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SERIES Q: SWITCHING AND SIGNALLING

Signalling requirements and protocols for the NGN – Testing for next generation networks

Conformance tests specification for the originating identification presentation and originating identification restriction using the IP multimedia core network subsystem – Part 2: Network side – Test suite structure and test purposes

Recommendation ITU-T Q.3943.2

ITU-T Q-SERIES RECOMMENDATIONS

SWITCHING AND SIGNALLING

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Recommendation ITU-T Q.3943.2

Conformance tests specification for the originating identification presentation and originating identification restriction using the IP multimedia core network subsystem – Part 2: Network side – Test suite structure and test purposes

Summary

Recommendation ITU-T Q.3943.2 specifies the test suite structure and test purposes (TSS&TP) for the network side of the originating identification presentation (OIP) and originating identification restriction (OIR) NGN basic service, (ETSI TS 124 607).

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T Q.3943.2	2013-04-29	11

FOREWORD

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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/.

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Recommendation ITU-T Q.3943.2

Conformance tests specification for the originating identification presentation and originating identification restriction using the IP multimedia core network subsystem – Part 2: Network side – Test suite structure and test purposes

1   Scope

This Recommendation specifies the test suite structure and test purposes (TSS&TP) for the network side of the originating identification presentation (OIP) and originating identification restriction (OIR) NGN basic service, [ETSI TS 124 607].

A further part of this Recommendation specifies the abstract test suite (ATS) and partial protocol implementation extra information for testing (PIXIT) proforma based on this Recommendation.

The OIP service provides the terminating party with the possibility to receive a trusted (network-provided) identity of the originating party, and is applicable to all session-based services of the NGN.

The OIR service enables the originating party to prevent presentation of any network-provided identity to the terminating party and is applicable to all session-based services of the NGN.

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.3943.1]	Recommendation ITU-T Q.3943.1 (2013), *Originating Identification Presentation (OIP) and Originating Identification Restriction (OIR) Conformance Tests Specification ; Part 1: Protocol Implementation Conformance Statement (PICS).*
[ITU-T X.290]	Recommendation ITU-T X.290 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – General concepts* (twinned with ISO/IEC 9646-1).
[ETSI TS 124 607]	ETSI TS 124 607 (V8.4.0) (2010-01), *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Originating Identification Presentation (OIP) and Originating Identification Restriction (OIR) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification (3GPP TS 24.607 version 8.4.0 Release 8).*
[IETF RFC 3323]	IETF RFC 3323 (2002), *A Privacy Mechanism for the Session Initiation Protocol (SIP).*

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 **abstract test suite (ATS)**: [ITU-T X.290].

3.1.2 **implementation under test (IUT)**: [ITU-T X.290].

3.1.3 **PICS proforma**: [ITU-T X.290]

3.1.4 **point of control and observation**: [ITU-T X.290].

3.1.5 **protocol implementation conformance statement (PICS)**: [ITU-T X.290].

3.1.6 **system under test (SUT)**: [ITU-T X.290].

3.1.7 **test purpose (TP)**: [ITU-T X.290].

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

AS	Application Server
ATS	Abstract Test Suite
CSCF	Call Session Control Function
IUT	Implementation Under Test
n/a	not applicable
NNI	Network-Network Interface
OIP	Originating Identification Presentation
OIR	Originating Identification Restriction
PICS	Protocol Implementation Conformance Statement
S-CSCF	Serving CSCF
SUT	System Under Test
TP	Test Purpose
TSS	Test Suite Structure

5 Test suite structure (TSS)

Network		
	AS_OrigUser	OIP_N01_xxx
	AS_TermUser	OIP_N02_xxx
	TermS-CSCF	OIP_N03_001

Figure 1 – Test suite structure

5.1 Configuration

This Recommendation is to test the signalling and procedural aspects of the stage 3 requirements as described in [ETSI TS 124 607]. 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:

5.1.1 Testing of the AS

The AS entity is responsible for performing and managing services. The ISC interface is the appropriate access point for testing (see Figure 2).
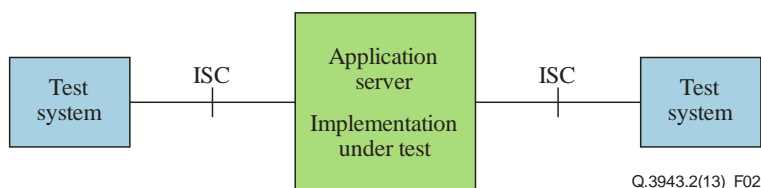

Figure 2 – Applicable interface to test AS functionalities

If the ISC interface is not accessible, it is also possible to perform the test of the AS using any NNI (Mw, Mg, Mx) interface (see Figure 3). 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.
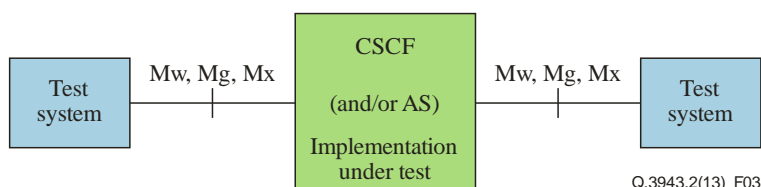

Figure 3 – Applicable interfaces for tests using a (generic) NNI interface

6 Test Purposes (TP)

6.1 Introduction

For each test requirement, a TP is defined.

6.1.1 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., "OIP"
\<iut\> = type of IUT:	N Network
\<group\> = group	2-digit field representing group reference according to TSS
\<nnn\> = sequential number	(001 to 999)

6.1.2 Test strategy

As the base standard [ETSI TS 124 607] 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.3943.1].

The criteria applied include the following:

- only the requirements from the point of view of the T or coincident S and T reference point are considered;
- whether or not a test case can be built from the TP is not considered.

6.2 Network TPs for OIP and OIR

6.2.1 Requirements on the originating network side

6.2.1.1 Actions at the AS serving the originating user

TSS Network/AS_OrigUser	TP OIP_N01_001	OIP reference clause 4.5.2.4	Selection expression PICS 2/2
Test purpose: *The AS includes a Privacy header field in **permanent mode**.* Ensure that the IUT, on receipt of an INVITE without Privacy header, transmits an INVITE with a Privacy header set to "**id**" or "**header**".			
Preconditions: The originating user has subscribed to the OIR service in the **permanent mode**. The subscription option Restriction is set to 'restrict the asserted identity'.			
Comments:			
Test equipment AS Test equipment INVITE → → INVITE 100 Trying ←			

TSS Network/AS_OrigUser	TP OIP_N01_002	OIP reference clause 4.5.2.4	Selection expression PICS 2/2
Test purpose: *The AS removes Privacy header field "none" in **permanent mode**.* Ensure that the IUT, on receipt of an INVITE with a Privacy header set to "**none**", transmits an INVITE with only one Privacy header set to "**id**" or "**header**".			
Preconditions: The originating user has subscribed to the OIR service in the **permanent mode**. The subscription option Restriction is set to 'restrict the asserted identity'.			
Comments:			
Test equipment AS Test equipment INVITE → → INVITE 100 Trying ←			

TSS Network/AS_OrigUser	TP OIP_N01_003	OIP reference clause 4.5.2.4	Selection expression PICS 1/5 AND PICS 2/2
Test purpose: *The AS anonymizes the identity in **permanent mode**.* Ensure that the IUT, on receipt of an INVITE, transmits an INVITE with a Privacy header set to "**user**" or transmits an INVITE with the From header anonymized.			
Preconditions: The originating user has subscribed to the OIR service in the **permanent mode**.			
Comments:			
Test equipment AS Test equipment INVITE → → INVITE 100 Trying ←			

TSS	TP	OIP reference	Selection expression
Network/AS_OrigUser	OIP_N01_004	clause 4.5.2.4	PICS 2/4

Test purpose:
*The AS includes a Privacy header field in **temporary mode, restricted***.
Ensure that the IUT, on receipt of an INVITE without Privacy header, transmits an INVITE with a Privacy header set to "**id**" or "**header**".

Preconditions:
The originating user has subscribed to the OIR service in the **temporary mode** with default **presentation restricted**.
The subscription option Restriction is set to 'restrict the asserted identity'.

Comments:			
Test equipment		**AS**	**Test equipment**
INVITE	➔		➔ INVITE
100 Trying	⬅		

TSS	TP	OIP reference	Selection expression
Network/AS_OrigUser	OIP_N01_005	clause 4.5.2.4	PICS 2/4

Test purpose:
*The AS includes a Privacy header field in **temporary mode, restricted***.
Ensure that the IUT, on receipt of an INVITE with a Privacy header present set to a value other than "**none**", transmits an INVITE with a Privacy header set to "**id**" or "**header**".

Preconditions:
The originating user has subscribed to the OIR service in the **temporary mode** with default **presentation restricted**.
The subscription option Restriction is set to 'restrict the asserted identity'.

Comments:			
Test equipment		**AS**	**Test equipment**
INVITE	➔		➔ INVITE
100 Trying	⬅		

TSS	TP	OIP reference	Selection expression
Network/AS_OrigUser	OIP_N01_006	clause 4.5.2.4	PICS 1/5 AND PICS 2/3 AND PICS 2/6

Test purpose:
*The AS anonymizes the identity in **temporary mode, not restricted***.
Ensure that the IUT, on receipt of an INVITE with a Privacy header set to "**id**", transmits an INVITE with the From header anonymized or the Privacy header field is set to "**user**".

Preconditions:
The originating user has subscribed to the OIR service in the **temporary mode** with default **not restricted**.
The originating user has subscribed to the **"no screening" special arrangement**.

Comments:			
Test equipment		**AS**	**Test equipment**
INVITE	➔		➔ INVITE
100 Trying	⬅		

TSS	TP	OIP reference	Selection expression
Network/AS_OrigUser	OIP_N01_007	clause 4.5.2.4	PICS 1/5 AND PICS 2/3 AND PICS 2/6

Test purpose:
*The AS anonymizes the identity in **temporary mode, not restricted***.
Ensure that the IUT, on receipt of an INVITE with a Privacy header set to "**header**", transmits an INVITE with the From header anonymized or the Privacy header field is set to "**user**".

Preconditions:
The originating user has subscribed to the OIR service in the **temporary mode** with default **not restricted**.
The originating user has subscribed to the **"no screening" special arrangement**.

Comments:			
Test equipment		**AS**	**Test equipment**
INVITE	➔		➔ INVITE
100 Trying	⬅		

TSS Network/AS_OrigUser	TP OIP_N01_008	OIP reference clause 4.5.2.4	Selection expression PICS 1/7 AND PICS 2/3 AND NOT PICS 2/6
Test purpose: *The AS replaces the identity in **temporary mode, not restricted***. Ensure that the IUT, on receipt of an INVITE with a Privacy header set to "**id**" and with the From header containing an identity which is not one of the originating user's registered public identities, transmits an INVITE with the From header containing the default public user identity of the originating user.			
Preconditions: The originating user has subscribed to the OIR service in the **temporary mode** with default **not restricted**. The originating user has **not** subscribed to the **"no screening" special arrangement**.			
Comments:			

Test equipment		AS		Test equipment
INVITE	➔		➔	INVITE
100 Trying	←			

TSS Network/AS_OrigUser	TP OIP_N01_009	OIP reference clause 4.5.2.4	Selection expression PICS 1/7 AND PICS 2/3 AND NOT PICS 2/6
Test purpose: *The AS replaces the identity in **temporary mode, not restricted***. Ensure that the IUT, on receipt of an INVITE with a Privacy header set to "**header**" and with the From header containing an identity which is not one of the originating user's registered public identities, transmits an INVITE with the From header containing the default public user identity of the originating user.			
Preconditions: The originating user has subscribed to the OIR service in the **temporary mode** with default **not restricted**. The originating user has **not** subscribed to the **"no screening" special arrangement**.			
Comments:			

Test equipment		AS		Test equipment
INVITE	➔		➔	INVITE
100 Trying	←			

TSS	TP	OIP reference	Selection expression
Network/AS_OrigUser	OIP_N01_010	clause 4.5.2.4	PICS 1/7 AND PICS 2/3 AND NOT PICS 2/6

Test purpose:
*The AS replaces the identity in **temporary mode, not restricted***. Ensure that the IUT, on receipt of an INVITE with a Privacy header is not present and with the From header containing an identity which is not one of the originating user's registered public identities, transmits an INVITE with the From header containing the default public user identity of the originating user.

Preconditions:
The originating user has subscribed to the OIR service in the **temporary mode** with default **not restricted**. The originating user has **not** subscribed to the **"no screening" special arrangement**.

Comments:

Test equipment		AS		Test equipment
INVITE	→		→	INVITE
100 Trying	←			

TSS	TP	OIP reference	Selection expression
Network/AS_OrigUser	OIP_N01_011	clause 4.5.2.4	NOT PICS 1/5 AND PICS 2/3 AND PICS 2/6

Test purpose:
*The AS does not anonymize the identity in **temporary mode, not restricted***. Ensure that the IUT, on receipt of an INVITE with a Privacy header set to "**id**", transmits an INVITE with the From header not anonymized. The From header is sent as it was received.

Preconditions:
The originating user has subscribed to the OIR service in the **temporary mode** with default **not restricted**. The originating user has subscribed to the **"no screening" special arrangement**.

Comments:

Test equipment		AS		Test equipment
INVITE	→		→	INVITE
100 Trying	←			

TSS	TP	OIP reference	Selection expression
Network/AS_OrigUser	OIP_N01_012	clause 4.5.2.4	NOT PICS 1/5 AND PICS 2/3 AND PICS 2/6

Test purpose:
*The AS does anonymize the identity in **temporary mode, not restricted***. Ensure that the IUT, on receipt of an INVITE with a Privacy header set to "**header**", transmits an INVITE with the From header not anonymized. The From header is sent as it was received.

Preconditions:
The originating user has subscribed to the OIR service in the **temporary mode** with default **not restricted**. The originating user has subscribed to the **"no screening" special arrangement**.

Comments:

Test equipment		AS		Test equipment
INVITE	→		→	INVITE
100 Trying	←			

TSS	TP	OIP reference	Selection expression
Network/AS_OrigUser	OIP_N01_013	clause 4.5.2.4	PICS 2/3 AND PICS 2/6

Test purpose:
*The AS leaves the identity unchanged in **temporary mode, not restricted***. Ensure that the IUT, on receipt of an INVITE without a Privacy header, transmits an INVITE with the From header unchanged.

Preconditions:
The originating user has subscribed to the OIR service in the **temporary mode** with default **not restricted**. The originating user has subscribed to the **"no screening" special arrangement**.

Comments:

Test equipment		AS		Test equipment
INVITE	→		→	INVITE
100 Trying	←			

6.2.1.2 Actions at the AS serving the terminating UE

TSS	TP	OIP reference	Selection expression
Network/AS_TermUser	OIP_N02_001	clause 4.5.2.9	NOT PICS 2/1
Test purpose:			
The terminating user does not subscribe the OIP service. Ensure that the IUT, on receipt of an INVITE with a Privacy header and a P-Asserted-Identity header, transmits an INVITE without Privacy header and without P-Asserted-Identity header.			
Preconditions:			
Terminating user does not subscribe to OIP service			
Comments:			
Test Equipment **AS** **Test Equipment** INVITE ➔ ➔ INVITE 100 Trying ⬅			

TSS	TP	OIP reference	Selection expression
Network/AS_TermUser	OIP_N02_002	clause 4.5.2.9	NOT PICS 2/1 AND PICS 1/8
Test purpose:			
The terminating user does not subscribe the OIP service, the AS anonymizes the contents of the From header. Ensure that the IUT, on receipt of an INVITE with a Privacy header and a P-Asserted-Identity header, transmits an INVITE without Privacy header and without P-Asserted-Identity header and with the From header set to a default non-significant value.			
Preconditions:			
Terminating user does not subscribe to OIP service. The IUT anonymize the contents of the From header.			
Comments:			
Test Equipment **AS** **Test Equipment** INVITE ➔ ➔ INVITE 100 Trying ⬅			

TSS	TP	OIP reference	Selection expression
Network/AS_TermUser	OIP_N02_003	clause 4.5.2.9	PICS 2/1 AND PICS 2/5
Test purpose:			
Terminating user has the override category. Ensure that the IUT, on receipt of an INVITE with a Privacy header and a P-Asserted-Identity header, transmits an INVITE without Privacy header and with the P-Asserted-Identity header.			
Preconditions:			
Terminating user does subscribe to OIP service. Terminating user has an override category.			
Comments:			
Test Equipment **AS** **Test Equipment** INVITE ➔ ➔ INVITE 100 Trying ⬅			

6.1.2.3 Actions at the S-CSCF serving the terminating UE

TSS	TP	OIP reference	Selection expression
Network/TermS-CSCF	OIP_N03_001	clause 4.3.3	
Test purpose:			
The terminating S-CSCF acts according to the OIR service. Ensure that the IUT, on receipt of an INVITE with a Privacy header set to "**id**", transmits an INVITE without the P-Asserted-Identity header.			
Comments:			
Test Equipment **S_CSCF** **Test Equipment** INVITE ➔ ➔ INVITE 100 Trying ⬅			

7 Compliance

An ATS which complies with this TSS&TP specification 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 5;

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 6 shall be included in a compliant ATS.

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