ETSI CTI Report V1.0.0 (2022-12)

The Next Generation eCall#2 Plugtests;
14 - 16 November 2022

ETSI

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1 Executive Summary

The second Next Generation eCall Plugtests was held from 14 to 16 November 2022 in Kranj, Slovenia.

This event was organized by ETSI with the support of the European Commission, European Free Trade Association and EENA and was hosted by SINTESIO. S&T Iskratel, Telekom Slovenije and CETECOM supported the event as technical partners.

The NG eCall Plugtests 2022 event had a specific focus on the interoperability of Next Generation eCall (NG eCall) over Long Term Evolution (LTE), based on the interoperability test descriptions described in the stable draft V2.1.1 of ETSI TS 103 683 [4].

The vendors of In-Vehicle Systems (IVS) and Public Safety Answering Points (PSAP), supporting the Next Generation eCall, joined the event. While carrying out interoperability tests, participants had the opportunity to test multiple aspects of their NG eCall implementations.

The Next Generation eCall Plugtests event took place as a face-to-face event in Kranj, Slovenia, whereas the previous NG eCall Plugtests event was hosted remotely due to the COVID-19 pandemic situation in 2020. One PSAP vendor was connected remotely (via VPN tunnel), while all other vendors attended the event onside. Protocol conformance tests, GNSS and audio performance tests were not executed.

The test results were reported by vendors using the ETSI Test Reporting Tool (TRT), allowing assessing the level of interoperability either by test categories or across all vendors.

The event provided value for standardisation with the final debriefing session where experts could address technical questions and interoperability issues.

As a result of the event, some clarification notes have been proposed to be included in multiple tests of the Interoperability test specification ETSI TS 103 683 [4].

The ETSI Mobile Standards Group (MSG) is the Technical Committee (TC) within ETSI working on the NG eCall standards. The initial version of the interoperability test specification was published in February 2020 as ETSI TS 103 683 V1.1.1 “Mobile Standards Group (MSG); Testing; Next Generation eCall High Level Application Protocol (HLAP) Interoperability Testing” [4]. The 2nd NG eCall Plugtests event permits to evaluate and validate the stable draft V2.1.1 of ETSI TS 103 683 [4].

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long-term validity.

The following referenced documents are necessary for the application of the present document.

[1] IETF RFC 8147: "Next-Generation Pan-European eCall"

[2] CEN EN 15722: "Road transport and traffic telematics - eSafety - eCall Minimum Set of Data"

[3] CEN TS 17184: "Intelligent transport systems - eSafety - eCall High level application Protocols (HLAP) using IMS packet switched networks"

[4] ETSI TS 103 683: "Mobile Standards Group (MSG); Testing; Next Generation eCall High Level Application Protocol (HLAP) Interoperability Testing"

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long-term validity.

The following referenced documents are not necessary for the application of the present document, but they assist the user with regard to a particular subject area.

[i.1] ETSI ETR 266: "Methods for Testing and Specification (MTS); Test Purpose style guide"

3 Abbreviations

ACK	Acknowledgement
DNS	Directory Name Server
EPC	Evolved Packet Core
GSM	Global System of Mobile telecommunications
HLAP	High Level Application Protocol
IMS	IP Multimedia Subsystem
IVS	In Vehicle System

NOTE: eCall terminal and associated sub-systems in vehicle.

MNO	Mobile Network Operator
MSC	Mobile Switching Centre
MSD	Minimum Set of Data
NA	Test is Not Applicable
NAD	Network Access Device
NG	Next Generation
NO	Test is recorded as NOT successfully passed
OK	Test is recorded as successfully passed
OT	Test is recorded as not being executed due to lack of time
PBX	Private Branch Exchange
PLMN	Public Land Mobile Network
PSAP	Public Service Answering Point
SBC	Session Border Controller
SIM	Subscriber Identity Module
SIP	Session Initiation Protocol
TRT	Test Reporting Tool
URN	Unique Resource Name
USIM	Universal Subscriber Identity Module
VPN	Virtual Private Network

4 Host

This event was hosted by SINTESIO. S&T Iskratel, Telekom Slovenije and CETECOM supported the event as technical partners.

5 Participants

In this section all the participants are listed.

Table 1: List of participants

No	Company Name	Country
1	ANRITSU LTD	JP
2	AMPER SISTEMAS SA	ES
3	CESTEL	ES
4	OECON Products & Services GmbH	DE
5	Qualcomm Inc	US

6 Technical and Project Management

6.1 Interoperability Tests

The interoperability tests specification is available as ETSI TS 103 683 [4]. It contains a set of pro-forma table corresponding to test scenarios to be executed by vendors, and it provides guidance to participants for executing and assessing the test sessions.

The initial version of the interoperability test specification was published in February 2020 as ETSI TS 103 683 V1.1.1 “Mobile Standards Group (MSG); Testing; Next Generation eCall High Level Application Protocol (HLAP) Interoperability Testing” [4]. The 2nd NG eCall Plugtests event permits to evaluate and validate the stable draft V2.1.1 of ETSI TS 103 683 [4]. The stable draft was made available for all participants. The tests were grouped in basic and advanced tests. The below tables Table 2 to Table 6 show the Test IDs, Titles (as used in ETSI TS 103 683 [4]) and indicate if the tests were assumed to be executable during the NG eCall Plugtests event.

Table 2: Basic Tests

Test case ID	Title	Executable
TD_BAS_01	Initiation of manual eCall	Yes
TD_BAS_02	Initiation of automatic eCall	Yes
TD_BAS_03	Initiation of test eCall	Yes
TD_BAS_04	MSD transfer to PSAP supporting IMS eCall	Yes
TD_BAS_05	MSD transfer to PSAP supporting IMS eCall in roaming scenario	No
TD_BAS_06	PSAP initiated call-back to IVS	Yes
TD_BAS_07	PSAP initiated call clear-down	Yes
TD_BAS_08	IVS initiated call clear-down not allowed	Yes
TD_BAS_09	Verification of audio interfaces of IVS and PSAP	Yes
TD_BAS_10	MSD update on request from PSAP	Yes
TD_BAS_13	Format of encoded and decoded MSD in accordance with CEN EN 15722:2015	Yes
TD_BAS_15	Negative acknowledgment for the initial MSD	Yes
TD_BAS_16	Format of encoded and decoded MSD in accordance with CEN EN 15722:2020	Yes

Table 3: Advanced Tests for PSAP and IVS

Test case ID	Title	Executable
TD_ADV_01	MSD transfer to PSAP supporting IMS eCall over IPv4	Yes
TD_ADV_02	MSD transfer to PSAP supporting IMS eCall over IPv6	No
TD_ADV_04	MSD transfer to PSAP not supporting IMS eCall	?
TD_ADV_05	IMS eCall establishment with IMS emergency registration	Yes
TD_ADV_06	IMS eCall establishment without IMS emergency registration	?
TD_ADV_07	IMS eCall establishment without IMS emergency registration GIBA supported	No
TD_ADV_08	MSD transfer via in-band modem after negative acknowledgment for the MSD	Yes
TD_ADV_09	MSD transfer via in-band modem after missing acknowledgment for the MSD	Yes
TD_ADV_10	MSD transfer via in-band modem after missing MSD in INVITE request	Yes
TD_ADV_11	MSD update during PSAP initiated call back	Yes

Table 4: Advanced Tests for IVS

Test case ID	Title	Executable
TD_ADV_IVS_01	Fallback to legacy eCall following busy during call setup	?
TD_ADV_IVS_02	Fallback to legacy eCall following unavailable response during call setup	?
TD_ADV_IVS_03	Fallback to legacy eCall following no-answer during call setup	?
TD_ADV_IVS_04	Dropped eCall after MSD has been acknowledged	Yes
TD_ADV_IVS_05	Dropped eCall before call has been established - reattempt to CS	?
TD_ADV_IVS_06	IVS configured for 'eCall only' service (restricted)	Yes
TD_ADV_IVS_07	eCall is attempted when no networks are available (limited-service condition with forbidden PLMN on SIM/USIM)	No
TD_ADV_IVS_08	MSD transfer to PSAP supporting IMS eCall via PLMN without VoIMS support	No
TD_ADV_IVS_09	Termination of manually triggered eCall by vehicle occupant	Yes
TD_ADV_IVS_10	Termination of automatically triggered eCall by vehicle occupant not allowed/not possible	Yes
TD_ADV_IVS_11	Ongoing eCall shall not be disconnected if new trigger is received	Yes
TD_ADV_IVS_12	No Fallback to legacy eCall following busy during call setup	Yes
TD_ADV_IVS_13	No Fallback to legacy eCall following unavailable response during call setup	Yes
TD_ADV_IVS_14	Dropped eCall after MSD has not been acknowledged - reattempt to PS	Yes
TD_ADV_IVS_15	Dropped eCall before call has been established - reattempt to PS	Yes
TD_ADV_IVS_16	Test eCall is not attempted when no networks are available (limited-service condition with forbidden PLMN on SIM/USIM)	No
TD_ADV_IVS_17	Reattempt of eCall following no-answer during call setup	Yes

Table 5: Advanced Tests for PSAP

Test case ID	Title	Executable
TD_ADV_PSAP_01	PSAP handling of more than 1 eCall simultaneously	Yes
TD_ADV_PSAP_02	PSAP correct MSD additional data decoding	Yes
TD_ADV_PSAP_03	Rerouting to another PSAP/emergency control centre	Yes
TD_ADV_PSAP_04	PSAP operator user interface	Yes
TD_ADV_PSAP_05[1]	Invalid MSD	Yes

Table 6: Advanced Tests for TPS

Test case ID	Title	Executable
TD_ADV_TPS_01	TPSP and rerouting to national PSAP	Yes
TD_ADV_TSP_02	Conference call between TPS IVS, TPSP and national PSAP	Yes

6.2 Test Scheduling

The ETSI Test Report Tool (TRT) was used to manage the test scheduling. There were 1-2 parallel test sessions of 2 hours, and the test schedule provided pairing sessions for 3 days.

[1] This test case has been added in ETSI TS 103 683 [4] during the NG eCall Plugtests event, based on feedback from device vendors.

6.3 Test Site Layout

The generic test bed used to carry out interoperability tests, during the event, is summarized in the figure 1. In normal operation conditions, the IVS calls urn:service:sos.ecall.manual or urn:service:sos.ecall.automatic. This call setting is then interpreted by the mobile network as a requirement to connect the IVS with the most appropriate PSAP, able to handle Next Generation (NG) pan EU eCalls, accordingly to the RFC 8147 [1] and CEN TS 17184 [3].

However, during an NG eCall interoperability event, IVS will need to be connected to given PSAP in order to carry out pairing test sessions. The selection of the PSAP is therefore achieved by the use of proposed plugtests URNs defined in Table 6 of ETSI TS 103 683 [4]. Based on the proposed URNs routing was configured at the IMS to access the correct PSAP and assure parallel sessions at the same time.

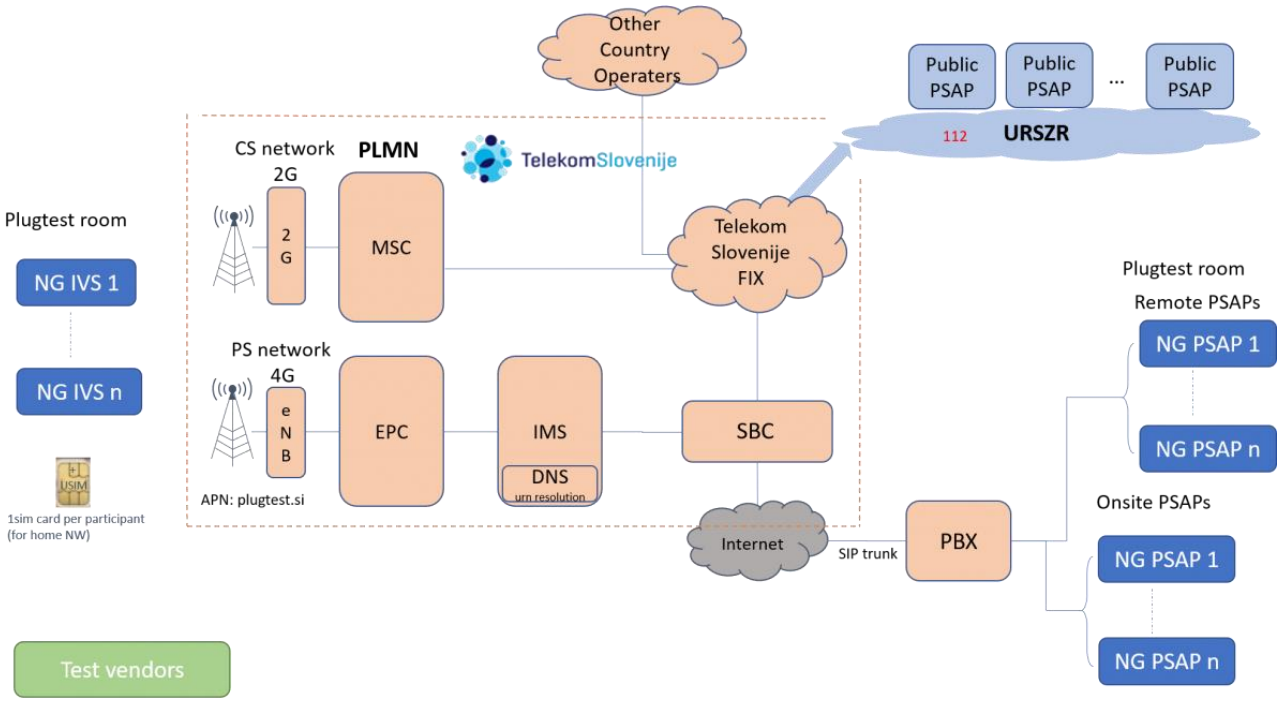

Figure 1: Test Site Layout

VPN tunnels were successfully established between two PSAPs and the Plugtest room. The other PSAPs were connected locally. The IVS devices were connected via a public 4G or 2G network by the MNO Telekom Slovenije.

6.4 Interoperability Test Procedure

Each test was executed in the same manner as listed below:

1) Connect devices from different vendors
2) Check connectivity between devices
3) Perform tests according to Test description document
4) Check if devices can send/receive messages from each other
5) Check if data is handled correctly in the network and facility layers
6) Result determination and reporting
7) Result OK: run next test
8) Result NOK: check monitor tools to identify source of error
9) Report results in ETSI Test Reporting Tool

7 Results

7.1 Results reporting

The results of each interoperability test session were recorded using the ETSI Test Report Tool (TRT). After each test execution the interoperability result was documented and agreed among all participants.

Vendors could only access test results of their own test sessions.

7.2 Overall Results

There were 4 tests sessions between 5 participants: 1 IVS, 3 PSAPs and 1 test system vendor.

57 test cases (79.2% of total amount) were executed during these sessions, 42 (73.7%) of them were executed successfully.

15 test cases (20.8% of total amount) were skipped according to different reasons.

The Table 7 presents the overall results of tests executions.

Table 7: Overall Results

Interoperability results		Not Executed		Use-cases	
Passed	Failed	Not applicable	Out-of-time	Run	Total
42 (73.7%)	15 (26.3%)	15 (20.8%)	(0.0%)	57 (79.2%)	72

The Table 8 presents the count of test cases executed during test sessions.

Table 8: Results per Sessions

	Interoperability results		Not Executed		Use-cases
	Passed	Failed	Not applicable	Out-of-time	Run
Minimum	6	1	1	0	1
Maximum	20	5	8	0	23
Mean	18.0	4.0	7.0	0.0	22.0
Deviation	2.00	1.00	1.00	0.00	1.00

The Table 9 presents the test results per group.

Table 9: Results per Group

Group	Interoperability results		Not Executed		Use-cases	
	Passed	Failed	Not applicable	Out-of-time	Run	Total
Interop	36 (80.0%)	9 (20.0%)	15 (25.0%)	0 (0.0%)	45 (75.0%)	60
Conformance IVS[2]	6 (50.0%)	6 (50.0%)	0 (0.0%)	0 (0.0%)	12 (100.0%)	12

The tables Table 10 and Table 11 present the execution statistics of each executable test case, as indicated in the above tables Table 2 to Table 6.

[2] The IVS has been connected with a conformance test system (simulating an LTE network and PSAP) in order to execute the basic tests from ETSI TS 103 683 [4].

Table 10: Results per Test (Basic Tests)

Test case ID	Interoperability results		Not Executed		Sessions	
	Passed	Failed	Not applicable	Out-of-time	Run	Total
TD_BAS_01	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	4 (100.0%)	4
TD_BAS_02	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_BAS_03	0 (0.0%)	1 (100.0%)	1 (50.0%)	0 (0.0%)	1 (50.0%)	2
TD_BAS_04	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_BAS_06	0 (0.0%)	0 (0.0%)	3 (100.0%)	0 (0.0%)	0 (0.0%)	3
TD_BAS_07	2 (66.7%)	1 (33.3%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_BAS_08	2 (66.7%)	1 (33.3%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_BAS_09	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	1
TD_BAS_10	1 (33.3%)	2 (66.7%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_BAS_13	0 (0.0%)	3 (100.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_BAS_15	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_BAS_16	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3

Table 11: Results per Test (Advanced Tests)

Test case ID	Interoperability results		Not Executed		Sessions	
	Passed	Failed	Not applicable	Out-of-time	Run	Total
TD_ADV_01	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_ADV_02	0 (0.0%)	0 (0.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	2
TD_ADV_04	0 (0.0%)	0 (0.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	2
TD_ADV_05	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_ADV_06	0 (0.0%)	0 (0.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	2
TD_ADV_07	0 (0.0%)	0 (0.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	2
TD_ADV_08	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_ADV_09	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_ADV_10	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_11	0 (0.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_ADV_IVS_01	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_IVS_02	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	1
TD_ADV_IVS_03	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	1
TD_ADV_IVS_04	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	1
TD_ADV_IVS_05	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_IVS_06	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_IVS_07	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1
TD_ADV_IVS_08	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1
TD_ADV_IVS_09	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_IVS_10	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_IVS_11	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_ADV_IVS_12	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_IVS_13	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_IVS_14	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_IVS_15	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_IVS_16	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1
TD_ADV_IVS_17	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_ADV_PSAP_01	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	1
TD_ADV_PSAP_02	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_ADV_PSAP_03	0 (0.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_ADV_PSAP_04	1 (50.0%)	1 (50.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_ADV_PSAP_05	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2

8 Event feedback and wrap up meeting summary

8.1 Technical issues detected and solved during the event

- The SIP 200 OK message between the PBX and IMS was not confirmed with a SIP ACK message (solved by MNO)
- PSAP call-backs were not possible due to rejection with "503" response from IMS (solved by MNO)
- PSAP call-backs were not possible due to rejection with "503" response from PBX (solved by PBX vendor)
- MNO did not broadcast the IMS eCall support indicator - ECL flag (solved by IVS by ignoring the missing ECL flag)
- IVS was configured to specific URNs per test session by the use of proposed plugtests URNs defined in Table 6 of ETSI TS 103 683 [4] in order to contact the assigned test PSAP (solved by IVS by modification of the URNs per test session)

8.2 Technical issues detected and not solved during the event

- MSD update requests from PSAPs did not work, because the PBX removed the XML content (MSD update request) from the SIP INFO message, hence the IVS did not receive the MSD update request from PSAP
- MSD update requests from PSAPs did not work, because IMS core did not response to the SIP INFO message from PSAPs
- PBX forwarded the SIP re-INVITE requests from test PSAPs to the IMS core, but there was no response from the IMS, hence the bidirectional voice communication could not be checked for PSAPs, which rely on re-INVITE schema to forward audio. It is not clear who is responsible for the failure (it might be that the failure was due to the content in the Contact header field).
- One test PSAP did not support "TEL URI" in the "To" header of the SIP INVITE, hence the call setup was not successful
- The provided USIM cards (from the MNO) did not contained a URN for test eCalls, hence all tests which require a test eCall were not executable

8.3 Technical issues requiring clarification in the SIP base standards

According to the NG eCall standards RFC 8147 [1] and CEN TS 17184 [3], the IVS shall insert the eCall service URN in the "Request-Line" and in the "To" header of the SIP INVITE message, but it is not described how the eCall service URN has to arrive at the PSAP.

The PBX changed the content of the "To" header and removed the "Request-Line" before forwarding the SIP INVITE message to the test PSAPs.

In RFC 8147 [1] the following example SIP messages are provided:

```
INVITE urn:service:sos.ecall.automatic SIP/2.0

To: urn:service:sos.ecall.automatic

(…)

SIP/2.0 200 OK

To: urn:service:sos.ecall.automatic;tag=8gydfe65t0

(…)
```

Since the PSAP shall include the same eCall service URN (in the example: urn:service:sos.ecall.automatic) in the "To" header of the SIP 200 OK message, this value shall somehow arrive at the PSAP.

It needs to be checked in the SIP base standards if the "To" header of the SIP INVITE message shall be routed to the PSAP transparently and if it is allowed to remove or modify the "Request-Line" e.g., by the PBX.

According to feedback from SIP experts received after the Plugtests event the “To” header of the SIP INVITE message shall be routed to the PSAP transparently. A tag may be added, but the initial eCall service URN shall not be removed from the “To” header.

The modification of the “Request-Line” e.g., by the PBX is expected behaviour in order to route the SIP INVITE message to the expected test PSAP correctly.

8.4 ETSI TS 103 683 updates

During the NG eCall Plugtests event some modifications to ETSI TS 103 683 [4] have been suggested by participants. The following changes to the test specification have been made during the NG eCall Plugtests event.

- Addition of new PSAP test TD_ADV_PSAP_05 (Invalid MSD)
- Addition of further notes in multiple tests (TD_BAS_08, TD_ADV_IVS_01 and TD_ADV_IVS_02)
- Minor updates in multiple tests (TD_BAS_07 and TD_BAS_08)
- Addition of further notes in multiple tests (TD_ADV_IVS_01, TD_ADV_IVS_02 and TD_ADV_IVS_03) because the IMS core may translate the 4xx or 6xx response into a 3xx response (e.g., 380)
- Added table with related tests (see table 7)

8.5 CEN TS 17184 updates

During the NG eCall Plugtests event some modifications to CEN TS 17184 [3] have been suggested by participants.

8.5.1 Timer T2

In the test case TD_ADV_IVS_04 an abnormal call drop is simulated. After the IVS recognized the call drop the IVS shall stop the timer T2. In CEN TS 17184 [3] the STOP condition for the timer T2 is specified as:

“STOP: T2 stops when the IVS-NAD receives a call clear-down indication from the mobile network or a call clear-down message from the PSAP.”

Suggestion was received to enhance the STOP condition for the timer T2 to:

STOP: T2 stops when the IVS-NAD receives a call clear-down indication from the mobile network or a call clear-down message from the PSAP or IVS recognized a call drop.

8.5.2 Timers T9 and T10

The START conditions for the timers T9 and T10 in CEN TS 17184 [3] also depend on the call clear-down indication. CEN WG 15 should consider to also enhance the start conditions of those timers by adding the condition “or IVS recognized a call drop” in the START conditions.