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Technical Specification

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



Reference

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Foreword

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

The present document is part 2 of a multi-part deliverable covering the Malicious Communication Identification (MCID) service, related to PSTN/ISDN simulation services, 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 Malicious Communication Identification (MCID) service based on the stage three of IMS MCID simulation service. Within the Next Generation Network (NGN) the stage 3 description is specified using the IP-Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP). The MCID service will store session related information independent of the service requested.

2 References

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

- For a specific reference, subsequent revisions do not apply.
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2.1 Normative references

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

- [1] ETSI TS 183 016: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services; Malicious Communication Identification (MCID); Protocol Specification".
- [2] ETSI TS 186 018-1: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services; Malicious Communication Identification (MCID); Part 1: Protocol Implementation Conformance Statement (PICS)".
- [3] ETSI TS 181 002: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Multimedia Telephony with PSTN/ISDN simulation services".
- [4] ETSI TS 181 006: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Direct Communication Service in NGN; Service Description [Endorsement of OMA-ERELED-PoC-V1]".
- [5] ETSI TR 180 000: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); NGN Terminology".

2.2 Informative references

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

- [i.1] IETF RFC 3966: "The tel URI for Telephone Numbers".
- [i.2] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 181 002 [3], TS 181 006 [4], TR 180 000 [5] and the following apply:

communication information: information collected and registered by the MCID service

identity information: includes all the information identifying a user, including trusted (network generated) and/or untrusted (user generated) identities

NOTE: See RFC 3966 [i.1] // RFC 3986 [i.2].

trusted identity: network generated user address information

untrusted identity: user generated user address information

NOTE: This may contain additional information.

3.2 Abbreviations

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

AS	Application Server
ID	user IDentification
IM	IP Multimedia
IMS	IP Multimedia Subsystem
IP	Internet Protocol
ISC	IP multimedia subsystem Service Control
ISDN	Integrated Services Digital Network
MCID	Malicious Call Identification
MIME	Multipurpose Internet Mail Extensions
NGN	Next Generation Network
NNI	Network Network Interface
PSTN	Public Switched Telephone Network
S-CSCF	Service - Call Session Control Function
SDP	Session Description Protocol
SIP	Session Initiation Protocol
TP	Test Purposes
TSS	Test Suite Structure
UE	User Equipment
URI	Uniform Resource Identifier
XML	eXtensible Markup Language

4 Test Suite Structure (TSS)

MCID		
	terminating_S-CSCF	MCID_N01_xxx
	terminating_AS	MCID_N02_xxx
	destination_UE	MCID_U01_xxx

4.1 Configuration

The scope of the current specification is to test the signalling and procedural aspects of the stage 3 requirements as described in TS 183 016 [1]. The stage 3 description describes the requirements for several network entities and also the requirements regarding for terminal 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.

4.1.1 Testing of the AS

The AS entity is responsible for performing and managing services. The ISC interface is the appropriate access point for testing.

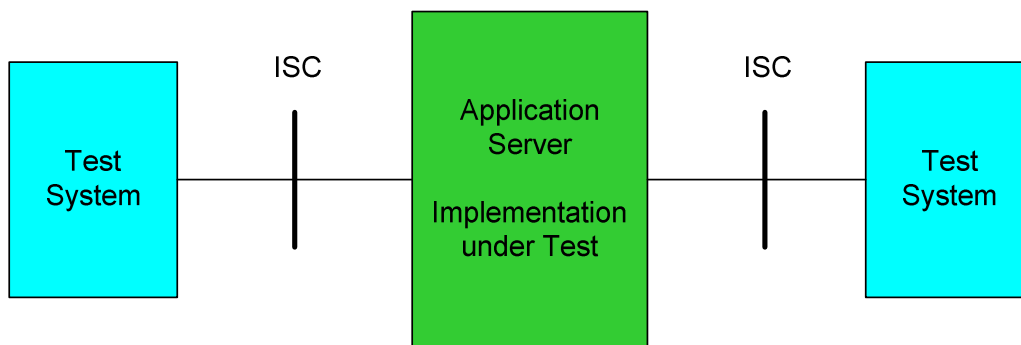


Figure 1: Applicable interface to test AS functionalities

If the ISC interface is not accessible it is also possible to perform the tests of the AS using any NNI (Mw, Mg, Mx) interface (see figure 2). In case only the Gm interface is accessible this interface can be used instead for testing, but the verification of all requirements may not be possible.

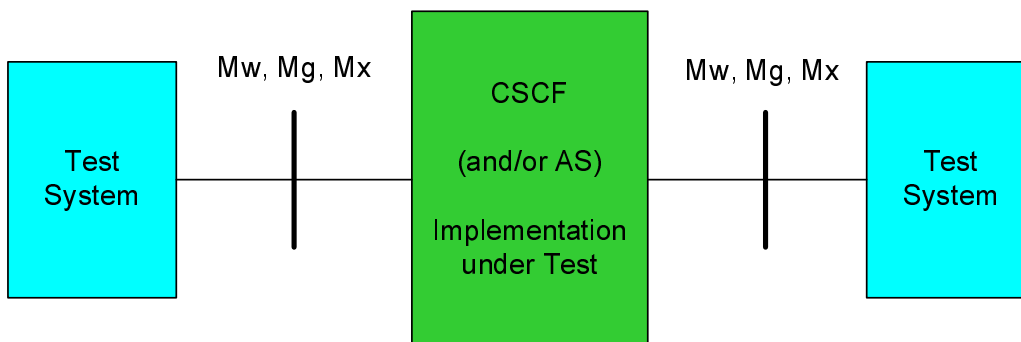


Figure 2: Applicable interfaces for tests using a (generic) NNI interface

4.1.2 Testing of the UE

There are special clauses in the protocol standard describing the procedures that apply at the originating and terminating user equipment. Therefore the test configuration below has been chosen.

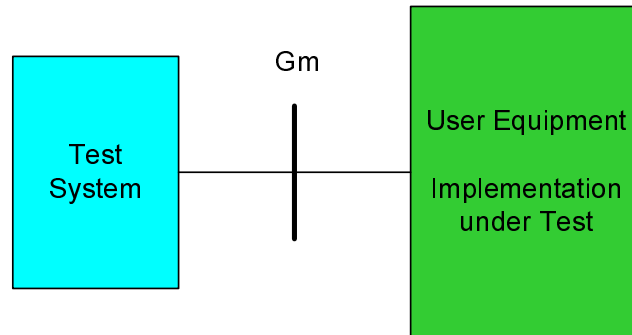


Figure 3: Applicable configuration to test UE functionalities

4.1.3 Testing of the S-CSCF

This entity is responsible for handling the initial filter criteria and for passing messages to the relevant AS. For testing both the Mw and the ISC interface are involved.

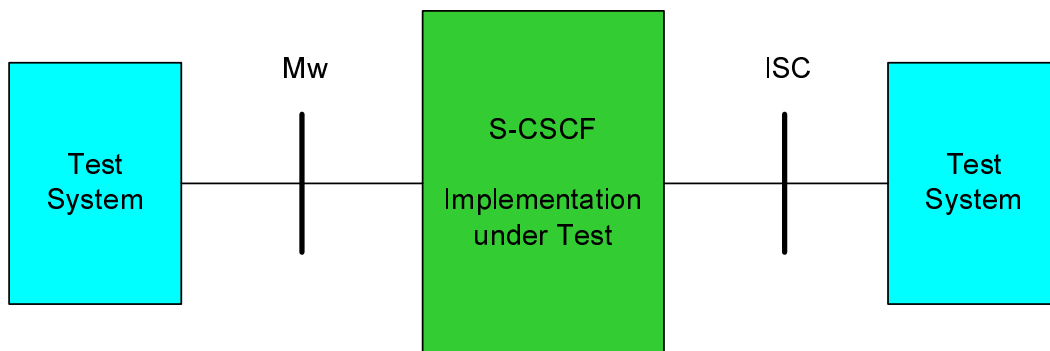


Figure 4: Applicable interfaces to test S-CSCF functionalities

If the either the ISC or the Mw interface is not accessible, it is also possible to perform the test of the S-CSCF using any NNI (Mw, Mg, Mx) interface (see figure 4). In case only the Gm interface is accessible this interface can be used instead for testing, but the verification of all requirements may not be possible.

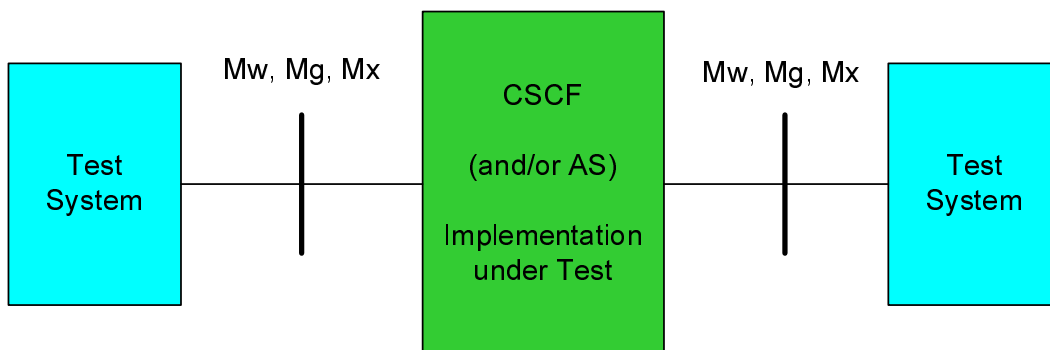


Figure 5: Applicable interfaces for tests using a (generic) NNI interface

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).

Table 1: TP identifier naming convention scheme

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

5.1.2 Test strategy

As the base standard TS 183 016 [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 186 018-1 [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 Malicious Communication Identification (MCID)

5.2.1 Actions at the terminating S-CSCF

TSS	TP	MCID reference	Selection expression
MCID/terminating_S-CSCF	MCID_N01_001	clause 4.5.2.4	PICS 1/3
Test purpose Ensure that the S-CSCF forwards the INVITE request to the AS if the called subscriber has a permanent MCID subscription.			
Preconditions: Called user has MCID subscription with mode permanent			
SIP header values:			
Comments:			
Test equipment (Mw) INVITE	 →	S-CSCF	→ Test equipment (ISC, Mw) INVITE

TSS MCID/terminating_S-CSCF	TP MCID_N01_002	MCID reference clause 4.5.2.4	Selection expression PICS 1/4
Test purpose Ensure that the S-CSCF forwards the Re-INVITE requesting MCID to the AS if the called subscriber has a case by case MCID subscription.			
Preconditions: Called user has MCID subscription with mode temporary			
SIP header values: Re-INVITE without session modification			
Comments:			
Test equipment (Mw)	S-CSCF		Test equipment (ISC)
INVITE	→	→	INVITE
100 Trying	←	←	100 Trying
180 Ringing	←	←	180 Ringing
200 OK INVITE	←	←	200 OK INVITE
ACK	→	→	ACK
Re-INVITE	←	←	Re-INVITE
200 OK INVITE	→	→	200 OK INVITE

TSS MCID/terminating_S-CSCF	TP MCID_N01_003	MCID reference clause 4.5.2.5.2	Selection expression PICS 1/4 AND PICS 1/5
Test purpose Ensure that the S-CSCF forwards the Re-INVITE requesting MCID to the AS if the called subscriber has a case by case MCID subscription. A XML MIME body is received indicating MCID request.			
Preconditions: Called user has MCID subscription with mode temporary			
SIP header values: Re-INVITE without session modification XML mcid request McidRequestIndicator = 1			
Comments:			
Test equipment (Mw)	S-CSCF		Test equipment (ISC)
INVITE	→	→	INVITE
100 Trying	←	←	100 Trying
180 Ringing	←	←	180 Ringing
200 OK INVITE	←	←	200 OK INVITE
ACK	→	→	ACK
Re-INVITE	←	←	Re-INVITE
200 OK INVITE	→	→	200 OK INVITE

5.2.2 Actions at the AS of the terminating user

TSS MCID/terminating_AS	TP MCID_N02_001	MCID reference clause 4.5.2.5	Selection expression
Test purpose If the INVITE request does not contain the information of the originating party, the AS shall send an INFO Message containing a XML mcid body with MCID XML Request schema requesting the originating ID.			
Preconditions: Called user has MCID subscription			
SIP header values: INFO XML mcid request McidRequestIndicator = 1			
Comments:			
Test equipment (ISC)	AS		Test equipment (ISC)
INVITE	→	→	INVITE
100 Trying	←	←	100 Trying
INFO (MIME body)	←		
200 OK INFO	→		

TSS MCID/terminating_AS	TP MCID_N02_002	MCID reference clause 4.5.2.5.3	Selection expression PICS 1/4
Test purpose <i>The AS holds the call state after a BYE from the originating UE</i> Ensure that the AS holds the call state while $T_{MCID-BYE}$ is running, if MCID was requested by the called user. When $T_{MCID-BYE}$ is expired, the BYE is forwarded to the terminating UE.			
Preconditions: Called user has MCID subscription with mode temporary			
SIP header values:			
Comments:			
Test equipment (ISC)	AS		Test equipment (ISC)
INVITE	→		→ INVITE
100 Trying	←		← 100 Trying
180 Ringing	←		← 180 Ringing
200 OK INVITE	←		← 200 OK INVITE
ACK	→		→ ACK
BYE	→	$T_{MCID-BYE}$ started	
200 OK BYE	←		
		$T_{MCID-BYE}$ expires	
			→ BYE
			← 200 OK BYE

TSS MCID/terminating_AS	TP MCID_N02_003	MCID reference clause 4.5.2.2	Selection expression PICS 1/4
Test purpose <i>The AS holds the call state after a BYE from the originating UE in the confirmed dialogue</i> Ensure that the AS holds the call state while $T_{MCID-BYE}$ is running. If a reINVITE to invoke the MCID service was received while $T_{MCID-BYE}$ is running, ensure that the BYE is forwarded to the terminating UE.			
Preconditions: Called user has MCID subscription with mode temporary			
SIP header values: reINVITE without session modification			
Comments:			
Test equipment (ISC)	AS		Test equipment (ISC)
INVITE	→		→ INVITE
100 Trying	←		← 100 Trying
180 Ringing	←		← 180 Ringing
200 OK INVITE	←		← 200 OK INVITE
ACK	→		→ ACK
BYE	→	$T_{MCID-BYE}$ started	
200 OK BYE	←		
		$T_{MCID-BYE}$ expires	
			← Re-INVITE requesting MCID
			→ 200 OK INVITE
			← ACK
			→ BYE
			← 200 OK BYE

TSS	TP	MCID reference	Selection expression
MCID/terminating_AS	MCID_N02_004	clause 4.5.2.5.3	PICS 1/8
Test purpose			
Ensure that the AS, having sent an INFO message containing a XML mcid body with MCID XML Request schema requesting the originating ID, on receipt of an INFO message containing a XML mcid body with MCID XML Response schema and the originating identity, passes on the 180 Ringing from the called user.			
Preconditions: Called user has MCID subscription			
SIP header values:			
INFO1 XML mcid request McidRequestIndicator = 1 INFO2 P-Asserted-Identity XML mcid Response McidResponseIndicator = 1			
Comments:			
Test equipment (ISC)	AS		Test equipment (ISC)
INVITE	→		→ INVITE
100 Trying	←		← 100 Trying
INFO1 (MIME body)	←	T _{O-ID} started	
200 OK INFO	→		← 180 Ringing
INFO2 (MIME body)	→		
200 OK INFO	←	T _{O-ID} stopped	
180 Ringing	←		

TSS	TP	MCID reference	Selection expression
MCID/terminating_AS	MCID_N02_004	clause 4.5.2.5.3	PICS 1/8
Test purpose			
Ensure that the AS, having sent an INFO message containing a XML mcid body with MCID XML Request schema requesting the originating ID, on receipt of an INFO message not containing the originating identity, passes on the 180 Ringing from the called user.			
Preconditions: Called user has MCID subscription			
SIP header values:			
INFO1 XML mcid request McidRequestIndicator = 1 INFO2 without originating identity			
Comments:			
Test equipment (ISC)	AS		Test equipment (ISC)
INVITE	→		→ INVITE
100 Trying	←		← 100 Trying
INFO1 (MIME body)	←	T _{O-ID} started	
200 OK INFO	→		← 180 Ringing
INFO2 (MIME body)	→		
200 OK INFO	←	T _{O-ID} stopped	
180 Ringing	←		

TSS MCID/terminating_AS	TP MCID_N02_006	MCID reference clause 4.5.2.5.3	Selection expression PICS 1/8
Test purpose Ensure that the AS, having sent an INFO message containing a XML mcid body with MCID XML Request schema requesting the originating ID, on the expiry of T _{O-ID} , passes on the 180 Ringing from the called user.			
Preconditions: Called user has MCID subscription			
SIP header values: INFO XML mcid request McidRequestIndicator = 1			
Comments:			
Test equipment (ISC)	AS		Test equipment (ISC)
INVITE	→		→ INVITE
100 Trying	←		← 100 Trying
INFO (MIME body)	←	T _{O-ID} started	
200 OK INFO	→		
		T _{O-ID} expires	← 180 Ringing
180 Ringing	←		

5.2.3 Actions at the destination UE

TSS MCID/destination_UE	TP MCID_U01_001	MCID reference clause 4.5.2.12	Selection expression PICS 1/1
Test purpose <i>The UE sends a MCID request</i> Ensure that the UE is able to invoke MCID. The UE sends a Re-INVITE without session modification.			
Preconditions:			
SIP header values: Re-INVITE without session modification			
Comments:			
Test equipment			User equipment
INVITE	→		
100 Trying	←		
180 Ringing	←		
200 OK INVITE	←		
ACK	→		
Re-INVITE requesting MCID	←		
200 OK INVITE	→		
ACK	←		

TSS MCID/destination_UE	TP MCID_U01_002	MCID reference clause 4.5.2.12	Selection expression PICS 1/2
Test purpose <i>The UE sends a MCID request using the XML McidRequestIndicator</i> Ensure that the UE is able to invoke MCID. The UE sends a Re-INVITE without session modification. Ensure that the UE is able to send a XML MIME body with the McidRequestIndicator set to 1.			
Preconditions:			
SIP header values: Re-INVITE without session modification XML mcid request McidRequestIndicator = '1'			
Comments:			
Test equipment			User equipment
INVITE	→		
100 Trying	←		
180 Ringing	←		
200 OK INVITE	←		
ACK	→		
Re-INVITE requesting MCID	←		
200 OK INVITE	→		
ACK	←		

Annex A (informative): Bibliography

ETSI ES 283 027: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Endorsement of the SIP-ISUP Interworking between the IP Multimedia (IM) Core Network (CN) subsystem and Circuit Switched (CS) networks [3GPP TS 29.163 (Release 7), modified]".

Annex B (informative): Change history

Date	WG Doc.	CR	Rev	CAT	Title / Comment	Current Version	New Version
10-06-09	21PTD091	001		F	Update of complete document during STF368's first work session	1.0.0	2.0.1
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