITE 4:Request URI = 1 NOTIFY(100): Event cont NOTIFY(200): Event cont	red-By contains IS ns ECT Session Ide red-By contains IS ECT Session Identi SC#3 URI ains refer Subscription-State: message/sipfrag con	C#1 URI entifier URI; metho C#ISC#1 URI fier URI active;expires=(a ntains SIP/2.0 100	ny value) Trying		
	Subscription-State:	terminated;reason=	=noresource		
Comments:					
ISC#1	AS	Fransferor	ISC#2		ISC#3
INVITE 1 180 Ringing 200 OK (INVITE) ACK INVITE 2 (sendonly) 200 OK (recvonly) ACK	+++ + ++	• • •	()		
REFER 1 202 Accepted	 → REFER ← 202 Acc 	REFER 2 202 Accepted	REFER		
INVITE (inactive) 200 OK (inactive) ACK	← → ←	-	 INVITE (inactive) 200 OK (inactive) ACK 		
NOTIFY(100) 200 OK NOTIFY	← →	INVITE 4 INVITE 4 180 Ringing 4 180 Ringing 200 OK 4 200 OK 4	200 OK NOTIFY INVITE 3 180 Ringing	→ + +	INVITE 180 Ringing 200 OK
NOTIFY(200) 200 OK NOTIFY BYE 200 OK (BYE)	← → +	+ +	 NOTIFY(200) 200 OK NOTIFY BYE 200 OK (BYE) 	ACK →	ACK
			Commun	ication ISC#2	with ISC#3

Test purpose Communication transfer: Assured transfer: Transferee was originator of the originating call. Ensure that a transferor can successfully transfer the communication with the transferee set on hold before and the transfer communication between the communication between transfer transferee was the initiator of the origin communication. SIP header values: REFER 1: Refer-To contains ISC#3 URI; method=invite Referred-By contains ISC#1 URI REFER 2: Refer-To contains ISC#3 URI; method=invite Referred-By contains ISC#1 URI INVITE 4: Referred-By contains ISC#1 URI INVITE 4: SC#3 URI; method=invite Referred-By contains ISC#1 URI INVITE 4: SC#3 URI NOTIFY(100): Event contains refer message/sipfrag contains SIP/2.0 200 OK Subscription-State: terminated;reason=noresource Comments: ISC#1 ISC 4: INVITE 4: Candonly) 200 OK (INVITE) ACK KEFER 1 PREFER 1 PREFER 2: 202 Accepted INVITE 4: Candonly) 4 202 Accepted NVITE (inactive) 202 Accepted INVITE (inactive)	TSS Netw/TransferorAS		TP ECT_N01_002	Reference Clause 4.5.2 [ITU-T Q.36	.4 of PICS 523 v.1] PICS NOT	S 5.5.1/2 S 5.7.1/2 Γ (PICS	
Communication transfer: Assured transfer. Transferee was originator of the originating call. Ensure that a transferor can successfully transfer the communication with the transferee set on hold before and the transfer target is confirme communication between transferor and transferee is terminated. The transferee was the initiator of the origi communication. SIP header values: REFER 1: Refer-To contains ISC#3 UR1; method=invite Referred-By contains ISC#1 UR1 REFER 2: Refer-Do contains ISC#3 UR1; method=invite Referred-By contains ISC#1 UR1 REFER 2: Refer-Do contains ISC#3 UR1 NVITE 3: Request UR1 = ECT Session Identifier UR1 NVITE 3: Request UR1 = ECT Session Identifier UR1 NVITE 4: Refered-By contains SIP2.0 100 Trying NOTIFY(100): Event contains refer Subscription-State: terminated,reason=noresource Comments: ISC#1 INVITE 4: AS Transferor ISC#2 ISC#3 INVITE Subscription-State: terminated,reason=noresource Comments: ISC#1 INVITE 2 (sendonly) CO2 Accepted INVITE 4: REFER REFER 1 REFER 1 REFER 1 REFER 1 REFER 1 REFER 2 C02 Accepted INVITE (inactive) C00 OK (inactive) C20 OK (i	Test purpose						
notified about the processing. After the communication between the transferee and the transfer target is confirme communication. SIP header values: REFER 1: Refer-To contains ISC#3 UR1; method=invite Referred-By contains ISC#1 UR1 REFER 2: Refer-To contains ISC#1 UR1 REFER 2: Refer-To contains ISC#1 UR1 REFER 2: Refer-To contains ISC#1 UR1 INVITE 3: Request UR1 = ISC#3 UR1 NOTIFY(100): Event contains refer message/sipfrag contains SIP/2.0 100 Trying NOTIFY(200): Event contains refer message/sipfrag contains SIP/2.0 100 Trying NOTIFY(200): Event contains refer message/sipfrag contains SIP/2.0 200 OK Subscription-State: terminated/reason=noresource Comments: ISC#1 AS Transferor ISC#2 ISC#3 INVITE 1 (Sendonly) 200 OK (INVITE) 4 CON OK (INVITE) ACK 4 C C CACK REFER 1 REFER 202 Accepted INVITE 2 (sendonly) 4 C C CON CK REFER 1 REFER 202 Accepted INVITE (inactive) 4 C C CON CK 202 Accepted INVITE (inactive) 4 C C CON CK CK REFER 1 REFER 202 Accepted INVITE (inactive) 4 C C CON CK CK REFER 1 REFER 202 Accepted INVITE (inactive) 4 C C CON CK CK REFER 1 C C CON CK (INVITE) ACK 4 C C CK NOTIFY(100) 200 OK (inactive) 4 C C CK NOTIFY(100) 4 C CK NOTIFY(100) 4 C C CK NOTIFY(200) 4 C CK NOTIFY(200) 4 C CK NOTIFY(200) 4 C CK NOTIFY(200) 4 C CK ACK A CK		ured transfer.	Fransferee was orig	inator of the orig	ginating call.		
REFER 1: Refer-To contains ISC#3 UR1: method=invite Referred-By contains ISC#1 UR1 REFER 2: Refer-To contains ECT Session Identifier UR1; method=invite Referred-By contains ISC#1 UR1 INVITE 3: Request UR1 = ISC#3 UR1 INVITE 4: Request UR1 = ISC#3 UR1 INVITE 4: Request UR1 = ISC#3 UR1 INVITE 4: Request UR1 = ISC#3 UR1 NOTIFY(200): Event contains refer message/sipfrag contains SIP/2.0 100 Trying NOTIFY(200): Event contains refer message/sipfrag contains SIP/2.0 200 OK Subscription-State: terminated;reason=noresource Comments: ISC#1 AS Transferor ISC#2 ISC#3 INVITE 6 AS Transferor ISC#2 ISC#3 INVITE 6 ACK 6 INVITE 180 Ringing 200 OK (INVITE) ACK 6 REFER 1 REFER 1 REFER 7 202 Accepted 6 INVITE (inactive) 200 OK (inactive) ACK 6 NOTIFY(100) COK (inactive) ACK 6 NOTIFY(100) COK (inactive) ACK 6 NOTIFY(100) ACK 6 NOTIFY(100) COK (inactive) ACK 6 NOTIFY(200) 6 NOTIFY(200) C NOTIFY(200) C NOTIFY(200) C NOTIFY(200) C NOTIFY(200) C NOTIFY(200) C ACK 7 ACK 7 A	notified about the processin communication between tra	g. After the co	mmunication betw	een the transfer	ee and the tran	nsfer ta	rget is confirmed, the
Referred-By contains ISC#1 URI REFER 2: Refer-To contains ECT Session Identifier URI; method=invite Referred-By contains ISC#1 URI INVITE 3: Request URI = ISC#3 URI NOTIFY(100): Event contains refer message/sipfrag contains SIP/2.0 100 Trying NOTIFY(200): Event contains refer message/sipfrag contains SIP/2.0 200 OK Subscription-State: terminated;reason=noresource Comments: ISC#1 AS Transferor ISC#2 ISC#3 INVITE 4 AS Transferor SUBC/10 VITE 1 180 Ringing $+$ $+$ REFER REFER 1 $+$ REFER REFER 2 202 Accepted 1NVITE (inactive) ACK $+$ $+$ 202 Accepted 202 Accepted NOTIFY(100) 200 OK (inactive) ACK $+$ $+$ 200 OK (inactive) ACK $+$ $+$ 200 OK (inactive) ACK $+$ $+$ 200 OK (inactive) ACK $+$ $+$ $+$ REFER	SIP header values:						
Subscription-State: terminated;reason=noresource Comments: ISC#1 AS Transferor ISC#2 ISC#3 INVITE É INVITE 1 180 Ringing 200 OK (INVITE) 200 OK (INVITE) ÷ 200 OK (INVITE) ÷ 200 OK (INVITE) ACK É INVITE (sendonly) ÷ 200 OK (recvonly) ACK ÷ INVITE (sendonly) ÷ 200 OK (recvonly) ACK ÷ REFER 1 ? REFER 2 202 Accepted 202 Accepted ÷ 202 Accepted ÷ 202 Accepted · 1NVITE (inactive) ÷ 202 Accepted ÷ 200 OK (inactive) · 200 OK (inactive) ÷ NOTIFY(100) 200 OK (inactive) · iNVITE 200 OK NOTIFY ÷ INVITE 4 * × iNVITE 180 Ringing 200 OK ÷ 200 OK · iNVITE 180 Ringing ÷ iNVITE 4 * × iNVITE 180 Ringing ÷ iNVITE 3 ÷ iNVITE iNVITE 180 Ringing	Referre REFER 2: Refer-To contains Referre INVITE 3:Request URI = EC INVITE 4:Request URI = IS NOTIFY(100): Event contain Sum MOTIFY(200): Event contain	d-By contains I ECT Session I d-By contains I CT Session Ider C#3 URI ns refer ubscription-Stat essage/sipfrag c ns refer	SC#1 URI dentifier URI; meth SC#1 URI ntifier URI e: active;expires=(a contains SIP/2.0 100	any value)) Trying			
Comments: ISC#1AS TransferorISC#2ISC#3INVITE \leftarrow \leftarrow INVITE 1180 Ringing 200 OK (INVITE) ACK \rightarrow 180 Ringing 200 OK (INVITE) ACK \rightarrow 180 Ringing 200 OK (INVITE) ACK \rightarrow 180 Ringing 200 OK (INVITE) ACK \rightarrow INVITE (sendonly) 200 OK (recvonly) ACK \rightarrow INVITE (sendonly) ACK \rightarrow INVITE (sendonly) ACK \rightarrow							
180 Ringing 200 OK (INVITE) ACK \rightarrow 180 Ringing \rightarrow \rightarrow 180 Ringing \rightarrow \rightarrow 180 Ringing \rightarrow \rightarrow	Comments:	-					ISC#3
200 OK (recvonly) ACK \rightarrow REFER \leftarrow 200 OK (recvonly) ACK \rightarrow ACK REFER 1 \rightarrow REFER \leftarrow 202 Accepted \leftarrow 202 Accepted 202 Accepted \leftarrow 202 Accepted \leftarrow 202 Accepted 202 Accepted \leftarrow 202 Accepted \leftarrow INVITE (inactive) 200 OK (inactive) \rightarrow 200 OK (inactive) ACK \leftarrow ACK NOTIFY(100) 200 OK NOTIFY \downarrow INVITE \leftarrow NOTIFY(100) 200 OK NOTIFY \rightarrow INVITE \leftarrow INVITE 3 \downarrow INVITE \leftarrow INVITE 3 \downarrow INVITE \leftarrow 180 Ringing \leftarrow 180 Ringing \downarrow 180 Ringing \rightarrow 180 Ringing \leftarrow 200 OK \downarrow 200 OK \leftarrow 200 OK \downarrow 200 OK \leftarrow ACK \rightarrow ACK	180 Ringing 200 OK (INVITE)	→ →		 → 180 Ringing → 200 OK (IN 			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	200 OK (recvonly)	←		← 200 OK (rec			
INVITE (inactive) 200 OK (inactive) ACK \leftarrow NOTIFY(100) 200 OK NOTIFY \rightarrow \rightarrow $200 OK (inactive) \leftarrow\rightarrow200 OK (inactive) \leftarrow\rightarrow200 OK NOTIFY(100) \rightarrow200 OK NOTIFY\rightarrow\rightarrow1NVITE \leftarrow1NVITE \leftarrow1NVITE 31NVITE 4 \rightarrow180 Ringing \leftarrow180 Ringing +180 Ringing -200 OK \leftarrow200 OK \leftarrow4CK \rightarrowACK$			202 Accepted		d		
200 OK NOTIFY \rightarrow \rightarrow 200 OK NOTIFY INVITE \leftarrow INVITE 3 INVITE 4 \rightarrow \rightarrow INVITE 180 Ringing \leftarrow 180 Ringing 180 Ringing \rightarrow 180 Ringing 200 OK \leftarrow \leftarrow 200 OK 200 OK \leftarrow \leftarrow 200 OK ACK \rightarrow ACK NOTIFY(200) \leftarrow \leftarrow NOTIFY(200)	INVITE (inactive) 200 OK (inactive)	← →		➔ 200 OK (ina			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			INVITE INVITE 4 180 Ringing	 → 200 OK NO ← INVITE 3 → ← 	TIFY		
NOTIFY(200) \leftarrow ACK \rightarrow ACK \leftarrow NOTIFY(200)			200 OK	÷		←	200 OK
BYE → BYE 200 OK (BYE) ← 200 OK (BYE) Communication ISC#2 with ISC#3	200 OK NOTIFY BYE	→ →		 ← NOTIFY(20 → 200 OK NO → BYE ← 200 OK (BY) 	0) TIFY 'E)		

5

TSS Netw/TransferorAS		TP ECT_N01_003	Reference Clause 4.5.2.4 of [ITU-T Q.3623 v.1]	PICS 5. PICS 5. NOT (F	5.1/2 7.1/1 PICS	
Test purpose						
Communication transfer: B	ind transfer . Tr	ansferor was originat	or of the originating call	!.		
Ensure that a transferor can notified about the processin transferee is terminated. The	g. After the RE	FER request to the tr	ansferee is sent, the con	nmunicat		
SIP header values:						
REFER 2: Refer-To contain Refer INVITE 3:Request URI = E INVITE 4:Request URI = I NOTIFY(100): Event conta	ed-By contains s ECT Session 1 ed-By contains CT Session Ide SC#3 URI ins refer Subscription-Sta nessage/sipfrag ins refer	ISC#1 URI Identifier URI; metho ISC#1 URI ntifier URI te: active;expires=(an contains SIP/2.0 100	ny value) Trying			
1	nessage/sipfrag	contains SIP/2.0 200	OK			
	Subscription-Sta	te: terminated;reason=	=noresource			
Comments: ISC#1	А	S Transferor	ISC#2			ISC#3
INVITE 1 180 Ringing 200 OK (INVITE) ACK INVITE 2 (sendonly) 200 OK (recvonly) ACK	$\begin{array}{c} \mathbf{a} \\ $	÷	 180 Ringing 200 OK (INVITE) ACK INVITE (sendonly) 200 OK (recvonly) 			
REFER 1 202 Accepted BYE 200 OK (BYE)	 → REFI ← 202 A → ← 	REFER 2 7 202 Accepted Accepted				
200 OK (BYE) NOTIFY(100) 200 OK NOTIFY	← →		NOTIFY(100) 200 OK NOTIFY INVITE 3 180 Ringing		→ ← ←	INVITE 180 Ringing 200 OK
NOTIFY(200) 200 OK NOTIFY	← →	200 OK 🚽		ACK	-	ACK

TSS Netw/TransferorAS		TP ECT_N01_004	Reference Clause 4.5.2.4 of [ITU-T Q.3623 v.1]	Selection ex PICS 5.5.1/2 PICS 5.7.1/1 NOT (PICS [ITU-T Q.4(2 AND 1 AND 5.7.1/4 OR PICS 5.7.1/5)
Test purpose					
Communication transfer: Bl	ind transfer . Trar	sferee was originat	tor of the originating call	l.	
Ensure that a transferor can notified about the processin transferee is terminated. The	g. After the REF	ER request to the tr	ransferee is sent, the con	mmunication l	
SIP header values:					
REFER 1: Refer-To contain					
REFER 2: Refer-To contain Refer INVITE 3:Request URI = E INVITE 4:Request URI = IS NOTIFY(100): Event conta NOTIFY(200): Event conta	ed-By contains IS CT Session Ident SC#3 URI ins refer Subscription-State nessage/sipfrag co ins refer	entifier URI; metho C#1 URI tifier URI : active;expires=(a ontains SIP/2.0 100	ny value) Trying		
		ontains SIP/2.0 200 : terminated;reason=			
Comments:					
ISC#1	AS	Transferor	ISC#2		ISC#3
INVITE 180 Ringing 200 OK (INVITE) ACK INVITE 2 (sendonly)	$\begin{array}{c} \leftarrow \\ \rightarrow \\ \rightarrow \\ \leftarrow \\ \rightarrow \end{array}$	+++++++++++++++++++++++++++++++++++++++	 INVITE 1 180 Ringing 200 OK (INVITE) ACK INVITE (sendonly) 		
200 OK (recvonly) ACK	←→	€ +	200 OK (recvonly)		
REFER 1 202 Accepted BYE 200 OK (BYE)	 → REFEF ← 202 Ac → ← 	202 Accepted	 REFER 2 202 Accepted BYE 200 OK (BYE) 		
200 OK (BYE) NOTIFY(100) 200 OK NOTIFY	€ ÷	•	NOTIFY(100) 200 OK NOTIFY INVITE 3 180 Ringing	→ ← ACK →	INVITE 180 Ringing 200 OK ACK
NOTIFY(200) 200 OK NOTIFY	← →			cation ISC#2	

TSS Netw/TransferorAS		TP ECT_N01_005	Reference Clause 4.5.2.4 of [ITU-T Q.3623 v.1]	Selection exp PICS 5.5.1/2 PICS 5.7.1/3 NOT (PICS 5 [ITU-T Q.40	AND AND 5.7.1/4 OR PICS 5.7.1/5)
Test purpose					
Communication transfer:	Consultative transfer	. Transferor was	originator of the origina	ating call.	
Ensure that a transferor ca notified about the processing the transferee to establish a sessions of the transferor a	ng. The transferor has a session to the transf	a session with tra er target. After the	nsferee and the transfer e successful session bet	target set on ho ween transfere	old. The transferor refers e and transfer target, the
SIP header values:					
REFER 2: Refer-To conta Refe INVITE 3:Request URI = INVITE 4:Request URI =	from-ta erred-By contains ISC ins ECT Session Idee erred-By contains ISC ECT Session Identif ISC#3 URI;	g%3D S1 &Requir #1 URI ntifier URI;meth #1 URI fier URI	e=replaces od=invite Referred-1	%3D S1 %3B By contains IS	C#1 URI
Req Refe NOTIFY(100): Event con Subs mess NOTIFY(200): Event con mess	scription-State: active sage/sipfrag contains ttains refer ; sage/sipfrag contains	C#1 URI e;expires=(any va SIP/2.0 100 Tryi SIP/2.0 200 OK	ılue) ng		
	scription-State: termin	nated;reason=nore	esource		
Comments:					
ISC#1	AS T	ransferor	ISC#2		ISC#3
INVITE 1 180 Ringing 200 OK (INVITE) ACK	+ + +		NVITE 180 Ringing 200 OK (INVITE) ACK		
INVITE (sendonly) 200 OK (recvonly) ACK	+ + +		INVITE (sendonly) 200 OK (recvonly) ACK		
INVITE 2 180 Ringing 200 OK (INVITE) ACK	→ ← ←			* * * *	INVITE 180 Ringing 200 OK (INVITE) ACK
INVITE (sendonly) 200 OK (recvonly) ACK	→ ← →			→ ← →	INVITE (sendonly) 200 OK (recvonly) ACK
REFER 1	→ REFER	REFER 2 =			
202 Accepted INVITE (inactive) 200 OK (inactive) ACK	 ← 202 Acco ← → ← 		► INVITE (inactive) ▶ 200 OK (inactive) ► ACK		
NOTIFY(100) 200 OK NOTIFY	← →	-	÷	→ +	INVITE 180 Ringing

TSS		ТР	Reference	Selection ex	pression
Netw/TransferorAS		ECT N01 005	Clause 4.5.2.4 of	PICS 5.5.1/2	•
			[ITU-T Q.3623 v.1]	PICS 5.7.1/3	AND
				NOT (PICS	5.7.1/4 OR
					PICS 5.7.1/5)
				[ITU-T Q.40	,
		200 OK 🗲	, , ,	÷	200 OK
		200 OK	200 OK		
				ACK 🔶	ACK
NOTIFY(200)	÷	€	NOTIFY(200)		
200 OK NOTIFY	→	+	200 OK NOTIFY		
BYE	←			+	BYE
200 OK (BYE)	→			→	200 OK (BYE)
BYE	→			→	BYE
200 OK (BYE)	÷			÷	200 OK (BYE)
			Commun	ication ISC#2	with ISC#3
		Apply post te	st routine		

ECT_N01_0	Clause 4.5.2.4 of [ITU-T Q.3623 v.1]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/3 AND
		NOT (PICS 5.7.1/4 OR PICS 5.7.1/5) [ITU-T Q.4007.1 v.1]

Test purpose

Communication transfer: Consultative transfer. Transferee was originator of the originating call.

Ensure that a transferor can successfully transfer the communication with the transferee set on hold before and the transferor is notified about the processing. The transferor has a session with transferee and the transfer target. The transferor refers the transferee to establish a session to the transfer target. After the successful session between transferee and transfer target set on hold, the sessions of the transferor are released by the transferor. The transferee was the initiator of the originating communication.

SIP header values:

REFER 1: Refer-To contains I	SC#3 URI: method-invite?Re	places-call-id1%3B				
	ag%3DS1%3Bfrom-tag%3D					
		ST&Require_replaces				
	By contains ISC#1 URI	4.1.1.1.1.1				
REFER 2: Refer-To contains E		method=invite				
	By contains ISC#1 URI					
INVITE 3:Request URI = ECT	Session Identifier URI					
Referred	By contains ISC#1 URI					
INVITE 4:Request URI = ISC	¥3 URI					
Replaces	=call-id1;to-tag=S1; from-ta	g=S1				
Require:	replaces	5				
	By contains ISC#1 URI					
NOTIFY(100): Event contains						
	scription-State: active;expire	s–(anv value)				
	sage/sipfrag contains SIP/2.0					
NOTIFY(200): Event contains		100 Hymg				
	sage/sipfrag contains SIP/2.0	200 OK				
mes	sage/sipirag contains SH /2.0	200 OK				
Sub	scription-State: terminated;rea	ason=noresource				
Comments:						
ISC#1	AS Transferor	ISC#2	ISC#3			
INVITE	+	€ INVITE 1				
180 Ringing	→	→180 Ringing				
200 OK (INVITE) \rightarrow -3200 OK (INVITE)						
ACK EACK						
INVITE (sendonly)	→	→INVITE (sendonly)				
200 OK (recvonly)	←	€200 OK (recvonly)				
ACK	→ →					
ACK	7	JACK				

TSS Netw/TransferorAS		TP ECT_N01_0 06	Reference Clause 4.5.2.4 of [ITU-T Q.3623 v.1]		2 AND 3 AND 5 5.7.1/4 OR PICS 5.7.1/5)
INVITE 2 180 Ringing 200 OK (INVITE) ACK	+ + + +			[ITU-T Q.4 → ← →	INVITE 180 Ringing 200 OK (INVITE)
INVITE (sendonly) 200 OK (recvonly) ACK	→←→			→ ← →	200 OK (recvonly)
REFER 1	→ R	EFER			
202 Accepted INVITE (inactive) 200 OK (inactive) ACK		02 Accepted 02 Accepted	 →REFER 2 €202 Accepted €INVITE (inactive) →200 OK (inactive) €ACK 		
NOTIFY(100) 200 OK NOTIFY	← →		€NOTIFY(100) ∋200 OK NOTIFY		
		INVITE 4 180 Ringing 180 Ringing 200 OK	→180 Ringing	→ + +	INVITE 180 Ringing 200 OK
NOTIFY(200) 200 OK NOTIFY	← →	200 OK	 →200 OK ◆NOTIFY(200) →200 OK NOTIFY 	ACK →	ACK
BYE 200 OK (BYE) BYE 200 OK (BYE)	$\begin{array}{c} \leftarrow \\ \rightarrow \\ \rightarrow \\ \leftarrow \end{array}$		→ BYE € 200 OK (BYE)	↔	200 OK (BYE)
		Apply post	test routine	inication ISC	C#2 with ISC#3

TSS Netw/TransferorAS		TP ECT_N01_007	Reference Clause 4.5.2 [ITU-T Q.3		Selection expression PICS 5.5.1/2 [ITU-T Q.4007.1 v.1]
Test purpose					
The method in the Refer-To he	ader is not the 'IN	VITE' method.			
Ensure that the REFER reques e.g. BYE.	t is rejected if the	method in the Ref	er-To header used	in this dialo	gue is not the INVITE method
SIP header values:					
REFER: Refer-To Referred	contains I-By contains ISC		SC#3	URI;	method=BYE
Comments:					
ISC#1	Α	S Transferor	ISC#2		ISC#3
INVITE	→		JINVITE		
180 Ringing	÷		€180 Ringi	ng	
200 OK (INVITE)	÷		€200 OK (I	NVITE)	
ACK	→		JACK		
INVITE (sendonly)	→		∃INVITE (s	sendonly)	
200 OK (recvonly)	+		€200 OK (r	ecvonly)	
ACK	→		JACK		
	ISC#1 transfer	rs ISC#2 to ISC#3	3		
REFER	→ REFER				
4xx or 5xx or 6xx Response	← 4xx or 5x	x or 6xx Response	e		
		Apply post tes	t routine		

TSS		TP ECT_N01_008		Reference Clause 4.5.2.4.1.2.2 of	Selection expression PICS 5.5.1/2
				[ITU-T Q.3623 v.1]	[ITU-T Q.4007.1 v.1]
Test purpose					
The request-URI is not targeted at	the same U	E instance that is involv	ed in	the dialog.	
Ensure that the ECT simulation s rejected.	ervice does	not apply if the reques	t UR	I is not the transferee UI	RI. The REFER request is
SIP header values:					
	ntains the U	J RI (PIXIT) IRI of ISC#3 , method=ir IP or tel URI of ISC#1	nvite		
Comments:					
ISC#1		AS Transferor		ISC#2	ISC#3
INVITE	→		→	INVITE	
180 Ringing	←		←	180 Ringing	
200 OK (INVITE)	←		←	200 OK (INVITE)	
ACK	→		→	ACK	
INVITE (sendonly)	→		→	INVITE (sendonly)	
200 OK (recvonly)	←		←	200 OK (recvonly)	
ACK	→		→	АСК	
REFER	→	REFER			
4xx or 5xx or 6xx Response	←	4xx or 5xx or 6xx Response			
		Apply post test ro	utine		
TOC		TD		D	
TSS Netw/TransferorAS		TP ECT_N01_009		Reference Clause 4.5.2.4.1.2.2 of [ITU-T Q.3623 v.1]	Selection expression PICS 5.5.1/2 [ITU-T Q.4007.1 v.1]

Test	purpose
rest	purpose

There is no method parameter contained in the Refer-To header.

Ensure that the REFER request is rejected if there is no method parameter contained in the Refer-To header.

SIP header values:

REFER:	Refer-To To contains ISC#3 URI (no method parameter)
	Referred-By contains ISC#1 URI

Comments:	5		
ISC#1	AS Transferor	ISC#2	ISC#3
INVITE	→	→ INVITE	
180 Ringing	÷	← 180 Ringing	
200 OK (INVITE)	+	← 200 OK (INVIT	Έ)
ACK	→	→ ACK	
INVITE (sendonly)	→	→ INVITE (sendor	nly)
200 OK (recvonly)	÷	← 200 OK (recvon	lly)
ACK	→	➔ ACK	
	ISC#1 transfers ISC#2 to ISC#3		
REFER	→ REFER		
4xx or 5xx or 6xx Response			
	Apply post test i	outine	

TSS Netw/TransferorAS		TP ECT_N01_010	Cl	eference ause 4.5.2.4.2.1 of [U-T Q.3623 v.1]	PICS 5. NOT (P	5.1/2 PICS 5	Dression AND 5.7.1/4 OR PICS 5.7.1/5) 07.1 v.1]
Test purpose							
In the REFER request, the Re	ferred-By hea	der does not contain	the va	lid identity of the se	rved user	r.	
A Referred-By header is avail identity of the served user. If Asserted-Identity.							
SIP header values:							
P-Asser REFER 1: Request URI: ISC 3	l-By contains ted-Identity= I		ny val	ue)			
Comments:							
ISC#1	А	S Transferor		ISC#2			ISC#3
	Establish	ment of session #1					
Session	#1 on hold						
	Establish	ment of session #2					
Session	#2 on hold						
	ISC#1 trans	fers ISC#2 to ISC#3	5				
REFER 1	→ REFI	ER					
		REFER 2	→	REFER			
		202 Accepted	←	202 Accepted			
202 Accepted	← 202 A	Accepted					
INVITE (inactive)	←		÷	INVITE (inactive	e)		
200 OK (inactive)	→		→	200 OK (inactive)		
ACK	÷		÷	ACK			
NOTIFY(100)	÷		←	NOTIFY(100)			
200 OK NOTIFY	→		→	200 OK NOTIFY	7		
		INVITE	←	INVITE 3			
		INVITE 4	→			→	INVITE
		180 Ringing	←			←	180 Ringing
		180 Ringing	→	180 Ringing			
		200 OK	←			←	200 OK
		200 OK	→	200 OK			
					ACK	→	ACK
NOTIFY(200)	÷		÷	NOTIFY(200)			
200 OK NOTIFY	→		→	200 OK NOTIFY	7		
BYE	→		→	BYE			
200 OK (BYE)	÷	Apply post te	←	200 OK (BYE)			

TSS Netw/TransferorAS	ansferorAS TP ECT_N01_011 Reference Clause 4.5.2. [ITU-T Q.36]		4.5.2.4.2.1 of PICS 5.5.1/2			2 AND 5.7.1/4 OR PICS 5.7.1/5)	
Test purpose							
The REFER request does	not contain a Re	ferred-By header.					
If no Referred-By header P-Asserted-Identity.	is available in th	e REFER request a l	Referred	-By header is add	led that m	atche	s the REFER method's
SIP header values:							
P-A	erred-By not pres sserted-Identity=						
REFER 1: Request URI: Ref	SC#2 erred-By contain	s ISC#1 URI					
Comments:							
ISC#1		AS Transferor		ISC#2			ISC#3
	Establis	hment of session #1					
Sess	ion #1 on hold						
	Establis	hment of session #2					
Sess	ion #2 on hold						
	ISC#1 tran	nsfers ISC#2 to ISC	#3				
REFER 1	→ REI	FER					
		REFER 2	→	REFER			
		202 Accepted	←	202 Accepted			
202 Accepted	← 202	Accepted					
INVITE (inactive)	+		÷	INVITE (inact			
200 OK (inactive)	→		→	200 OK (inacti	ve)		
ACK	÷		÷	ACK			
NOTIFY(100)	÷		←	NOTIFY(100)			
200 OK NOTIFY	→		→	200 OK NOTI	FY		
		INVITE	÷	INVITE 3			
		INVITE 4	→			→	INVITE
		180 Ringing	÷			←	180 Ringing
		180 Ringing	→	180 Ringing			
		200 OK	←			÷	200 OK
		200 OK	→	200 OK			
					ACK	→	ACK
NOTIFY(200)	+		(NOTIFY(200)			
200 OK NOTIFY	→		→	200 OK NOTI	FY		
BYE	→		→	BYE			
200 OK (BYE)	+	Apply post	÷	200 OK (BYE))		

TSS Netw/TransferorAS		TP ECT_N01_012	Cla	ference uuse 4.5.2.4.2.1 of U-T Q.3623 v.1]	PICS 5. NOT (F	.5.1/2 PICS	pression 2 AND 5.7.1/4 OR PICS 5.7.1/5) 007.1 v.1]
Test purpose							
The Referred-By header i	n the received I I	NVITE does not contair	n the v	alid identity of the s	served us	er.	
If a Referred-By header is identity of the served use Asserted-Identity.							
SIP header values:							
REFER 1: Refer-To conta							
P-A = INVITE 3:Request URI	sserted-Identity ECT Session I						
Ref = INVITE 4:Request URI	erred-By contain	ns ISC#x URI (PIXIT a	iny val	ue)			
Comments:							
ISC#1		AS Transferor		ISC#2			ISC#3
	Establi	shment of session #1					
Sess	ion #1 on hold						
	Establi	shment of session #2					
Sess	ion #2 on hold						
	ISC#1 tra	unsfers ISC#2 to ISC#3	3				
REFER 1	→ RE	EFER					
		REFER 2	→	REFER			
		202 Accepted	÷	202 Accepted			
202 Accepted	← 20	2 Accepted					
INVITE (inactive)	(←	INVITE (inactiv			
200 OK (inactive)	→		→	200 OK (inactive	e)		
ACK	÷		÷	ACK			
NOTIFY(100)	←		←	NOTIFY(100)			
200 OK NOTIFY	→		→	200 OK NOTIFY	Y		
		INVITE	←	INVITE 3	-		
		INVITE 4	→			→	INVITE
		180 Ringing	←			←	180 Ringing
		180 Ringing	→	180 Ringing			
		200 OK	←			←	200 OK
		200 OK	→	200 OK			
					ACK	→	ACK
NOTIFY(200)	+		←	NOTIFY(200)			
200 OK NOTIFY	→		→	200 OK NOTIFY			

TSS Netw/TransferorAS		TP ECT_N01_013	Clau	erence Ise 4.5.2.4.2.1 of J-T Q.3623 v.1]	Selectio PICS 5.5 NOT (P)	5.1/2 A ICS 5. I	AND 7.1/4 OR PICS 5.7.1/5)
Test purpose							
The received INVITE do	es not contain a	Referred-By header.					
If no Referred-By header P-Asserted-Identity.	is available in t	he INVITE request a F	Referre	d-By header is ad	ded that n	natche	s the REFER request's
SIP header values:							
REFER 1: Refer-To conta							
INVITE 3:Request URI =		l dentifier URI					
Ref = INVITE 4:Request URI	erred-By not pr ISC#3 URI	esent					
Ref	erred-By contai	ns ISC#1 URI					
Comments:							
ISC#1		AS Transferor		ISC#2			ISC#3
		shment of session #1					
Sess	ion #1 on hold						
		shment of session #2					
Sess	ion #2 on hold						
		unsfers ISC#2 to ISC#	3				
REFER 1	→ RI	EFER					
		REFER 2	→ <	REFER			
202 A	4 20	202 Accepted	÷	202 Accepted			
202 Accepted INVITE (inactive)	← 20←	2 Accepted	←	INVITE (inact			
200 OK (inactive)			→	200 OK (inacti			
ACK	÷		÷	ACK	((())		
nen	Ľ		•	nen			
NOTIFY(100)	÷		←	NOTIFY(100)			
200 OK NOTIFY	→		→	200 OK NOTI			
		INVITE	←	INVITE 3			
		INVITE 4	→			→	INVITE
		180 Ringing	←			←	180 Ringing
		180 Ringing	→	180 Ringing			
		200 OK	←			←	200 OK
		200 OK	→	200 OK			
					ACK	→	ACK
NOTIFY(200)	÷		÷	NOTIFY(200)			
200 OK NOTIFY	→		→	200 OK NOTI	FY		
BYE	→		→	BYE			
200 OK (BYE)	+		←	200 OK (BYE))		

TSS Netw/TransferorAS		TP ECT_N01_014	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/2 AND PICS 5.7.1/4 [ITU-T Q.4007.1 v.1]
Test purpose				
	nsferor AS receive	s a 403 Forbidd	en indicating that the tra	nsferee does not support the REFER
method.			0	····
Ensure that three party call transferee:	control applies at t	he transferor AS	when a 403 Forbidden is re	eceived upon a REFER was sent to the
• A 202 Accepted	for the REFER is s	ent.		
A NOTIFY cont	aining a message/si	pfrag body set to	'SIP/2.0 100 Trying' if the	REFER request is accepted.
	ent to the transfer dentity of the trans		the P-Asserted_identity of	of the transferee and the Referred-By
	K is received, a rell eferred-By header v			the P-Asserted_identity of the transfer
A NOTIFY cont	aining a message/si	pfrag body set to	'SIP/2.0 200 OK' if the ret	fered communication is established.
SIP header values:				
NOTIFY(200): Event con	Subscription-State message/sipfrag co tains refer message/sipfrag co Subscription-State	ontains SIP/2.0 1 0	00 Trying 00 OK	
Comments:				
ISC#1 Sessi		Transferor ent of session #1	ISC#2	ISC#3
REFER 1	→ REFE	REFER	→REFER€403 Forbidden	
202 Accepted	← 202 Ac	ccepted	ontrol applies	
NOTIFY(100) 200 OK NOTIFY	← → 2	INVITE 3 180 Ringing 200 OK ACK NOTIFY(100) 00 OK NOTIFY	∃ € €	 → INVITE ← 180 Ringing ← 200 OK → ACK
NOTIFY(200) 200 OK NOTIFY	← → 2		JINVITE€200 OKJACK	
BYE 200 OK (BYE)	 → BYE ← 200 OF 	K (BYE) Apply post	test routine	

TSS Netw/TransferorAS		TP ECT_N01_015	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/1 AND PICS 5.7.1/4 [ITU-T Q.4007.1 v.1]
Test purpose				
Blind transfer. The transfer	or AS receives a	403 Forbidden indica	ting the transferee does not	support the REFER method.
Ensure that three party call co transferee:	ontrol applies at	the transferor AS whe	en a 403 Forbidden is receiv	ed upon a REFER was sent to the
• A 202 Accepted fo	r the REFER is	sent.		
A NOTIFY contain	ning a message/s	ipfrag body set to 'SII	P/2.0 100 Trying' if the REF	ER request is accepted.
• An INVITE is sen header with the ide			e P-Asserted_identity of the	e transferee and the Referred-By
		NVITE is sent to the with the identity of the		Asserted_identity of the transfer
A NOTIFY contain	ning a message/s	ipfrag body set to 'SII	P/2.0 200 OK' if the referred	d communication is established.
SIP header values:				
NOTIFY(200): Event contain n S Comments: ISC#1	ns refer hessage/sipfrag o ubscription-Stat As Establishm	contains SIP/2.0 100 f contains SIP/2.0 200 (e: terminated;reason= S Transferor nent of session #1	OK	ISC#3
Sess	ion #1 on hold			
REFER 1		R REFER ➡ 403 Forbidden ◀ ccepted		
202 Accepted BYE 200 OK (BYE)	→ ←			
BYE		3 party call cont INVITE 3 180 Ringing 200 OK		 → INVITE ← 180 Ringing ← 200 OK → ACK
BYE		INVITE 3 180 Ringing 200 OK ACK INVITE 4 200 OK	 → INVITE ← 200 OK 	 ← 180 Ringing ← 200 OK
BYE 200 OK (BYE) NOTIFY(100)	← ← →	INVITE 3 180 Ringing 200 OK ACK INVITE 4 200 OK	 → INVITE ← 200 OK 	 ← 180 Ringing ← 200 OK

[
TSS Netw/TransferorAS		TP ECT_N01_016	Reference Clause 4.5.2.4.1.2.3 [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	
Test purpose				
	ne transferor AS rec	eives a 403 Forb	idden indicating the trans	sferee does not support the REFER
Ensure that three party cal transferee:	l control applies at th	e transferor AS w	hen a 403 Forbidden is rec	eived upon a REFER was sent to the
A 202 Accepted	for the REFER is se	ent.		
A NOTIFY con	taining a message/sij	ofrag body set to "	SIP/2.0 100 Trying' if the I	REFER request is accepted
	sent to the transfer identity of the transf		the P-Asserted_identity of	f the transferee and the Referred-By
	K is received, a reIN eferred-By header w			e P-Asserted_identity of the transfer
A NOTIFY con	taining a message/sij	ofrag body set to '	SIP/2.0 200 OK' if the refe	rred communication is established.
SIP header values:				
Ref INVITE 3:Request URI = INVITE 4:Request URI = NOTIFY(100): Event con NOTIFY(200): Event con	erred-By contains IS ISC#3 , P-Asserted- ISC#2 , P-Asserted- ntains refer Subscription-State message/sipfrag co	Identity=ISC#2, F Identity=ISC#3, F active;expires=(ntains SIP/2.0 10 ntains SIP/2.0 20	Referred-By=ISC#1 Referred-By=ISC#1 any value) 0 Trying 0 OK	
	Subscription-State	terminated;reaso	n=noresource	
-	Establishme ession #1 on hold	Transferor ent of session #1 ent of session #2	ISC#2	ISC#3
REFER 1	→ REFER			
202 Accepted	← 202 Ac	3 party call co INVITE 3 180 Ringing 200 OK	→ ¹¹ ← ←	 → INVITE ← 180 Ringing ← 200 OK
NOTIFY(100) 200 OK NOTIFY	 ← NOTIF → 200 OK 	ACK Y(100) X NOTIFY	→	→ ACK
NOTIFY(200)			 → INVITE ← 200 OK → ACK 	
200 OK NOTIFY BYE(S1) 200 OK (BYE)	→ BYE	K NOTIFY		
BYE 200 OK (BYE)	 ← BYE(S → 200 OK 	2) (BYE) Apply post t	est routine	

TSS Netw/TransferorAS		TP ECT_N01_017	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	PICS 5. PICS 5. PICS 5.	n expression 5.1/2 AND 7.1/2 AND 7.1/4 Q.4007.1 v.1]
Test purpose					
Assured transfer . The tran method.	sferor AS receives	a 501 Not impleme	ented indicating the transferee	e does not	t support the REFER
Ensure that three party call sent to the transferee:	control applies at the	he Transferor AS w	when a 501 Not implemented is	s received	l upon a REFER was
• A 202 Accepted f	for the REFER is set	nt.			
	ent to the transfer ta lentity of the transfe		P-Asserted_identity of the Tr	ransferee	and the Referred-By
	t is received, a reIN ferred-By header wi		transferee containing the P-Ase transferor.	sserted_ic	lentity of the transfer
SIP header values:					
REFER 1: Refer-To contair					
INVITE 3:Request URI = I INVITE 4:Request URI = I NOTIFY(100): Event conta NOTIFY(200): Event conta	(SC#2 , P-Asserted-I ains refer Subscription-State: message/sipfrag con ains refer	dentity=ISC#2, Re dentity=ISC#3, Re active;expires=(an ntains SIP/2.0 100	ferred-By=ISC#1 ny value) Trying		
	message/sipfrag con				
	Subscription-State:	terminated;reason=	noresource		
Comments:					
ISC#1		ransferor	ISC#2		ISC#3
S	Establishm Session #1 on hold	ent of session #1			
REFER 1		REFER ot implemented	 → REFER ← 501 Not implemented 		
202 Accepted	← 202 Accepte	ed 3 party call cont	rol annlies		
		INVITE 3 180 Ringing 200 OK ACK	→ ← ←	→ + + + +	INVITE 180 Ringing 200 OK ACK
NOTIFY(100) 200 OK NOTIFY	 ← NOTIFY(10 → 200 OK NO 	,			
		INVITE 4 200 OK ACK	 → INVITE ← 200 OK → ACK 		
NOTIFY(200) 200 OK NOTIFY	 ← NOTIFY(20 → 200 OK NO)0)			
BYE 200 OK (BYE)	 → BYE ← 200 OK (BY) 	(E) Apply post tes			

TSS Netw/TransferorAS		TP ECT_N01_018	}	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	PICS 5 PICS 5 PICS 5	on expression .5.1/2 AND .7.1/1 AND .7.1/4 ^Q.4007.1 v.1]
Test purpose						
Blind transfer. The transf	eror AS red	eives a 501 Not implemente	d indic	rating the transferee does r	ot suppo	ort the REFER method.
Ensure that three party ca sent to the transferee:	ll control	applies at the transferor AS	when	a 501 Not implemented is	s receive	d upon a REFER was
A 202 Accepted	for the R	EFER is sent.				
• An INVITE is header with the		transfer target containing the transferor.	the P-	Asserted_identity of the ta	ransferee	and the Referred-By
		ved, a reINVITE is sent to t header with the identity of			sserted_i	dentity of the transfer
SIP header values:						
INVITE 3:Request URI =	ISC#3, P ISC#2, P Itains refe Subscrip message tains refe message	tion-State: active;expires= (sipfrag contains SIP/2.0 10 r (sipfrag contains SIP/2.0 20	Referre (any va 00 Tryi 00 OK	d-By=ISC#1 alue) ing		
	Subscrip	tion-State: terminated;reaso	n=nore	esource		
Comments:						
ISC#1	Б	AS Transferor stablishment of session #1		ISC#2		ISC#3
	E Session #1					
REFER 1	→	REFER	→	REFER		
		501 Not implemented	←	501 Not implemented		
202 Accepted	←	202 Accepted				
BYE	→					
200 OK (BYE)	÷					
		3 party call co		applies		
		INVITE 3	→		→ ✓	INVITE
		180 Ringing	←		+ -	180 Ringing
		200 OK	+ د		+ ->	200 OK ACK
NOTIFY(100)	L	ACK	→		→	AUN
	← →					
200 OK NOTIEV		INVITE 4	→	INVITE		
200 OK NOTIFY				11 (Y 1 1 L)		
200 OK NOTIFY			4	200 OK		
200 OK NOTIFY		200 OK	← →	200 OK		
	£	200 OK ACK	← →	200 OK ACK		
200 OK NOTIFY NOTIFY(200) 200 OK NOTIFY	← →	200 OK				

TSS Netw/TransferorAS		TP ECT_N01_019	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/3 AND PICS 5.7.1/4 [ITU-T Q.4007.1 v.1]
Test purpose				
Consultative transfer . Th method.	e transferor AS rece	ives a 501 Not impleme	nted indicating the transfere	ee does not support the REFER
Ensure that three party ca sent to the transferee:	all control applies at	the transferor AS whe	n a 501 Not implemented is	s received upon a REFER was
A 202 Accepted	l for the REFER is s	ent.		
	sent to the transfer identity of the trans		P-Asserted_identity of the ta	ransferee and the Referred-By
		NVITE is sent to the tra with the identity of the t		sserted_identity of the transfer
SIP header values:				
	from- erred-By contains IS ISC#3, P-Asserted ISC#2, P-Asserted ntains refer Subscription-State message/sipfrag contains refer message/sipfrag contains refer	tag%3DS1&Require=r SC#1 URI -Identity=ISC#2, Refer	red-By=ISC#1 red-By=ISC#1 value) ying	
Comments:				
	Establish Session #1 on hold	5 Transferor ment of session #1 ment of session #2	ISC#2	ISC#3
REFER 1 202 Accepted	 → REFER 50 ← 202 Acce 		REFER501 Not implemented	
		3 party call contro INVITE 3 180 Ringing 200 OK ACK		 → INVITE ← 180 Ringing ← 200 OK → ACK
NOTIFY(100) 200 OK NOTIFY	 ← NOTIFY → 200 OK 	(100)		
			INVITE200 OKACK	
NOTIFY(200) 200 OK NOTIFY	 ← NOTIFY → 200 OK 			
BYE(S1) 200 OK (BYE)	 → BYE ← 200 OK 	(BYE)		
BYE 200 OK (BYE)	 ← BYE(S2 → 200 OK 			

TSS Netw/TransferorAS	TP ECT_N01_020	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/2 AND PICS 5.7.1/5 [ITU-T Q.4007.1 v.1]
Test purpose			
	AS initiate the special REFER ha	andling procedures directly.	
	ol applies directly at the transferors not support the REFER metho		nowledge that the transferee
• A 202 Accepted for the	e REFER is sent.		
 A NOTIFY request is REFER request is acce 	sent to the transferor containing pted.	a message/sipfrag body set to	'SIP/2.0 100 Trying' after the
• An INVITE is sent to header with the identity	the transfer target containing the y of the transferor.	e P-Asserted_identity of the tr	ansferee and the Referred-By
	ceived, a reINVITE is sent to the -By header with the identity of th		sserted_identity of the transfer
• A NOTIFY request is s communication is conf	ent to the transferor containing a r ïrmed.	nessage/sipfrag body set to 'SIF	P/2.0 200 OK' after the referred
SIP header values:			
NOTIFY(100): Event contains r Subso messa NOTIFY(200): Event contains r messa	cription-State: active;expires=(ar age/sipfrag contains SIP/2.0 100 refer age/sipfrag contains SIP/2.0 200	ny value) Trying OK	
	cription-State: terminated;reason=	noresource	
Comments: ISC#1	AS transferor Establishment of session #1	ISC#2	ISC#3
Session	n #1 on hold		
REFER 1 →	REFER		
		trol applies	
REFER 1 →	REFER 202 Accepted 3 party call cont	trol applies →	➔ INVITE
REFER 1 →	REFER 202 Accepted 3 party call cont INVITE 3 180 Ringing	→	← 180 Ringing
REFER 1 →	REFER 202 Accepted 3 party call cont INVITE 3 180 Ringing 200 OK	→ ← ←	 ← 180 Ringing ← 200 OK
REFER 1 → 202 Accepted ←	REFER 202 Accepted 3 party call cont INVITE 3 180 Ringing 200 OK ACK	→	← 180 Ringing
REFER 1 →	REFER 202 Accepted 3 party call cont INVITE 3 180 Ringing 200 OK	→ ← ←	 ← 180 Ringing ← 200 OK
REFER 1 → 202 Accepted ← NOTIFY(100) ←	REFER 202 Accepted 3 party call cont INVITE 3 180 Ringing 200 OK ACK NOTIFY(100) 200 OK NOTIFY INVITE 4 200 OK	→ ← ←	 ← 180 Ringing ← 200 OK
REFER 1 → 202 Accepted ← NOTIFY(100) ←	REFER 202 Accepted 3 party call cont INVITE 3 180 Ringing 200 OK ACK NOTIFY(100) 200 OK NOTIFY INVITE 4 200 OK	 → → → → invite → 200 OK 	 ← 180 Ringing ← 200 OK
REFER 1 → 202 Accepted ← NOTIFY(100) ← 200 OK NOTIFY →	REFER 202 Accepted 3 party call cont INVITE 3 180 Ringing 200 OK ACK NOTIFY(100) 200 OK NOTIFY INVITE 4 200 OK ACK NOTIFY(200)	 → → → → invite → 200 OK 	 ← 180 Ringing ← 200 OK
REFER 1 → 202 Accepted ← NOTIFY(100) ← 200 OK NOTIFY → NOTIFY(200) ← 200 OK NOTIFY →	REFER 202 Accepted 3 party call cont INVITE 3 180 Ringing 200 OK ACK NOTIFY(100) 200 OK NOTIFY INVITE 4 200 OK ACK NOTIFY(200) 200 OK NOTIFY	 → → → → invite → 200 OK 	 ← 180 Ringing ← 200 OK

TSS Netw/TransferorAS	TP ECT_N01_	021	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1]	PICS 5	ion expression 5.5.1/2 AND 5.7.1/1 AND
			Clause 4.7.2.9.7 of	PICS 5	5.7.1/5
			[ETSI TS 124 628]	[ITU-7	Г Q.4007.1 v.1]
Test purpose					
Blind transfer. The transferor AS	initiate the special REFE	handling	g procedures directly.		
Ensure that three party call control is not allowed to receive or does			S when the AS has prior l	knowled	ge that the transferee
• A 202 Accepted for the	REFER is sent.				
• A NOTIFY request is s REFER request is accept		ining a m	essage/sipfrag body set to) 'SIP/2.0) 100 Trying' after the
• An INVITE is sent to the header with the identity		ng the P-	Asserted_identity of the t	ransferee	e and the Referred-By
	eived, a reINVITE is sent By header with the identity		nsferee containing the P-A ansferor.	sserted_	identity of the transfer
• A NOTIFY request is se communication is confin		ng a mes	sage/sipfrag body set to 'SI	P/2.0 200	O OK' after the referred
SIP header values:					
REFER 1: Refer-To contains ISC					
	contains ISC#1 URI) Dafam	ad Dy-ICC#1		
INVITE 3:Request URI = ISC#3 , INVITE 4:Request URI = ISC#2 ,					
NOTIFY(100): Event contains re	fer		-		
	iption-State: active;expir ge/sipfrag contains SIP/2.				
NOTIFY(200): Event contains re	fer	-	-		
messa	ge/sipfrag contains SIP/2.	200 OK			
Subsci	ription-State: terminated;re	ason=noi	resource		
Comments:					
ISC#1	AS transferor		ISC#2		ISC#3
~ ·	Establishment of session	#1			
Session	#1 on hold				
REFER 1 →	REFER				
202 Accepted \leftarrow	202 Accepted				
BYE →	I I I I I				
200 OK (BYE) ←					
	3 party ca	l control	applies		
	INVITE	3 →		→	INVITE
	180 Ringi	ng 🗲		←	180 Ringing
	200 C	к 🗲		←	200 OK
NOTIFY(100)					
200 OK NOTIFY →					
	AC	к 🗲		→	ACK
	INVITE	4 →	INVITE		
	200 C	к 🗲	200 OK		
	AC	К 🗲	ACK		
NOTIFY(200)	NOTIFY(200)				
200 OK NOTIFY →	200 OK NOTIFY				
	Apply p	ost test ro	outine		

		IP ECT_N01_022	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/3 AND PICS 5.7.1/5 [ITU-T Q.4007.1 v.1]
Test purpose				
Consultative transfer. The tr	ansferor AS initiate	the special REFER	nandling procedures direct	'y.
Ensure that three party call c is not allowed to receive or c			AS when the AS has prior I	mowledge that the transferee
• A 202 Accepted fo	r the REFER is sent.			
• A NOTIFY reques REFER request is a		feror containing a n	nessage/sipfrag body set to	'SIP/2.0 100 Trying' after the
	t to the Transfer Tar ntity of the transfero		P-Asserted_identity of the t	ransferee and the Referred-By
	s received, a reINVI rred-By header with			sserted_identity of the transfer
• A NOTIFY request communication is c		ror containing a mes	sage/sipfrag body set to 'SII	P/2.0 200 OK' after the referred
SIP header values:				
m NOTIFY(200): Event contai	ubscription-State: ac nessage/sipfrag conta	ins SIP/2.0 100 Try	ving	
	ubscription-State: ter	rminated;reason=no	resource	
	ubscription-State: ter	rminated;reason=no	resource	
S Comments: ISC#1	AS Tr Establishmen sion #1 on hold	rminated;reason=no ansferor it of session #1 it of session #2	resource ISC#2	ISC#3
S Comments: ISC#1 Ses	AS Tr Establishmen sion #1 on hold Establishmen → REFER ← 202 Accepted	ansferor tt of session #1 tt of session #2	ISC#2 applies	 → INVITE ← 180 Ringing ← 200 OK
S Comments: ISC#1 Ses REFER 1	AS Tr Establishmen sion #1 on hold Establishmen → REFER ← 202 Accepted	ansferor t of session #1 t of session #2 d 3 party call control INVITE 3 → 180 Ringing ← 200 OK ← ACK → 0)	ISC#2 applies	 → INVITE ← 180 Ringing
S Comments: ISC#1 Ses REFER 1 202 Accepted NOTIFY(100)	AS Tr Establishmen sion #1 on hold Establishmen → REFER ← 202 Accepter	ansferor t of session #1 t of session #2 d 3 party call control INVITE 3 → 180 Ringing ← 200 OK ← ACK → 0) TIFY INVITE 4 → 200 OK ← ACK → 0)	ISC#2 applies INVITE 200 OK	 → INVITE ← 180 Ringing ← 200 OK

6.2.2 Action at the transferee AS

TSS Netw/TransfereeAS		TP ECT_N02_001	C	Reference Clause 4.5.2.7 of ITU-T Q.3623 v.1]	PIC	ection expression S 5.5.1/2 U-T Q.4007.1 v.1]
Test purpose						
Communication transfer: Ass	sured	t ransfer applicable at the Tra	ansfere	e AS.		
Ensure that the transferee AS for the call that is transferred			the RE	FER request, the INV	VITE re	equest and the BYE request
SIP header values:						
REFER 1: Refer-To ISC#3 U		ethod=invite contains ISC#1 URI				
REFER 2: Refer-To ISC#3 U	JRI; n	ethod=invite				
INVITE 3:Request URI = IS INVITE 4:Request URI = IS NOTIFY(100): Event contai	C#3U C#3 U ns ref	JRI	ving			
NOTIFY(200): Event contai	ns ref	er	_			
Comments:	e/sipf	rag contains SIP/2.0 200 OK	L			
ISC#2		AS Transferee	1	SC#3		ISC#1
		Establishment				20 011 2
				Sessio	n #1 or	ı hold
		ISC#1 transfers	ISC#2	to ISC#3		
		REFER	←		←	REFER 1
REFER	←	REFER 2				
202 Accepted	→	202 Accepted				
		202 Accepted	→		→	202 Accepted
NOTIFY(100)	→				→	NOTIFY(100)
200 OK NOTIFY	←				←	200 OK NOTIFY
INVITE 3 (S2)	→	INVITE				
		INVITE 4	→ 1	NVITE		
		180 Ringing	← 1	80 Ringing		
180 Ringing	←	180 Ringing				
			← 2	200 OK		
200 OK		200 OK				
ACK	→		→ 1	ACK		
NOTIFY(200)	→				→	NOTIFY(200)
200 OK NOTIFY	÷				÷	200 OK NOTIFY
BYE	←				÷	BYE (S1)
200 OK (BYE)	÷ →				÷	200 OK (BYE)
	-	Apply post t	to at			Loo OK (DIL)

TSS Netw/TransfereeAS		TP ECT_N02_002		Reference Clause 4.5.2.7 of [ITU-T Q.3623 v.1]	PICS	tion expression 5.5.1/2 -T Q.4007.1 v.1]
Test purpose						
Communication transfer: B	ind tran	s fer applicable at the transfer	ree AS.			
Ensure that the transferee A the call that is transferred as		t as a proxy when receives the transfer.	e REFI	ER request, the INVI	TE requ	est and the BYE request for
SIP header values:						
REFER 2: Refer-To ISC#3 Refer INVITE 3:Request URI = I INVITE 4:Request URI = I NOTIFY(100): Event conta	ed-By c URI;me ed-By c SC#3 U SC#3 U ins refe nessage ins refe	ontains ISC#1 URI thod=invite ontains ISC#1 URI RI RI r sipfrag contains SIP/2.0 100 ' r	•	2		
	nessage	sipfrag contains SIP/2.0 200	OK			
Comments:		AS Treesform		150#2		160#1
ISC#2		AS Transferee	e	ISC#3		ISC#1
		Establishment	of sess		on #1 o	- hald
		ISC#1 transfers I	50#2		ON #1 0	
		REFER	€ €	130#3	←	REFER 1
REFER	←	REFER 2	•		•	
202 Accepted	→	202 Accepted				
L.		202 Accepted	→		→	202 Accepted
BYE	←				←	BYE (S1)
200 OK (BYE)	→				→	200 OK (BYE)
NOTIFY(100)	→				→	NOTIFY(100)
200 OK NOTIFY	←				←	200 OK NOTIFY
INVITE 3	→	INVITE				
		INVITE 4	→	INVITE		
		180 Ringing	←	180 Ringing		
180 Ringing	←	180 Ringing				
	_		÷	200 OK		
200 OK	+	200 OK	_			
ACK	→ 、		→	ACK		
NOTIFY(200)	→				→ ✓	NOTIFY(200)
200 OK NOTIFY	÷	Apply post te			÷	200 OK NOTIFY

TSS		ТР	Reference	Soloction overassion
Netw/TransfereeAS		ECT_N02_003	Clause 4.5.2.7 of	Selection expression PICS 5.5.1/2
Test purpose			[ITU-T Q.3623 v.1]] [ITU-T Q.4007.1 v.1]
Communication transfer: Con	sultativo	transfor applicable at the	transforce AS	
, i i i i i i i i i i i i i i i i i i i		0 11	Ū.	NUTE request and the DVE request
for the call that is transferred			ne KEFEK lequest, the I	NVITE request and the BYE request
SIP header values:				
REFER 1: Refer-To ISC#3 U	İ	d=invite?Replaces= call-ic from-tag%3DS1&Requin ains ISC#1 URI	8	В
REFER 2: Refer-To contains Referre	ISC#3/Tra d-By cont	ansferee AS URI;method= ains ISC#1 URI	=invite	
INVITE 3:Request URI = ISC Referre		feree AS URI ains ISC#1 URI		
INVITE 4:Request URI = ISC	C#3 URI			
		l;to-tag=S1;from-tag=S1 ains ISC#1 URI		
Require	: replaces			
NOTIFY(100): Event contain m		frag contains SIP/2.0 100	Trving	
NOTIFY(200): Event contain	ns refer	frag contains SIP/2.0 200	• 0	
Comments:		<u> </u>		
ISC#2		AS Transferee	ISC#3	ISC#1
		Establishment		
		S	Session #1 on hold	
		Establishment	of session #2	
		5	Session #2 on hold	
	ISC#1 tra	ansfers ISC#2 to ISC#3		
		REFER	÷	← REFER 1
REFER	← RE	EFER 2		
202 Accepted	→ 20	2 Accepted		
	• •••	202 Accepted	→	→ 202 Accepted
INVITE (S2 inactive)		VITE (inactive)		
200 OK (inactive) ACK	← 20→ A0	0 OK (S2 inactive)		
ACK	7 A(- K		
NOTIFY(100)	→			→ NOTIFY(100)
200 OK NOTIFY	€			 ✓ 200 OK NOTIFY
INVITE 3	→ IN	VITE		
		INVITE 4	→ INVITE	
		180 Ringing	← 180 Ringing	
180 Ringing	← 18	0 Ringing		
			← 200 OK	
200 OK	← 20	0 OK		
ACK	→ A0	СК		
	_	ACK	→ ACK	_
NOTIFY(200)	→			→ NOTIFY(200)
200 OK NOTIFY	÷			← 200 OK NOTIFY
ВҮЕ	÷			
200 OK (BYE)	→			→ 200 OK (BYE)
		Apply post te	est routine	

TSS Netw/TransfereeAS				TP ECT_N02_004		Reference Clause 4.5.2.7.3 [ITU-T Q.3623		PICS PICS	tion expression 5.5.1/2 AND 5.7.1/7 T Q.4007.1 v.1]	
Test purpose										
The Referred-By he	ader in the	rece	ived INVIT	E does not contain	the 1	valid identity of t	he serv	ved use	r. Value is replaced.	
If a Referred-By heat header contains the					o the	transfer target, t	he AS	verifie	s the provided Referred-By	
If no match is foun REFER request.	d, the valu	e of	the Referre	d-By header is rep	laced	d by the value of	f the R	eferred	-By header received in the	
SIP header values:										
REFER 2: Refer-To INVITE 3:Referred INVITE 4:Referred	Referred -By other	l-By URI	ISC#1							
Comments:										
ISC#2			AS	Transferee		ISC#3			ISC#1	
				Establishment	of se	ssion #1				
							Sessio	on #1 o	n hold	
				Establishment	of se	ssion #2				
							Sessio	on #2 o	n hold	
						ISC#1 transfers ISC#2 to ISC#3				
				REFER	←			←	REFER 1	
REFER		←	REFER 2							
202 Accepted		→	202 Acce	pted						
				202 Accepted	→			→	202 Accepted	
NOTIFY(100)		→						→	NOTIFY(100)	
200 OK NOTIFY		←						←	200 OK NOTIFY	
INVITE 3		→	INVITE							
				INVITE 4						
180 Ringing		←	190 Ding		÷	180 Ringing				
180 Kinging		T	180 Ring	ing	←	200 OK				
	200 OK	←	200 OK		-	200 011				
	ACK	→	ACK							
				ACK	→	ACK				
NOTIFY(200)		>						→	NOTIFY(200)	
200 OK NOTIFY		÷						÷	200 OK NOTIFY	
BYE		←						←	BYE	
200 OK (BYE)		→						→	200 OK (BYE)	
Apply post test routine										

TSS Netw/TransfereeAS		TP ECT_N02_005	Reference Clause 4.5.2.7.3 of [ITU-T Q.3623 v.1]	PICS PICS	tion expression 5.5.1/2 AND 5.7.1/6 T Q.4007.1 v.1]				
Test purpose									
The Referred-By header in the received INVITE does not contain the valid identity of the served user. The request is rejected.									
If a Referred-By header is available in the INVITE request sent to the transfer target, the AS verifies if the provided Referred- By header contains the value stored in the received REFER request.									
If no match is found, the INVITE request is rejected.									
SIP header values:									
REFER 2: Refer-To URI; method=invite									
Referred-By ISC#1 INVITE 3:Referred-By other URI (PIXIT)									
Comments:									
ISC#2	AS	S Transferee	ISC#3		ISC#1				
Establishment of session #1									
Session #1 on hold									
Establishment of session #2									
	Session #2 on hold								
	ISC#1 transfers ISC#2 to ISC#3								
		REFER •	F	←	REFER 1				
REFER	REFER	2							
202 Accepted →	202 Acce	epted							
		202 Accepted	>	→	202 Accepted				
_				_					
NOTIFY(100) \rightarrow				→	NOTIFY(100)				
200 OK NOTIFY				÷	200 OK NOTIFY				
INVITE 3 →	INVITE								
4xx	4xx								
ACK →	ACK								
Apply post test routine									

TSS Netw/TransfereeAS			Г Р ЕСТ_N02_006		Reference Clause 4.5.2.7.3 of [ITU-T Q.3623 v.1]	PICS PICS	tion expression 5.5.1/2 AND 5.7.1/8 T Q.4007.1 v.1]
Test purpose							
The received INVITE does r	ot con	tain a Referi	ed-By header.				
If no Referred-By header is the value is equal to the value					he transfer target, the A	S inser	ts a Referred-By header and
SIP header values:							
REFER 2: Refer-To URI; m							
Referr INVITE 3:(no Referred-By INVITE 4:Referred-By ISC	neader	ISC#1)					
Comments:							
ISC#2		AS	Fransferee		ISC#3		ISC#1
			Establishment	of se	ssion #1		
					Sessi	on #1 o	on hold
			Establishment	of se	ssion #2		
						on #1 o	
					ISC#1 trans	sfers IS	C#2 to ISC#3
			REFER	÷		÷	REFER 1
REFER	+	REFER 2					
202 Accepted	→	202 Accep		_		_	
			202 Accepted	→		→	202 Accepted
NOTIFY(100)	→					→	NOTIFY(100)
200 OK NOTIFY	←					←	200 OK NOTIFY
INVITE 3	→	INVITE					
			INVITE 4	→	INVITE		
			180 Ringing	←	180 Ringing		
180 Ringing	←	180 Ringi	ng				
				←	200 OK		
200 OK	€	200 OK					
ACK	→	ACK					
			ACK	→	ACK		
NOTIFY(200)	→					→	NOTIFY(200)
200 OK NOTIFY	÷					÷	200 OK NOTIFY
BYE	←					←	BYE
200 OK (BYE)	→					→	200 OK (BYE)
	-					-	
			Apply post te	st r	outine		

		-		
TSS Netw/TransfereeAS		TP ECT_N02_007	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/2 AND PICS 5.7.1/4 [ITU-T Q.4007.1 v.1]
Test purpose			I	
	ransferee AS receives a	403 Forbidden ind	dicating the transferre does	not support the REFER method.
-	-			eived upon a REFER was sent to
the Transferee:				erved upon a KEFEK was sent to
• A 202 Accept	ted for the REFER is se	nt.		
• A NOTIFY c	ontaining a message/sij	ofrag body set to 'Sl	IP/2.0 100 Trying' if the RE	FER request is accepted.
	is sent to the transfer the identity of the transf		e P-Asserted_identity of th	e transferee and the Referred-By
	OK is received, a reIN Referred-By header w			P-Asserted_identity of the transfer
• A NOTIFY c	ontaining a message/sij	ofrag body set to 'Sl	IP/2.0 200 OK' if the referre	d communication is established.
SIP header values:				
REFER 1: Refer-To co	ntains ISC#3 URI; met	hod=invite		
INVITE 3:Request UR INVITE 4:Request UR NOTIFY(100): Event o n	I = ISC#2 , P-Asserted- contains refer nessage/sipfrag contains	Identity=ISC#2, Re Identity=ISC#3, Re	eferred-By=ISC#1	
NOTIFY(200): Event of m	contains refer lessage/sipfrag contains	SIP/2.0 200 OK		
Comments:				
ISC#1	AS	Transferor	ISC#2	ISC#3
		ent of session #1		
	Session #1 on hold			
REFER 1	→ REFER			
			→ REFER	
			← 403 Forbidden	
202 Accepted	← 202 Ac	cepted		
		3 party call con	trol applies	
		INVITE 3	→	→ INVITE
		180 Ringing	÷	← 180 Ringing
		200 OK	÷	← 200 OK
		ACK	→	→ ACK
NOTIFY(100)	÷	NOTIFY(100)		
200 OK NOTIFY	→ 20	0 OK NOTIFY		
		INVITE 4	→ INVITE	
			← 200 OK	
			\rightarrow ACK	
NOTIFY(200)	÷	NOTIFY(200)		
200 OK NOTIFY		0 OK NOTIFY		
ВҮЕ	→ BYE			
200 OK (BYE)	← 200 OK	(BYE)		
		Apply post te	st routine	

TSS Netw/TransfereeAS		TP ECT_N02_008	8	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	PICS 5.5 PICS 5.7 PICS 5.7	n expression 5.1/2 AND 7.1/1 AND 7.1/4 2.4007.1 v.1]
Test purpose						
Blind transfer. The transfer	ree AS receives a	403 Forbidden ind	licating	the transferee does not	support th	e REFER method.
Ensure that three party call the Transferee:	control applies a	at the transferee AS	when	a 403 Forbidden is recei	ved upon	a REFER was sent to
• A 202 Accepted f	for the REFER is	sent.				
A NOTIFY conta	ining a message/	sipfrag body set to	'SIP/2.	0 100 Trying' if the REF	ER reques	t is accepted.
• An INVITE is se header with the id			the P-	Asserted_identity of the	transferee	e and the Referred-By
		INVITE is sent to t with the identity of		sferee containing the P	Asserted_	identity of the transfer
A NOTIFY conta	ining a message/	sipfrag body set to	'SIP/2.	0 200 OK' if the referred	communi	cation is established.
SIP header values:						
INVITE 3:Request URI = I INVITE 4:Request URI = I NOTIFY(100): Event cont messa NOTIFY(200): Event cont	SC#2, P-Asserte ains refer age/sipfrag conta ains refer	d-Identity=ISC#2,	Referre ying			
Comments:						
ISC#1	Α	S Transferor		ISC#2		ISC#3
	Establish	ment of session #1				
Se	ssion #1 on hold					
	• • • • •					
REFER 1	→ REFI		•	DEFED		
		REFER 403 Forbidden	→ ∠	REFER		
202 Accortad	← 202 /		T	403 Forbiddeli		
202 Accepted BYE	← 202 #	Accepted				
200 OK (BYE)	→ ←					
200 OK (B1E)	x	3 party call co	ontrol	annlies		
		INVITE 3	→	appies	→	INVITE
		180 Ringing	(÷	180 Ringing
		200 OK			÷	200 OK
		ACK			→	ACK
NOTIFY(100)	÷					
200 OK NOTIFY	→					
		INVITE 4	→	INVITE		
		200 OK	←	200 OK		
		ACK	→	ACK		
NOTIFY(200)	← NOT	IFY(200)				
200 OK NOTIFY	→ 200 0	OK NOTIFY				
		Apply post	test ro	utine		

TSS Netw/TransfereeAS		TP ECT_N02_009	Reference Clause 4.5.2.4.1.2.3of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/3 AND PICS 5.7.1/4 [ITU-T Q.4007.1 v.1]
Test purpose				
Consultative transfe method.	r . The transferee	AS receives a 403 Forbia	dden indicating the transfer	ree does not support the REFER
Ensure that three par the transferee:	ty call control app	blies at the transferee AS w	vhen a 403 Forbidden is rec	eived upon a REFER was sent to
• A 202 Acc	epted for the REF	ER is sent.		
A NOTIFY	containing a mes	sage/sipfrag body set to 'S	IP/2.0 100 Trying' if the REI	FER request is accepted.
	E is sent to the tr the identity of th		ne P-Asserted_identity of th	e transferee and the Referred-By
		l, a reINVITE is sent to the eader with the identity of the	6	-Asserted_identity of the transfer
A NOTIFY	containing a mes	sage/sipfrag body set to 'S	IP/2.0 200 OK' if the referre	d communication is established.
SIP header values:				
NOTIFY(100): Ever	nt contains refer message/sipfrag nt contains refer	sserted-Identity=ISC#3, Recontains SIP/2.0 100 Tryin		
Comments: ISC#1	Session #1 on	blishment of session #2	ISC#2	ISC#3
REFER 1 202 Accepted		REFER REFER 403 Forbidden 202 Accepted 3 party call con		
NOTIFY(100) 200 OK NOTIFY		INVITE 3 180 Ringing 200 OK	→ ← ← →	 → INVITE ← 180 Ringing ← 200 OK → ACK
		INVITE 4 200 OK ACK	 → INVITE ← 200 OK → ACK 	
NOTIFY(200) 200 OK NOTIFY		NOTIFY(200) 200 OK NOTIFY		
BYE(S1) 200 OK (BYE)		BYE 200 OK (BYE)		
BYE 200 OK (BYE)		BYE(S2) 200 OK (BYE) Apply post te	st routine	

TSS Netw/TransfereeAS		TP ECT_N02_010	Cl [I] Cl	eference ause 4.5.2.4.1.2.3 of IU-T Q.3623 v.1] ause 4.7.2.9.7 of TSI TS 124 628]	PICS 5. PICS 5. PICS 5.	n expression 5.1/2 AND 7.1/2 AND 7.1/4 Q.4007.1 v.1]
Test purpose						
Assured transfer. The method.	transferee AS recei	ves a 501 Not implen	nented ind	icating the transferee	e does not	support the REFER
Ensure that three party sent to the transferee:	call control applies	at the transferee AS	when a 50	1 Not implemented is	s received	upon a REFER was
A 202 Accept	ed for the REFER i	s sent.				
	s sent to the transf ne identity of the tra	er target containing the standard standard standard standard standard standard standard standard standard stand	he P-Asser	rted_identity of the tr	ransferee	and the Referred-By
		eINVITE is sent to th r with the identity of t			sserted_id	entity of the transfer
SIP header values:						
INVITE 3:Request URJ INVITE 4:Request URJ NOTIFY(100): Event c m NOTIFY(200): Event c	eferred-By contains = ISC#3 , P-Assert = ISC#2 , P-Assert contains refer uessage/sipfrag cont contains refer	s ISC#1 URI ed-Identity=ISC#2, R	eferred-By			
Comments:	eosuge orpring cont					
ISC#1	A	S Transferor	IS	C#2		ISC#3
		shment of session #1				
	Session #1 on ho	ld				
REFER 1	→ REFER					
		REFER	→ RI	EFER		
		1 Not implemented	← 50	1 Not implemented		
202 Accepted	← 202 Acc	1				
		3 party call con INVITE 3	ntrol appl	ies	د	INVITE
		180 Ringing	≁ ←			180 Ringing
		200 OK	` ←		、 +	200 OK
		ACK	÷ →		→	ACK
NOTIFY(100)	← NOTIFY					
200 OK NOTIFY		NOTIFY				
		INVITE 4		IVITE		
		200 OK		00 OK		
		ACK	→ A0	СК		
NOTIFY(200)	 ← NOTIFY → 200 OK 					
200 OK NOTIFY	→ 200 OK	NOTIFY				
BYE	→ BYE					
200 OK (BYE)	← 200 OK	(BYE)				
· · · · · · · · · · · · · · · · · · ·	200 011	Apply post to				

TSS Netw/TransfereeAS		TP ECT_N02_011	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]		PICS 5 PICS 5 PICS 5	on expression .5.1/2 AND .7.1/1 AND .7.1/4 `Q.4007.1 v.1]
Test purpose						
Blind transfer. The transf	eree AS receiv	ves a 501 Not implemented	indicat	ing the transferee does r	ot suppo	ort the REFER method.
Ensure that three party ca sent to the transferee:	all control app	blies at the transferee AS w	when a :	501 Not implemented is	s receive	d upon a REFER was
• A 202 Accepted	l for the REF	ER is sent.				
• An INVITE is header with the		ansfer target containing th e transferor.	ne P-As	serted_identity of the t	ransferee	and the Referred-By
		, a reINVITE is sent to the eader with the identity of th			sserted_	identity of the transfer
SIP header values:						
INVITE 3:Request URI = INVITE 4:Request URI = NOTIFY(100): Event co me: NOTIFY(200): Event co	erred-By cont = ISC#3 , P-As = ISC#2 , P-As ntains refer ssage/sipfrag on ntains refer	tains ISC#1 URI sserted-Identity=ISC#2, Re sserted-Identity=ISC#3, Re contains SIP/2.0 100 Tryin	eferred-			
Comments:						
ISC#1		AS Transferor]	(SC#2		ISC#3
	Esta	blishment of session #1				
	Session #1 or	ı hold				
REFER 1	→ RI	EFER				
		REFER		REFER		
202 A		501 Not implemented	€ :	501 Not implemented		
202 Accepted		2 Accepted				
BYE	→ ←					
200 OK (BYE)	T	2	4	-1		
		3 party call con INVITE 3	\rightarrow	pnes	→	INVITE
		180 Ringing				180 Ringing
		200 OK	← ←			200 OK
		ACK	► →		← →	ACK
NOTIFY(100)	←	ACK	7		7	ACK
200 OK NOTIFY	← →					
200 OK INUTIF I	7		· د	NUTE		
		INVITE 4		NVITE		
		200 OK		200 OK		
NOTIEN		ACK	→	ACK		
NOTIFY(200)	← N	OTIFY(200)				
200 OK NOTIFY	→ 20	0 OK NOTIFY				

TSS Netw/TransfereeAS		TP ECT_N02_012	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/3 AND PICS 5.7.1/4 [ITU-T Q.4007.1 v.1]
Test purpose				
Consultative transfer . The method.	e transferee AS rec	eives a 501 Not impleme	ented indicating the transfer	ee does not support the REFER
Ensure that three party ca sent to the transferee:	ll control applies a	t the transferee AS whe	en a 501 Not implemented i	s received upon a REFER was
A 202 Accepted	for the REFER is	sent.		
	sent to the transfe identity of the tran		P-Asserted_identity of the t	ransferee and the Referred-By
		INVITE is sent to the tr with the identity of the t	6	sserted_identity of the transfer
SIP header values:				
INVITE 3:Request URI = INVITE 4:Request URI = NOTIFY(100): Event con mes NOTIFY(200): Event con	erred-By contains I ISC#3, P-Asserted ISC#2, P-Asserted tains refer sage/sipfrag contain tains refer	I SC#1 URI d-Identity=ISC#2, Refer		
Comments:				
ISC#1		S Transferor ment of session #1	ISC#2	ISC#3
	Session #1 on hold	ament of session #2		
REFER 1	→ REFER	-	• REFER	
202 Accepted	50	01 Not implemented	501 Not implemented	
202 Accepted	• 202 AC	3 party call contro	ol applies	
NOTIFY(100)	← NOTIF		+	 → INVITE ← 180 Ringing ← 200 OK → ACK
200 OK NOTIFY	→ 200 OK	NOTIFY INVITE 4 200 OK ACK	₩ 200 OK	
NOTIFY(200) 200 OK NOTIFY	 ← NOTIF → 200 OK 		- ACK	
BYE(S1) 200 OK (BYE)	 → BYE ← 200 OK 	(BYE)		
BYE 200 OK (BYE)	 ← BYE(S2 → 200 OK 			

TSS Netw/TransfereeAS	TP ECT_N02_013	Reference Clause 4.5.2.4.1.2.3 of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/2 AND PICS 5.7.1/5 [ITU-T Q.4007.1 v.1]
Test purpose			
Assured transfer. The transferee	AS initiate the special REFER h	nandling procedures directly.	
Ensure that three party call contr is not allowed to receive or does			knowledge that the transferee
• A 202 Accepted for the	e REFER is sent.		
 A NOTIFY request is REFER request is acce 	sent to the transferor containing pted.	g a message/sipfrag body set to	'SIP/2.0 100 Trying' after the
-	the transfer target containing th	he P-Asserted_identity of the th	ransferee and the Referred-By
	ceived, a reINVITE is sent to th -By header with the identity of t		sserted_identity of the transfer
e	ent to the transferor containing a		P/2.0 200 OK' after the referred
SIP header values:			
INVITE 3:Request URI = ISC#3 INVITE 4:Request URI = ISC#2 NOTIFY(100): Event contains r message/si NOTIFY(200): Event contains r	By contains ISC#1 URI B, P-Asserted-Identity=ISC#2, R 2, P-Asserted-Identity=ISC#3, R refer pfrag contains SIP/2.0 100 Tryi refer	eferred-By=ISC#1	
	pfrag contains SIP/2.0 200 OK		
Comments: ISC#1	AS Transferor	ISC#2	ISC#3
150/11	Establishment of session #1	15012	156#5
Sessior	1 #1 on hold		
REFER 1 →	REFER		
202 Accepted ←	202 Accepted		
	3 party call con		
	INVITE 3	→	→ INVITE
	180 Ringing	←	← 180 Ringing
	200 OK	+	← 200 OK
	ACK	→	→ ACK
NOTIFY(100)	NOTIFY(100) 200 OK NOTIFY		
	200 OK NOTIFY		
	INVITE 4	→ INVITE	
	200 OK	← 200 OK	
	ACK	→ ACK	
NOTIFY(200)	NOTIFY(200)		
200 OK NOTIFY →	200 OK NOTIFY		
вуе →	BYE		
BYE → 200 OK (BYE) ←	BYE 200 OK (BYE)		

TSS Netw/TransfereeAS		TP ECT_N02_014		Reference Clause 4.5.2.4.1.2.3of [ITU-T Q.3623 v.1] Clause 4.7.2.9.7 of [ETSI TS 124 628]	PICS 5 PICS 5 PICS 5	on expression 5.5.1/2 AND 5.7.1/1 AND 5.7.1/5 7 Q.4007.1 v.1]
Test purpose						
Blind transfer. The trans	feree AS initiate t	he special REFER ha	ndling p	procedures directly.		
Ensure that three party ca is not allowed to receive				when the AS has prior	knowled	ge that the transferee
• A 202 Accepted	l for the REFER	is sent.				
• A NOTIFY req REFER request		e transferor containin	ig a mes	sage/sipfrag body set to	o 'SIP/2.0	100 Trying' after the
	sent to the transf identity of the tra		the P-A	sserted_identity of the t	ransferee	e and the Referred-By
		reINVITE is sent to the reINVITE is sent to the relation of the sentity of		feree containing the P-A sferor.	sserted_	identity of the transfer
• A NOTIFY required communication		transferor containing a	a messag	ge/sipfrag body set to 'SI	P/2.0 200	OK' after the referred
SIP header values:						
NOTIFY(200): Event co	ISC#2 , P-Assert ntains refer ssage/sipfrag cont ntains refer		Referred v ing			
Comments:						
ISC#1	I	AS Transferor		ISC#2		ISC#3
	Establis	hment of session #1				
	Session #1 on ho	ld				
REFER 1	→ REFE	ÊR				
202 Accepted	← 202 A	ccepted				
BYE	→					
200 OK (BYE)	←					
		3 party call co	_	oplies		
		INVITE 3	→ <		→	INVITE
		180 Ringing 200 OK	(+	180 Ringing
NOTIFY(100)	←	200 OK	÷		÷	200 OK
200 OK NOTIFY	÷					
	-	ACK	→		→	ACK
		INVITE 4		INVITE	-	
		200 OK	€	200 OK		
		ACK		ACK		
NOTIFY(200)	← NOTI	FY(200)				
200 OK NOTIFY		OK NOTIFY				
200 OK NOTIT		NUTIF I				

TSS Netw/TransfereeAS		TP ECT_N02_015	Reference Clause 4.5.2.4.1.2.3 of Clause 4.7.2.9.7 of [ETSI TS 124 628]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/3 AND PICS 5.7.1/5 [ITU-T Q.4007.1 v.1]
Test purpose				
Consultative transfer. The tra	insferee AS initia	te the special REFE	ER handling procedures dire	ctly.
Ensure that three party call co is not allowed to receive or d		•		r knowledge that the transferee
A 202 Accepted for	the REFER is se	ent.		
• A NOTIFY request REFER request is a		ansferor containing	a message/sipfrag body set	to 'SIP/2.0 100 Trying' after the
• A reINVITE is sen header with the ider			e P-Asserted_identity of the	e transferee and the Referred-By
• After the 200 OK is target and the Refer				Asserted_identity of the transfer
A NOTIFY request communication is c		sferor containing a r	nessage/sipfrag body set to 'S	SIP/2.0 200 OK' after the referred
SIP header values:				
NOTIFY(200): Event contain message	ns refer e/sipfrag contains ns refer	s SIP/2.0 100 Tryin s SIP/2.0 200 OK		
Comments:				
ISC#1	AS	Transferor	ISC#2	ISC#3
	Establishn	nent of session #1		
Sessio	n #1 on hold			
	Establishn	nent of session #2		
REFER 1 202 Accepted	 → REFER ← 202 Acce 	pted 3 party call cont INVITE 3 180 Ringing 200 OK	→ ¹ ←	 → INVITE ← 180 Ringing ← 200 OK
NOTIFY(100) 200 OK NOTIFY	 ← NOTIFY → 200 OK N 	ACK (100)		→ ACK
			 JINVITE €200 OK JACK 	
NOTIFY(200) 200 OK NOTIFY	 ← NOTIFY → 200 OK N 	(200)		
BYE(S1) 200 OK (BYE)	 → BYE ← 200 OK (BYE)		
BYE 200 OK (BYE)	 ← BYE(S2) → 200 OK (

6.2.3 Interaction with other services

6.2.3.1 Originating identification restriction (OIR)

TSS Interaction/OIR		TP ECT_N03_001	Cla	eference ause 4.6.5 of ITU-T Q.3623 v.1]	PICS PICS	tion expression 5.5.1/2 AND 7.7.2/1 -T Q.4007.1 v.1]
Test purpose			·			
Referred-By header	privacy regarding the red	quested privacy for the	e P-Asser	ted-Identity.		
Ensure that a privacy value 'id'.	header is present and the	ne value 'user' is inclue	ded in ad	ldition if the privac	/ header	was received with the
SIP header values:						
REFER 1: Refer-To	contains ISC#3 URI; me Referred-By contains I					
	P-Asserted-Identity ISC Privacy: id	C#1 URI				
REFER 2: Refer-To	contains ISC#3 URI; me Referred-By contains I					
	P-Asserted-Identity ISC Privacy: id, user	C#1 URI				
Comments:						
ISC#1	AS	Transferor	IS	C#2		ISC#3
	Establishm	ent of session #1				
	Session #1 on hold					
	Establishm	ent of session #2				
	ISC#1 transfe	ers ISC#2 to ISC#3				
REFER 1	→ REFE	R				
		REFER 2	→ RE	EFER		
		202 Accepted	E 20	2 Accepted		
202 Accepted	← 202 A	ccepted				
NOTIFY(100)	+	•	e no	OTIFY(100)		
200 OK NOTIFY	→	-	→ 20	0 OK NOTIFY		
		INVITE	F IN	VITE 3		
		INVITE 4	>		→	INVITE
		180 Ringing	f		←	180 Ringing
		180 Ringing	→ 18	0 Ringing		
		200 OK	F		←	200 OK
		200 OK	→ 20	0 OK		
				ACH	< →	ACK
NOTIFY(200)	+	•		OTIFY(200)		
200 OK NOTIFY	→	-		0 OK NOTIFY		
BYE	→			YE		
200 OK (BYE)	+		E 20	0 OK (BYE)		

TSS Interaction/OIR		TP ECT_N03_002	2	Reference Clause 4.6.5 of [ITU-T Q.3623 v.1]	PIC PIC	ection expression S 5.5.1/2 AND S 7.7.2/1 U-T Q.4007.1 v.1]
Test purpose						
Privacy header in the INVI	TE of the transj	feree is set according	previo	ous received privacy indi	cation.	
Ensure that the INVITE rec call between the transferee a			he sa	me privacy requirements	as previ	ous received in initial
				E of the initial call. The safer target does not contain		
SIP header values:						
200 OK INVITE 1: Privacy	: id					
INVITE 3: (no Privacy head INVITE 4: Privacy: id	ler)					
Comments:						
ISC#1 INVITE 1 180 Ringing 200 OK (INVITE) ACK	+ + +	AS Transferor	→ ← ← →	ISC#2 INVITE 180 Ringing 200 OK (INVITE) 1 ACK		ISC#3
INVITE (sendonly) 200 OK (recvonly) ACK	→ ← →		→ + →	INVITE (sendonly) 200 OK (recvonly) ACK		
INVITE 2 180 Ringing 200 OK (INVITE) ACK	→				→ + + +	8 8
INVITE (sendonly) 200 OK (recvonly) ACK REFER	 → ← → RE 	FER			→ ← →	INVITE (sendonly) 200 OK (recvonly) ACK
202 Accepted	← 202	REFER 202 Accepted 2 Accepted	→ ←	REFER 202 Accepted		
NOTIFY(100) 200 OK NOTIFY	← →	INVITE INVITE 4 180 Ringing 180 Ringing	* * * * * *	NOTIFY(100) 200 OK NOTIFY INVITE 3 180 Ringing	→ +	INVITE 180 Ringing
		200 OK 200 OK	← →		← 2K →	200 OK ACK
NOTIFY(200) 200 OK NOTIFY BYE 200 OK (BYE)	+ + + +	Apply post to	$\begin{array}{c} \leftarrow \\ \rightarrow \\ \rightarrow \\ \leftarrow \\ \end{array}$	NOTIFY(200) 200 OK NOTIFY BYE 200 OK (BYE) utine		

TSS Interaction/OIR		TP ECT_N03_003		Reference Clause 4.6.5 of [ITU-T Q.3623 v.1]	PIC PIC	ection expression CS 5.5.1/2 AND CS 7.7.2/1 U-T Q.4007.1 v.1]
Test purpose						
Privacy header in the INVITE of	of the transfere	e is set according	previc	ous received privacy in	dication.	
Ensure that the INVITE reques call between the transferee and			e sam	e privacy requirements	s as previo	usly received in initial
Transferee sends a privacy if the INVITE request sent					nserts a pr	ivacy header set to 'id'
SIP header values:						
INVITE 1: Privacy: id						
INVITE 3: (no Privacy header) INVITE 4: Privacy: id						
Comments:						
ISC#1 INVITE 180 Ringing 200 OK (INVITE) ACK	AS ← → ←	5 Transferor	÷ + + +	ISC#2 INVITE 1 180 Ringing 200 OK (INVITE) 1 ACK		ISC#3
INVITE (sendonly) 200 OK (recvonly) ACK	→ ← →		→ ← →	INVITE (sendonly) 200 OK (recvonly) ACK		
INVITE 2 180 Ringing 200 OK (INVITE) ACK	→ ← ← →					
INVITE (sendonly) 200 OK (recvonly) ACK REFER	 → ← → REFEI 				→ ← →	INVITE (sendonly) 200 OK (recvonly) ACK
202 Accepted	← 202 A	REFER 202 Accepted ccepted	→ ←	REFER 202 Accepted		
NOTIFY(100) 200 OK NOTIFY	← →	INVITE INVITE 4 180 Ringing 180 Ringing 200 OK 200 OK	* * * * * * * *	NOTIFY(100) 200 OK NOTIFY INVITE 3 180 Ringing 200 OK	→ + +	INVITE 180 Ringing 200 OK
NOTIFY(200) 200 OK NOTIFY BYE 200 OK (BYE)	← → +	Apply post to	+ + + +	NOTIFY(200) 200 OK NOTIFY BYE 200 OK (BYE)	АСК →	ACK

6.2.3.2 Anonymous communication rejection and communication barring (ACR/CB)

TSSInteraction/ACR-CB		TP ECT_N04_001	Reference Clause 4.6.9 of [ITU-T Q.3623 v.1]	Selection expression PICS 5.5.1/2 AND PICS 7.7.2/2 [ITU-T Q.4007.1 v.1]
Test purpose				
Transfer requests with a tr	ansfer target tha	t is barred by the served u	sers outgoing communicati	on barring (OCB) rules.
Ensure that the AS does communication barring (O		nsfer requests with a tra	ansfer target that is barred	l by the transferor's outgoing
Precondition: The transfer	target is barred	by the transferor's outgoin	ng communication barring r	ules.
SIP header values:				
REFER 1: Refer-To contai Referred-F	ns ISC#3 URI; r By contains ISC #			
Comments:				
ISC#1	A	AS Transferor	ISC#2	ISC#3
	Establish	ment of session #1		
INVITE	←	+	INVITE 1	
180 Ringing	→	→	180 Ringing	
200 OK (INVITE)	→	→	200 OK (INVITE)	
ACK	÷	+	ACK	
INVITE 2 (sendonly)	→	→	INVITE (sendonly)	
200 OK (recvonly)	÷	+	200 OK (recvonly)	
ACK	→	→	ACK	
	ISC#1 trans	sfers ISC#2 to ISC#3		
REFER 1	→ REF	ER		
403 Forbidden	← 403	Forbidden		
		Apply post test r	outine	

6.2.3.3 CONFerence calling (CONF)

TSS Interaction/CONF	TP EC	T_N05_001	Reference Clause 4.6.6 [ITU-T Q.3		Selection expression PICS 5.5.1/2 AND PICS 5.7.1/1 AND PICS 7.7.2/3 [ITU-T Q.4007.1 v.1]
Test purpose					
ECT does not apply if the Refe REFER.	er-To header of the R	EFER request d	lialogue contain.	s the URI ta	rgeted a conference invited by
Ensure that ECT does not appl dialogue to join a conference a 4xx or 5xx or 6xx unsuccessfu	fter received a REFE				a 1xx or 200 OK response in a FER request is rejected with a
SIP header values:					
INVITE: Request URI=confer	ence factory URI				
200 OK (INVITE) 1:					
Contact:	conference URI; isfo	cus			
	2 o conference URI;met -By ISC#1 URI	hod=invite			
Comments:					
ISC#ISC#1	AS	S Transferor			AS CONF
	A confe	erence is alread	y established		
REFER	÷		÷	REFER	
202 Accepted	→		→	202 Accep	oted
INVITE	→		→	INVITE	
180 Ringing	÷		+	180 Ringi	ng
200 OK (INVITE)	←		÷	200 OK (I	NVITE)
ACK	→		→	ACK	
REFER	→ REFER				
4xx or 5xx or 6xx Response	← 4xx or 5xx or	6xx Response			
	A	Apply post test	routine		

TSS Interaction/CONF	TP ECT_N05_002	Reference Clause 4.6.6 of [ITU-T Q.3623 v.1]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/1 AND PICS 7.7.2/3 [ITU-T Q.4007.1 v.1]
Test purpose			
ECT does not apply if the Refer-To header of INVITE.	the REFER request dial	ogue contains the URI targ	eted a conference invited by
Ensure that ECT does not apply if the "Isfocue a dialogue to join a conference after received unsuccessful final response.			
SIP header values:			
INVITE: ISC#1 URI			
Contact: conference URI	; isfocus		
Comments:			
ISC#ISC#1	AS Transferor		AS CONF
Α	conference is already e	stablished	
INVITE ←		← INVITE	
180 Ringing →		➔ 180 Ringing	
200 OK (INVITE) →		→ 200 OK (IN)	VITE)
ACK ←		← ACK	
REFER			
4xx or 5xx or 6xx Response 🗧 4xx or 5	5xx or 6xx Response		
	Apply post test rou	ıtine	
TSS Interaction/CONF	TP ECT_N05_003	Reference Clause 4.6.6 of [ITU-T Q.3623 v.1]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/1 AND PICS 7.7.2/3 [ITU-T Q.4007.1 v.1]
Test purpose			
ECT does not apply if the conference controlle	r invokes ECT.		
Ensure that ECT does not apply if the conferent 6xx unsuccessful final response.	ace controller invokes EC	CT. The REFER request is r	rejected with a 4xx or 5xx or
SIP header values:			
INVITE 1: conference factory URI			
Comments:			
ISC#ISC#1	AS Transferor		AS CONF
INVITE 1 →		→ INVITE	
200 OK (INVITE)		← 200 OK (IN	VITE)
	Invite a	nother user to the confere	ence
REFER → REFER			
	oxx or 6xx Response		
	Apply post test rou	ıtine	

6.2.3.4 Explicit communication transfer (ECT)

TSS Interaction/ECT		TP ECT_N06_00	1	Reference Clauses 4.6.10.2, 4.6.10.3 of [ITU-T Q.3623 v.1]	PICS PICS	ction expression 5 5.5.1/2 AND 5 5.7.1/1 [-T Q.4007.1 v.1]
Test purpose						
Interaction with ECT: Bli	nd transfer.					
A session between ISC#1	and ISC#2 ex	ists and was transferred	befo	ore.		
Ensure that if the INVITE presence of a Referred-By			ved	is a previously transferred con	nmunio	cation indicated by the
• REFER is forwarded	and the value	of the Refer-To header	is re	eplaced by the ECT session ide	ntifier	
• The Request URI of target.	the INVITE re	equest received to forwa	rd to	o the transfer target is replaced	with th	he value of the transfer
SIP header values:						
REFER 2: Refer-To ECT	erred-By ISC#	‡1 URI tifier URI; method=inv	ite			
INVITE 3:Request URI =	erred-By ISC#	#1 URI				
Comments:						
ISC#ISC#1		AS Transferor		ISC#ISC#2		ISC#ISC#3
A transferred	communicatio	on already exists				
Sess	ion #1 on hold	1				
REFER 1	→ R	REFER				
		REFER 2	→	REFER		
		202 Accepted	÷	202 Accepted		
202 Accepted	← 2	02 Accepted				
BYE	→		→	BYE		
200 OK (BYE)	+		←	200 OK (BYE)		
		INVITE	←	INVITE 2 (S2)		
		INVITE 3	→		→	INVITE
		180 Ringing			←	180 Ringing
				180 Ringing		
		200 OK			←	200 OK
		200 OK	→	200 OK		
				ACK	→	ACK
		Apply post	test	routine		

TSS Interaction/ECT	TP ECT_N06_002	Reference Clauses 4.6.10.2, 4.6.10.3 of [ITU-T Q.3623 v.1]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/2 [ITU-T Q.4007.1 v.1]
Test purpose			
Interaction with ECT: Assured transfer.			
A session between ISC#1 and ISC#2 exists and	was transferred befo	ore.	
Ensure that if the INVITE dialog on which the I presence of a Referred-By header in the INVITE		is a previously transferred com	munication indicated by the
• REFER is forwarded and the value of the R	efer-To header is re	placed by the ECT session Ider	ntifier.
• The Request URI of the INVITE request reating target.	ceived to forward to	the transfer target is replaced v	vith the value of the transfer
SIP header values:			
REFER 1: Refer-To ISC#3 URI; method=invite Referred-By ISC#1 URI REFER 2: Refer-To ECT Session Identifier UF Referred-By ISC#ISC#1 U	RI; method=invite		
INVITE 2:Request URI = ECT Session Identifi Referred-By ISC#1 URI INVITE 3:Request URI = ISC#3 URI Referred-By ISC#1 URI	ier URI		
Comments:			
ISC#1 AS T	ransferor	ISC#2	ISC#3
A transferred communication alread	ly exists		
Session #1 on hold			
REFER 1 \rightarrow REFER			
	REFER 2 \rightarrow	REFER	
	202 Accepted ←	202 Accepted	
	INVITE 🗲	INVITE 2 (S2)	
	INVITE 3 \rightarrow		→ INVITE
	180 Ringing 🗲		← 180 Ringing
	180 Ringing →	180 Ringing	
	200 OK 🗲		← 200 OK
	200 OK →	200 OK	
		ACK	→ ACK
	Apply post test	routine	

TSS		ТР	Reference	Selection expression
Interaction/ECT		ECT_N06_003	Clauses 4.6.10.2, 4.6.10.3 of	PICS 5.5.1/2 AND
			[ITU-T Q.3623 v.1]	PICS 5.7.1/3 [ITU-T Q.4007.1 v.1]
Test purpose		·		
Interaction with ECT: Cor	ısultative transfer	•		
A session between ISC#1	and ISC#2 exists	and was transferred	before.	
Ensure that if the INVITE presence of a Referred-By			ved is a previously transferred co	ommunication indicated by the
-		-	is replaced by the ECT session is	lantifian
			is replaced by the ECT session ic	
• The Request URI of t target.	ine IN VITE reque	st received to forwar	d to the transfer target is replace	d with the value of the transfer
SIP header values:				
Refe REFER 2: Refer-To conta	3 URI; method=i fron erred-By ISC#1 U	ı-tag=S2 &Require≕ RI Identifier URI; met	-	
	ISC#3 URI laces=call-id-S2;	to-tag=S2; from-tag	Referred-By ISC #	#1 URI
	erred-By ISC#1 U	RI		
Comments:	uire: replaces			
ISC#1		S Transferor	ISC#2	ISC#3
A transferred co			150#2	150#5
INVITE 1 (S1)	→	cauy caises		→ INVITE
180 Ringing	÷			← 180 Ringing
200 OK (INVITE)	←			 ← 200 OK (INVITE)
ACK	→			→ ACK
INVITE (sendonly)	→			→ INVITE (sendonly)
200 OK (recvonly)	←			← 200 OK (recvonly)
ACK	→			→ ACK
REFER 1	→ REF	ER		
		REFER 2	→REFER	
		202 Accepted	←202 Accepted	
202 Accepted	← 202	Accepted		
INVITE (inactive)	÷		←INVITE (inactive)	
200 OK (inactive)	→		→200 OK (inactive)	
ACK	÷		← ACK	
NOTIFY(100)	÷		←NOTIFY(100)	
200 OK NOTIFY	→		→200 OK NOTIFY	
			←INVITE 2 (S3)	
		INVITE 3		→ INVITE
		180 Ringing		← 180 Ringing

TSS Interaction/ECT		TP ECT_N06_003	Reference Clauses 4.6.10.2, 4.6.10.3 of [ITU-T Q.3623 v.1]	Selection expression PICS 5.5.1/2 AND PICS 5.7.1/3 [ITU-T Q.4007.1 v.1]
		180 Ringing 🚽	180 Ringing	
		200 OK 🗲	-	← 200 OK
		200 OK 🚽	200 OK	
			ACK	→ ACK
NOTIFY(200)	÷	÷	NOTIFY(200)	
200 OK NOTIFY	→	-	200 OK NOTIFY	
BYE	÷			
200 OK (BYE)	→			→ 200 OK (BYE)
BYE (S1)	→	+	BYE	
200 OK (BYE)	÷	÷	-200 OK (BYE)	
		Apply post te	st routine	

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Terminals and subjective and objective assessment methods
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks, open system communications and security
Series Y	Global information infrastructure, Internet protocol aspects and next-generation networks, Internet of Things and smart cities
Series Z	Languages and general software aspects for telecommunication systems