

# ETSI CTI Report V1.0.0 (2026-07)



**Next Generation eCall Plugtests 2026**  
**01 - 05 June 2026**  
**Ljubljana, Slovenia**



**Co-funded by  
the European Union**



**Co-funded by EFTA**

**ETSI**

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# Contents

|                                                                        |    |
|------------------------------------------------------------------------|----|
| Contents .....                                                         | 3  |
| 1 Executive summary .....                                              | 4  |
| 2 References .....                                                     | 5  |
| 2.1 Normative references .....                                         | 5  |
| 2.2 Informative references .....                                       | 5  |
| 3 Abbreviations .....                                                  | 7  |
| 4 Host .....                                                           | 8  |
| 5 Participants .....                                                   | 8  |
| 6 Technical and project management .....                               | 9  |
| 6.1 Interoperability tests .....                                       | 9  |
| 6.2 Justification for not executable interoperability tests .....      | 12 |
| 6.3 Test scheduling .....                                              | 12 |
| 6.4 Test site layout .....                                             | 12 |
| 6.5 Interoperability test procedure .....                              | 13 |
| 7 Test results .....                                                   | 14 |
| 7.1 Results reporting .....                                            | 14 |
| 7.2 Overall test results .....                                         | 14 |
| 7.3 Interoperability test results .....                                | 14 |
| 7.3.1 Overview of interoperability test results .....                  | 14 |
| 7.3.2 Received comments for failed tests .....                         | 16 |
| 7.3.3 Received comments for N/A tests .....                            | 17 |
| 7.3.4 Routing test eCalls using ESInet .....                           | 20 |
| 7.4 Conformance test results .....                                     | 20 |
| 8 Event feedback and wrap up meeting summary .....                     | 21 |
| 8.1 Additional technical issues detected during the event .....        | 21 |
| 8.2 ETSI TS 103 683 updates .....                                      | 22 |
| 8.3 General comments .....                                             | 22 |
| 9 Implementation guidance .....                                        | 23 |
| Annex A (informative): Draft interoperability test specification ..... | 24 |
| A.1 Overview .....                                                     | 24 |

# 1 Executive summary

The Next Generation eCall Plugtests 2026 were held from 01 to 05 June 2026 in Ljubljana, Slovenia.

This event was organized by ETSI with the support of the European Commission, European Free Trade Association and EENA and was hosted by Telekom Slovenije.

The NG eCall Plugtests 2026 event had a specific focus on the interoperability of Next Generation eCall (NG eCall) over Long Term Evolution (LTE), based on the interoperability tests described in ETSI TS 103 683 [6].

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 aim of the event was to allow the interoperability testing for advanced NG eCall scenarios. It helps to enrich the testing by bringing real use case scenarios and move on to the next steps for vendors to deploy the next generation of a European eCall architecture.

Tests were executed in the 4G based testing network environment, provided by Telekom Slovenije, and using elements of the NG112 ESInet infrastructure, provided by event participants. The ESInet infrastructure was used to route NG eCall requests (emergency and test calls) to the most appropriate PSAP and to connect PSAP emergency callback to the IVS.

The event also included conformance test infrastructure, provided by multiple conformance test tool vendors.

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 comments for an ETSI TS 103 683 [6] update clarification have been proposed (see clause 8.2) and an Implementation guidance has been provided (see clause 9).

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## 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] EN 15722:2020: "Road transport and traffic telematics – eSafety – eCall Minimum Set of Data"
- [3] EN 17184:2024+A1:2026: "Intelligent transport systems – eSafety – eCall High level application Protocols (HLAP) using IMS packet switched networks"
- [4] ETSI TS 123 167 (Rel-14): "IP Multimedia Subsystem (IMS) emergency sessions"
- [5] ETSI TS 124 229 (Rel-14): "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3"
- [6] ETSI TS 103 683 (Draft V3.1.1\_0.0.4): "Mobile Standards Group (MSG); Testing; Next Generation eCall High Level Application Protocol (HLAP) Interoperability Testing"
- [7] EN 17240:2024+A1:2026: "Intelligent transport systems – eSafety – eCall end to end conformance testing for IMS packet switched based systems"
- [8] EN 18052:2025: "Intelligent transport systems – eSafety – eCall end to end conformance testing for eCall HLAP in hybrid circuit switched/packet switched network environments"
- [9] ITU-T P.1140: "Speech communication requirements for emergency calls originating from vehicles"
- [10] ETSI TS 124 229 (Rel-19): "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3"
- [11] EN 16072:2025: "Intelligent transport systems – eSafety – Pan-European eCall operating requirements"
- [12] ETSI TS 103 479: "Emergency Communications (EMTEL); Core elements for network independent access to emergency services"

### 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"

[i.2] CEN Liaison Statement: “LS on Next Generation eCall”

Accessible at: [https://www.3gpp.org/ftp/TSG\\_SA/TSG\\_SA/TSGS\\_104/Shanghai\\_2024-06/Docs/SP-240522.zip](https://www.3gpp.org/ftp/TSG_SA/TSG_SA/TSGS_104/Shanghai_2024-06/Docs/SP-240522.zip)

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## 3 Abbreviations

|        |                                        |
|--------|----------------------------------------|
| ACK    | Acknowledgement                        |
| BCF    | Border Control Function                |
| DNS    | Domain Name Server                     |
| EPC    | Evolved Packet Core                    |
| ESInet | Emergency Services IP Network          |
| ESRP   | Emergency Services Routing Proxy       |
| GSM    | Global System of Mobile Communications |
| HLAP   | High Level Application Protocol        |
| IMS    | IP Multimedia Subsystem                |
| IVS    | In-Vehicle System                      |

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

|      |                                                            |
|------|------------------------------------------------------------|
| 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 Safety Answering Point                              |
| RAN  | Radio Access Network                                       |
| 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

The event was co-funded by European Commission and EFTA with the partnership of European Emergency Number Association.

This event was hosted by Telekom Slovenije.



## 5 Participants

This section contains lists of participating companies and observing organizations.

**Table 1: List of participating vendors**

| Company                                               | Country |                                               |    |
|-------------------------------------------------------|---------|-----------------------------------------------|----|
| 1 ACTIA Nordic AB                                     | SE      | 21 Accuver EMEA ltd                           | GB |
| 2 Anritsu EMEA Ltd                                    | GB      | 22 Mobis Part Europe                          | DE |
| 3 Audi AG                                             | DE      | 23 OECON Products & Services GmbH             | DE |
| 4 AUMOVIO Romania                                     | RO      | 24 Oracle Corporation                         | US |
| 5 BYD Auto Industry Company Limited                   | CN      | 25 Orange Romania                             | RO |
| 6 CENTRO ESPAÑOL DE SERVICIOS<br>TELEMATICOS, S.A     | ES      | 26 Qualcomm Germany GmbH                      | DE |
| 7 cetecom advanced GmbH                               | DE      | 27 Rivian VWG                                 | US |
| 8 Ford Motor Company                                  | US      | 28 ROHDE & SCHWARZ GmbH &<br>Co.KG            | DE |
| 9 Frequentis AG                                       | AT      | 29 Shanghai Changxin Software                 | CN |
| 10 GridGears GmbH                                     | AT      | 30 Sintesio, Foundation                       | SI |
| 11 HEAD acoustics GmbH                                | DE      | 31 ST SUNLAB                                  | KR |
| 12 Honda Motor Co., Ltd                               | JP      | 32 STRABAG ISS                                | AT |
| 13 HYUNDAI MOBIS                                      | KR      | 33 Special Telecommunications Service         | RO |
| 14 IAV GmbH Ingenieurgesellschaft<br>Auto und Verkehr | DE      | 34 Telekom Slovenije d.d.                     | SI |
| 15 Keysight Technologies UK Ltd                       | GB      | 35 TE-SYSTEMS GmbH                            | DE |
| 16 Kontron Europe GmbH                                | DE      | 36 TOYOTA Info Technology Center<br>USA, Inc. | US |
| 17 Kontron Slovenia                                   | SI      | 37 Toyota Motor Europe                        | BE |
| 18 LG Electronics Inc.                                | KR      | 38 Valeo Telematik und Akustik GmbH           | DE |
| 19 LG Innotek                                         | KR      | 39 Valid8.com, Inc.                           | US |
| 20 LIG Accuver                                        | KR      | 40 Volkswagen AG                              | DE |

### Table 2: List of observers

|   | Organization Name                       | Country |
|---|-----------------------------------------|---------|
| 1 | Applus IDIADA                           | ES      |
| 2 | DEKRA testing and Certification, S.A.U. | ES      |
| 3 | European Emergency Number Association   | BE      |
| 4 | GSM MoU Association                     | GB      |
| 5 | Testsvyaz, LLC                          | AM      |



**Figure 1: Logos of participating vendors**

## 6 Technical and project management

## 6.1 Interoperability tests

The interoperability test specification is available as ETSI TS 103 683 [6]. 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 current draft version of the interoperability test specification was created in May 2026 as ETSI TS 103 683 V0.0.4 “Mobile Standards Group (MSG); Testing; Next Generation eCall High Level Application Protocol (HLAP) Interoperability Testing” [6]. Interoperability tests are grouped in two major groups of basic and advanced tests. The below tables Table 3 to Table 7 show the Test IDs, Titles (as used in ETSI TS 103 683 [6]) and indicate if the tests were assumed to be executable during the NG eCall Plugtests event.

**Table 3: 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_15    | Negative acknowledgment for the initial MSD                        | Yes        |
| TD_BAS_16    | Format of encoded and decoded MSD in accordance with EN 15722:2020 | Yes        |

**Table 4: 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_03    | MSD transfer to PSAP supporting IMS eCall over IPv6(IVS)/IPv4(PSAP)                                      | No               |
| TD_ADV_05    | IMS eCall establishment with IMS emergency registration                                                  | Yes              |
| TD_ADV_06    | IMS eCall establishment without IMS emergency registration                                               | Yes <sup>1</sup> |
| 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              |
| TD_ADV_12    | MSD update successful during PSAP initiated callback including priority header field                     | Yes              |
| TD_ADV_13    | MSD update successful during PSAP initiated callback without priority header field                       | Yes              |
| TD_ADV_14    | MSD update unsuccessful during PSAP initiated callback                                                   | Yes              |
| TD_ADV_15    | IVS provides indication about unsuccessful MSD update during initial eCall                               | Yes              |
| TD_ADV_16    | IVS provides indication about unsuccessful MSD update during PSAP initiated callback                     | Yes              |
| TD_ADV_17    | MSD transfer via in-band modem during PSAP initiated callback after unsuccessful MSD update via SIP INFO | Yes              |
| TD_ADV_18    | No IVS redial after normal call clear-down                                                               | Yes              |

<sup>1</sup> Test case was wrongly indicated as "Executable" but in fact the IMS emergency registration was automatically done by the IVS, thus this test was not executable.

**Table 5: Advanced Tests for IVS**

| Test case ID  | Title                                                                                                                  | Executable |
|---------------|------------------------------------------------------------------------------------------------------------------------|------------|
| TD_ADV_IVS_04 | Dropped eCall after MSD has been acknowledged                                                                          | Yes        |
| 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        |
| TD_ADV_IVS_18 | Unexpected positive acknowledgements for MSD updates                                                                   | Yes        |
| TD_ADV_IVS_19 | Unexpected negative acknowledgements for MSD updates                                                                   | Yes        |
| TD_ADV_IVS_20 | Handling of illegal content in 200 OK INVITE response and positive acknowledgement for the MSD                         | Yes        |
| TD_ADV_IVS_21 | Handling of illegal content in 200 OK INVITE response and negative acknowledgement for the MSD                         | Yes        |
| TD_ADV_IVS_22 | Handling of illegal content in 200 OK INVITE response and missing acknowledgement for the MSD                          | Yes        |
| TD_ADV_IVS_23 | Handling of XML namespace prefix in 200 OK INVITE response                                                             | Yes        |
| TD_ADV_IVS_24 | Handling of XML namespace prefix in INFO request                                                                       | Yes        |
| TD_ADV_IVS_25 | Handling of 202 ACCEPTED INFO response                                                                                 | Yes        |
| TD_ADV_IVS_26 | Handling of missing INFO response                                                                                      | Yes        |

**Table 6: 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                 | To be checked |
| TD_ADV_PSAP_04 | PSAP operator user interface                                       | Yes           |
| TD_ADV_PSAP_05 | Invalid MSD                                                        | Yes           |
| TD_ADV_PSAP_06 | Format of encoded and decoded MSD in accordance with EN 15722:2015 | Yes           |
| TD_ADV_PSAP_07 | PSAP handling of MSD which includes line break sequence            | Yes           |
| TD_ADV_PSAP_08 | Notification of undecoded MSD data                                 | Yes           |
| TD_ADV_PSAP_09 | PSAP handling of 408 Request Timeout                               | Yes           |
| TD_ADV_PSAP_10 | PSAP handling of XML namespace prefix in INFO request              | Yes           |

**Table 7: Advanced Tests for TPS**

| Test case ID  | Title                                                   | Executable |
|---------------|---------------------------------------------------------|------------|
| TD_ADV_TPS_01 | TPSP and rerouting to national PSAP                     | No         |
| TD_ADV_TSP_02 | Conference call between TPS IVS, TPSP and national PSAP | No         |

**Table 8: Advanced Tests for hybrid networks (relevant until CS switch-off)**

| Test case ID  | Title                                                                     | Executable |
|---------------|---------------------------------------------------------------------------|------------|
| TD_HYB_IVS_01 | Fallback to legacy eCall following busy during call setup                 | No         |
| TD_HYB_IVS_02 | Fallback to legacy eCall following unavailable response during call setup | No         |
| TD_HYB_IVS_03 | Fallback to legacy eCall following no-answer during call setup            | No         |
| TD_HYB_IVS_04 | Dropped eCall before call has been established - reattempt to CS          | No         |
| TD_HYB_IVS_05 | MSD transfer to PSAP not supporting IMS eCall                             | No         |

## 6.2 Justification for not executable interoperability tests

The justification, why certain tests from ETSI TS 103 683 [6] are indicated in the above tables Table 4 to Table 8 as not executable are summarised in the below Table 9.

**Table 9: Reasons for not executable tests**

| Test case ID(s)                                                                 | Justification                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TD_BAS_05                                                                       | Roaming is not supported in the test network.                                                                                                                                                                                       |
| TD_ADV_02, TD_ADV_03                                                            | Gm interface (P-CSCF <-> IVS) only assigns IPv4 addresses to the IVS.                                                                                                                                                               |
| TD_ADV_07                                                                       | GIBA is not used in the IMS for VoLTE.                                                                                                                                                                                              |
| TD_ADV_IVS_07,<br>TD_ADV_IVS_16                                                 | Test cases require limited-service conditions, hence is not foreseen for the Plugtests event in the test network, to avoid potential emergency calls to a genuine PSAP.                                                             |
| TD_ADV_IVS_08                                                                   | Test requires a network, which shall indicate support of IMS Emergency Services (EMS) and eCall Over IMS (ECL) and shall not indicate support of Voice over IMS (VoIMS). It was decided not to deactivate this in the test network. |
| TD_ADV_TPS_01,<br>TD_ADV_TSP_02                                                 | Rerouting of TPSP eCall to a regular PSAP is not possible in this setup.                                                                                                                                                            |
| TD_HYB_IVS_01, TD_HYB_IVS_02,<br>TD_HYB_IVS_03, TD_HYB_IVS_04,<br>TD_HYB_IVS_05 | Test cases, which require hybrid network constellation (CS and PS networks) are not possible in this setup.                                                                                                                         |

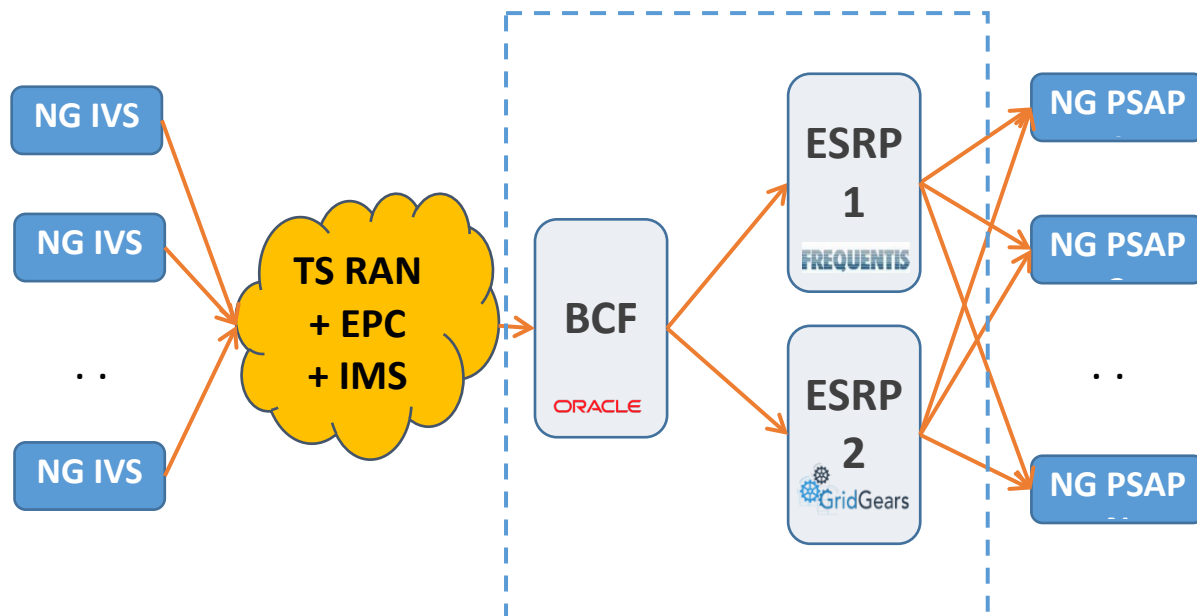
## 6.3 Test scheduling

The ETSI Test Report Tool (TRT) was used to manage the test scheduling. There were up to 10 parallel interoperability test sessions of 2 hours, and the test schedule provided pairing sessions for 5 days of testing. In addition, up to 8 parallel conformance test sessions were executed.

## 6.4 Test site layout

The generic test bed used to carry out interoperability tests, during the event, is summarized in Figure 2. 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 test 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 IETF RFC 8147 [1] and EN 17184:2024+A1:2026 [3]. Test eCalls to the service URN *urn:service:test.sos.ecall* were also supported by the test network.

During an NG eCall interoperability event, IVS needed to be connected to a given PSAP in order to carry out the pairing test sessions. Participating parties were required to use SIM cards provided by Telekom Slovenije. All emergency calls of those participating SIM cards were routed to the BCF, provided by Oracle. According to the schedule, the BCF routed the call to one of two participating NG112 ESRP solutions from Frequentis or GridGears. The selection of the assigned PSAPs is therefore achieved by reconfiguration of the routing (MSISDN number to PSAP) in participating ESRPs before every test session.



**Figure 2: Test Site Layout**

VPN tunnels were successfully established between remote PSAPs and the Plugtests environment. Other PSAPs were connected locally. The IVS devices were connected via a local 4G testing network.

## 6.5 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 Test 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 test results

During the NG eCall Plugtests event there were 225 test sessions between 45 participants, using 20 IVS devices, 6 PSAPs and 5 conformance test systems.

From the overall amount of 6814 test cases, 3419 (50%) were executed. From this number, 3221 (94.2%) were executed successfully.

The Table 10 presents the test case overall results of test executions.

**Table 10: Overall test case results**

| Executed     |            | Not executed   | Totals       |       |
|--------------|------------|----------------|--------------|-------|
| Passed       | Failed     | Not applicable | Run          | Total |
| 3221 (94.2%) | 198 (5.8%) | 3395 (49.8%)   | 3419 (50.2%) | 6814  |

### 7.3 Interoperability test results

#### 7.3.1 Overview of interoperability test results

The drafted Interoperability test specification ETSI TS 103 683 [6] contains 68 test cases, 14 of which are not supported by the test network.

The Table 11 presents the test case execution results of interoperability test sessions.

**Table 11: Results of interoperability test sessions**

| Executed     |            | Not executed   | Totals       |       |
|--------------|------------|----------------|--------------|-------|
| Passed       | Failed     | Not applicable | Run          | Total |
| 1887 (94.5%) | 110 (5.5%) | 2158 (51.9%)   | 1997 (48.1%) | 4155  |

Table 12 presents the execution statistics of interoperability test cases, as indicated in the above tables Table 3 to Table 7.

**Table 12: Results per test case**

| Test case | Executed     |           | Not executed   | Totals      |       |
|-----------|--------------|-----------|----------------|-------------|-------|
|           | Passed       | Failed    | Not applicable | Run         | Total |
| TD_BAS_01 | 120 (100.0%) | 0 (0.0%)  | 4 (3.2%)       | 120 (96.8%) | 124   |
| TD_BAS_02 | 104 (100.0%) | 0 (0.0%)  | 17 (14.0%)     | 104 (86.0%) | 121   |
| TD_BAS_03 | 43 (87.8%)   | 6 (12.2%) | 60 (55.0%)     | 49 (45.0%)  | 109   |

| Test case              | Executed     |            | Not executed   | Totals      |       |
|------------------------|--------------|------------|----------------|-------------|-------|
|                        | Passed       | Failed     | Not applicable | Run         | Total |
| TD_BAS_04              | 117 (100.0%) | 0 (0.0%)   | 2 (1.7%)       | 117 (98.3%) | 119   |
| TD_BAS_06              | 94 (97.9%)   | 2 (2.1%)   | 3 (3.0%)       | 96 (97.0%)  | 99    |
| TD_BAS_07              | 99 (100.0%)  | 0 (0.0%)   | 3 (2.9%)       | 99 (97.1%)  | 102   |
| TD_BAS_08              | 72 (100.0%)  | 0 (0.0%)   | 23 (24.2%)     | 72 (75.8%)  | 95    |
| TD_BAS_09              | 91 (97.8%)   | 2 (2.2%)   | 7 (7.0%)       | 93 (93.0%)  | 100   |
| TD_BAS_10              | 73 (79.3%)   | 19 (20.7%) | 4 (4.2%)       | 92 (95.8%)  | 96    |
| TD_BAS_15              | 53 (93.0%)   | 4 (7.0%)   | 31 (35.2%)     | 57 (64.8%)  | 88    |
| TD_BAS_16              | 91 (98.9%)   | 1 (1.1%)   | 4 (4.2%)       | 92 (95.8%)  | 96    |
| TD_ADV_01              | 85 (100.0%)  | 0 (0.0%)   | 9 (9.6%)       | 85 (90.4%)  | 94    |
| TD_ADV_05              | 74 (100.0%)  | 0 (0.0%)   | 12 (14.0%)     | 74 (86.0%)  | 86    |
| TD_ADV_06 <sup>2</sup> | 4 (100.0%)   | 0 (0.0%)   | 73 (94.8%)     | 4 (5.2%)    | 77    |
| TD_ADV_08              | 7 (53.8%)    | 6 (46.2%)  | 72 (84.7%)     | 13 (15.3%)  | 85    |
| TD_ADV_09              | 31 (88.6%)   | 4 (11.4%)  | 50 (58.8%)     | 35 (41.2%)  | 85    |
| TD_ADV_10              | 10 (83.3%)   | 2 (16.7%)  | 67 (84.8%)     | 12 (15.2%)  | 79    |
| TD_ADV_11              | 49 (68.1%)   | 23 (31.9%) | 14 (16.3%)     | 72 (83.7%)  | 86    |
| TD_ADV_12              | 44 (81.5%)   | 10 (18.5%) | 29 (34.9%)     | 54 (65.1%)  | 83    |
| TD_ADV_13              | 11 (73.3%)   | 4 (26.7%)  | 63 (80.8%)     | 15 (19.2%)  | 78    |
| TD_ADV_14              | 17 (94.4%)   | 1 (5.6%)   | 57 (76.0%)     | 18 (24.0%)  | 75    |
| TD_ADV_15              | 17 (94.4%)   | 1 (5.6%)   | 57 (76.0%)     | 18 (24.0%)  | 75    |
| TD_ADV_16              | 11 (91.7%)   | 1 (8.3%)   | 64 (84.2%)     | 12 (15.8%)  | 76    |
| TD_ADV_17              | 4 (80.0%)    | 1 (20.0%)  | 69 (93.2%)     | 5 (6.8%)    | 74    |
| TD_ADV_18              | 56 (100.0%)  | 0 (0.0%)   | 21 (27.3%)     | 56 (72.7%)  | 77    |
| TD_ADV_IVS_04          | 10 (90.9%)   | 1 (9.1%)   | 56 (83.6%)     | 11 (16.4%)  | 67    |
| TD_ADV_IVS_06          | 11 (100.0%)  | 0 (0.0%)   | 52 (82.5%)     | 11 (17.5%)  | 63    |
| TD_ADV_IVS_09          | 37 (100.0%)  | 0 (0.0%)   | 29 (43.9%)     | 37 (56.1%)  | 66    |
| TD_ADV_IVS_10          | 36 (100.0%)  | 0 (0.0%)   | 30 (45.5%)     | 36 (54.5%)  | 66    |
| TD_ADV_IVS_11          | 47 (97.9%)   | 1 (2.1%)   | 15 (23.8%)     | 48 (76.2%)  | 63    |
| TD_ADV_IVS_12          | 3 (100.0%)   | 0 (0.0%)   | 60 (95.2%)     | 3 (4.8%)    | 63    |
| TD_ADV_IVS_13          | 4 (100.0%)   | 0 (0.0%)   | 56 (93.3%)     | 4 (6.7%)    | 60    |
| TD_ADV_IVS_14          | 4 (80.0%)    | 1 (20.0%)  | 56 (91.8%)     | 5 (8.2%)    | 61    |
| TD_ADV_IVS_15          | 4 (100.0%)   | 0 (0.0%)   | 56 (93.3%)     | 4 (6.7%)    | 60    |
| TD_ADV_IVS_17          | 12 (100.0%)  | 0 (0.0%)   | 49 (80.3%)     | 12 (19.7%)  | 61    |
| TD_ADV_IVS_18          | 18 (100.0%)  | 0 (0.0%)   | 41 (69.5%)     | 18 (30.5%)  | 59    |
| TD_ADV_IVS_19          | 10 (100.0%)  | 0 (0.0%)   | 51 (83.6%)     | 10 (16.4%)  | 61    |
| TD_ADV_IVS_20          | 11 (78.6%)   | 3 (21.4%)  | 48 (77.4%)     | 14 (22.6%)  | 62    |
| TD_ADV_IVS_21          | 5 (62.5%)    | 3 (37.5%)  | 53 (86.9%)     | 8 (13.1%)   | 61    |
| TD_ADV_IVS_22          | 8 (100.0%)   | 0 (0.0%)   | 52 (86.7%)     | 8 (13.3%)   | 60    |
| TD_ADV_IVS_23          | 6 (60.0%)    | 4 (40.0%)  | 50 (83.3%)     | 10 (16.7%)  | 60    |
| TD_ADV_IVS_24          | 6 (54.5%)    | 5 (45.5%)  | 48 (81.4%)     | 11 (18.6%)  | 59    |
| TD_ADV_IVS_25          | 10 (83.3%)   | 2 (16.7%)  | 48 (80.0%)     | 12 (20.0%)  | 60    |
| TD_ADV_IVS_26          | 8 (100.0%)   | 0 (0.0%)   | 51 (86.4%)     | 8 (13.6%)   | 59    |
| TD_ADV_PSAP_01         | 48 (100.0%)  | 0 (0.0%)   | 33 (40.7%)     | 48 (59.3%)  | 81    |
| TD_ADV_PSAP_02         | 46 (100.0%)  | 0 (0.0%)   | 34 (42.5%)     | 46 (57.5%)  | 80    |
| TD_ADV_PSAP_03         | 2 (66.7%)    | 1 (33.3%)  | 77 (96.3%)     | 3 (3.8%)    | 80    |

<sup>2</sup> Test case was wrongly indicated as "Executable" but in fact the IMS emergency registration was automatically done by the IVS, thus this test was not executable, and the reported results should be ignored.

| Test case      | Executed    |           | Not executed   | Totals     |       |
|----------------|-------------|-----------|----------------|------------|-------|
|                | Passed      | Failed    | Not applicable | Run        | Total |
| TD_ADV_PSAP_04 | 68 (100.0%) | 0 (0.0%)  | 13 (16.0%)     | 68 (84.0%) | 81    |
| TD_ADV_PSAP_05 | 29 (100.0%) | 0 (0.0%)  | 48 (62.3%)     | 29 (37.7%) | 77    |
| TD_ADV_PSAP_06 | 63 (98.4%)  | 1 (1.6%)  | 19 (22.9%)     | 64 (77.1%) | 83    |
| TD_ADV_PSAP_07 | 4 (80.0%)   | 1 (20.0%) | 74 (93.7%)     | 5 (6.3%)   | 79    |
| TD_ADV_PSAP_08 | 42 (100.0%) | 0 (0.0%)  | 36 (46.2%)     | 42 (53.8%) | 78    |
| TD_ADV_PSAP_09 | 0 (0.0%)    | 0 (0.0%)  | 77 (100.0%)    | 0 (0.0%)   | 77    |
| TD_ADV_PSAP_10 | 6 (100.0%)  | 0 (0.0%)  | 67 (91.8%)     | 6 (8.2%)   | 73    |

### 7.3.2 Received comments for failed tests

The following comments have been provided by some or multiple of the NG eCall Plugtests participants for Interoperability tests from ETSI TS 103 683 [6], which have failed during the test sessions.

- Initiation of test eCall (TD\_BAS\_03)**  
 For some IVS samples it was not possible to trigger test eCalls or a wrong service URN has been used.
- MSD update during initial call (TD\_BAS\_10)**  
 For some IVS samples MSD updates via SIP were not successful during initial call.  
 In some sessions, the IVS received the INFO request but was only sending a 200 OK INFO response but no INFO (MSD update).  
 In some sessions, the IVS made an IMS re-registration after around 3 minutes during the ongoing call and then the MSD updates were successful.
- MSD transfer via in-band modem after negative MSD ACK (TD\_ADV\_08)**  
 According to parts of clause 5.1.6.11.2 in ETSI TS 124 229 Release 19 [10], a compliant IVS shall not initiate the MSD transfer via in-band modem after a negative MSD ACK. In Release 14 to Release 18 of ETSI TS 124 229 the expected IVS behaviour is to initiate the MSD transfer via in-band modem, in such a case.  
 The MSD transfer via in-band modem after a negative MSD ACK has typically not been supported on IVS side during the NG eCall Plugtests event.
- MSD update during PSAP initiated callback (TD\_ADV\_11)**  
 For some IVS samples MSD updates were not successful during PSAP callback.  
 In some sessions, the IVS received the INFO request but was only sending a 200 OK INFO response but no INFO (MSD update).  
 NOTE: Almost all PSAPs included the priority header in the SIP INVITE message, and this header has transparently been forwarded to the IVS.

According to clause 5.1.6B in ETSI TS 124 229 Release 19 [10] the PSAP should include the following headers and values in the SIP INVITE of callback:

- **Priority** header field with header field value **psap-callback**
- **Accept** header field that includes the value **application/EmergencyCallData.Control+xml**
- **Recv-Info** header field with header field value **EmergencyCallData.eCall.MSD**

The Priority header field in PSAP callbacks was supported by the test network during the NG eCall Plugtests event.

In some test sessions the IVS replied with a SIP 405 Method Not Allowed message to the INFO (MSD update) request.

- MSD update successful during PSAP initiated callback including priority header field (TD\_ADV\_12)**  
 For some IVS samples MSD updates were not successful during PSAP callback, because the INFO request has not been received by the IVS or the IVS prepared the MSD update but was not sending it out.

- **IVS provides indication about unsuccessful MSD update during PSAP initiated callback (TD\_ADV\_16)**  
In some test sessions the IVS replied with a SIP 405 Method Not Allowed message to the INFO (MSD update) request.
- **Handling of illegal content in 200 OK INVITE response and positive acknowledgement for the MSD (TD\_ADV\_IVS\_20)**  
In some test sessions the IVS the 200 OK INVITE response was anyway understood by the modem and MSD transmission was indicated on IVS side as successful, or the IVS was not validating the XML schema of the 200 OK INVITE response.
- **Handling of illegal content in 200 OK INVITE response and negative acknowledgement for the MSD (TD\_ADV\_IVS\_21)**  
In some test sessions the IVS the 200 OK INVITE response was anyway understood by the modem, or the IVS was not validating the XML schema of the 200 OK INVITE response.
- **Handling of XML namespace prefix in 200 OK INVITE response (TD\_ADV\_IVS\_23)**  
Some IVS samples were unable to process the 200 OK INVITE response, even though the XML namespace prefix usage is compliant.
- **Handling of XML namespace prefix in INFO request (TD\_ADV\_IVS\_24)**  
Some IVS samples were unable to process the INFO request, and an IVS reboot was automatically triggered, even though the XML namespace prefix usage is compliant.
- **Rerouting to another PSAP/emergency control centre (TD\_ADV\_PSAP\_03)**  
In some test sessions the PSAP sent a 603 INVITE response, and the network converted it into 380 Alternative Service message.

### 7.3.3 Received comments for N/A tests

The following comments have been provided by some or multiple of the NG eCall Plugtests participants for Interoperability tests from ETSI TS 103 683 [6], which have been indicated as “not applicable” (N/A) during the test sessions.

- **Initiation of test eCall (TD\_BAS\_03)**  
For some IVS samples it was not possible to trigger test eCalls or the service URN test eCall was not supported by the IVS.
- **IVS initiated call clear-down not allowed (TD\_BAS\_08)**  
Some IVS samples contain options to allow a call clear-down, hence for those IVS implementations this test was not applicable.
- **Negative acknowledgement for the initial MSD (TD\_BAS\_15)**  
Some PSAP samples do not contain options to force a negative acknowledgement for the initial MSD, hence for those PSAP implementations this test was not applicable.
- **IMS eCall establishment without IMS emergency registration (TD\_ADV\_06)**  
The test case TD\_ADV\_06 was wrongly indicated as "Executable" but in fact the IMS emergency registration was automatically done by the IVS, thus this test was not executable, and the reported results should be ignored.
- **MSD transfer via in-band modem after negative (or missing) acknowledgement for the MSD (TD\_ADV\_08 and TD\_ADV\_09)**  
Some of the PSAP samples do not contain options to force a negative (or missing) acknowledgement for the initial MSD or the fallback to MSD transfer via in-band modem was not supported by PSAPs, hence for those PSAP implementations those tests were not applicable.
- **MSD transfer via in-band modem after missing MSD in INVITE request (TD\_ADV\_10)**  
Most of the IVS samples do not contain options to trigger an eCall without sending an MSD in the INVITE request, hence for those IVS implementations this test was not applicable.

- **MSD update successful (unsuccessful) during PSAP initiated callback including (without) priority header field (TD\_ADV\_12, TD\_ADV\_13, TD\_ADV\_14)**  
For some IVS samples MSD updates were not successful during PSAP callback.  
In some sessions, the IVS received a 405 Method Not Allowed response (from the network) for the INFO request (including the updated MSD).  
In some sessions, the PSAP sent INFO (MSD update) request, but the INFO request has not been received by the IVS.
- **IVS provides indication about unsuccessful MSD update during initial eCall (PSAP callback) (TD\_ADV\_15, TD\_ADV\_16)**  
Multiple IVS samples do not contain options to simulate a situation where the IVS is not able to provide an updated MSD, hence for those IVS implementations those tests were not applicable.
- **MSD transfer via in-band modem during PSAP initiated callback after unsuccessful MSD update via SIP INFO (TD\_ADV\_17)**  
For this test case a network element should be set up to provide a SIP 4xx INFO response (e.g. SIP 488 Not Acceptable Here) to the PSAP, but this was not realized during the NG eCall Plugtests event, hence this test was not executable.
- **Dropped eCalls (TD\_ADV\_IVS\_04, TD\_ADV\_IVS\_14, TD\_ADV\_IVS\_15)**  
Most of the IVS and PSAP implementations do not contain options to simulate a dropped eCall, hence for those implementations those tests were not applicable.
- **IVS configured for 'eCall only' service (restricted) (TD\_ADV\_IVS\_06)**  
Some of the IVS samples do not contain options to be configured for eCall only services, hence for those IVS implementations this test was not applicable.  
In some test sessions this test has not been executed to avoid potential emergency calls to a genuine PSAP.
- **No Fallback to legacy eCall following busy (unavailable response) during call setup (TD\_ADV\_IVS\_12, TD\_ADV\_IVS\_13)**  
Some of the PSAP samples do not contain options to reject incoming calls with a 4xx or 6xx error code including a positive MSD ACK, hence for those PSAP implementations those tests were not applicable.  
If a PSAP tried to reject an eCall, then the ESInet (ESRP) automatically tried to reroute the eCall to another PSAP and the 4xx or 6xx error code was not forwarded to the IVS. The ESInet was configured with automatic call rerouting because it is the common way of operating an ESInet.  
In some test sessions this test has not been executed to avoid potential emergency calls to a genuine PSAP.
- **Reattempt of eCall following no-answer during call setup (TD\_ADV\_IVS\_17)**  
If a PSAP was not answering to an eCall, then the ESInet (ESRP) automatically tried to reroute the eCall to another PSAP. The ESInet was configured with automatic call rerouting because it is the common way of operating an ESInet.
- **Unexpected positive (negative) acknowledgements for MSD updates (TD\_ADV\_IVS\_18, TD\_ADV\_IVS\_19)**  
Most of the PSAP implementations do not contain options to include a positive (negative) acknowledgement for MSD update, hence those tests were not executable.
- **Handling of illegal content in 200 OK INVITE response and positive (negative, missing) acknowledgement for the MSD (TD\_ADV\_IVS\_20, TD\_ADV\_IVS\_21, TD\_ADV\_IVS\_22)**  
Most of the PSAP implementations do not contain options to include an illegal content in the 200 OK INVITE response and a positive (negative or missing) acknowledgement for the initial MSD, hence those tests were not executable.
- **Handling of XML namespace prefix in 200 OK INVITE response (INFO request) (TD\_ADV\_IVS\_23, TD\_ADV\_IVS\_24)**  
Most of the PSAP implementations do not contain options to include an XML namespace prefix in the 200 OK INVITE response for the initial MSD or in an INFO (MSD update) request, hence those tests were not executable.

- **Handling of 202 ACCEPTED INFO response (TD\_ADV\_IVS\_25)**  
Most of the PSAP implementations do not contain options to send 202 ACCEPTED INFO response (instead of 200 OK INFO response), hence this test was not executable.
- **Handling of missing INFO response (TD\_ADV\_IVS\_26)**  
For this test case the PSAP shall be set up to send no INFO response for an updated MSD or a network element should be set up to remove the 200 INFO response from the PSAP. Most of the PSAP implementations do not contain options to prevent the 200 INFO response from being sent and no network element has been set up to remove the 200 INFO response during the NG eCall Plugtests event, hence this test was not executable in most test sessions.  
In some test sessions it has been observed that the call has been terminated by the IMS. More details are given below.
  - during the ongoing initial call an INFO (MSD update) request was sent by the PSAP
  - PSAP received 200 OK (INFO response)
  - PSAP received INFO (updated MSD)
  - PSAP does NOT send a response for INFO
  - PSAP and IVS received BYE from the networkThe IMS ended the ongoing emergency call after around 20 seconds when one party does not respond to SIP INFO at all.
- **PSAP correct MSD additional data decoding (TD\_ADV\_PSAP\_02)**  
Some of the IVS samples do not support additional optional data, hence this test was not executable.
- **Rerouting to another PSAP/emergency control centre (TD\_ADV\_PSAP\_03)**  
In most test sessions this test was not executable due to missing support by the PSAP or due to missing access to a second PSAP.
- **Invalid MSD (TD\_ADV\_PSAP\_05)**  
Some of the IVS implementations do not contain options to send an invalid MSD, hence this test was not executable.
- **Format of encoded and decoded MSD in accordance with EN 15722:2015 (TD\_ADV\_PSAP\_06)**  
Some of the IVS implementations do not contain options to send an MSD using version 2, hence this test was not executable.  
At least one PSAP reported to not support MSD version 2 hence for this PSAP implementation this test was not executable.  
PSAPs shall support MSD version 2 (according to EN 15722:2015) and MSD version 3 (according to EN 15722:2020 [2]).
- **PSAP handling of MSD which includes line break sequence (TD\_ADV\_PSAP\_07)**  
Most of the IVS implementations do not contain options to customize the content of the MSD, hence this test was not executable.
- **Notification of undecoded MSD data (TD\_ADV\_PSAP\_08)**  
Some of the IVS implementations do not contain options to customize the content of the MSD, hence this test was not executable.
- **PSAP handling of 408 Request Timeout (TD\_ADV\_PSAP\_09)**  
For this test case the IVS shall be set up to send no response for an INFO (MSD update) request or a network element should be set up to remove the 200 INFO response from the IVS. Most of the IVS implementations do not contain options to prevent the 200 INFO response from being sent and no network element has been set up to remove the 200 INFO response during the NG eCall Plugtests event, hence this test was not executable in most test sessions.  
In some test sessions it has been observed that the call has been terminated by the network.
- **PSAP handling of XML namespace prefix in INFO request (TD\_ADV\_PSAP\_10)**  
Most of the IVS implementations do not contain options to customize the content of the MSD, hence this test was not executable.

### 7.3.4 Routing test eCalls using ESInet

Test eCalls are defined to use non-emergency signalling. For test eCalls in PS domain either the defined non-emergency service URN “urn:service:test.sos.ecall” or any other non-emergency URN or URI shall be used.

Since NG eCall test calls are treated by commercial mobile networks as normal data traffic such test eCalls may be blocked or NG eCall related parts (e.g. SIP headers) may be removed by network elements.

As part of the NG eCall Plugtests event, we have successfully implemented and tested an alternative routing solution using an ESInet.

Instead of forcing every mobile network operator to change its commercial routing rules, the ESInet acts as a secure sandbox. It enables test eCalls to be routed in accordance with IMS emergency communication rules, uses its own routing to separate traffic from “urn:service:test.sos.ecall” from real emergency calls, and forwards it to automated PSAP endpoints.

This ensures the protection of real PSAPs, reduces the burden on mobile network operators, and is an alternative way to validate the end-to-end communication and MSD transmission in PS domain.

## 7.4 Conformance test results

6 test tool vendors provided their solutions to run conformance tests for IVS devices. These tests were based on the following test standards and test specifications:

- EN 17240:2024+A1:2026: “Intelligent transport systems – ESafety – ECall end to end conformance testing for IMS packet switched based systems”
- EN 18052:2025: “Intelligent transport systems – ESafety – ECall end to end conformance testing for eCall HLAP in hybrid circuit switched/packet switched network environments”
- ITU-T P.1140: “Speech communication requirements for emergency calls originating from vehicles”

The overall conformance tests results are presented in the following Table 13.

**Table 13: Results of conformance test sessions**

| Standard            | Executed    |            | Not executed   | Totals      |       |
|---------------------|-------------|------------|----------------|-------------|-------|
|                     | Passed      | Failed     | Not applicable | Run         | Total |
| <b>EN 17240</b>     | 862 (96.4%) | 32 (3.6%)  | 681 (43.2%)    | 894 (56.8%) | 1575  |
| <b>EN 18052</b>     | 336 (92.6%) | 27 (7.4%)  | 511 (58.5%)    | 363 (41.5%) | 874   |
| <b>ITU-T P.1140</b> | 136 (82.4%) | 29 (17.6%) | 45 (21.4%)     | 165 (78.6%) | 210   |

Many conformance test cases were not executed because of the restrictions, applied for the event, preventing devices to use 2G and 3G networks. The overall success rate of executed conformance tests is very high: about 95%.

The following comments and suggestions have been provided by test tool vendors:

- **Improved Standard Alignment:** Device compliance with the EN 18052 Hybrid standard has improved significantly since the 2025 NG eCall Plugtests event. This advancement is primarily attributed to the recent update of ETSI TS 103 683, which brought the two standards into closer alignment.
- **MSD Update Ambiguities:** Ambiguity persists regarding the specific conditions under which a Minimum Set of Data (MSD) update may legally be requested via SIP or in-band signaling. Consequently, device behavior varies regarding the acceptance and provisioning of MSD updates, particularly during redial and domain-switching scenarios.
- **Cell Barring Mitigation:** Due to the nature of certain Hybrid Test Cases (TCs) that trigger Cell Attach Rejects, subsequent testing became highly challenging as some devices placed the test cell on a barred list. It is recommended that device manufacturers implement a mechanism to manually reset or clear cell-barred lists during testing.

- **Test Environment Optimization:** For future events, it is recommended to utilize a protected or shielded environment (e.g., an RF shield box or chamber) for conformance test systems. This will mitigate the risk of accidental registration or interference with live cellular networks.
- **Session Duration:** It is further recommended to extend the duration of individual conformance test sessions to allow for more comprehensive evaluation.

## 8 Event feedback and wrap up meeting summary

### 8.1 Additional technical issues detected during the event

The following additional technical issues have been detected and have not been fully solved during the NG eCall Plugtests events.

- some components of the ESInet have been configured during the Plugtests event to remove or to include SIP headers, which are relevant for NG eCall signaling (e.g. addition of the Priority header in INVITE requests for PSAP callbacks, removal of the Accept header in INFO requests for MSD update request) - this kind of SIP manipulation by ESInet components should be clearly announced, especially if it is affecting all participants or multiple interoperability test sessions
- some participants reported that the IVS was accidentally calling a genuine PSAP during test sessions, especially during the conformance test sessions - due to the used test USIM cards the IVS could not complete network registration and triggered the eCall anonymously. After compliance from the genuine PSAP all participants have been requested to skip tests which require a call reject, to ensure that the IVS is not calling again a genuine PSAP during the test sessions
- a component of the IMS network included additional 2 elements in the Accept header and 1 additional element in the Recv-Info header of INVITE requests for PSAP callbacks, for some IVS samples hereafter MSD update requests were not successful
- a component of the IMS network changed the casing of the MIME Content-Type from "application/EmergencyCallData.eCall.MSD" into "application/emergencycalldata.ecall.msd" in the INFO (MSD update) request - this should also be accepted by the IVS (per IETF standards) however for some IVS samples hereafter MSD update requests were not successful
- Oracle provided the following implementation recommendations related to the casing of NG eCall related SIP parts:
  - For SENDING implementations:  
Always use the exact registered casing for all four fields. This is safe regardless of how the receiver matches, and it is what the RFCs show in every example:
    - Info-Package: EmergencyCallData.eCall.MSD
    - Call-Info: <cid:...>;purpose=EmergencyCallData.eCall.MSD
    - Content-Type: application/EmergencyCallData.eCall.MSD
    - Accept: application/EmergencyCallData.Control+xml, application/EmergencyCallData.eCall.MSD
 Sending with incorrect casing (e.g., all lowercase) is a compliance violation for `Info-Package` and a gratuitous interoperability risk for the other three fields.
  - For RECEIVING implementations:  
Field | Matching rule
    - "Info-Package" / "Recv-Info" | MUST compare **case-sensitively** (RFC 6086 §7.2)
    - "Call-Info" "purpose=" | SHOULD accept **case-insensitively** per RFC 3261, but given the standards gap, accepting exact casing only is a defensible implementation choice
    - "Content-Type" | MUST accept **case-insensitively** (RFC 2045)
    - "Accept" (media-range) | MUST accept **case-insensitively** (RFC 2045 / RFC 6838) - value is a MIME media type, same rule as "Content-Type"
- one IVS vendor reported the following issue for MSD updates during the initial call (TD\_BAS\_10)
  - during the ongoing initial call the IVS received an INFO (MSD update) request
  - IVS transmitted a 200 OK response and an INFO request containing the updated MSD
  - IVS received 408 Request Timeout (INFO response) from the network
  - IVS received BYE (cause 408) from the network
  - PSAP received no response from the IVS or the network, leaving the call in a continuously connected state
- one PSAP vendor reported the following issue - the IMS ended the ongoing emergency call immediately when SIP INFO is responded to with 408

- during the ongoing initial call an INFO (MSD update) request was sent by the PSAP
- PSAP received 200 OK (INFO response)
- PSAP received INFO (updated MSD)
- PSAP sent 408 (INFO response)
- PSAP and IVS received BYE from the network

## 8.2 ETSI TS 103 683 updates

The following proposals for changes in the drafted test specification ETSI TS 103 683 [6] have been made during the NG eCall Plugtests event.

- update the test TD\_BAS\_15 - if the PSAP cannot be set to reply with MSD NACK, then as an alternative the IVS could be configured to send an invalid MSD (if supported)
- add a new test case to verify an MSD update during a PSAP callback after a test eCall  
NOTE: In some sessions the callback after a test eCall failed, because the P-Asserted-Identity header field of SIP INVITE has been removed by the IMS.
- in tests which require a call reject (or limited-service conditions) a note should be added that an IVS may redial, hence a CS network shall be available in the test environment and IVS vendors should keep an eye on the IVS traces to ensure that the IVS is not calling a genuine PSAP during the test session
- consider regrouping the newly added (negative) tests
- add a new test case with lower casing (in some SIP headers and MIME parts), because this should also be accepted by the IVS (per IETF standards)
- update the test TD\_ADV\_IVS\_24 - the test purpose (and other parts) needs to be updated to include XML namespace prefix in 200 OK and SIP INFO, because a PSAP typically uses the namespace prefix for all or for none of the SIP messages
- Include recommendations that certain points shall be respected, if a ESInet is used e.g. during a Plugtests event (no call rerouting for call reject tests, no modification, removal or addition of SIP headers, which are relevant for NG eCall signaling)
- consider moving conditions from the "Applicability" sections into the "Pre-test conditions" for certain tests (e.g. TD\_ADV\_IVS\_18, TD\_ADV\_PSAP\_02 etc.)
- consider adding new test cases for the reported failure cases (see clause 8.1)

## 8.3 General comments

The following general comments have been made during the NG eCall Plugtests event.

- Currently no clear statement is available, which audio codec(s) shall be supported by IVSs, MNOs and PSAPs for NG eCall
- PSAPs are typically using old audio codecs (e.g. G.711) but advanced audio codecs (e.g. AMR-NB, AMR-WB) are available for free since November 2024
- consider recommending an advanced audio codec (e.g. AMR-NB, AMR-WB) for IVSs and PSAPs to avoid audio transcoding

## 9 Implementation guidance

This implementation guidance describes how to use ESInet (NG 112 infrastructure) for NG eCall needs during NG eCall Plugtests event or other NG eCall interoperability testing activities.

The ESInet and core elements for network independent access to emergency services are specified in ETSI TS 103 479 [12].

NG eCall and NG 112 are both based on IMS and have a certain overlap, however an ESInet is no precondition for NG eCall interoperability testing activities. Some concepts for NG eCall and NG 112 are slightly different. One practical example is the automatic call rerouting. The ESInet was configured with automatic call rerouting because it is the common way of operating an ESInet. This effected NG eCall test scenarios were a PSAP is rejecting an incoming NG eCall (using SIP 4xx or 6xx INVITE response including a positive MSD ACK) and tests were the PSAP shall not answer to an incoming NG eCall. In both cases the ESInet (ESRP) automatically tried per default to reroute the eCall to another PSAP (e.g. a default PSAP) and the IVS did not receive the PSAP response (including a positive MSD ACK). This is conflicting with the expected message flow of some NG eCall tests from the drafted test specification ETSI TS 103 683 [6].

The following shall therefore be considered if an ESInet is used for NG eCall testing:

- ESInet shall be configured to transparently handle SIP reject cases (e.g. the call shall not be re-routed to another PSAP after SIP 4xx or 6xx INVITE response)
  - Tests were the PSAP shall not answer to an incoming NG eCall shall also be handled transparently by the ESInet (e.g. the call shall not be re-routed to another PSAP)
  - ESInet shall be configured to not modify, remove or add any SIP headers, which are relevant for NG eCall signaling (e.g. Priority header, Accept header etc.)
  - Emergency service URNs should be preserved in SIP signaling because it is essential for enabling correct call routing through ESInet infrastructure
- NOTE: In some countries without ESInet infrastructure, mandatory requirements are defined for MNOs to convert emergency service URNs into URIs.

Using an ESInet for NG eCall testing enables the possibility to modify parts of the SIP signaling (if requested). The below Table 14 lists the NG eCall tests from the drafted test specification ETSI TS 103 683 [6], where such a SIP signaling modification is needed (if not supported by IVS or PSAP):

**Table 14: Tests, where SIP signaling modification is needed**

| Test case ID   | Subset of pre-test conditions in the drafted test specification ETSI TS 103 683 [6]                                                                                                                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TD_ADV_17      | A <b>network element should be set up</b> to provide a SIP 4xx INFO response (e.g. SIP 488 Not Acceptable Here) to the PSAP                                                                                                                                                                             |
| TD_ADV_IVS_26  | PSAP is set up to send no INFO response for an updated MSD and/or a <b>network element should be set up</b> to remove the 200 INFO response from the PSAP for an updated MSD                                                                                                                            |
| TD_ADV_PSAP_09 | The IVS should be configured (if supported) to respond to the SIP INFO MSD Update requests with 408 (Request Timeout) or not at all (to cause a transaction timeout on the PSAP side) and/or a <b>network element should be set up</b> to provide a SIP 408 (Request Timeout) INFO response to the PSAP |

Any SIP signaling modification by ESInet/IMS components should be clearly announced to test participants, especially if it is affecting all participants or multiple interoperability test sessions at the same time.

# Annex A (informative): Draft interoperability test specification

## A.1 Overview

Following draft interoperability test specification ETSI TS 103 683 V3.1.1\_0.0.4 was used during NG eCall Plugtests 2026:



ts\_103683v000004p.p  
df

The IDs of certain tests are expected to change in the final version of ETSI TS 103 683 V3.1.1, based on some of the proposed changes listed above (see clause 8.2).