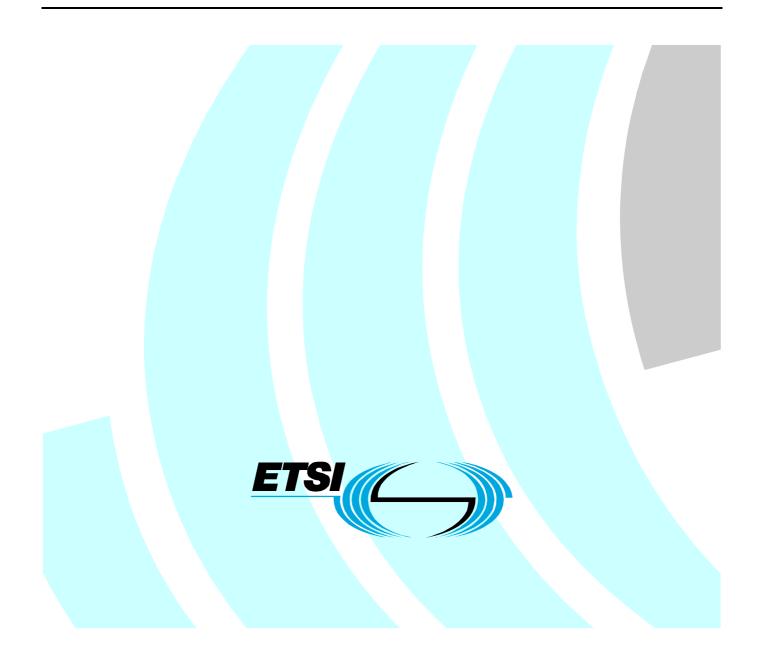
ETSI TS 186 022-2 V3.1.1 (2011-08)

Technical Specification

Technical Committee for IMS Network Testing (INT); Communication Waiting (CW) using IP Multimedia (IM) Core Network (CN) subsystem; Conformance Testing; Part 2: Test Suite Structure and Test Purposes (TSS&TP)



Reference RTS/INT-00030-2

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ETSI

650 Route des Lucioles F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C Association à but non lucratif enregistrée à la Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee IMS Network Testing (INT).

The present document is part 2 of a multi-part deliverable covering Communication Waiting (CW) using IP Multimedia (IM) Core Network (CN) subsystem; Conformance Testing, as identified below:

Part 1: "Protocol Implementation Conformance Statement (PICS)";

Part 2: "Test Suite Structure and Test Purposes (TSS&TP)";

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

1 Scope

The present document specifies the Test Suite Structure and Test Purposes of the Communication Waiting (CW) service, based on stage 1 and stage 2 of the ISDN call waiting supplementary services. It provides the protocol details in the IP Multimedia (IM) Core Network (CN) subsystem based on the Session Initiation Protocol (SIP) and the Session Description Protocol (SDP).

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2 References

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

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

2.1 Normative references

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

[1]	ETSI TS 124 615 (V8.3.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Communication Waiting (CW) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol Specification (3GPP TS 24.615 version 8.3.0 Release 8)".
[2]	ETSI TS 186 022-1: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services; Communication Waiting (CW); Part 1: Protocol Implementation Conformance Statement (PICS)".
[3]	IETF RFC 5621: "Message Body Handling in the Session Initiation Protocol (SIP)".
[4]	ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

2.2 Informative references

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

Not applicable.

3 Definitions and abbreviations

3.1Definitions

For the purposes of the present document, the terms and definitions given in TS 124 615 [1] and the following apply:

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

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

PICS proforma: Refer to ISO/IEC 9646-1 [4].

point of control and observation: Refer to ISO/IEC 9646-1 [4].

Protocol Implementation Conformance Statement (PICS): Refer to ISO/IEC 9646-1 [4].

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

Test Purpose (TP): Refer to ISO/IEC 9646-1 [4].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TS 124 615 [1] and the following apply:

TSS Test Suite Structure

4 Test Suite Structure (TSS) and Configuration

Table 1a

destination_UE		CW_U01_xxx
originating_UE		CW_U02_xxx
AS		CW_N01_xxx
interaction	CDIV	CW_N02_xxx
configuration		CW_N03_xxx

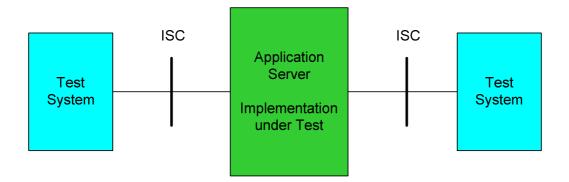
4.1 Configuration

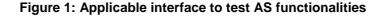
CW

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

Therefore to test the appropriate entities the configurations below are applicable:

Testing of the Application Server: This entity is responsible to perform the service. Hence the ISC interface is the appropriate access point. Figure 1 points to this.





If the ISC interface is not accessible it is also applicable to perform the test of the AS using any NNI (Mw, Mg, Mx) interface (consider figure 2). In case only the Gm interface is accessible this shall be used instead. In this case, be aware that the verification of several requirements is impeded.

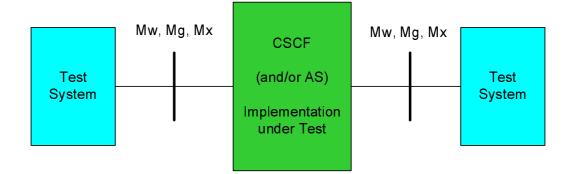


Figure 2: Applicable interfaces to test using the (generic) NNI interface

Figure 3 illustrates the usage of any NNI interface.

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

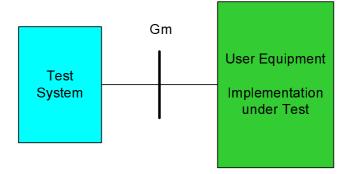


Figure 3: Applicable configuration to test the User Equipment

5 Test Purposes (TP)

5.1 Introduction

For each test requirement a TP is defined.

5.1.1 TP naming convention

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

Identifier: <s< th=""><th colspan="8">Identifier: <ss>_<iut><group>_<nnn></nnn></group></iut></ss></th></s<>	Identifier: <ss>_<iut><group>_<nnn></nnn></group></iut></ss>							
<\$\$>	=	supplementary service:	e.g. "CW"					
<iut></iut>	=	type of IUT:	U N	User - equipment Network				
<group></group>	=	group	2 digit field I	representing group reference according to TSS				
<nnn></nnn>	=	sequential number	(001-999)					

Table 1: TP identifier naming convention scheme

5.1.2 Test strategy

As the base standard TS 124 615 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification TS 186 022-1 [2]. The criteria applied include the following:

• whether or not a test case can be built from the TP is not considered.

5.2 TPs for Communication Waiting (CW)

5.2.1 Test purposes at the destination (user B) UE

TSS	TP	Reference	Selection expression
CW/destination_UE	CW_U01_001	4.5.5.3.2	PICS 2/4
Test purpose			
The terminating User Equipment sends a 180 Rin	nging.		
Ensure that the user B User Equipment is able to	send a 180 Ringing	n on receipt of an INVIT	F with a CW XML MIME
attachment indicating Communication Waiting.			
Preconditions:			
SIP header values:			
INVITE: MIME body			
Content-Type: application/3gpp-ims+xml			
Content_Disposition: 3gpp-alternative-service			
MIME XML			
ims-3gpp version="1"			
alternative-service			
action			
call-waiting-indication			
Comments:			
Test System		User Equipme	ent
	<i>a</i>		
Establish	n a confirmed com	munication	
INVITE	→		
100 Trying	+		
180 Ringing	+		
A	pply post test rout	tine	
TSS	ТР	Reference	Selection expression
CW/destination_UE	CW_U01_002	4.5.5.3.2	PICS 2/3 and PICS 2/4
Test purpose			
The terminating User Equipment is able to send a	a Communication W	aiting indication in a 18	30 response.
	L 400 D' '		
Ensure that the user B User Equipment is able to <urn:alert:service:call-waiting> on receipt of an IN</urn:alert:service:call-waiting>			
Preconditions:	NVITE COntaining a l		
SIP header values:			
180 Ringing Alert-Info: <urn:alert:service:call-wa< td=""><td>iiting></td><td></td><td></td></urn:alert:service:call-wa<>	iiting>		
Comments:	0		
Test System		User Equipme	ent
Fstablish	n a confirmed com	munication	
Latabila		manication	
INVITE	→		
100 Trying	+		
180 Ringing Alert-Info:	÷		
<urn:alert:service:call-waiting></urn:alert:service:call-waiting>	-		
٨	pply post test rout	line	

TSS	TP	Reference	Selection expression
CW/destination_UE	CW_U01_003	4.5.5.3.2, RFC 5621	
Test purpose The terminating User Equipment sends a 4 MIME attachment indicating CW	115 Unsupported Medi	a Type if the received IN	VITE contains a XML CW
Ensure that the user B User Equipment is a support the CW XML MIME attachment ind			the User Equipment does not
Preconditions:		······································	
SIP header values:			
INVITE: MIME body			
Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv	ice		
MIME XML			
ims-3gpp version="1"			
alternative-service action			
call-waiting-indication			
Comments:			
Test System		User Equipn	nent
Est	ablish a confirmed c	ommunication	
INVITE	→		
415 Unsupported Media Type	+		
ACK	→		
TSS	ТР	Reference	Selection expression
CW/destination_UE	TP CW_U01_004 urrent communication a	Reference 4.5.5.3.3 Case A and accepts the waiting o	Selection expression PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication.	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of	PICS 2/4
Ensure that the user B User Equipment is a communication. Preconditions: SIP header values:	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1"	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1"	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments:	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of tive communication on he	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments: Test System	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of tive communication on he User Equipm	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments: Test System Estal	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of tive communication on he User Equipn	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments: Test System Estal INVITE (2)	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of tive communication on he User Equipn	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments: Test System Estal INVITE (2) 100 Trying	CW_U01_004 urrent communication a able set the current act ice blish a confirmed condition	4.5.5.3.3 Case A and accepts the waiting of tive communication on he User Equipn	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments: Test System Estal INVITE (2) 100 Trying 180 Ringing (2)	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of tive communication on he User Equipn	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments: Test System Estal INVITE (2) 100 Trying 180 Ringing (2) INVITE (1, sendonly)	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of tive communication on he User Equipn	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments: Test System Estal INVITE (2) 100 Trying 180 Ringing (2) INVITE (1, sendonly) 200 OK INVITE (1, recvonly)	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of tive communication on he User Equipn	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments: Test System Estal INVITE (2) 100 Trying 180 Ringing (2) INVITE (1, sendonly) 200 OK INVITE (1, recvonly) ACK 200 OK INVITE (2)	CW_U01_004	4.5.5.3.3 Case A and accepts the waiting of tive communication on he User Equipn	PICS 2/4
CW/destination_UE Test purpose The terminating User Equipment holds s cu Ensure that the user B User Equipment is a communication. Preconditions: SIP header values: INVITE: MIME body Content-Type: application/3gpp-ims+xml Content_Disposition: 3gpp-alternative-serv MIME XML ims-3gpp version="1" alternative-service action call-waiting-indication Comments: Test System	CW_U01_004 current communication a able set the current act ice blish a confirmed con ← ← ← ← ←	4.5.5.3.3 Case A and accepts the waiting of tive communication on he User Equipm nmunication (1)	PICS 2/4

TSS	TP	Reference	Selection expression
CW/destination_UE	CW_U01_005	4.5.5.3.3 Case A	PICS 2/4
Test purpose			
The terminating User Equipment is able a	to release current commu	nication and accepts th	e waiting call.
Ensure that the user B User Equipment is	s able release the current	active communication :	and accents the waiting
communication.			and decepts the waiting
Preconditions:			
SIP header values:			
INVITE: MIME body			
Content-Type: application/3gpp-ims+xml			
Content_Disposition: 3gpp-alternative-se	rvice		
MIME XML			
ims-3gpp version="1"			
alternative-service			
action call-waiting-indication			
call-waiting-indication			
Comments:			
Test System		User Equipn	nent
Est	ablish a confirmed com	munication (1)	
INVITE (2)	→		
100 Trying	+		
180 Ringing (2)	+		
BYE (1)	+ →		
200 OK BYE (1)	7		
200 OK INVITE (2)	+		
ACK	→		
	Apply post test ro	utine	

TSS CW/destination_UE	TP CW_U01_006	Reference 4.5.5.3.3 Case B	Selection expression PICS 2/4 AND
Test purpose			PICS 3/2
The terminating User Equipment starts t	imer TAS CW and acts on it	s expirv.	
		o onpriji	
Ensure that the user B User Equipment			
response containing a Reason header ir	ndicating cause value 19 (N	lo answer from user(us	ser alerted)).
Preconditions:			
SIP header values: INVITE: MIME body			
Content-Type: application/3gpp-ims+xm	I		
Content_Disposition: 3gpp-alternative-se			
MIME XML			
ims-3gpp version="1"			
alternative-service action			
call-waiting-indication			
our watting indication			
480			
Reason header			
Cause value=19 No answer from use Comments:	er(user alerted)		
Test System		User Equipr	nent
		oboi Equipi	
E	Establish a confirmed con	nmunication	
INVITE	→		
100 Trying	+		
180 Ringing	+		
	Start timer TAS-CN	N	
	Timeout T _{AS-CW}		
480 Temporarily Unavailable	+		
ACK	→		
	Apply post test ro	utine	

TSS	ТР	Reference	Coloction expression
CW/destination_UE	CW_U01_007	4.5.5.3.3	Selection expression PICS 2/4
Test purpose			
The terminating User Equipment is able to accept	ot release of the wa	iting call.	
Frances that the user Diller Frankresstic ships			
Ensure that the user B User Equipment is able a user C.	apply the terminating	g OE procedures up	on receipt of CANCEL from
Preconditions:			
SIP header values:			
INVITE: MIME body			
Content-Type: application/3gpp-ims+xml			
Content_Disposition: 3gpp-alternative-service			
MIME XML			
ims-3gpp version="1" alternative-service			
action			
call-waiting-indication			
Comments:			
Test System		User Equi	pment
Establish	a confirmed comr	nunication (1)	
INVITE (2)	→		
100 Trying	(
180 Ringing (2)	÷		
CANCEL (2)	→		
200 OK CANCEL (2)	←		
487 Request Terminated	+		
ACK	→		
	Apply post test rou	utine	
TSS CW/destination_UE	TP CW_U01_008	Reference 4.5.5.3.3	Selection expression PICS 2/4
Test purpose		4.0.0.3.3	FIC3 2/4
The terminating User Equipment is able to accept	ot release of the wa	itina call.	
Ensure that the user B User Equipment is able a	pply the terminating	g UE procedures up	oon receipt of BYE from user C.
Preconditions:			
SIP header values:			
INVITE: MIME body			
Content-Type: application/3gpp-ims+xml			
Content_Disposition: 3gpp-alternative-service MIME XML			
ims-3gpp version="1"			
alternative-service			
action			
call-waiting-indication			
Commenter			
Comments: Test System		User Equi	pment
-		-	r
Establish	a confirmed comr	nunication (1)	
INVITE (2)	→		
100 Trying	÷		
180 Ringing (2)	÷		
BYE (2)	→		
200 OK BYE (2)	+		
	Apply post test rou	Itine	
,			

TSS CW/destination_UE	TP CW_U01_0	Reference 4.5.5.3.3	Selection expression PICS 2/4
	09		
Test purpose			
	ent is able to acce	pt the waiting c	all after the current active communication is released by
the User A.			
			aiting communication after the remote user A released
the active communication by s Preconditions :	sending a CANCEI	_ request	
SIP header values:			
INVITE: MIME body			
Content-Type: application/3gp Content_Disposition: 3gpp-alt			
MIME XML	emalive-service		
ims-3gpp version="1"			
alternative-service			
action			
call-waiting-indi	cation		
-			
Comments:			
Test System			User Equipment
	Establish	a confirmed c	communication (1)
INVITE (2)			→
100 Trying			~
180 Ringing (2)			
CANCEL (1)			\rightarrow
200 OK CÀŃCEL (1)			←
487 Request Terminated			+
ACK			→
	Prompt user	B to accept wa	aiting communication
200 OK INVITE (2)			(
ACK			→

TSS	-	ГР	Reference	Selection expression
CW/destination_UE		CW_U01_010	4.5.5.3.3	PICS 2/4
Fest purpose The terminating User Equi _n the User A.	oment is able to accept	the waiting call a	fter the current activ	ve communication is released by
			g communication aft	ter the remote user A released
the active communication I	by sending a BYE reque	st		
Preconditions:				
SIP header values:				
INVITE: MIME body				
Content-Type: application/				
Content_Disposition: 3gpp MIME XML	-alternative-service			
ims-3gpp version="1"				
alternative-service				
action				
call-waiting-i	ndication			
5				
Comments:				
Test System			User Equ	ipment
	Establish a	confirmed com	munication (1)	
NVITE (2)		→		
100 Trying		÷		
180 Ringing (2)		÷		
3 3 ()				
BYE (1)		→		
200 OK BYE (1)		+		
	Prompt user B	to accept waitin	g communication	
200 OK INVITE (2)		+		
ACK		→		
	An	ply post test ro	utine	

5.2.2 Test purposes at the originating (user C) UE

TSS	TP	CB reference	Selection expression
CW/originating_UE	CW_U02_001	clause 4.5.2.1	PICS 2/2
Test purpose			
The originating user receives the Communication			
Ensure that the originating user equipment has	the ability to receive	the "communication	is waiting" indication in the
Alert-Info header value <urn:alert:service:call-wa< td=""><td>aiting>.</td><td></td><td></td></urn:alert:service:call-wa<>	aiting>.		
Preconditions:			
SIP header values:			
180 Ringing Alert-Info: <urn:alert:service:call-w< td=""><td>aiting></td><td></td><td></td></urn:alert:service:call-w<>	aiting>		
Comments:			
User Equipment		Test Syster	n
	→	INVITE	
	←	100 Trying	
	+	180 Ringing	Alert-Info:
	v	<urn:alert:se< td=""><td>ervice:call-waiting></td></urn:alert:se<>	ervice:call-waiting>
	Apply post test ro	utine	

5.2.3 Test purposes at the Application Server

TSS CW/AS	TP CW_N01_001	Refer 4.5.5.		Selection expression PICS 1/2 AND NOT PICS 1/3
Test purpose CW indication determined by approaching	NDUB condition. The i	ndication f	for CW is sen	t to the terminating user.
Ensure that on receipt of an INVITE reque that a Communication Waiting condition hat the INVITE contains:				
 a MIME body with the "call-waiting-ind turn contained in a "alternative-service "ims-3gpp" root element; and the Content-Type header field is set to 	e" element, with that "al	ernative-s		
The 180 Ringing sent to the originating con <urn:alert:service:call-waiting></urn:alert:service:call-waiting>	ntains an Alert-Info hea	der indica	ting Commun	ication Waiting by value
Preconditions: Terminating user subscrib	es to the CW simulation	n service		
SIP header values:				
INVITE: MIME body				
Content-Type: application/3gpp-ims+xml				
MIME XML				
ims-3gpp version="1" alternative-service				
action				
call-waiting-indication				
180 Ringing: Alert-Info: <urn:alert:service< td=""><td>:call-waiting></td><td></td><td></td><td></td></urn:alert:service<>	:call-waiting>			
Comments:				
Test System (ISC towards user C)	AS			n (ISC towards user B)
INVITE	→	→	INVITE	
100 Trying	+	÷	100 Trying	
180 Ringing	÷	÷	180 Ringing	
	Apply post test r			

TSS	TP	Reference	Selection expression
CW/AS	CW_N01_002	4.5.5.2 [1]	PICS 1/2 AND
			PICS 1/3
Test purpose			
CW indication determined by approaching N	IDUB condition. The A	S applies an annour	cement to the originating user.
Ensure that on receipt of an INVITE request that a Communication Waiting condition has that the INVITE contains:			
 a MIME body with the "call-waiting-indic turn contained in a "alternative-service" "ims-3gpp" root element; and the Content-Type header field is set to 	element, with that "alte	ernative-service" ele	
Ensure that an announcement is applied to			
Preconditions: Terminating user subscribe	s to the CW simulation	service	
SIP header values:			
INVITE: MIME body			
Content-Type: application/3gpp-ims+xml			
MIME XML			
ims-3gpp version="1"			
alternative-service			
action			
call-waiting-indication			
Comments:	40	Tast Orac	
Test System (ISC towards user C)	AS		em (ISC towards user B)
INVITE 100 Taxia a	→	→ INVITE	_
100 Trying	+	 100 Trying 100 Dia aii 	
180 Ringing	Announcement to or	180 Ringin indicating user	ng
Abbi		ignating user	
	Apply post test ro	utine	

TSS	TP	Refere	ence	Selection expression
CW/AS	CW_N01_003	4.5.5.2	2 [1]	PICS 1/2
Test purpose	·			
CW indication determined by approaching N	DUB condition. Call e	stablishme	ent unsucces	ssful due to the terminating
User Equipment not supporting the CW indic	ation in the received	INVITE.		
Ensure that on receipt of an INVITE request that a Communication Waiting condition has that the INVITE contains:				
 a MIME body with the "call-waiting-indication turn contained in a "alternative-service" of "ims-3gpp" root element; and the Content-Type header field is set to "attraction to the content the content to the	element, with that "alt	ernative-s		
If a 415 Unsupported Media Type final respo originating user.			ating user, a	486 Busy Here is sent to the
Preconditions: Terminating user subscribes	to the CW simulation	service		
SIP header values: INVITE: MIME body				
Content-Type: application/3gpp-ims+xml MIME XML				
ims-3gpp version="1"				
alternative-service				
action				
call-waiting-indication				
Comments:				
Test System (ISC)	AS			n (ISC towards user B)
	→	-	INVITE	ented Medie Ture
	÷			orted Media Type
ACK	→	→	ACK	
227	ТР	Pofor		Selection expression

TSS	TF		Reference	Selection expression
CW/AS	CV	V_N01_004	4.5.5.2 [1]	PICS 1/1
Test purpose				
CW indication determined by receiving a	180 (Ringir	ig) response w	ith an Alert-Info he	ader field set to
"urn:alert:service:call-waiting".				
Ensure that on receipt of a 180 (Ringing)				
Communication Waiting is determined. E	insure that t	he 180 Ringing	g is passed to the c	originating user.
Preconditions:				
Preconditions: SIP header values:				
	e:call-waitir	g>		
SIP header values:	e:call-waitir	g>		
SIP header values: 180 Ringing: Alert-Info: <urn:alert:servic< td=""><td>e:call-waitir</td><td>g> AS</td><td>Test Syste</td><td>em (ISC towards user B)</td></urn:alert:servic<>	e:call-waitir	g> AS	Test Syste	em (ISC towards user B)
SIP header values: 180 Ringing: Alert-Info: <urn:alert:servic Comments:</urn:alert:servic 	e:call-waitir	0	Test Syste	em (ISC towards user B)
SIP header values: 180 Ringing: Alert-Info: <urn:alert:servic Comments: Test System (ISC towards user C)</urn:alert:servic 		0	•	
SIP header values: 180 Ringing: Alert-Info: <urn:alert:servic Comments: Test System (ISC towards user C) INVITE</urn:alert:servic 	→ ←	0	 → INVITE ← 100 Trying 180 Ringing 	
SIP header values: 180 Ringing: Alert-Info: <urn:alert:servic Comments: Test System (ISC towards user C) INVITE 100 Trying</urn:alert:servic 	→	0	 → INVITE ← 100 Trying ← 180 Ringin 	
SIP header values: 180 Ringing: Alert-Info: <urn:alert:servic Comments: Test System (ISC towards user C) INVITE 100 Trying 180 Ringing Alert-Info</urn:alert:servic 	→ + +	0	 → INVITE ← 100 Trying ← 180 Ringir <urn:alert:< li=""> </urn:alert:<>	ig Alert-Info

TSS CW/AS		Reference	Selection expression PICS 1/1 AND
CW/AS	CW_N01_005	4.5.5.2 [1]	PICS 1/1 AND PICS 1/3
Test purpose CW indication determined by receiving a "urn:alert:service:call-waiting". An annou			der field set to
Ensure that on receipt of a 180 (Ringing) Communication Waiting is determined. E 180 Ringing is passed to the originating	insure that an announcem		
Preconditions: SIP header values:			
180 Ringing: Alert-Info: <urn:alert:servic< td=""><td>e:call-waiting></td><td></td><td></td></urn:alert:servic<>	e:call-waiting>		
Comments:			
Test System (ISC towards user C)	AS	•	m (ISC towards user B)
	\rightarrow	→ INVITE	
100 Trying 180 Ringing Alert-Info	7	 100 Trying 180 Ringing 	Alort Info
<urn:alert:service:call-waiting></urn:alert:service:call-waiting>	←		ervice:call-waiting>
•	oply announcement to or		ervice.cui waiting>
ግ <u>ት</u>			

TSS CW/AS	TP CW_N01_006	Reference 4.5.5.2 [1]	Selection expression PICS 1/1 AND PICS 3/1
Test purpose <i>CW indication determined by receiving a 1</i> <i>"urn:alert:service:call-waiting". The</i> T_{AS-CW} Ensure that on receipt of a 180 (Ringing) re Communication Waiting is determined. Ensure that on expiry of timer T_{AS-CW} the <i>A</i> set to SIP and the cause set to 408 toward header with the cause set to 19 towards us	timer expires. esponse with an Alert-Ir sure that the 180 Ringin AS sends a CANCEL re s user B and a 480 Ten	fo header field set to g is passed to the or quest containing a R	o "urn:alert:service:call-waiting" riginating user. leason header with the protocol
Preconditions: SIP header values: 180 Ringing: Alert-Info: <urn:alert:service: 480 Temporarily unavailable: Reason: ca CANCEL: Reason: protocol=SIP; cause=4</urn:alert:service: 	ause=19		
Comments: Test System (ISC towards user C) INVITE 100 Trying 180 Ringing Alert-Info <urn:alert:service:call-waiting></urn:alert:service:call-waiting>	AS ← ← Start timer T _{AS-C}	 → INVITE ← 100 Trying ← 180 Ringing <urn:alert:s< li=""> </urn:alert:s<>	m (ISC towards user B) g Alert-Info ervice:call-waiting>
480 Temporarily Unavailable ACK	T _{AS-CW} expired ✦ ✦	 → CANCEL ← 200 OK CA 	NCEL st Terminated

5.3 Interaction with other supplementary services

5.3.1 Communication diversion services (CDIV)

TSS	TP	CB reference	Selection expression
CW/interaction/CDIV	CW_N02_001	4.6.8.1	
Test purpose	•	•	·
A Communication Diversion (CFU) activation ta	kes precedence ove	er the Communication	Waiting service, CW
indication determined by approaching NDUB co	ondition.		
Ensure that on receipt of an INVITE request that			
that a Communication Waiting condition has oc	curred. User B has a	also CFU activated. Er	nsure that the AS does not
send the INVITE request to user B.			
Preconditions: Configuration of simulation service	vices via Ut interface	e is applicable	
SIP header values:			
HTTP PUT			
<simservs< td=""><td></td><td></td><td></td></simservs<>			
<call-waiting active="true"></call-waiting>			
Comments:			
Test System (ISC towards user C)	AS	Test Systen	n (ISC towards user B)
INVITE A		No message	. ,
100 Trying 🗧 🗧			

5.4 Test purposes for Service Configuration

TSS	TP	CB reference	Selection expression
CW/int	CW_N03_001	4.8	PICS 1/5
Test purpose			
Communication Waiting can succ	essful activated using Ut interface		
Ensure that Communication Waiti	ng can be activated by the user, a	XML document is se	ent to the XCAP server.
Preconditions: Configuration of s	imulation services via Ut interface	e is applicable	
SIP header values:			
HTTP PUT			
xml version="1.0" encoding="U</td <th>ΓF-8"?></th> <td></td> <td></td>	ΓF-8"?>		
	si.org/ngn/params/xml/simservs/xo		
	vw.w3.org/2001/XMLSchema-inst	ance">	
<call-waiting active="true"></call-waiting>			
Comments:			
Test System (Ut)		XCAP serv	rer
HTTP PUT	→		
HTTP 200 OK PUT	÷		
	-		

TSS	TP	CB reference	Selection expression
CW/int	CW_N03_002	4.5.1	NOT PICS 1/5
Test purpose			
Communication Waiting can successful S	SIP based activated.		
Ensure that Communication Waiting can			
request is used to convey the configuration	on code to the Application	Server that hosts the	supplementary service.
Preconditions: Configuration of simulation	on services via CW Applic	ation Server is applic	able
SIP header values:			
INVITE: sip: <service code="">;phone-contex</service>	xt=home1.net;user=dialstr	ing SIP/2.0	
Comments:			
Test System (Ut)		CW AS	
	→		
200 OK INVITE	4		
ACK	+		
ACK	7		
BYE	→		
200 OK BYE	+		
NOTE: Service code e.g. "*43*".			

6 Compliance

An ATS which complies with the present document shall:

- a) consist of a set of test cases corresponding to the set or to a subset of the TPs specified in clause 5;
- b) use a TSS which is an appropriate subset of the whole of the TSS specified in clause 4;
- c) use the same naming conventions for the test groups and test cases;
- d) maintain the relationship specified in clause 5 between the test groups and TPs and the entries in the PICS proforma to be used for test case deselection.

In the case of a) or b) above, a subset shall be used only where a particular Abstract Test Method (ATM) makes some TPs untestable. All testable TPs from clause 5 shall be included in a compliant ATS.

History

Document history			
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