6th NG112 and NGeCall Emergency Communications Plugtests; Malaga Spain; 30 September - 4 October 2024

Keywords
Testing, Interoperability, NG112, NGeCall

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1 Executive Summary

ETSI, in partnership with EENA (the European Emergency Number Association), has organized the sixth NG112 and NG eCall Emergency Communications Remote Plugtests™ event. This event was held in the University of Malaga, Spain, from September 30 to October 4 of 2024.

The aim of the event was to trial independently and jointly all components of the 112 communication chain based on Next Generation networks. Different topics were addressed, including Location Based Emergency Call Routing, Policy Based Emergency Call Routing, and Next Generation Media Types, mainly Voice and RTT.

The special attention was paid to support of NG eCall communication over NG112 infrastructure services.

22 organizations from Europe, and North America, had the opportunity to connect their equipment to the test infrastructure and validate the interoperability and conformity of their market solutions using different scenarios from their own labs. In addition, 20 organizations participated as observers. In total, 42 organizations were involved in the Plugtests.

The scope of the event included content-rich emergency calling, location- and policy-based routing and secure transport via TLS. Participants put their products to the test, gaining valuable insights from experiencing a variety of scenarios.

The results of the tests show that the NG112 technology is mature and that a large number of vendors provide the various elements of the NG112 equipment chain and that those elements interoperate with each other. Thus, providing a large choice of innovative products to build next generation emergency communication solutions. With the technical foundation of ETSI TS 103 479 [i.1] and its accompanying standards, the conditions for procurement and deployment are reached.

2 References

The following base specifications were partly validated in the Plugtests event.

[i.1] ETSI TS 103 479 (V1.2.1): “Emergency Communications (EMTEL); Core elements for network independent access to emergency services”.

[i.2] ETSI TS 103 698 (V1.1.1): “Emergency Communications (EMTEL); Lightweight Messaging Protocol for Emergency Service Accessibility (LMPE)”

[i.3] RFC 4103: “RTP Payload for Text Conversation”

[i.4] IETF RFC 8147: “Next-Generation Pan-European eCall”

[i.5] CEN/TS 17184:2022: "Intelligent transport systems - eSafety - eCall High level application Protocols (HLAP) using IMS packet switched networks"

[i.6] CEN EN 15722:2020: "Intelligent transport systems - eSafety - eCall Minimum Set of Data”

The following test specifications were used and partly validated in the Plugtests event.

[i.7] ETSI TS 103 480 (stable draft): "Emergency Communications (EMTEL); Interoperability testing of core elements for network independent access to emergency services"

[i.8] ETSI TS 103 650 (V1.2.1): “Emergency Communications (EMTEL); Testing - Conformance test specifications for core elements for network independent access to emergency services (NG112)”

[i.9] ETSI TS 103 683 (V2.1.1): “Mobile Standards Group (MSG); Testing; Next Generation eCall High Level Application Protocol (HLAP) Interoperability Testing”

[i.10] ETSI TS 103 795-2 (V1.1.1): “Core Network and Interoperability Testing (INT); Network Interoperability Test Description for emergency services over VoLTE (3GPP™ Release 15); Part 2: Test Descriptions”

[i.11] FprEN 17240:2024: “Intelligent transport systems - ESafety - ECall end to end conformance testing for IMS packet switched based systems”

3 Abbreviations

AML	Advanced Mobile Location
APN	Access Point Name
APP	APPlication
BCF	Border Control Function
BGCF	Breakout Gateway Control Function
E-CSCF	Emergency Call Session Control Function
ECRF	Emergency Call Routing Function
ELS	Emergency Location Service
ESInet	Emergency Services IP Network
ESRP	Emergency Services Routing Proxy
GW	GateWay
HELD	HTTP-Enabled Location Delivery
HLAP	High Level Application Protocol
HPLMN	Home Public Land Mobile Network
HSS	Home Subscriber Server
HTTP	Hyper-text Transfer Protocol
IMS	IP Multimedia Subsystem
IP	Internet Protocol
IUT	Implementation Under Test
IVS	In-Vehicle System
LbR	Location by Value
LbV	Location by Reference
LIS	Location Information Server
LOST	LOcation to Service Translation
LRF	Location Retrieval Function
MME	Mobility Management Entity
MNO	Mobile Network Operator
MSD	Minimum Set of Data
mTLS	Mutual Transport Layer Security
NGCS	Next Generation Core Services
P-CSCF	Proxy Call Session Control Function
PGW	Packet data network GateWay
PIDF-LO	Presence Information Data Format Location Object
PRF	Policy Routing Function
PSAP	Public Safety Answering Point
RAN	Radio Access Network
RFC	Request For Comments
RTP	Real-time Transport Protocol
RTT	Real-Time Text
S-CSCF	Serving Call Session Control Function
SDP	Session Description Protocol
SIP	Session Initiation Protocol
SIP UA	Session Initiation Protocol User Agent
SIM	Subscriber Identity Module
SMS	Short Message Service

SMSC	Short Message Service Center
TC	Test Case
TD	Test Description
TLS	Transport Layer Security
TS	Technical Specification
UC	Unified Communication
UE	User Equipment
URI	Uniform Resource Identifier
URN	Unique Resource Name
VoIMS	Voice over IP Multimedia Subsystem
VoIP	Voice over IP
VPN	Virtual Private Network

4 Participants

96 people including EENA (European Emergency Number Association) and the technical experts participated in the 6th NG112 and NGeCall Emergency Communications Plugtests™ event. They were supported by an additional 3-member ETSI team.

Participating organizations in the Plugtests who signed the Rules of Engagement (RoE) and Non-Disclosure Agreement (NDA) are listed below:

Company name	Role
360 Degrees Access	Observer
Ageximco	Observer
Amper	Vendor
Anritsu EMEA Ltd	Test tool provider
ATOS Spain SA Unipersonal	Vendor
Beta 80 Group	Vendor
Cestel	Vendor
cetecom advanced GmbH	Expert
Continental Automotive France SAS	Vendor
Continental Automotive Technologies Romania	Observer
DEKRA testing and Certification, S.A.U.	Test tool provider
European Emergency Number Association	Observer
Eventide Communications	Observer
FRAFOS GmbH	Vendor
Frequentis AG	Vendor
GIE Union des Assisteurs	Vendor
Google Inc.	Vendor
GridGears GmbH	Vendor
HEAD acoustics GmbH	Vendor
IMA GROUPE	Observer
INdigital	Vendor
Interactivité Vidéo et Système (IVèS)	Vendor
Keysight Technologies UK Ltd	Test tool provider
Kosovo Earth Observation Institute	Observer
Kosovo Emergency Management Agency	Observer
Kosovo Ministry of Internal Affairs, ASHI (Information Society Agency)	Observer
Kosovo Police	Observer
Kyocera Corporation	Observer
Neat Path Networks GmbH	Vendor
NG-Voice GmbH	Vendor
Qualcomm Germany GmbH	Vendor
ROHDE & SCHWARZ GmbH & Co.KG	Test tool provider
Sabio	Vendor
Special Telecommunications Service (STS) Romania	Vendor
SVYAZ s.r.o.	Observer
Testsvyaz LLC	Observer
Universidad de Malaga	Host
University of Patras	Observer
Valeo Telematik und Akustik GmbH	Vendor
Valid8.com, Inc.	Vendor
Volvo Car Corporation AB	Observer

Table 1: List of organizations

5 Scope of the event

5.1 Objectives

Main objectives of this event were to:

- Validate the global interoperability of different solutions on the market on end-to-end emergency services communications as defined in ETSI TS 103 479 [i.1]
- Validate the interoperability of different NG eCall solutions using NG eCall end-to-end tests as defined in ETSI TS 103 683 [i.9] or ETSI TS 103 795-2 [i.10]

- Validate End-to-End interoperability for emergency calls from mobile devices through an actual LTE Network to the PSAP through IMS and ESInet
- Provide an opportunity for developers from different companies to get together to test their implementations and ensure interoperability between products
- Evaluate the level of conformance of several implementations to interface specification (RFCs, TS, …)

To validate interoperability the following features or services were considered for testing scenarios (a schematic overview of the test infrastructure is shown in Fig. 1):

- location conveyance (value and reference)
- location and policy based routing
- secure transport (certificates and mutual authentication)
- roaming scenarios (local breakout)
- NG eCall over ESInet

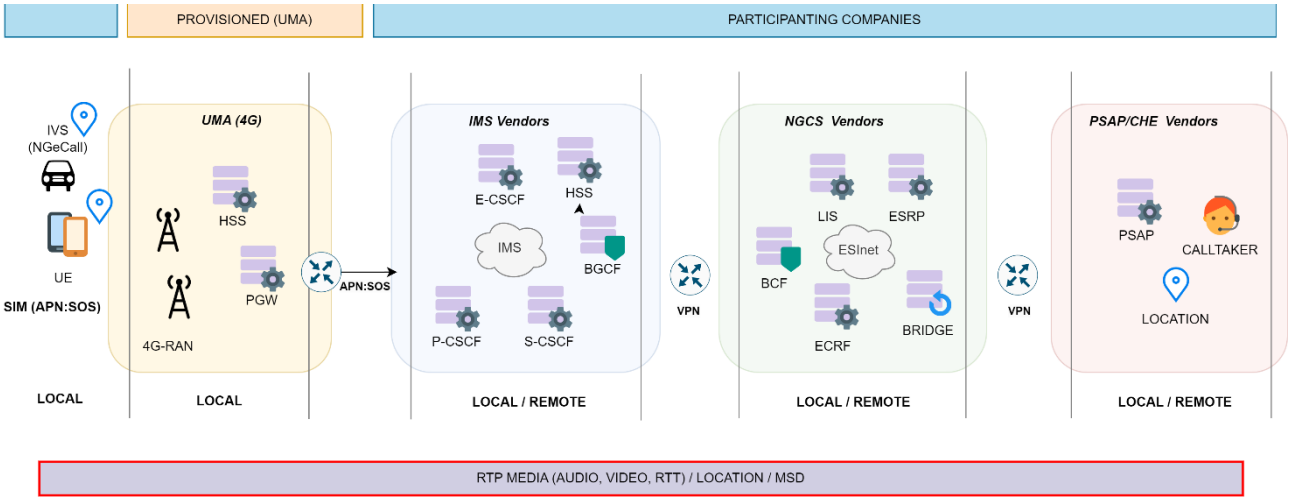

Figure 1: Test infrastructure

5.2 Description

In this event four groups of tests considering different scenarios and test cases (examples: location based call routing, accessibility, different types of originating networks) were performed in two main domains: NGCS and NG eCall:

- **Generic**: basic testing (audio, Location by Value (LbV), Location by Reference (LbR))
- **Media**: Audio/RTT communication
- **mTLS**: mutual authentication (valid, invalid certificates)
- **eCall**: NG eCall related features (MSD passing, NG eCall scenarios)

5.3 NG112 Emergency Communication

5.3.1 General

As in the previous editions of the NG112 Communications Plugtests event, the NG112 components and their interfaces, as shown in Figure 2, of different vendors were tested working together. Scenarios and vendors combinations were planned and tests were executed.

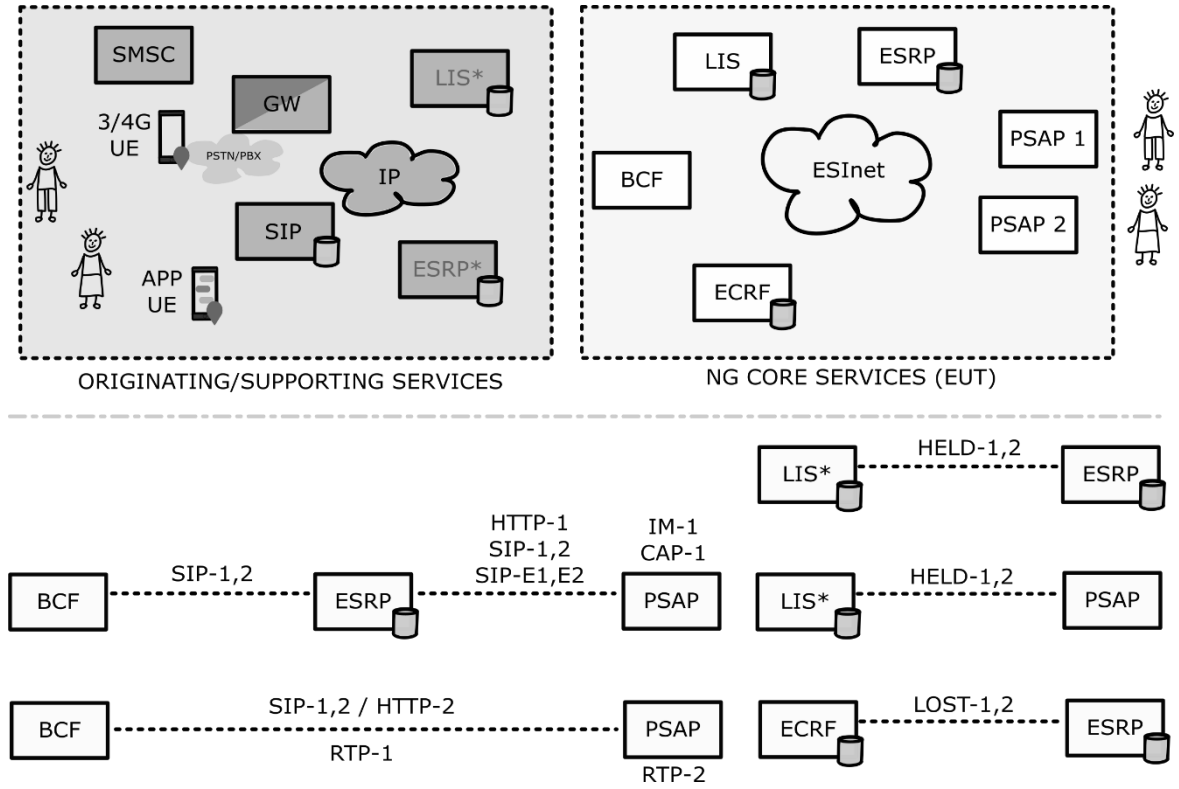

Figure 2: Functional elements and interfaces (refer to ETSI TS 103 479 [i.1])

The tests were executing using basic groups of scenarios:

Mobile Network Attachment Procedures
UE Initialization, Network Authentication, Attach Acceptance, Location Update, Emergency Number Download (MME; download local emergency numbers to the UE)

IMS Procedures
IMS Registration, Capability Negotiation (whether the IMS is capable of handling RTT sessions), Emergency Call Setup, Media Capability Exchange, Location by Value and Location Refresh

IMS or VoIP / ESInet Interconnect
E-CSCF Routing, LRF/LIS Location Retrieval

ESInet / NGCS / PSAP
Basic Emergency Communication, Certificates, STIR/SHAKEN, Routing, Mapping, Media: Audio/Video/RTT

5.3.2 Test Data

Testing several scenarios required creating simple polygons that define PSAP areas (or service boundaries) surrounding the building. Provided location information represents 48 locations (4 per service area): ALICE01, BOB01, CAROL01, ALICE02, ... with ALICExx and BOBxx as point, CAROLxx as circle location type, and DAVEXX as civic location, see figure 3. LIS' were preconfigured with locations (pin icons in Figure 3). For instance, sip:alice-01@plugtests.app resolves to a location within the top-left PSAP (area shown in Figure 3) and therefore calls originated by alice-01 shall route to the PSAP configured for that region.

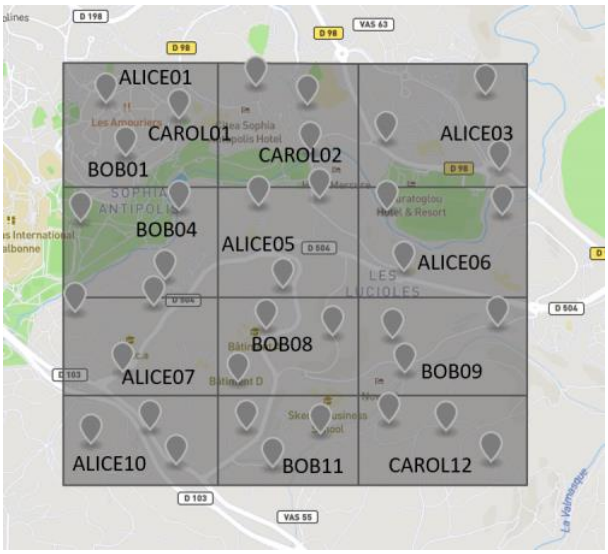

Figure 3: Pre-configured test locations and SIP identities (source: geojson.io)

5.3.3 Test Tools

To simplify remote testing and to be able to perform simple tests without an originating device as part of a test scenario, a tool (RoboDialer) was used to trigger emergency communication. This tool can be operated via the command line with curl or via the web browser or *links* (see Figure 4). To trigger a call, the following attributes are required:

- **Caller = a2** (sip:alice-02@plugtests.app); used to define the location used for testing
- **Service = 112|911**; used to set proper service URNs
- **BCF = vendor_1**; used to select the BCF (can be omitted)
- **ESRP = vendor_2**; used to select an ESRP (indicated in a pre-loaded route-set)

Figure 4: RoboDialer (Web UI and CL Tool)

With the Robo-dialer it is possible to emulate not only emergency calls (audio) but also an NG eCall with MSD information, which is transmitted in the call setup.

5.3.4 Configurations

Different test configurations were used to test interoperability among different service instances from different vendors. The basic configuration, as briefly shown in Figure 5 below, supports Next Generation Core Service (NGCS) testing scenarios, multimedia communication (audio, video and text) and location delivery using identities (sip and tel URIs). Most test calls were placed from local user equipment (UE) configured to register one of the predefined identities with a SIP proxy. Depending on the emergency numbers dialled, the SIP proxy forwarded calls to the border control function (BCF) inserting the corresponding service URN (urn:service:sos).

BCFs used static routing to forward calls to the ESRP used in specific scenarios or combinations. To route to the correct PSAP based on the location received or requested at the LIS via HELD, the ESRP was requesting routing information at the configured ECRF, and finally forwarded the emergency call to the PSAP serving the location at which the caller is located.

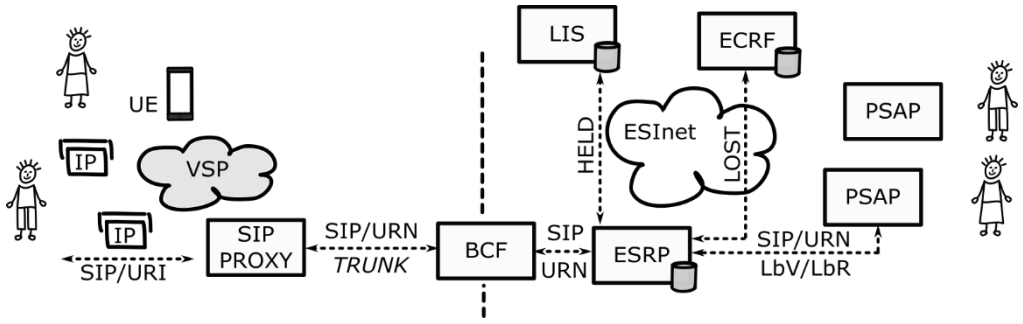

Figure 5: General NGCS Configuration

Minor changes to the basic configuration were needed to support location by reference (LbR) testing. In that scenario, the *public* SIP proxy requested location information at the LIS using the identity (tel or sip URI) received with the emergency call as depicted in Figure 6. The response in a LbR scenario is an URL to be inserted in the SIP request as Geolocation header value. The next downstream element that requires location information uses the URL to dereference location information via HTTPS.

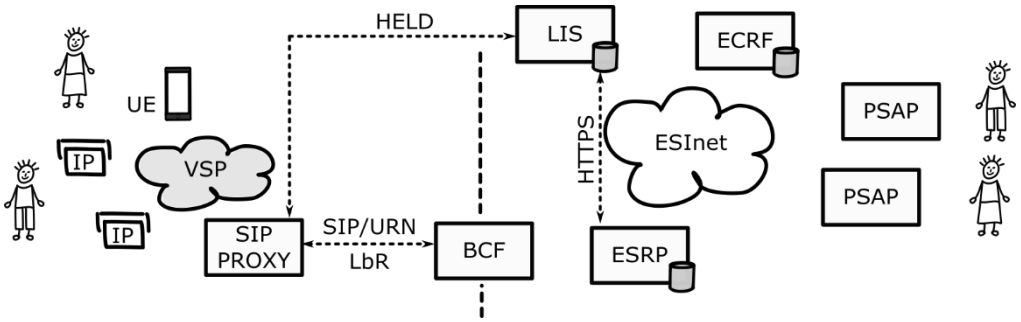

Figure 6: Location by Reference (LbR) Test Configuration

To test location by value, the *public* SIP proxy only forwarded calls by inserting a service URN, and the ESRP requested location information at the LIS using the identity (tel or sip URI) received with the emergency call as depicted in Figure 7. In addition, the ESRP inserted location information as value (PIDF-LO) into the SIP message as part of a multipart MIME body. The next downstream element that requires location information (e.g. PSAP) uses the location received in the message.

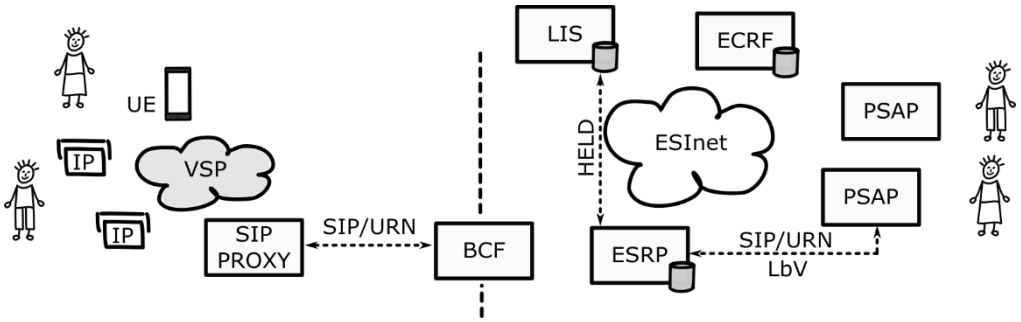

Figure 7: Location by Value (LbV) Test Configuration

Basic steps to test calls were: registering an UE using a specific identity (to get a location), dialing an emergency number, and setting up audio, or multimedia calls.

The NG eCall test configuration is shown in Figure 8 below. The HPLMN shall indicate support of Voice over IMS (VoIMS), IMS Emergency Services (EMS) and eCall Over IMS (ECL).

NOTE: In general, ESInet infrastructure is not required for NG eCall end-to-end tests, but if used it shall be transparent for the NG eCall IVS and NG eCall PSAP.

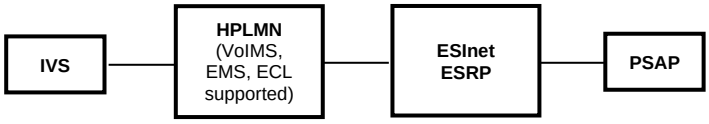

Figure 8: NG eCall Test Configuration

6 Achieved Results

6.1 Observations

6.1.1 General

- During this event, tests with commercial mobiles and real emergency numbers were carried out in a laboratory environment for the first time. This provided important insights into the transmission of location information from the end device, as well as the negotiation of multimedia sessions (audio and rtt) and the resulting media transmission.

- With the help of the local mobile packet core and its functional elements, a previously unused option for the automatic configuration of emergency numbers of mobile devices could be used. A list of emergency numbers and service URNs is transmitted to the end device via MME (Mobility Management Entity). This ensures that even with newly defined test numbers, a terminal device acts as if a known emergency number were being dialled (and enables location conveyance and RTT).

- Since several stakeholders are involved end-to-end, it is particularly important to transparently pass on all the information required to establish a successful connection. In this respect, it is necessary to describe aspects of SIP media negotiation (such as upgrade/downgrade RTT media) in detail in TS 103 479.

- Interconnection between ESInet infrastructure and NG eCall devices is working well after resolving of some configuration issues.

- The functionality and stability of the tested core services in ESInet (BCF, ECRF, ESRP and LIS) has now been confirmed by several Plugtest events - including this one.

- SIP media negotiation aspects (such as upgrade/downgrade RTT media) shall be defined in detail in ETSI TS 103 479.

- SIP functionality of an ESRP is not clearly defined in ETSI TS 103 479. It shall be defined more precisely whether an ESRP also relays in-dialogue requests (i.e. dialogue stateful) or only the initial INVITE transaction. This also applies to downstream elements (BCF, PSAP …), as their SIP transaction layer is different for each variant.

Some suggestions for next event organization were identified during the Plugtests event:

- Pre-testing should be organized in a stricter manner. Special pre-testing scenarios should be defined before the event.

- First 1-2 days (e.g. Mon, Tue) of the event should be a kind of exploration phase, only simple scenarios should be planned, ad-hoc reports can be added.

- Run 2 days intensive testing with one lead person per scenario to conduct testing and proper test reporting tool (tests, configuration)

- Have at least one person per vendor on-site

- At least one IMS needs to be "productive" prior to event.

- In order to test a fall-back scenario, it would be useful to have a kind of RF chamber (Faraday tent) to avoid using the real network coverage.

- Keep VPN up and running after the event (e.g. 4 weeks)

6.1.2 Observations of NG112 tests

- At the beginning of the event some routing configuration issues were identified. First days of testing were spent to resolve these issues. As an outcome of this situation, some suggestions were raised:

    - Need to define precisely 4/5G and IMS configuration (including SIM cards; emergency number list via MME, IMS registration …).

    - All test configurations should be checked first with VoIP initiator, excluding IMS impacts.

    - Default PSAP shall be defined for each test configuration.

- Next time more mobile device vendors can be invited to the event.

- Real-Time-Text VoIP devices or implementations should be also invited to the next testing event.

- In order to test IMS behavior, more IMS scenarios and test cases are required: registered and non-registered devices, location, roaming, call-back, STIR/SHAKEN, device-to-device testing, registered numbers ... use same device throughout)

- Define more audio/video/rtt test cases including "upgrade/downgrade" media.
- Include scenarios with and without RTT redundancy encoding.
- ESInet infrastructure is not required for NG eCall end-to-end tests, but if used it shall be transparent for the NG eCall IVS and NG eCall PSAP, hence it is recommended to keep the ESInet configuration stable during dedicated test slots

6.1.3 Observations of NG eCall test sessions

NG eCall originating devices (IVS) and NG eCall PSAPs were tested using the NG112 ESInet infrastructure. All NG eCall calls were routed by IMS to the NG112 Board Control Function and further routed to a proper NG eCall capable PSAP.

During the test sessions some observations and suggestions were made:

- It is recommended to enhance NG eCall test specifications to check interconnection with ESInet, even if it is not mandatory, to include:
  - mapping & routing
  - PRF rules
  - and support know-how transfer (NG eCall over NG112)
- To allow ESInet location-based routing for NG eCall it is proposed to extend NG eCall specifications and recommend using both, MSD and PIDF-LO data in the NG eCall initiation (SIP INVITE message sent from IVS)

6.2 Statistics

The overall test results, considering configurations as introduced in 5.3.4, as illustrated in the below figure 9.

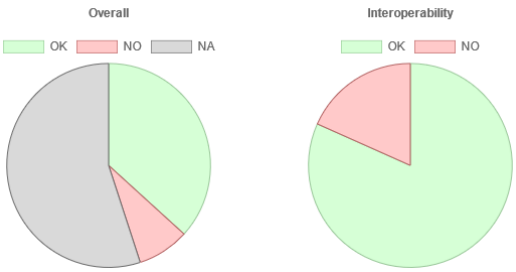

Figure 9: Overview of test results

Total count of test cases: **558**

Not-executed test cases: **307 (55%)**

Run test cases: **251 (45%)**

Passed test cases: **205 (82%)**

Failed test cases: **46 (18%)**

Many test cases were not executed because of initial setup problems and not-supported features, like VoIP or video calling.

Table 2: Group Results

Test Group	Total TC count	Run TC count		Not executed
		Passed	Failed	
NG eCall IVS Conformance [i.9] and [i.11]	259	141 (55%)		118 (45%)

		124 (88%)	17(12%)	
NG eCall interoperability tests (basic and advanced) [i.9]	37	29 (78%)		8 (22%)
		24 (83%)	5 (17%)	
NG112 Location tests	36	14 (39%)		22 (61%)
		10 (71%)	4 (29%)	
NG112 Audio tests	18	11 (61%)		7 (39%)
		9 (82%)	2 (18%)	
NG112 Video tests	2	1 (50%)		1 (50%)
		0 (0%)	1 (100%)	
NG112 RTT tests	7	4 (57%)		3 (43%)
		4 (100%)	0 (0%)	
NG112 TLS	34	5 (10%)		45 (90%)
		5 (100%)	0 (0%)	
NG112 basic tests using NG eCall IVS	12	4 (33%)		8 (67%)
		3 (75%)	1 (25%)	

Table 3: Test Results (NG eCall)

Use case	Passed	Failed	Not executed	Run	Total TC count
TD_BAS_01 [i.9]	13 (92.9%)	1 (7.1%)	1 (6.7%)	14 (93.3%)	15
TD_BAS_02 [i.9]	12 (92.3%)	1 (7.7%)	1 (7.1%)	13 (92.9%)	14
TD_BAS_03 [i.9]	6 (75.0%)	2 (25.0%)	4 (33.3%)	8 (66.7%)	12
TD_BAS_04 [i.9]	15 (100.0%)	0 (0.0%)	0 (0.0%)	15 (100.0%)	15
TD_BAS_05 [i.9]	4 (80.0%)	1 (20.0%)	2 (28.6%)	5 (71.4%)	7
TD_BAS_06 [i.9]	10 (90.9%)	1 (9.1%)	1 (8.3%)	11 (91.7%)	12
TD_BAS_07 [i.9]	10 (100.0%)	0 (0.0%)	0 (0.0%)	10 (100.0%)	10
TD_BAS_09 [i.9]	7 (77.8%)	2 (22.2%)	0 (0.0%)	9 (100.0%)	9
TD_BAS_10 [i.9]	9 (90.0%)	1 (10.0%)	1 (9.1%)	10 (90.9%)	11
TD_BAS_13 [i.9]	10 (100.0%)	0 (0.0%)	3 (23.1%)	10 (76.9%)	13
TD_BAS_15 [i.9]	6 (100.0%)	0 (0.0%)	1 (14.3%)	6 (85.7%)	7
TD_BAS_16 [i.9]	12 (100.0%)	0 (0.0%)	0 (0.0%)	12 (100.0%)	12
TD_ADV_01 [i.9]	8 (100.0%)	0 (0.0%)	1 (11.1%)	8 (88.9%)	9
TD_ADV_02 [i.9]	6 (100.0%)	0 (0.0%)	0 (0.0%)	6 (100.0%)	6
TD_ADV_04 [i.9]	0 (0.0%)	1 (100.0%)	3 (75.0%)	1 (25.0%)	4
TD_ADV_05 [i.9]	8 (100.0%)	0 (0.0%)	1 (11.1%)	8 (88.9%)	9
TD_ADV_08 [i.9]	0 (0.0%)	2 (100.0%)	3 (60.0%)	2 (40.0%)	5
TD_ADV_11 [i.9]	2 (22.2%)	7 (77.8%)	1 (10.0%)	9 (90.0%)	10
TD_ADV_IVS_01 [i.9]	1 (100.0%)	0 (0.0%)	3 (75.0%)	1 (25.0%)	4
TD_ADV_IVS_02 [i.9]	1 (100.0%)	0 (0.0%)	3 (75.0%)	1 (25.0%)	4
TD_ADV_IVS_03 [i.9]	1 (100.0%)	0 (0.0%)	3 (75.0%)	1 (25.0%)	4

TD_ADV_IVS_06 [i.9]	2 (100.0%)	0 (0.0%)	4 (66.7%)	2 (33.3%)	6
TD_ADV_IVS_11 [i.9]	1 (100.0%)	0 (0.0%)	3 (75.0%)	1 (25.0%)	4
TD_ADV_IVS_12 [i.9]	0 (0.0%)	1 (100.0%)	4 (80.0%)	1 (20.0%)	5
TD_ADV_IVS_15 [i.9]	0 (0.0%)	1 (100.0%)	4 (80.0%)	1 (20.0%)	5
TD_ADV_IVS_17 [i.9]	0 (0.0%)	1 (100.0%)	4 (80.0%)	1 (20.0%)	5
TD_ADV_PSAP_02 [i.9]	2 (100.0%)	0 (0.0%)	6 (75.0%)	2 (25.0%)	8
TD_ADV_PSAP_04 [i.9]	2 (100.0%)	0 (0.0%)	4 (66.7%)	2 (33.3%)	6
CTP 1.1.0.2 [i.11]	1 (100.0%)	0 (0.0%)	1 (50.0%)	1 (50.0%)	2
CTP 1.1.1.2 [i.11]	1 (100.0%)	0 (0.0%)	1 (50.0%)	1 (50.0%)	2
CTP 1.1.3.1 [i.11]	1 (100.0%)	0 (0.0%)	1 (50.0%)	1 (50.0%)	2
CTP 1.1.7.1 [i.11]	1 (100.0%)	0 (0.0%)	1 (50.0%)	1 (50.0%)	2
CTP 1.1.15.2 [i.11]	1 (100.0%)	0 (0.0%)	1 (50.0%)	1 (50.0%)	2

Table 4: Test Results (NG112)

Use case	Passed	Failed	Not executed	Run	Total TC count
LOC_LBV_01	4 (66.7%)	2 (33.3%)	9 (60.0%)	6 (40.0%)	15
LOC_LBV_02	7 (70.0%)	3 (30.0%)	4 (28.6%)	10 (71.4%)	14
LOC_LBR_01	2 (50.0%)	2 (50.0%)	18 (81.8%)	4 (18.2%)	22
LOC_LBR_02	1 (25.0%)	3 (75.0%)	15 (78.9%)	4 (21.1%)	19
MME_AUD_01	4 (66.7%)	2 (33.3%)	8 (57.1%)	6 (42.9%)	14
MME_AUD_02	11 (78.6%)	3 (21.4%)	2 (12.5%)	14 (87.5%)	16
MME_VID_01	0 (0.0%)	1 (100.0%)	11 (91.7%)	1 (8.3%)	12
MME_VID_02	0 (0.0%)	2 (100.0%)	9 (81.8%)	2 (18.2%)	11
MME_RTT_01	1 (50.0%)	1 (50.0%)	5 (71.4%)	2 (28.6%)	7
POL_TAD_01	0 (0.0%)	1 (100.0%)	10 (90.9%)	1 (9.1%)	11
TLS_SIP_01	1 (50.0%)	1 (50.0%)	10 (83.3%)	2 (16.7%)	12
TLS_SIP_02	4 (80.0%)	1 (20.0%)	5 (50.0%)	5 (50.0%)	10
TLS_HTTP_01	6 (85.7%)	1 (14.3%)	10 (58.8%)	7 (41.2%)	17
TLS_HTTP_02	6 (85.7%)	1 (14.3%)	11 (61.1%)	7 (38.9%)	18
MME_RTT_02	5 (100.0%)	0 (0.0%)	0 (0.0%)	5 (100.0%)	5

History

V1.0	08.11.2024	ETSI Secretariat	Consultation
V1.1	21.11.2014	ETSI Secretariat	Publishing