1st PEMEA Plugtests; Sophia-Antipolis, France; 12 - 16 February 2024

PLUGTESTS™ INTEROP EVENTS

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PEMEA CONSORTIUM | *Revolutionizing how apps connect to emergency services*

Keywords
Testing, Interoperability, NG112

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1 Executive Summary

ETSI, in partnership with PEMEA Consortium, has organized the first Pan-European Mobile Emergency Application (PEMEA) Plugtests™ event. This event was held in ETSI promises in Sophia Antipolis, France, from 12 to 16 of February 2024. The event is co-funded by European Union and the European Free Trade Association (EFTA).

The aim of the event was to demonstrate interoperability of PEMEA nodes and services across multiple vendors and supplies. Different topics were addressed, including PEMEA core tests, instant messaging, real-time text and audio-video features.

Ten organizations from different European countries had the opportunity to inter-connect their equipment within the test infrastructure and validate the interoperability and conformity of their market solutions using different scenarios from their own labs. In addition, six organizations participated as observers. In total, 16 organizations were involved in the Plugtests.

The scope of the event included application testing, PEMEA core tests, instant messaging, real-time text, shared services, service discovery and audio-video tests. All communication was performed by secure transport via TLS. Participants put their products to the test, gaining valuable insights from experiencing a variety of scenarios.

The event was used to validate the currently published PEMEA standards, as shown in clause 2.

The results of the tests show that the PEMEA technology is growing fast. Many application and service providers implements in in their solutions. This technology can extend other solutions or can be implemented independently. It providing a large choice of innovative products to build an efficient emergency communication solutions.

2 References

The following base specifications were validated in the Plugtest.

[i.1] ETSI TS 103 478 – "EMTEL. Emergency Communications (EMTEL); Pan-European Mobile Emergency Application"

[i.2] ETSI TS 103 755 – "EMTEL. Emergency Communications (EMTEL); PEMEA ESInet Shared Services"

[i.3] ETSI TS 103 756 – "EMTEL. Emergency Communications (EMTEL); PEMEA Instant Message Extension"

[i.4] ETSI TS 103 871 – "EMTEL. Emergency Communications (EMTEL); PEMEA Real-Time Text Extension"

[i.5] ETSI TS 103 872 – "EMTEL. Emergency Communications (EMTEL); PEMEA Service Discovery Extension"

[i.6] ETSI TS 103 945 – "EMTEL. Emergency Communications (EMTEL); PEMEA Audio Video Extension"

[i.7] PEMEA-CONS-Spec-UserInfo-001 – "PEMEA Consortium; User Information Conveyance in PEMEA" https://pemea.help/wp-content/uploads/2021/09/UserData-PEMEA-Consortium-1.0.pdf

[i.8] PEMEA-CONS-CNI – "PEMEA Consortium; PEMEA Cellular Network Info" https://pemea.help/wp-content/uploads/2023/08/PEMEA-Cellular-Network-Info-v1.1.pdf

[i.9] PEMEA-CLOSE-EDS – "PEMEA Consortium; PEMEA Close EDS"
https://pemea.help/wp-content/uploads/2023/08/PEMEA-Close-EDS-1.0.pdf

[i.10] PEMEA-CONS-PRAFILE-DATA – "PEMEA Consortium; PEMEA Registration Authority (PRA) Interface Specification"
https://pemea.help/wp-content/uploads/2024/01/PRA-Entities-File-Data-v1.0.pdf

[i.11] PEMEA-CONS-OPS-001 – "PEMEA Consortium; PEMEA Operations Document"
https://pemea.help/wp-content/uploads/2023/06/PEMEA_OPS_v10.3.pdf

[i.12] PEMEA-CONS-Spec-RTT-001 – "PEMEA Consortium; Real-Time Text (RTT) Protocol for PEMEA"
https://pemea.help/wp-content/uploads/2024/02/Real-Time-Text-for-PEMEA-consortium.pdf

[i.13] PEMEA-CONS-Spec-AV-001 – "PEMEA Consortium; Audio Video Protocol for PEMEA"
https://pemea.help/wp-content/uploads/2024/02/Audio_Video-PEMEA-consortium.pdf

3 Abbreviations

AP	Application Provider
App	Application
ASP	Aggregating Service provider
AV	Audio Video
CLO	Close
COR	PEMEA Core
DRE	Data retrieval
EDS	Emergency Data Send
ESInet	Emergency Services Internet
HELD	HTTP-Enabled Location Delivery
HTTP	Hyper-Text Transfer Protocol
IM	Instant Messenger
LOC	Location
N/A	Not Applicable
PEMEA	Pan-European Mobile Emergency Application (framework)
PIM	PSAP Interface Module
PRA	PEMEA Registration Authority
PSAP	Public Safety Answering Point
PSP	PSAP Service Provider
RTE	Routing
RTT	Real-Time Text
SD	Service Discovery
SIP	Session Initiation Protocol
SS	Shared Services
TS	Technical Specification

4 Participants

35 people including observers and the technical experts participated in the 1st PEMEA Plugtests™ event. They were supported by an additional five-member ETSI team.

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

Organization name	**Category**
112 Moldova, MD	Observer
Aplikace Zachranka, z.ú, CZ	Vendor
bevuta IT GmbH, DE	Observer
Cestel, ES	Vendor/Technical expertise
Digia Plc, FI	Vendor
EENA	Observer
EMA (Emergency Management Agency), XK	Observer
Fire and rescue service, LV	Observer
Hellenic Mediterranean University – HMU, GR	Vendor
Ipkom d.o.o., SI	Vendor
National 112 System, BG	Observer
Orange Romania, RO	Observer
PARTICLE SUMMARY, PT	Vendor
SOS Alarm, SW	Observer
STS Romania, RO	Vendor
Telekom Slovenije, d.d., SI	Vendor
University of Ljubljana, SI	Vendor

Table 1: List of organizations

5 Scope of the event

5.1 Objectives

Main objectives of this event were to:

- Demonstrate interoperability of PEMEA nodes and services across multiple vendors and suppliers
- Show that various types of Apps running on different platforms can use the same PEMEA network

- Demonstrate Apps using the PEMEA network can address special needs use cases
- Demonstrate integration of PEMEA with PSAP vendor solutions and interoperability with other network technologies
- Identify gaps in standards and operations that can be addressed by ETSI and/or the PEMEA Consortium

To validate interoperability the following features or services were considered for testing scenarios:

- PEMEA location based routing
- Data retrieval
- Location retrieval and update
- Instant messaging
- Real-time text
- Audio-Video features

Multiple test specifications were tested during the event, not only TS 103 478 [i.1]. The following list enumerates all test specifications that were tested during the event:

- EMTEL. Emergency Communications (EMTEL); Pan-European Mobile Emergency Application, ETSI TS 103 478 [i.1]
- EMTEL. Emergency Communications (EMTEL); PEMEA ESInet Shared Services, ETSI TS 103 755 [i.2]
- EMTEL. Emergency Communications (EMTEL); PEMEA Instant Message Extension, ETSI TS 103 756 [i.3]
- EMTEL. Emergency Communications (EMTEL); PEMEA Real-Time Text Extension, ETSI TS 103 871 [i.4]
- EMTEL. Emergency Communications (EMTEL); PEMEA Service Discovery Extension, ETSI TS 103 872 [i.5]
- EMTEL. Emergency Communications (EMTEL); PEMEA Audio Video Extension, ETSI TS 103 945 [i.6]
- PEMEA Consortium; User Information Conveyance in PEMEA, PEMEA-CONS-Spec-UserInfo-001 [i.7]
- PEMEA Consortium; PEMEA Cellular Network Info, PEMEA-CONS-CNI [i.8]
- PEMEA Consortium; PEMEA Close EDS, PEMEA-CLOSE-EDS [i.9]
- PEMEA Consortium; PEMEA Registration Authority (PRA) Interface Specification, PEMEA-CONS-PRA-FILE-DATA [i.10]
- PEMEA Consortium; PEMEA Operations Document, PEMEA-CONS-OPS-001 [i.11]
- PEMEA Consortium; Real-Time Text (RTT) Protocol for PEMEA, PEMEA-CONS-Spec-RTT-001 [i.12]
- PEMEA Consortium; Audio Video Protocol for PEMEA, PEMEA-CONS-Spec-AV-001 [i.13]

5.2 Network architecture

To be able to exchange EDS between the PEMEA nodes of each participant ETSI provided a network where a PEMEA Registration Authority (PRA) and an Aggregating Service provider (ASP) nodes were deployed. Those nodes would be used to reduce required configurations in the nodes of the participants between each test session.

The ETSI PRA node shall be used by registered PEMEA nodes to retrieve the updated list of PEMEA nodes participating. As specified in TS 103 478 [i.1], PEMEA nodes shall only make requests and accept request to and from trusted PEMEA nodes.

The ETSI ASP node shall be used by the ASP nodes of the participants as the default gateway. This means that if a call is done out of the area of service of the PEMEA nodes of a participant, his nodes shall send the EDS to ETSI ASP so that it can route it to the ASP node of the participant covering the area where the call was made. This allows that the PEMEA calls can be made to the PEMEA nodes of a participant by setting a location of the participant area of service.

5.2 Test scenarios

Multiple test scenarios were tested depending on the functionalities available between each App and PSAP combination.

The two main different PEMEA call test scenarios are the following:

1. PEMEA calls that use PEMEA as a emergency data transmission mechanism but that makes a parallel voice call over IMS network.

   The general structure for this test cases can be seen in Figure 1.

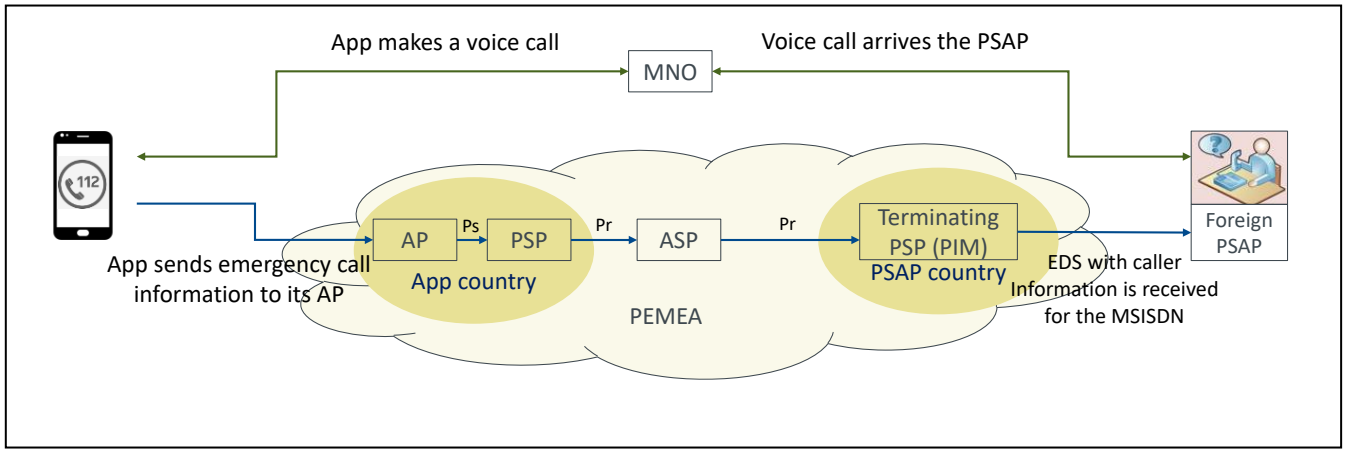

Figure 1: PEMEA as extra information for a parallel voice call

2. PEMEA calls that use PEMEA as the main communication channel. This emergency calls do not require any voice call over IMS network and can use PEMEA extensions to establish communication channels between Apps and PSAPs.

   During this tests, multiple PEMEA extensions were tested:

   - Chat with automatic translations (PEMEA IM extension (TS 103 756 [i.3]))
   - Real-Time Text chat (PEMEA RTT extension (TS 103 871 [i.4]))
   - Videocall (PEMEA Audio Video extension (TS 103 945 [i.6]))

   The general structure for this test cases can be seen in Figure 2.

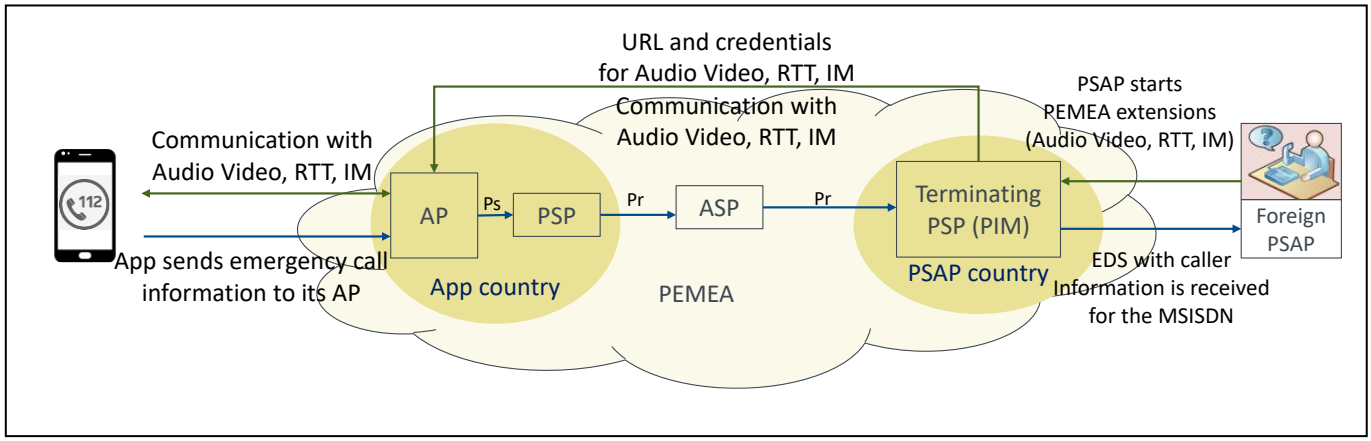

Figure 2: PEMEA as main communication channel

5.3 PEMEA communication

5.3.1 General

PEMEA is specified in TS 103 478 [i.1]. It defines the elements and the procedures to allow internet Applications to reach emergency services using over-the-top internet services. The core specification defines the message exchanged between the PEMEA nodes in order to achieve routing and how PSAP take the emergency call. It defines also all possible error messages that could occure during the routing process.

After the reception of the emergency call, the communication is done with capabilities. PEMEA capabilities are extensions that may be supported by Apps and PSAPs, during the establishment of the call, the App and the PSAP are notified with what capabilities they have in common, and the PSAP can choose which ones it will use to communicate. Capabilities could have any use, from opening a new communication channel to exchange extra data not defined in TS 103 478 [i.1], the standardization of these capabilities is important to make them interoperable between all Apps and PSAPs, and that is why ETSI is pusblishing these extension in other technical specifications.

The entities that conform the PEMEA network can be identified in Figure 3.

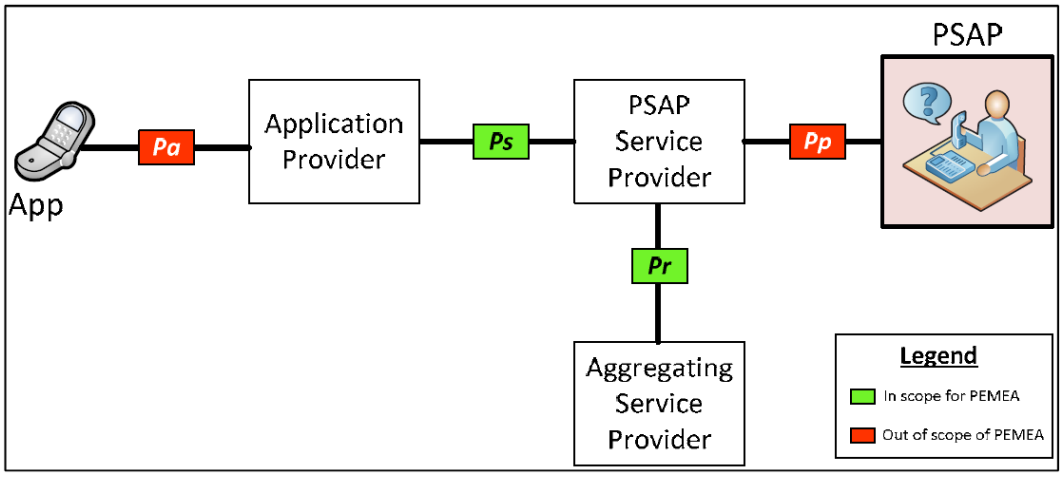

Figure 3: PEMEA enties

Application Provider (AP) nodes are the entry point of emergency calls from internet Apps. It receives the emergency request from the App and generates an EDS message that is sent to the AP's configured PSAP Service Provider (PSP). The AP provides URLs where it will be notified if there is an error while routing the EDS or when the EDS is accepted by a PSAP.

PSAP Service Provider (PSP) nodes have mainly 2 possible roles:

1. Start the routing of the EDS after receiving an EDS from an AP node to which they are attach. This is only the case if the PSP is attached to an AP node, a PSP could only be attached to a PSAP node if the country does not have its own emergency App but its PSAP is ready to receive PEMEA calls from foreign Apps.

   When receiving a new EDS from its configured AP, the PSP shall check if the EDS can be attended by the attached PSAP and, if it is out of the area of service because it is being made in a different country, the PSAP shall send the EDS to its configured Aggregating Service Provider (ASP) that will try to route it to the PEMEA node that is better for the emergency call based on the information provided in the EDS.

2. Receive EDS from PEMEA network and notify them to the PSAP. This is the case when the PSP is attached to a PSAP node that is ready to receive EDSs from PEMEA network.

Aggregating Service Provider (ASP) nodes are the routing node that make possible the routing in the PEMEA network. They receive EDSs and try to route it to the closest PEMEA node that could attend the EDS. They have routing tables that can be based on location or in other parameters.

PSAP node appears as out of scope of PEMEA in Figure 3 and in TS 103 478 but further PEMEA extensions mention a PSAP Interface Module (PIM) component. It has been identified that PIM component shall be added to TS 103 478 because it gave some confussion between the participants. The PIM node is an interface between PEMEA and the PSAP

systems, in TS 103 478 the node is not mandatory, and a PSAP can receive EDSs from the terminating PSP node, but being able to have a separation between the PSP node and the PIM node offers more flexibility to PEMEA implementations, where the PSP can be used to receive EDS and deliver it to the PIM node, and being the PIM node the one that establishes the communication with the AP.

The PEMEA Registration Authority (PRA) is a node that is briefly described in TS 103 478. It is the source if trust for PEMEA nodes to wheter accept or make requests. PEMEA nodes only accept and make request from and to nodes that are trusted, and PEMEA nodes shall use the infromation provided by the PRA to update the domains they trust. PRA is depicted in Figure 4.

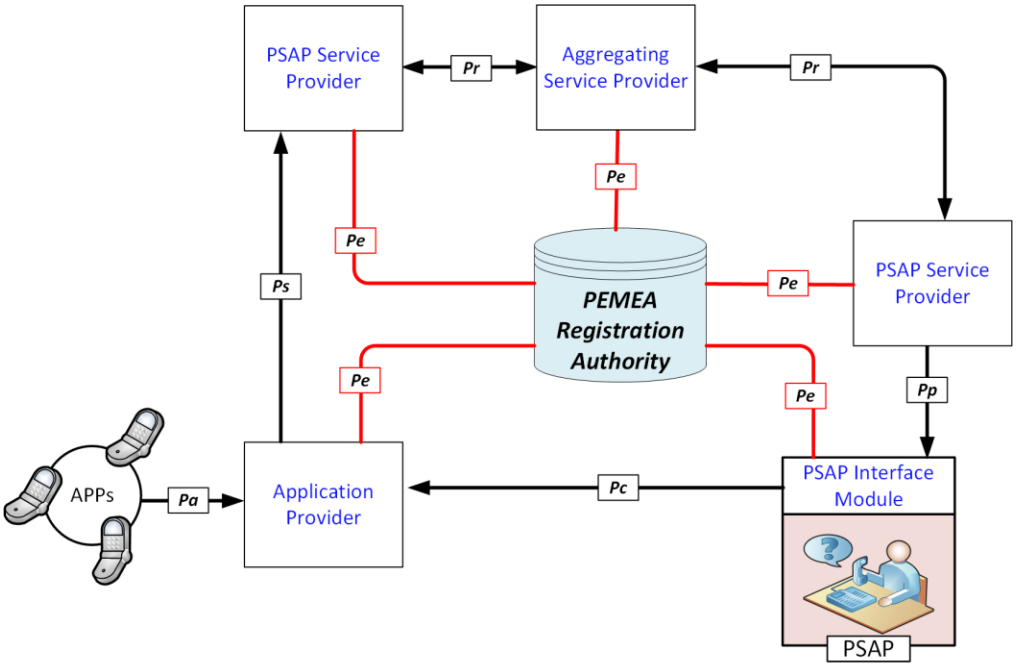

Figure 4: PEMEA Registration Authority

5.3.2 PEMEA extensions

TS 103 478 [i.1] list some capabilities in clauses 10.3.11 and 10.3.12, but only SIP_Request and Location_Update are defined, the others are suggestions of possible extensions. Since TS 103 478 [i.1] was published, some of the capabilities have been standardized in other technical specifications and they could be tested during this Plugtest event.

The following are the extensions that could be tested during the event:

- PEMEA Instant Message Extension. This extension is specified in ETSI TS 103 756 [i.3]. It allows Apps and PSAP to communicate using a chat protocol with inbuilt replies and translations. The protocol is designed to be a multiparty communication, so the PSAP can add third parties to the conversation. Translations can be done automatically by a translator user or automatically by a translation service.

  Figure 5 depicts the architecture of PEMEA Instant Message.

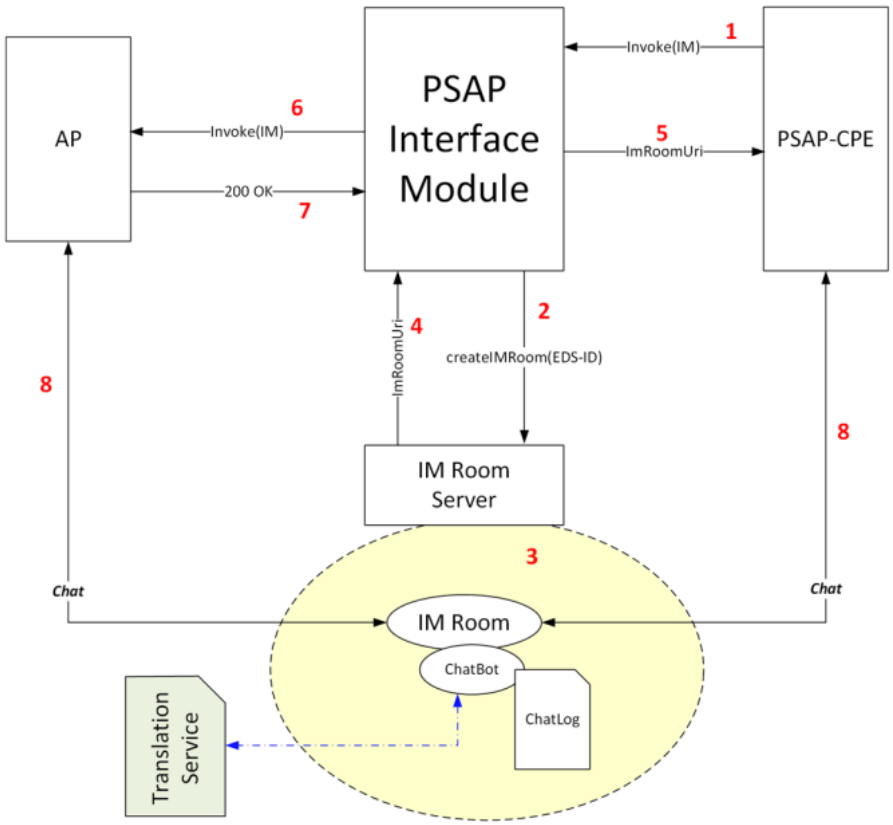

Figure 5: PEMEA Instant Message architecture

- PEMEA Real-Time Text Extension. This extension is specified in ETSI TS 103 871 [i.4]. It allows Apps and PSAP to communicate using an RTT protocol that allow them to exchange characters in real time. The protocol is designed to be a multiparty communication, so the PSAP can add third parties to the conversation.

depicts the architecture of PEMEA Instant Message.

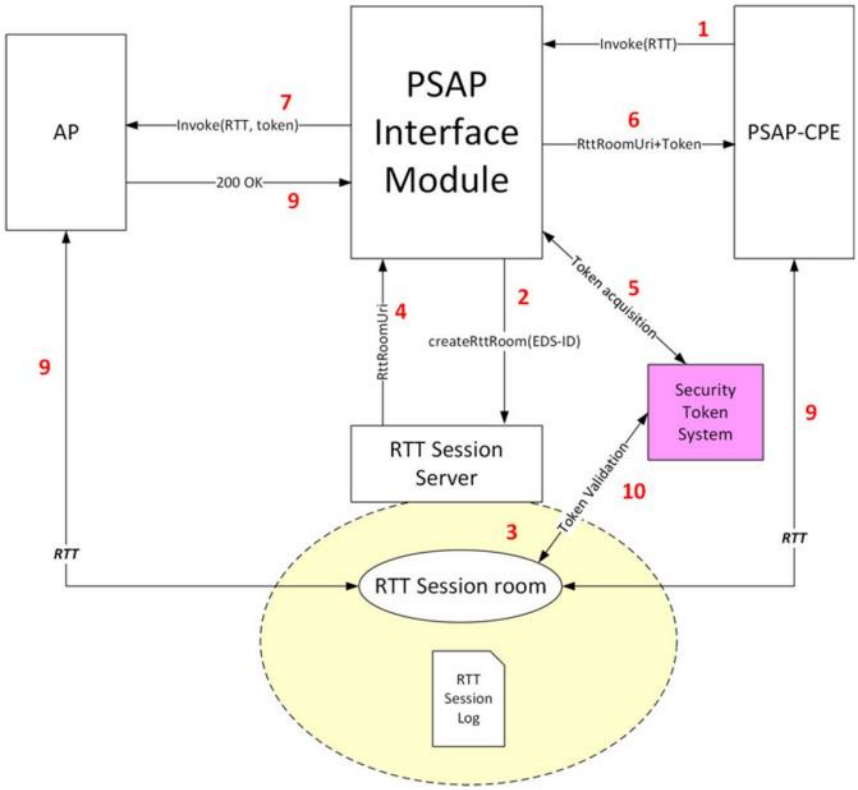

Figure 6: PEMEA Real-Time Text architecture

- PEMEA Service Discovery Extension. This extension is specified in ETSI TS 103 872 [i.5]. It allow Apps to check if PEMEA is available in the area and which capabilities are available without making a emergency call. This allows Apps to advertise to the callers if PEMEA is available or not.
- PEMEA Audio Video Extension. This extension is specified in ETSI TS 103 945 [i.6]. It allows Apps and PSAP to communicate using a videocall protocol. The protocol is designed to be a multiparty communication, so the PSAP can add third parties to the conversation. The protocol allows the PSAP to control the media of the room, by controlling if the caller can hear/video the streams of another user in the conference and the PSAP is also able to enable or disable the streams of the caller. These two functionalities allow PSAPs to control the video conference and to add supervisors during emergency calls.

  Figure 7 depicts the architecture of PEMEA Audio Video.

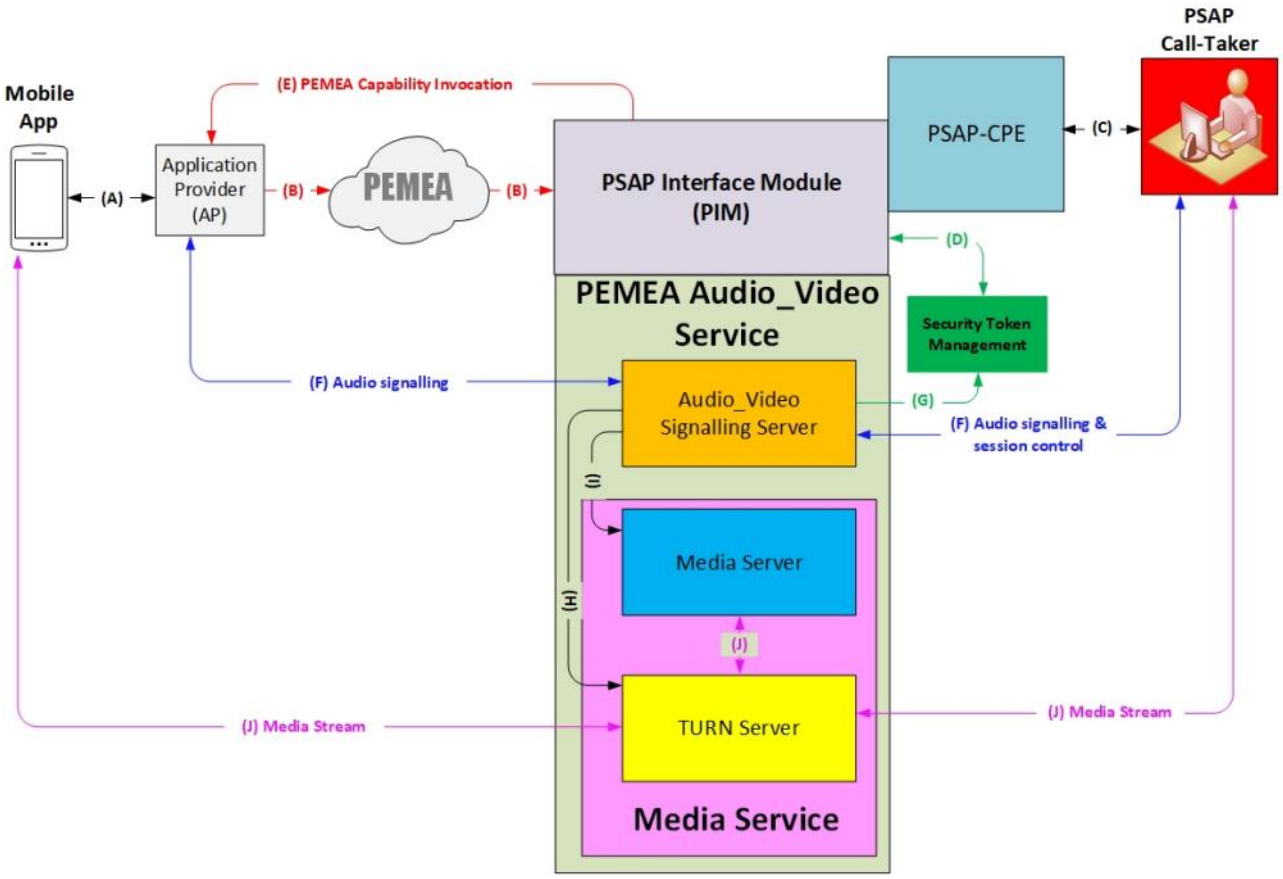

Figure 7: PEMEA Audio Video architecture

- PEMEA ESInet Shared Services. This extension is specified in ETSI TS 103 755 [i.2]. It allows routing PEMEA EDSs inside the ESInet of NG 112. It also allows adding to the EDS a serviceTag property that can be used during the routing to route the call to third party services like police or firefighters if the App prefers so and if it is available in the region.

  Figure 8 depicts the architecture of PEMEA ESInet Shared Services.

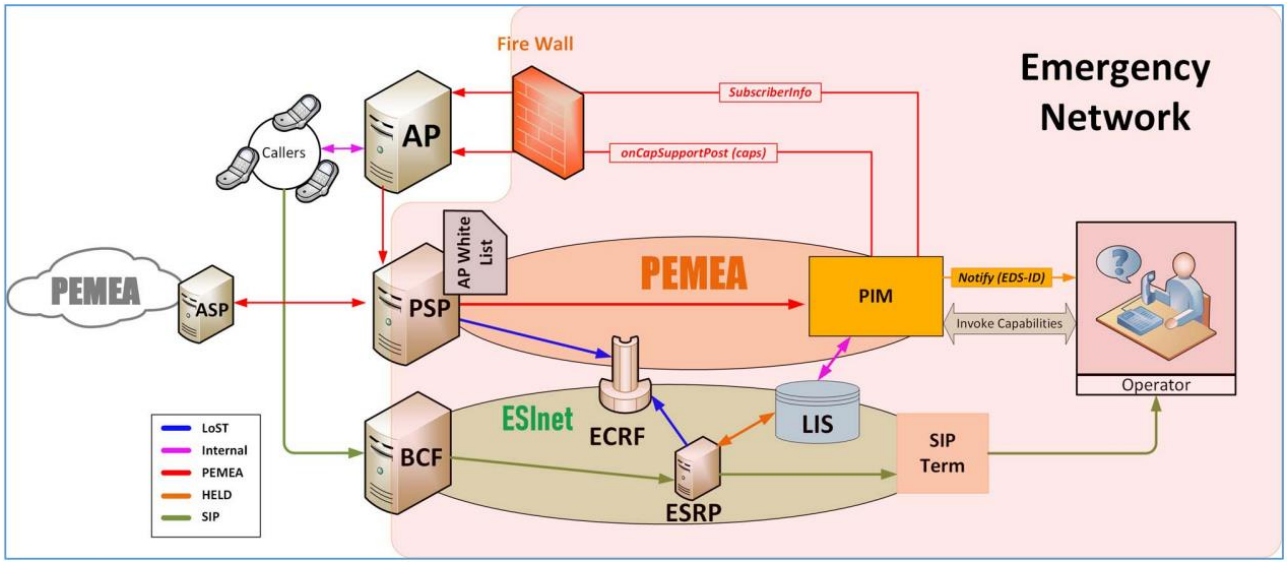

Figure 8: PEMEA ESInet Shared Services network architecture

5.3.2 Configurations

Plugtests are about testing interoperability between components from different vendors. The main objective is to test all possible interfaces with as many use cases as possible between all possible combinations between the products provided by all the vendors participating.

In this 1st PEMEA Plugtests, few PEMEA vendors participated, but many PEMEA implementations participated also, willing to test not only PEMEA nodes, but PEMEA Extensions that involve App and PSAP implementations. So 2 configurations were defined for this event:

1. Local configuration.

   This configuration was made to test the interoperability between PEMEA nodes. It does not involve ASP since ASPs will be tested in roaming configurations, but tests the generation of EDS by Aps and the reception of EDSs by PSP nodes.

   Figure 9 depicts the local configuration.

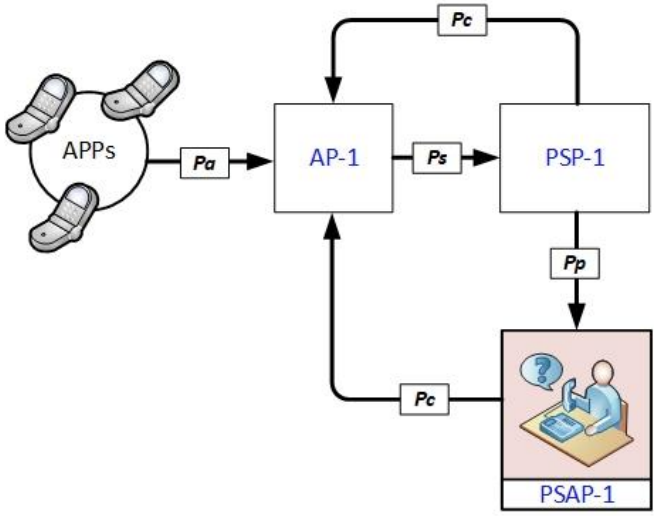

Figure 9: Local Configuration

2. Roaming configuration.

   This configuration was made to be able to test between PEMEA implementations in different areas of service. ASPs in between may be used and have to be configurated to route the call to the area of service of the PSAP.

   Figure 10 depicts the local configuration.

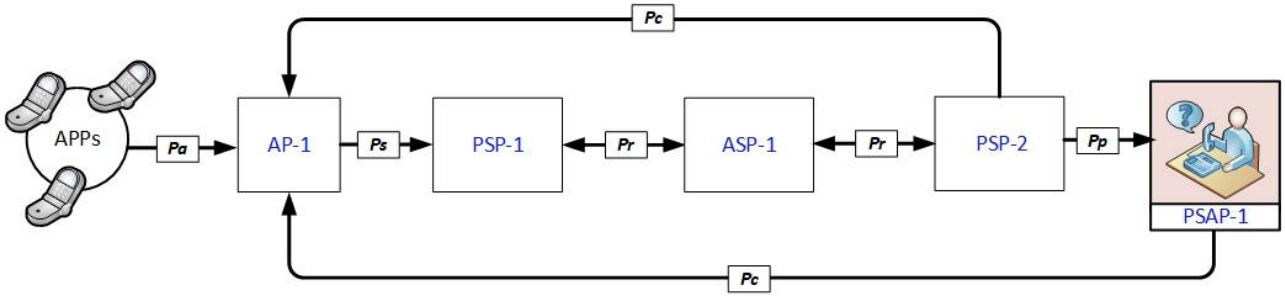

Figure 10: Roaming Configuration

6 Achieved Results

6.1 Interoperability Testing Results

6.2.1 General Observations

- Generation and transmission of EDSs between PEMEA nodes was validated
- Caller information was validated as specified in TS 103 478 [i.1] and PEMEA-CONS-Spec-UserInfo-001 [i.7]
- Caller extended cellular network information was validated as specified in PEMEA-CONS-CNI [i.8]
- Location_Update capability was validated as specified in TS 103 478 [i.1]
- Close of EDS by PSAP was validated as specified in PEMEA-CLOSE-EDS [i.9]
- PEMEA Instant Message extension (IM) was validated as specified in TS 103 756 [i.3]
    - Some test configurations were also able to test automatic translations
- PEMEA Real-Time Text extension (RTT) was able to be tested as specified in TS 103 756 [i.3]
    - Only one participant had the implementation available in App and PSAP, so interoperability could not be tested during this event
    - Pre-standards version of the PEMEA Real-Time Text extension was validated between some Apps and PSAPs which are planning the update to the standard version
- PEMEA Audio Video extension was able to be tested as specified in TS 103 945 [i.6]
    - Pre-standards version of the PEMEA Audio Video extension was validated between some Apps and PSAPs which are planning the update to the standard version
- PEMEA Service Discovery extension was ready to be tested as specified in TS 103 872 [i.5]
    - At the moment of the event, no Apps had PEMEA Service Discovery implemented, so the tests were not executed
- PEMEA ESInet Shared Services was ready to be tested as specified in TS 103 755 [i.2]
    - At the moment of the event, no PEMEA nodes were able to route as specified in PEMEA ESInet Shared Services technical specification, so the tests were not executed
- In general, TS 103 478 [i.1] features and most of its extensions were successfully validated. Future events shall be able to test more advanced features when implementations have them available

6.2.2 Statistics

Overall results considering configurations as introduced in 5.3.4

Table 2: Overall Results

Executed		Not Executed		Totals	
Passed	**Failed**	**Not applicable**	**Out-of-Test**	**Executed**	**Use-cases**
206 (92.4%)	17 (7.6%)	165 (42.5%)	(0.0%)	223 (57.5%)	388

Overall results illustrates the current status of maturity of PEMEA implementations.

- Only 55% of available use-cases were executed. A half of available PEMEA features was not implemented by participants.

- When implemented, most of use-cases were succeed. That indicates that the base specifications were correctly interpreted by all participants.

Group results considering groups as introduced in 5.2

Table 3: Group Results

Use-case group	Total	Run	Not applicable	OK	Failed
Routing	56	51 (91.1%)	5 (8.9%)	39 (76.5%)	12 (23.5%)
Data retrieval	84	23 (27.4%)	61 (72.6%)	21 (91.3%)	2 (8.7%)
Location update	28	16 (57.1%)	12 (42.9%)	14 (87.5%)	2 (12.5%)
Close EDS	23	13 (56.5%)	10 (43.5%)	13 (100.0%)	0 (0.0%)
IM	107	45 (42.1%)	62 (57.9%)	45 (100.0%)	0 (0.0%)
RTT	7	0 (0.0%)	7 (100.0%)	-	-
Pre-standard RTT	27	25 (92.6%)	2 (7.4%)	24 (96.0%)	1 (4.0%)
Pre-standardized AV	56	50 (89.3%)	6 (10.7%)	50 (100.0%)	0 (0.0%)
Overall	388	223 (57.5%)	165 (42.5%)	206 (92.4%)	17 (7.6%)

Group results shows the following:

- The main PEMEA routing functionality is implemented by all participants. However there were some failed use-case execution.
- Other features of core technology, such as location update, data retrieval, close EDS were implemented only by some participants. When implemented it works correctly.
- Only pre-standardized version of The RTT and Audio-Video parts has been implemented.

Test results considering individual scenarios based on configurations as introduced in 5.3.4.

Table 4: Test Results

	Executed		Not Executed		Totals	
	Passed	Failed	Not Applicable	Out-of-Test	Executed	Results
TD_COR_RTE_1	1 (50.0%)	1 (50.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	2
TD_COR_RTE_2	22 (84.6%)	4 (15.4%)	0 (0.0%)	0 (0.0%)	26 (100.0%)	26
TD_COR_RTE_3	16 (69.6%)	7 (30.4%)	5 (17.9%)	0 (0.0%)	23 (82.1%)	28
TD_COR_DRE_1	0 (0.0%)	1 (100.0%)	27 (96.4%)	0 (0.0%)	1 (3.6%)	28
TD_COR_DRE_2	16 (94.1%)	1 (5.9%)	11 (39.3%)	0 (0.0%)	17 (60.7%)	28
TD_COR_DRE_3	5 (100.0%)	0 (0.0%)	23 (82.1%)	0 (0.0%)	5 (17.9%)	28
TD_COR_CLO_1	13 (100.0%)	0 (0.0%)	10 (43.5%)	0 (0.0%)	13 (56.5%)	23
TD_IM_1	6 (100.0%)	0 (0.0%)	8 (57.1%)	0 (0.0%)	6 (42.9%)	14
TD_IM_2	6 (100.0%)	0 (0.0%)	8 (57.1%)	0 (0.0%)	6 (42.9%)	14
TD_IM_3	6 (100.0%)	0 (0.0%)	8 (57.1%)	0 (0.0%)	6 (42.9%)	14
TD_IM_4	6 (100.0%)	0 (0.0%)	7 (53.8%)	0 (0.0%)	6 (46.2%)	13
TD_IM_5	6 (100.0%)	0 (0.0%)	8 (57.1%)	0 (0.0%)	6 (42.9%)	14
TD_IM_6	1 (100.0%)	0 (0.0%)	13 (92.9%)	0 (0.0%)	1 (7.1%)	14
TD_IM_7	3 (100.0%)	0 (0.0%)	11 (78.6%)	0 (0.0%)	3 (21.4%)	14
TD_IM_8	5 (100.0%)	0 (0.0%)	9 (64.3%)	0 (0.0%)	5 (35.7%)	14
TD_IM_9	6 (100.0%)	0 (0.0%)	8 (57.1%)	0 (0.0%)	6 (42.9%)	14
TD_RTT_1	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1
TD_RTT_2	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1
TD_RTT_3	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1
TD_RTT_4	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1
TD_RTT_5	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1

TD_RTT_6	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1
TD_RTT_7	0 (0.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1
TD_SS_1	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_SS_2	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_SD_1	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_AV_1	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_AV_2	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_AV_3	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_AV_6	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_AV_7	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_AV_8	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_AV_9	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_AV_10	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_AV_11	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
TD_COR_LOC_1	14 (87.5%)	2 (12.5%)	12 (42.9%)	0 (0.0%)	16 (57.1%)	28
TD_RTT_PRE_1	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_RTT_PRE_2	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_RTT_PRE_3	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_RTT_PRE_4	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_RTT_PRE_5	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_RTT_PRE_6	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_RTT_PRE_7	0 (0.0%)	1 (100.0%)	2 (66.7%)	0 (0.0%)	1 (33.3%)	3
TD_RTT_PRE_8	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_RTT_PRE_9	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (100.0%)	3
TD_AV_PRE_1	7 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (100.0%)	7
TD_AV_PRE_2	7 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (100.0%)	7
TD_AV_PRE_3	7 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (100.0%)	7
TD_AV_PRE_4	7 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (100.0%)	7
TD_AV_PRE_5	7 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (100.0%)	7
TD_AV_PRE_6	5 (100.0%)	0 (0.0%)	2 (28.6%)	0 (0.0%)	5 (71.4%)	7
TD_AV_PRE_7	5 (100.0%)	0 (0.0%)	2 (28.6%)	0 (0.0%)	5 (71.4%)	7
TD_AV_PRE_8	5 (100.0%)	0 (0.0%)	2 (28.6%)	0 (0.0%)	5 (71.4%)	7

7 PEMEA Observations

7.1 Improvements of TS 103 478 identified during 1st PEMEA Plugtests

7.2.1 Add PIM component description

Some PEMEA extensions like TS 103 945 [i.6], TS 103 871 [i.4] and TS 103 756 [i.3] talk about a PSAP Interface Module (PIM) component, TS 103 478 [i.1] should be updated to describe this component because doing the Plugtests there were some confusion regarding this component. In TS 103 478 [i.1] there is a PSAP component described that obtain EDSs from the terminating PSP, but in further specifications, this PSAP component are split between PIM and PSAP components. TS 103 478 [i.1] shall be updated to reflect and explain the PIM component and to avoid confusions.

7.2.2 Add PEMEA Consortium specifications

Some pending standardization work that has been tested and should be added to TS 103 478 [i.1]:

- PEMEA-CONS-Spec-UserInfo-001 [i.7]: Updated user info format. It can coexist with SubscriberInfo.
- PEMEA-CONS-CNI [i.8]: Extra cellular network information shall be added to the EDS structure.
- PEMEA-CLOSE-EDS [i.9]: onClosePost allows PSAP to close EDS calls. It should be added to TS 103 478 [i.1] like onErrorPost and onCapSupportPost.

7.2.3 Fix typo in EDS examples

Most EDS examples in TS 103 478 [i.1] had the same typo error. The attribute onCapSupportPost is written as onCapSupporPost, a t letter is missing.

History

Document history		
V0.1	21.02.2024	First draft
V1.0	23.02.2024	Stable draft. Typos fixed.