

International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.4012.3

(08/2016)

SERIES Q: SWITCHING AND SIGNALLING

Testing specifications – Testing specifications for SIP-IMS

Anonymous communication rejection and communication barring using IP multimedia core network subsystem; Conformance test specification – Part 3: Test suite structure and test purposes; User side

Recommendation ITU-T Q.4012.3

ITU-T



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.4012.3

Anonymous communication rejection and communication barring using IP multimedia core network subsystem; Conformance test specification – Part 3: Test suite structure and test purposes; User side

Summary

Recommendation ITU-T Q.4012.3 provides the testing requirements for the supplementary service "Anonymous communication rejection (ACR) and communication barring (CB) using IP multimedia (IM) core network (CN) subsystem; Conformance test specification – Part 3: Test suite structure and test purposes (TSS&TP) for the user side" (based on Recommendation ITU-T Q.3628 v.1).

The version number, v.1, indicates that this is version one of Recommendation ITU-T Q.4012.3, 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.4012.3 v.1	2016-08-29	11	11.1002/1000/13009

Keywords

ACR, anonymous communication rejection, IMS, IP multimedia subsystem, testing, test suite structure and test purposes, TSS&TP

* 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, <http://handle.itu.int/11.1002/1000/11830-en>.

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 <http://www.itu.int/ITU-T/ipr/>.

© 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 References.....	1
3 Definitions	1
3.1 Terms defined elsewhere	1
3.2 Terms defined in this Recommendation.....	2
4 Abbreviations and acronyms	2
5 Conventions	2
6 Test Suite Structure (TSS).....	3
6.1 Configuration.....	3
7 Test Purposes (TP).....	3
7.1 Introduction	3

Recommendation ITU-T Q.4012.3

Anonymous communication rejection and communication barring using IP multimedia core network subsystem; Conformance test specification – Part 3: Test suite structure and test purposes; User side

1 Scope

This Recommendation is Part 3 of a multi-part deliverable covering anonymous communication rejection (ACR) and communication barring (CB) using IP multimedia (IM) core network (CN) subsystem; Conformance test specification – Part 3: Test suite structure and test purposes (TSS&TP); User side, as identified below:

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

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

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

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.3628 v.1] ITU-T Q.3628 v.1 (2016), *Anonymous communication rejection and communication barring using IP multimedia core network subsystem – Protocol specification.*

[ITU-T Q.4012.1] ITU-T Q.4012.1 (2016), *Anonymous communication rejection and communication barring using IP multimedia core network subsystem; Conformance testing specification – Part 1: Protocol implementation conformance statement.*

[ETSI TS 124 623] ETSI TS 124 623 (2012-03), *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Extensible Markup Language (XML) Configuration Access Protocol (XCAP) over the Ut interface for Manipulating Supplementary Services (3GPP TS 24.623 version 10.3.0 Release 10).*

3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

ACR	Anonymous Communication Rejection
CB	Communication Barring
CN	Core Network
ICB	Incoming Communication Barring
IM	IP Multimedia
IMS	IP Multimedia Subsystem
IP	Internet Protocol
PICS	Protocol Implementation Conformance Statement
SIP	Session Initiation Protocol
TP	Test Purpose
TSS	Test Suite Structure
XCAP	Extensible Markup Language Configuration Access Protocol
XML	Extensible Markup Language

5 Conventions

None.

6 Test suite structure

Table 6-1 – Test suite structure

ACR-CB			
	User	Destination_UE	ACR-CB_U01_xxx

6.1 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.3628 v.1]. Stage 3 describes the requirements for several network entities and terminal devices. Consequently, several interfaces (reference points) are addressed to satisfy the test of the different entities.

In order to test the appropriate entities the configurations below are applicable.

6.1.1 Testing of the user equipment

There are special clauses in the protocol standard describing the procedures that apply at the originating and terminating user equipment (UE) as shown in the test configuration in Figure 1.

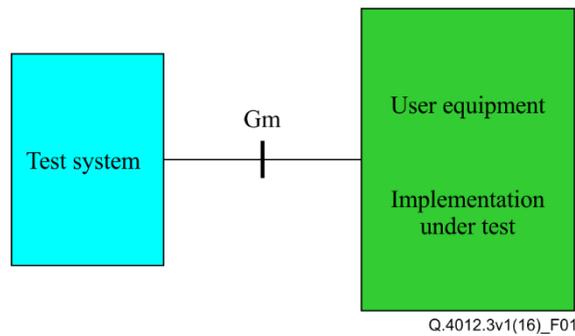


Figure 1 – Applicable configuration to test UE functionalities

7 Test Purposes

7.1 Introduction

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

7.1.1 TP naming convention

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

Table 1 – TP identifier naming convention scheme

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

7.1.2 Test strategy

As the base standard [ITU-T Q.3628 v.1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the protocol implementation conformance statement (PICS) specification [ITU-T Q.4012.1]. The criteria applied include the following:

- Whether or not a test case can be built from the TP is not considered.

7.1.3 Actions at the destination user equipment

TSS	TP	Reference	Selection expression
ACR-CB/User/Destination_UE	ACR-CB_U01_001	Clause 4.5.0 of [ITU-T Q.3628 v.1]	PICS 4.5.1/1 AND PICS 4.6.1/4 [ITU-T Q.4012.1]
Test purpose <i>The user equipment is able to send an INVITE request including a SSC command to use session initiation protocol (SIP) based user configuration.</i> Ensure that a user equipment is able to send an INVITE request including a SSC command to use SIP based user configuration.			
SIP header values: INVITE: Request line sip:<service code>;phone-context=<any domain>;user=dialstring SIP/2.0			
Comments: UE (Gm#1) INVITE			
		→	Test equipment (Gm#2) INVITE
Apply post test routine			

TSS	TP	Reference	Selection expression																		
ACR-CB/User/Destination_UE	ACR-CB_U01_002	Clause 4.5.2.13 of [ITU_T Q.3628 v.1]	PICS 4.5.1/1 AND PICS 4.6.1/1 [ITU-T Q.4012.1]																		
Test purpose <i>The user equipment is able to send a 603 Decline to indicate incoming call barring.</i> Ensure that a user equipment is able to send a 603 Decline containing a Reason header set to SIP the cause parameter set to '603' and the text parameter set to 'Decline' to indicate incoming call barring.																					
SIP header values: 603: Reason: SIP;cause=603;text="Decline"																					
Comments: <table border="0"> <thead> <tr> <th>UE (Gm#1)</th> <th></th> <th>Test equipment (Gm#2)</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td>←</td> <td>INVITE</td> </tr> <tr> <td>180 Ringing</td> <td>→</td> <td>180 Ringing</td> </tr> <tr> <td colspan="3" style="text-align: center;">Apply procedure to indicate incoming communication barring</td> </tr> <tr> <td>603 Decline</td> <td>→</td> <td>603 Decline</td> </tr> <tr> <td>ACK</td> <td>←</td> <td>ACK</td> </tr> </tbody> </table>				UE (Gm#1)		Test equipment (Gm#2)	INVITE	←	INVITE	180 Ringing	→	180 Ringing	Apply procedure to indicate incoming communication barring			603 Decline	→	603 Decline	ACK	←	ACK
UE (Gm#1)		Test equipment (Gm#2)																			
INVITE	←	INVITE																			
180 Ringing	→	180 Ringing																			
Apply procedure to indicate incoming communication barring																					
603 Decline	→	603 Decline																			
ACK	←	ACK																			

TSS	TP	Reference	Selection expression																								
ACR-CB/User/Destination_UE	ACR-CB_U01_003	Clause 4.5.2.13 of ITU_T Q.3628 v.1	PICS 4.5.1/1 AND PICS 4.6.1/2 [ITU-T Q.4012.1]																								
Test purpose <i>The user equipment is able to send a BYE request to indicate incoming call barring.</i> Ensure that a user equipment is able to send a BYE request containing a Reason header set to SIP the cause parameter set to '603' and the text parameter set to 'Decline' to indicate incoming call barring.																											
SIP header values: BYE: Reason: SIP;cause=603;text="Decline"																											
Comments: <table border="0"> <thead> <tr> <th>UE (Gm#1)</th> <th></th> <th>Test equipment (Gm#2)</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td>←</td> <td>INVITE</td> </tr> <tr> <td>180 Ringing</td> <td>→</td> <td>180 Ringing</td> </tr> <tr> <td>200 OK INVITE</td> <td>→</td> <td>200 OK INVITE</td> </tr> <tr> <td>ACK</td> <td>←</td> <td>ACK</td> </tr> <tr> <td colspan="3" style="text-align: center;">Apply procedure to indicate incoming communication barring in BYE</td> </tr> <tr> <td>BYE</td> <td>→</td> <td>BYE</td> </tr> <tr> <td>200 OK BYE</td> <td>←</td> <td>200 OK BYE</td> </tr> </tbody> </table>				UE (Gm#1)		Test equipment (Gm#2)	INVITE	←	INVITE	180 Ringing	→	180 Ringing	200 OK INVITE	→	200 OK INVITE	ACK	←	ACK	Apply procedure to indicate incoming communication barring in BYE			BYE	→	BYE	200 OK BYE	←	200 OK BYE
UE (Gm#1)		Test equipment (Gm#2)																									
INVITE	←	INVITE																									
180 Ringing	→	180 Ringing																									
200 OK INVITE	→	200 OK INVITE																									
ACK	←	ACK																									
Apply procedure to indicate incoming communication barring in BYE																											
BYE	→	BYE																									
200 OK BYE	←	200 OK BYE																									

TSS	TP	Reference	Selection expression																														
ACR-CB/User/Destination_UE	ACR-CB_U01_004	Clause 4.5.2.13 of ITU_T Q.3628 v.1	PICS 4.5.1/1 AND PICS 4.6.1/3 [ITU-T Q.4012.1]																														
Test purpose <i>The user equipment is able to send an INVITE request in the early dialogue to indicate incoming call barring.</i> Ensure that a user equipment is able to send an INVITE request in the early dialogue including a SSC command to indicate incoming call barring.																																	
SIP header values: INVITE 2: Request line sip:<service code>;phone-context=<any domain>;user=dialstring SIP/2.0																																	
Comments: <table border="0"> <thead> <tr> <th>UE (Gm#1)</th> <th></th> <th>Test equipment (Gm#2)</th> </tr> </thead> <tbody> <tr> <td>INVITE</td> <td>←</td> <td>INVITE 1</td> </tr> <tr> <td>180 Ringing</td> <td>→</td> <td>180 Ringing</td> </tr> <tr> <td colspan="3" style="text-align: center;">Apply procedure to indicate incoming communication barring in INVITE</td> </tr> <tr> <td>INVITE 2</td> <td>→</td> <td>INVITE</td> </tr> <tr> <td>200 OK INVITE</td> <td>←</td> <td>200 OK INVITE</td> </tr> <tr> <td>ACK</td> <td>→</td> <td>ACK</td> </tr> <tr> <td>BYE 2</td> <td>→</td> <td>BYE</td> </tr> <tr> <td>200 OK BYE</td> <td>←</td> <td>200 OK BYE</td> </tr> <tr> <td colspan="3" style="text-align: center;">Apply post test routine</td> </tr> </tbody> </table>				UE (Gm#1)		Test equipment (Gm#2)	INVITE	←	INVITE 1	180 Ringing	→	180 Ringing	Apply procedure to indicate incoming communication barring in INVITE			INVITE 2	→	INVITE	200 OK INVITE	←	200 OK INVITE	ACK	→	ACK	BYE 2	→	BYE	200 OK BYE	←	200 OK BYE	Apply post test routine		
UE (Gm#1)		Test equipment (Gm#2)																															
INVITE	←	INVITE 1																															
180 Ringing	→	180 Ringing																															
Apply procedure to indicate incoming communication barring in INVITE																																	
INVITE 2	→	INVITE																															
200 OK INVITE	←	200 OK INVITE																															
ACK	→	ACK																															
BYE 2	→	BYE																															
200 OK BYE	←	200 OK BYE																															
Apply post test routine																																	

TSS ACR-CB/User/Destination_UE	TP ACR-CB_U01_005	Reference Clause 4.5.2.13 of ITU_T Q.3628 v.1	Selection expression PICS 4.5.1/1 AND PICS 4.6.1/3 [ITU-T Q.4012.1]
Test purpose <i>The user equipment is able to send an INVITE request in the confirmed dialogue to indicate incoming call barring.</i> Ensure that a user equipment is able to send an INVITE request in the confirmed dialogue including a SSC command to indicate incoming call barring.			
SIP header values: INVITE: Request line sip:<service code>;phone-context=<any domain>;user=dialstring SIP/2.0			
Comments:			
UE (Gm#1)			Test equipment (Gm#2)
INVITE	←		INVITE 1
180 Ringing	→		180 Ringing
	→		200 OK INVITE
	←		ACK
		Apply procedure to indicate incoming communication barring in INVITE	
INVITE 2	→		INVITE
200 OK INVITE	←		200 OK INVITE
ACK	→		ACK
BYE 2	→		BYE
200 OK BYE	←		200 OK BYE
		Apply post test 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