Report	22.10.2007	ETSI World Class Standards
Stephan Schulz		1 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

# ETSI IMS Plugtest October 8-12 2007, Torino, Italy Final Test Report

Report	22.10.2007	ETSI World Closs Standards
Stephan Schulz		2 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

### **Table of Contents**

1	Summary	. 3
2	Event Organization	3
3	Overall Results	5
3	More Detailed Interoperability Results	7
4	More Detailed Conformance Results	9
5	Collected Comments	13

Report	22.10.2007	World Class Standards
Stephan Schulz		3 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

### 1 Summary

This report presents the results of ETSI IMS plugtest held in Torino, Italy from October  $8^{th}$  to  $12^{th}$  2007 at the premises of Telecom Italia Labs. The plugtest assessed the interoperability as well as conformance of IMS core networks (composed of P/I/S-CSCF and HSS) which are implemented on the basis of 3GPP TS 24.229 Release 6 (Version 6.13.0). The tests executed at the event were related to basic IMS call functionality and messaging and taken from the ETSI IMS NNI interoperability test specification ETSI TS 186 011-2 Version 1.1.4<sup>1</sup>.

It is important to remember that the main goal of this IMS plugtest has been to *assess the base specification* of IMS core networks, i.e., not the quality of IMS core network implementations. Therefore, the results are presented in this report purely from a test specification point of view, i.e., they are not related to the participating IMS vendors.

Six IMS core network vendors participated at this event. During the event 482 of 690 potential tests were executed. Overall results show a very high level of interoperability (94%) of IMS core networks but a lower level of overall conformance to the 3GPP base standard (65%) in the tests executed. Also note that 25% of all potential tests could not be executed due to issues outside of the IMS core networks, e.g., issues with remote connections and clarity of event configuration information, as well as lack of the support for a feature by a participating IMS core network.

The main interoperability issues encountered were related to call hold/resume functionality, transmission of large messages, and de-registration in originating network. Most issues encountered in conformance assessment where related to handling of call hold/resume, handling of de-registration in originating network, record-route handling, as well as P-Charging-Vector and Tel-URI handling (especially in messaging tests).

For more detailed results the reader should check the remainder of this document.

## 2 Event Organization

In the event participating vendors had their IMS network either locally installed in a private room in Torino, i.e., with access restricted to the IMS network vendor only, or remotely connected via a VPN connection. One vendor provided only a component of the IMS network and used the freely available OpenIMS solution by Fraunhofer Focus to complete its IMS network. Note that in the latter case failures to conform were only

<sup>&</sup>lt;sup>1</sup> Note that the basis for the tests was the published version 1.1.1 of this document. During the event a number of errors were found and corrected in the document leading to version 1.1.2, 1.1.3, and 1.1.4. Version 1.1.4 was used as the basis for conformance analysis. Note that this version will be submitted to ETSI TISPAN WG6 for approval and eventual publishing. In addition, the revision of the published version may differ from the current working version.

Report	22.10.2007	<b>ETSI</b> World Class Standards
Stephan Schulz		4 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

recorded in the case that the failure was caused by the component provided by that vendor – failures due to the OpenIMS solution were recorded as inconclusive.

DNS equipment was provided by vendors and also located with the IMS network installation. User equipment was located in public rooms, i.e., rooms with access to both, IMS core network vendors and operators. User equipment used for the tests were freely available soft clients x-lite and OpenIC. No application servers were used in the tests (since none of the tests in the test specification required the presence of an application server).

Tests, i.e., the test sequence part of Test Descriptions specified in the test specification, were executed in test sessions from the public rooms, i.e., with presence of representatives of ETSI, IMS network vendors and operators. For each test executed, a member of the IMS network vendor team operated user equipment connected to their IMS network based on instructions from an ETSI representative. During each test, IMS network traffic at Gm and Mw interfaces was captured and saved by an ETSI representative.

During the first 1.5 h each test session 23 tests were attempted to be executed from one IMS network vendor playing the role of IMS\_A to the another IMS network vendor playing the role of IMS\_B. In the next 1.5h the roles were reversed and all 23 tests were again attempted to be executed. Note that during the first 3 hours of the test session no conformance analysis was performed. Only interoperability results were recorded in a Test Session Report based on mutual agreement of all involved parties. Two Test Session Reports were filled in during each test session.

After 3 hours into the test session all test execution was stopped and a selected number of tests (as many as possible) were reviewed for conformance for one hour during test session wrap-up. Conformance verdicts were assigned for each reviewed test. The remaining tests (which could not be analyzed due to time limitations) were reviewed and assigned verdicts by ETSI representatives. The final Test Session Reports with all interoperability results and conformance verdicts were handed out to IMS vendors a first review and approved at the end of the event. Note that at this point there has not been any final agreement by IMS network vendors to the final results.

Since the test specification only assessed SIP messaging it was agreed to not check bidirectional voice as part of interoperability test results. Also 5 tests from the test specification ETSI TS 186 011-2 were not taken into account since they either required functionality not part of the event test configuration, i.e., PDF/SPDF functionality, or were not supported by the user equipment used in the event, i.e., PRACK method and call resume using UPDATE method.

Report	22.10.2007	World Class Standards
Stephan Schulz		5 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

## 3 Overall Results

Table 1, Figure 1, and Figure 2 summarize interoperability as well as conformance results collected over all test sessions performed during this event.

For interoperability results there are four possible observations: "OK", "not OK", "Not Applicable" or "Out Of Time". Whereas the first two results are self-explanatory, the "Not Applicable" result has been given in case the test could not be performed due to limitations of the event setup or by one of the IMS core networks participating in a test, e.g., missing support to specify default public identities using a Tel-URI. The "Out Of Time" result was given for all tests not executed due to lack of time in each three hour test session.

For conformance results there are five possible verdicts: "Pass", "Fail", "Inconclusive", "Not Applicable" or "Out Of Time". Here, the "Fail" verdict has been given in cases that the analysis of the test execution trace show that one of the IMS core networks participating in a test violated one or more of the verdict criteria specified in the test specification for that test. The "Inconclusive" verdict was assigned in cases were some non-conformant condition had been observed which was either not part of the verdict criteria, e.g., the test never got to through its preamble, or could not be contributed to the participating IMS core networks, e.g., the user equipment failed to send a large message to the originating network although it had been asked to do so. So in both latter cases the verdict criteria can not be checked – therefore the test is assigned an "Inconclusive" verdict. The other verdicts are either self-explanatory or have been assigned based on the interoperability result.

Specification under test	3GPP TS 24.229 (V6.13.0)	
Test Specification used	ETSI 186 011-2 1.1.4 <sup>2</sup>	
Number of potential Test	23 of 28 (TDs not tested were TD_IMS_0024	
Descriptions in the Plugtest	(UPDATE), TD_IMS_0025 (PRACK) and	
	TD_IMS_0016, TD_IMS_0017, TD_IMS_0018	
	(Resource failures))	
Number of participating IMS core	6	
network vendors		
Number of test sessions	30	
Number of tests executed	482 of 690	
Average number of tests executed	16 of 23	
per session		
Interoperability testing		
<b>Overall percentage of IOP OK</b>	93.9%	

Table 1. Overall interoperability and conformance event results

<sup>2</sup> See footnote 1

Report	22.10.2007	World Closs Standards
Stephan Schulz		6 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

Overall percentage of IOP not OK	6.1%
Overall percentage of IOP Not	27.5%
Applicable (over total possible)	
Overall percentage of IOP Out Of	3.2%
Time (over total possible)	
Со	nformance testing
<b>Overall percentage of Pass Verdicts</b>	66.5%
<b>Overall percentage of Fail Verdicts</b>	23.7%
Overall percentage of Inconclusive	9.9%
Verdicts	
Overall percentage of Not	27.7%
Applicable verdicts (over total	
possible)	
<b>Overall percentage of Out Of Time</b>	3.2%
verdicts (over total possible)	

Note that the numbers for overall interoperability in Table 1 exclude tests with "Not OK" results for which the verdict was found to be inconclusive, i.e., failed due to reasons beyond the IMS core networks. Also percentages for "OK" and "not OK" or "Pass", "Fail" and "Inconclusive" are computed based on the total *executed* tests, whereas the percentage of "Not Applicable" and "Out Of Time" are based on the total of all *potential* tests.



Figure 1. Pie chart of overall conformance figures for all potential tests

Note that in Figure 1 "Pass", "Fail", and "Inconclusive" percentages are based on the number of all *potential* tests whereas in Table 1 and in Figure 2 they are based on all executed tests.

Report	22.10.2007	ETSI World Class Standards
Stephan Schulz		7 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)



Figure 2. Pie chart of overall conformance figures for all executed tests

### 3 More Detailed Interoperability Results

This section presents the overall interoperability results based on the executed Test Description identifier from ETSI TS 186 011-2. The column "Runs" refers to the total number of executions during the entire event. Table 2 shows interoperability results in percentages and Table 3 in number of test execution runs. Note again that the percentages in Table 2 for "OK" and "not OK" are computed based on the total *executed* tests, whereas the percentage of "Not Applicable" and "Out Of Time" are based on the total of all *potential* tests.

A first analysis shows that the call hold/resume test (TD\_IMS\_0027) has had the most interoperability issues. It is followed by the originating network de-registration test (TD\_IMS\_0022) and large message transfer (TD\_IMS\_0001). It should also be noted that tests related basic call and messaging with implicit SIP URI (TD\_IMS\_0012/13/14/4) have not been executed often.

Report	22.10.2007	ETSI World Closs Standards
Stephan Schulz		8 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

$1 a \mu \alpha 2$ . Inter operating regulas per rest Description in percent	Table 2. Inte	eroperability	<b>Results</b> per	· Test Descri	ption in	percent
--	---------------	---------------	--------------------	---------------	----------	---------

Test Description	Runs	OK	Not Ok	NA	OoT
TD_IMS_0006	29	100.0%	0.0%	3.3%	0.0%
TD_IMS_0007	30	96.7%	3.3%	0.0%	0.0%
TD_IMS_0008	30	96.7%	3.3%	0.0%	0.0%
TD_IMS_0019	28	100.0%	0.0%	6.7%	0.0%
TD_IMS_0020	27	92.6%	7.4%	10.0%	0.0%
TD_IMS_0028	30	100.0%	0.0%	0.0%	0.0%
TD_IMS_0026	30	96.7%	3.3%	0.0%	0.0%
TD_IMS_0022	19	68.4%	31.6%	33.3%	3.3%
TD_IMS_0023	20	95.0%	5.0%	30.0%	3.3%
TD_IMS_0027	22	54.5%	45.5%	23.3%	3.3%
TD_IMS_0009	26	96.2%	3.8%	13.3%	0.0%
TD_IMS_0010	26	96.2%	3.8%	13.3%	0.0%
TD_IMS_0011	26	96.2%	3.8%	13.3%	0.0%
TD_IMS_0012	6	100.0%	0.0%	73.3%	6.7%
TD_IMS_0013	6	100.0%	0.0%	73.3%	6.7%
TD_IMS_0014	6	100.0%	0.0%	73.3%	6.7%
TD_IMS_0015	11	100.0%	0.0%	56.7%	6.7%
TD_IMS_0021	25	100.0%	0.0%	13.3%	3.3%
TD_IMS_0001	11	63.6%	36.4%	56.7%	6.7%
TD_IMS_0002	28	100.0%	0.0%	0.0%	6.7%
TD_IMS_0003	23	100.0%	0.0%	16.7%	6.7%
TD_IMS_0004	8	100.0%	0.0%	66.7%	6.7%
TD_IMS_0005	11	100.0%	0.0%	56.7%	6.7%

Report	22.10.2007	ETSI World Closs Standards
Stephan Schulz		9 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

Test Description	Runs	OK	Not Ok	OoT	NA
TD_IMS_0006	29	29	0	0	1
TD_IMS_0007	30	29	1	0	0
TD_IMS_0008	30	29	1	0	0
TD_IMS_0019	28	28	0	0	2
TD_IMS_0020	27	25	2	0	3
TD_IMS_0028	30	30	0	0	0
TD_IMS_0026	30	29	1	0	0
TD_IMS_0022	19	13	6	1	10
TD_IMS_0023	20	19	1	1	9
TD_IMS_0027	22	12	10	1	7
TD_IMS_0009	26	25	1	0	4
TD_IMS_0010	26	25	1	0	4
TD_IMS_0011	26	25	1	0	4
TD_IMS_0012	6	6	0	2	22
TD_IMS_0013	6	6	0	2	22
TD_IMS_0014	6	6	0	2	22
TD_IMS_0015	11	11	0	2	17
TD_IMS_0021	25	25	0	1	4
TD_IMS_0001	11	7	4	2	17
TD_IMS_0002	28	28	0	2	0
TD_IMS_0003	23	23	0	2	5
TD_IMS_0004	8	8	0	2	20
TD_IMS_0005	11	11	0	2	17

### 4 More Detailed Conformance Results

This section presents the overall conformance verdicts based on the executed Test Description identifier from ETSI TS 186 011-2. The column "Runs" refers to the total number of executions during the entire event. Table 4 shows conformance results in percentages and Table 5 in number of test execution runs. Note again that the percentages in Table 4 for "P(ass)", "F(ail)", and "I(nconclusive)" are computed based on the total *executed* tests, whereas the percentage of "N(ot Applicable)" and "O(ut Of Time)" are based on the total of all *potential* tests. Finally Figure 3 shows a graphical representation of the data presented in Table 5.

A first analysis shows that not surprisingly the call hold/resume test (TD\_IMS\_0027) and originating network de-registration test (TD\_IMS\_0022) have had the most conformance issues. In general, we see that a number of messaging tests (TD\_IMS\_0002/3/4) have

Report	22.10.2007	World Class Standards
Stephan Schulz		10 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

conformance issues. A good result to see is the relatively low amount of "Inconclusive" verdicts. The exception here is large messaging test TD\_IMS\_0001 where the common issue has been the user equipment used in the tests.

Test Description	Runs	Р	F	Ι	0	Ν
TD_IMS_0006	30	63.3%	20.0%	16.7%	0.0%	0.0%
TD_IMS_0007	29	44.8%	31.0%	24.1%	0.0%	3.3%
TD_IMS_0008	29	48.3%	34.5%	17.2%	0.0%	3.3%
TD_IMS_0019	28	100.0%	0.0%	0.0%	0.0%	6.7%
TD_IMS_0020	27	77.8%	18.5%	3.7%	0.0%	10.0%
TD_IMS_0028	30	83.3%	16.7%	0.0%	0.0%	0.0%
TD_IMS_0026	30	56.7%	20.0%	23.3%	0.0%	0.0%
TD_IMS_0022	20	55.0%	40.0%	5.0%	3.3%	30.0%
TD_IMS_0023	20	95.0%	0.0%	5.0%	3.3%	30.0%
TD_IMS_0027	22	27.3%	68.2%	4.5%	3.3%	23.3%
TD_IMS_0009	26	76.9%	19.2%	3.8%	0.0%	13.3%
TD_IMS_0010	25	68.0%	16.0%	16.0%	0.0%	16.7%
TD_IMS_0011	25	68.0%	16.0%	16.0%	0.0%	16.7%
TD_IMS_0012	6	100.0%	0.0%	0.0%	6.7%	73.3%
TD_IMS_0013	6	66.7%	33.3%	0.0%	6.7%	73.3%
TD_IMS_0014	6	66.7%	33.3%	0.0%	6.7%	73.3%
TD_IMS_0015	11	100.0%	0.0%	0.0%	6.7%	56.7%
TD_IMS_0021	25	100.0%	0.0%	0.0%	3.3%	13.3%
TD_IMS_0001	13	38.5%	30.8%	30.8%	6.7%	50.0%
TD_IMS_0002	27	40.7%	44.4%	14.8%	6.7%	3.3%
TD_IMS_0003	23	43.5%	47.8%	8.7%	6.7%	16.7%
TD_IMS_0004	8	37.5%	62.5%	0.0%	6.7%	66.7%
TD_IMS_0005	11	100.0%	0.0%	0.0%	6.7%	56.7%

#### Table 4. Conformance Verdicts per Test Description in percent

Report	22.10.2007	ETSI World Class Standards
Stephan Schulz		11 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

### Table 5. Conformance Verdicts per Test Description in number of test executions

Test Description	Runs	Р	F	Ι	0	Ν
TD_IMS_0006	30	19	6	5	0	0
TD_IMS_0007	29	13	9	7	0	1
TD_IMS_0008	29	14	10	5	0	1
TD_IMS_0016	-	-	-	-	-	-
TD_IMS_0017	-	-	-	-	-	-
TD_IMS_0018	-	-	-	-	-	-
TD_IMS_0019	28	28	0	0	0	2
TD_IMS_0020	27	21	5	1	0	3
TD_IMS_0028	30	25	5	0	0	0
TD_IMS_0026	30	17	6	7	0	0
TD_IMS_0022	20	11	8	1	1	9
TD_IMS_0023	20	19	0	1	1	9
TD_IMS_0027	22	6	15	1	1	7
TD_IMS_0009	26	20	5	1	0	4
TD_IMS_0010	25	17	4	4	0	5
TD_IMS_0011	25	17	4	4	0	5
TD_IMS_0012	6	6	0	0	2	22
TD_IMS_0013	6	4	2	0	2	22
TD_IMS_0014	6	4	2	0	2	22
TD_IMS_0015	11	11	0	0	2	17
TD_IMS_0021	25	25	0	0	1	4
TD_IMS_0001	13	5	4	4	2	15
TD_IMS_0002	27	11	12	4	2	1
TD_IMS_0003	23	10	11	2	2	5
TD_IMS_0004	8	3	5	0	2	20
TD_IMS_0005	11	11	0	0	2	17





Figure 3. Graphical representation of Conformance Verdicts per Test Description

Report	22.10.2007	World Class Standards
Stephan Schulz		13 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

## 5 Collected Comments

In order to understand the results shown in previous sections better, this section presents some of the comments specified in cases of conformance "Fail" and "Inconclusive" verdicts. These comments have been extracted from relevant Test Session Reports.

Test Description	Verdict	Comment
TD_IMS_0006	F	PCSCF in Via header missing
	F	PCSCF in Record-Route headers missing
	F	P-Access-Network-Info present
	F	No P-Charging-Vector in Mw sent by IMS_A
	F	No orig-ioi parameter
	Ι	Focus OpenIMS Issue
TD_IMS_0007	F	orig-ioi missing in P-Charging-Vector
	F	no Record-Route header contained the IMS_B P-CSCF port number
	F	Record-Route PCSCF IMS_B is missing
	F	P-Charging-Function present
	F	No orig-ioi parameter, No term-ioi parameter
	Ι	OpenIMS issue missing orig-ioi parameter
	Ι	Missing Record-Route header, Missing P-Charging-Vector header, OpenIMS issue
TD_IMS_0008	F	step 21 - orig and term ioi missing
	F	no Record-Route header contained the IMS_B P-CSCF port number
	F	orig-ioi and term-ioi missing in P-Charging-Vector
	F	PCSCF Record-Route is missing
	F	P-Charging-Function-Addresses; P-Access-Network-Network-Info present
	F	Missing term-ioi
	Ι	OpenIMS issue missing orig-ioi parameter
TD_IMS_0020	F	step 6 - 404 instead of 480
	F	Wrong implementation in IMS_B
	F	IMS_B returned 481 instead of 480 at Mw
	Ι	OpenIMS send 404 instead of 480

Report	22.10.2007	ETSI World Class Standards
Stephan Schulz		14 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

Test Description	Verdict	Comment
TD_IMS_0028	F	P-Charging-Vector is missing
	Ι	OpenIMS - P-Charging-Vector header missing
TD_IMS_0026	F	Missing P-Charging-Vector header
	F	P-Access-Network-Info header present
	F	Step 30 IMS_B does not receive the BYE
	F	No P-Charging-Vector in 200 OK for BYE from IMS_B at Mw
	Ι	No 200OK sent from UE_B
	Ι	Open IMS do not send P-Charging-Vector
	Ι	Contained a P-Access-Network-Info header
TD_IMS_0022	F	IMS_A does not send the BYE message to IMS_B (but directly to client)
	F	Request URI is wrong, UE_B does not receive the BYE
	F	Cseq not ok and Route header missing
	F	No bye exchanged
	F	Request-URI is not the same as the 200-OK from UE_B Contact header
	Ι	Focus IMS S-CSCF forwards contact incorrectly to IMS_A; x-lite does also not support via and record-route handling
TD_IMS_0023	Ι	IMS_B does not send BYE to IMS_A
TD_IMS_0027	F	Remote IMS_B S-CSCF never receives 200OK on 2nd INVITE
	F	no P-CSCF in a via header and no Record-Route; missing Record-Route; Step 45 and Step 51 could not be analysed, never sent third INVITE.
	F	PCSCF Record-Route of IMS_B is missing
	F	step 31 - PCSCF Via and Record-Route Headers missing; step 45 - No Invite ;step 51 - No 200 OK; step 31 P-Charging Vector Header;, step 45 - No Invite
	F	PCSCF and SCSCF Record-Route missing, PCSCF Via missing, P-Charging-Vector missing
	F	Xlite from IMS_A do not re-ack
	F	UE_B never receive the INVITE step 45, UE_A never receive 2xx step 51

Report	22.10.2007	ETSI World Class Standards
Stephan Schulz		15 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

Test Description	Verdict	Comment
	F	IMS_A did not send Record-Route header in MESSAGE at Mw; IMS_B does not return P-Asserted-Identity and P-Charging-Vector header in 200 ok at Mw
	F	HOLD reINVITE from IMS_A missing Record-Route and P- Charging-Vector headers and RESUME reINVOTE missing; Note that trace is very messy - also RTP does not stop
	F	No Record-Route and P-Charging-Vector Header sent in INVITE by IMS_A via Mw; 200OK has incorrect P-CSCF port number in Record-Route,UE_B does not return ACK on 2nd INVITE
	F	P-CSCF port and IP not present in any via header, Missing Record-Route header, Call Flow step 45 never reached (INVITE) caused by missing ACK from UE_A (Step 39)
TD_IMS_0009	F	missing P-Asserted-Identity header indicating a Tel-URI
	Ι	OpenIMS - Tel URI P-Asserted-Identity missing
TD_IMS_0010	F	Tel URI - P-Asserted-Identity is missing
	Ι	The tel URI is missing from OpenIMS
	Ι	OpenIMS issue, cannot config HSS tel uri
	Ι	Tel URI P-Asserted-Identity missing
TD_IMS_0011	F	Missing P-Asserted-Identity indicating the TeI-URI
	Ι	OpenIMS issue, cannot config HSS tel uri
	Ι	Tel URI P-Asserted-Identity missing
TD_IMS_0013	F	Tel_derived_sip URI P-Asserted-Identity is missing
TD_IMS_0014	F	Tel_derived_sip URI P-Asserted-Identity is missing
	F	IMS_B not sending Tel derived SIP URI P-Asserted-Idenity header in 180 at MW (Use of P-Called-Party header for P-Asserted-Idenity not correctly stated in Specification?)
TD_IMS_0015	F	IMS_B not sending Tel derived SIP URI P-Asserted-Idenity header in 180 at MW (Use of P-Called-Party header for P-Asserted-Idenity not correctly stated in Specification?)
TD_IMS_0001	F	UE_B did not receive the message

Report	22.10.2007	<b>ETSI</b> World Class Standards
Stephan Schulz		16 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

Test Description	Verdict	Comment	
	F	UE_B never received the MESSAGE, The IMS_A did not support the long message	
	F	UE_B cannot receive message	
	F	IMS_B returns 400 (only supports big message with TCP)	
	Ι	Focus S-CSCF did not forward fragmented SIP message at Mw	
	Ι	UE_A sends only 1000 bytes	
	Ι	Client Issue	
TD_IMS_0002	F	missing P-Asserted-Identity heade	
	F	Missing P-Charging-Vector header	
	F	missing orig-ioi parameter in the P-Charging-Vector	
	F	Missing P-Charging-Vector header (IMS_A do not send, and thus IMS_B do not contain)	
	Ι	OpenIMS do not add the orig-ioi and term-ioi in PassCriteria-5	
	Ι	Open IMS do not send P-Charging-Vector	
	Ι	missing P-Asserted-Identity header, I3(OpenIMS issues)	
TD_IMS_0003	F	step3-P-Asserted-Identity indicating a Tel URI is missing	
	F	IMS_B sends no P-Asserted-Identity headers in 200 OK	
	F	Record-Route header missing	
	Ι	The tel URI is missing from OpenIMS	
	Ι	OpenIMS issue, cannot config HSS tel uri	
TD_IMS_0004	F	IMS_B sends no P-Asserted-Identity headers in 200 OK	
	F	missing a P-Asserted-Identity header indicating a Tel_URI; missing P-Asserted-Identity header	

## **Version History**

V1.0.0	October 2007	First version
V1.1.0	October 2007	Corrected results based on test spec error in TD_IMS_0002

Report	22.10.2007	ETSI World Class Standards
Stephan Schulz		17 of 17
Centre for Testing & Interoperability (CTI)		Version (1.1.1)

V1.1.1 Octo	ober 2007 Corrected results about TD	_IMS_0012
-------------	--------------------------------------	-----------