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Technical Specification

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

Reference
DTS/TISPAN-06044-2-NGN

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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 Subaddressing (SUB) service, as identified below:

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

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

1 Scope

The present document specifies the test suite structure and test purposes of the Subaddressing (SUB) service, based on IP Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP) Stage 3. Within the Next Generation Network (NGN) the stage 3 description is specified using the IP-Multimedia Communication Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP).

2 References

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

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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 ES 283 003: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IP Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP) Stage 3 [3GPP TS 24.229 (Release 7), modified]".

[2] ETSI TS 186 012-1: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN simulation services; Subaddressing (SUB); 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] IETF RFC 3261: "SIP: Session Initiation Protocol".

[5] 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]".

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 (2004): "The tel URI for Telephone Numbers".

[i.2] ISO/IEC 8348:2002: "Information technology - Open Systems Interconnection - Network service definition".

[i.3] ITU-T Recommendation X.213: "Information technology - Open Systems Interconnection - Network service definition".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 181 002 [3] and RFC 3261 [4] apply.

3.2 Abbreviations

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

ACK	ACKnowledgement
HOLD	communication HOLD
IMS	IP Multimedia Subsystem
IP	Internet Protocol
ISDN	Integrated Service Data Network
NGN	Next Generation Network
PSTN	Public Switched Telephone Network
SDP	Session Description Protocol
SIP	Session Initiation Protocol
SUB	Subaddressing
TIP	Terminating Identification Presentation
UA	User Agent
UE	User Equipment
URI	Universal Resource Identifier

4 Test Suite Structure (TSS)

SUB			
	originating_UE		SUB_U01_xxx
	originating_P-CSCF		SUB_N01_xxx
	destination_P-CSCF		SUB_N02_xxx
	destination_UE		SUB_U02_xxx
ISUP-SIP			
	SS	SUB	TP607xxx
SIP-ISUP			
	SS	SUB	TP508xxx

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. "SUB"	
<iut>	=	type of IUT:	U N	User – equipment Network
<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 ES 283 003 [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 186 012-1 [2]. The criteria applied include the following:

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

5.2 Test Purposes for Subaddressing (SUB)

5.2.1 Actions at the originating UA

TSS SUB/originating_UE	**TP** SUB_U01_001	**SUB reference [5]** clause 4.5.2	**Selection expression** PICS 1/1
Test purpose *UE sends a subaddress in the From header in the initial INVITE* Ensure that the originating user equipment is able to send an ISDN calling party subaddress in the **From** header of the INVITE			
Preconditions:			
SIP header values: INVITE: From: sip: user part; isub=<subaddress>@hostportion			
Comments:			

UA C		**SUT**		**UA S**
INVITE	→		→	INVITE
100 Trying	←		←	100 Trying
180 Ringing	←		←	180 Ringing
200 OK INVITE	←		←	200 OK INVITE
ACK	→		→	ACK
		Communication		
BYE	→		→	BYE
200 OK BYE	←		←	200 OK BYE

<table>
<tr><td>TSS
SUB/originating_UE</td><td>TP
SUB_U01_002</td><td>SUB reference [5]
clause 4.5.2</td><td>Selection expression
PICS 1/1</td></tr>
<tr><td colspan="4">Test purpose
UE sends a subaddress in the To header in the initial INVITE
Ensure that the originating user equipment is able to send a called party ISDN subaddress in the To header of the INVITE</td></tr>
<tr><td colspan="4">Preconditions:</td></tr>
<tr><td colspan="4">SIP header values:
INVITE: To: sip: user part; isub=<subaddress>@hostportion</td></tr>
<tr><td colspan="4">Comments:
UA C SUT UA S
INVITE → → INVITE
100 Trying ← ← 100 Trying
180 Ringing ← ← 180 Ringing
200 OK INVITE ← ← 200 OK INVITE
ACK → → ACK
Communication
BYE → → BYE
200 OK BYE ← ← 200 OK BYE</td></tr>
</table>

5.2.2 Actions at the originating P-CSCF

<table>
<tr><td>TSS
SUB/originating_P-CSCF</td><td>TP
SUB_N01_001</td><td>SUB reference [5]
clause 4.5.2</td><td>Selection expression
PICS 1/2</td></tr>
<tr><td colspan="4">Test purpose
Ensure that the originating P-CSCF in able to transfer an ISDN subaddress in the From header and To header of the received INVITE into the P-Asserted-Identity and Request-URI</td></tr>
<tr><td colspan="4">Preconditions:</td></tr>
<tr><td colspan="4">SIP header values:
INVITE: From: sip: user part; isub=<subaddress>@hostportion
To: sip: user part; isub=<subaddress>@hostportion
INVITE: P-Asserted-Identity: sip: user part; isub=<subaddress>@hostportion
Request-URI: sip: user part; isub=<subaddress>@hostportion</td></tr>
<tr><td colspan="4">Comments:
UA C SUT UA S
INVITE → → INVITE
100 Trying ← ← 100 Trying
180 Ringing ← ← 180 Ringing
200 OK INVITE ← ← 200 OK INVITE
ACK → → ACK
Communication
BYE → → BYE
200 OK BYE ← ← 200 OK BYE</td></tr>
</table>

TSS	TP	SUB reference [5]	Selection expression
SUB/originating_P-CSCF	SUB_N01_002	clause 4.5.2	PICS 1/2

Test purpose

Ensure that the originating P-CSCF in able to pass an ISDN connected subaddress in the “changed” **From** header of the UPDATE

Preconditions:

SIP header values:
INVITE: supported: from-change
UPDATE: From: sip: user part; isub=<subaddress>@hostportion

Comments:

UA C		SUT		UA S
INVITE (From-change)	→		→	INVITE
100 Trying	←		←	100 Trying
180 Ringing	←		←	180 Ringing
200 OK INVITE	←		←	200 OK INVITE
ACK	→		→	ACK
UPDATE (From)	←		←	UPDATE (From)
200 OK UPDATE	→		→	200 OK UPDATE
		Communication		
BYE	→		→	BYE
200 OK BYE	←		←	200 OK BYE

TSS	TP	SUB reference [5]	Selection expression
SUB/originating_P-CSCF	SUB_N01_003	clause 4.5.2	PICS 1/2

Test purpose
Ensure that the originating P-CSCF is able to pass an ISDN connected subaddress in the P-Asserted-Identity header of the 200 OK (INVITE)

Preconditions:

SIP header values:
200 OK (INVITE): P-Asserted-Identity: sip: user part; isub=<subaddress>@hostportion

Comments:

UA C		SUT		UA S
INVITE (From-change)	→		→	INVITE
100 Trying	←		←	100 Trying
180 Ringing	←		←	180 Ringing
200 OK INVITE	←		←	200 OK INVITE
ACK	→		→	ACK
		Communication		
BYE	→		→	BYE
200 OK BYE	←		←	200 OK BYE

5.2.3 Actions at the destination P-CSCF

TSS	TP	SUB reference [5]	Selection expression
SUB/destination_P-CSCF	SUB_N02_001	clause 4.5.2	PICS 1/2

Test purpose
Ensure that the terminating P-CSCF is able to pass an ISDN subaddress in the **P-Asserted-Identity** header and **Request-URI** header of the INVITE

Preconditions:

SIP header values:
INVITE: P-Asserted-Identity: sip: user part; isub=<subaddress>@hostportion
Request-URI: sip: user part; isub=<subaddress>@hostportion

Comments:

UA C		SUT		UA S
INVITE	→		→	INVITE
100 Trying	←		←	100 Trying
180 Ringing	←		←	180 Ringing
200 OK INVITE	←		←	200 OK INVITE
ACK	→		→	ACK
		Communication		
BYE	→		→	BYE
200 OK BYE	←		←	200 OK BYE