# Draft ETSI EN 303 919 V1.0.0 (2026-02)

**HARMONISED EUROPEAN STANDARD**

## Emergency Communications (EMTEL); Accessibility and Interoperability of Emergency Communications

Reference
DEN/EMTEL-00067

Keywords
accessibility, emergency communications, language, location information, PSAP, real-time text, relay services, roaming, sign language, SIP, total conversation

***ETSI***

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

# Contents

# Intellectual Property Rights

## Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI IPR online database.

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

## Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

**DECT™**, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™**, **LTE™** and **5G™** logo are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM**® and the GSM logo are trademarks registered and owned by the GSM Association.

# Foreword

This draft Harmonised European Standard (EN) has been produced by ETSI Special Committee Emergency Communications (EMTEL), and is now submitted for the combined Public Enquiry and Vote phase of the ETSI Standardisation Request deliverable Approval Procedure (SRdAP).

The present document has been prepared under the Commission's standardisation request C(2022) 6456 final [i.1] to provide one voluntary means of conforming to the essential requirements of Directive (EU) 2019/882 on the accessibility requirements for products and services [i.3].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table AA.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding requirements of that Directive and associated EFTA regulations.

| **Proposed national transposition dates** | |
|---|---|
| Date of latest announcement of this EN (doa): | 3 months after ETSI publication |
| Date of latest publication of new National Standard or endorsement of this EN (dop/e): | 6 months after doa |
| Date of withdrawal of any conflicting National Standard (dow): | 18 months after doa |

# Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

# Executive summary

Accessible emergency communications are needed to provide equal opportunities for all persons to get assistance in emergency situations. The present document specifies technical, and accessibility means to provide accessible emergency communications. The communications environment is based on packet switched communications technologies, and ETSI TS 103 479 [2] specifies the details for emergency communications. The present document requires a set of functions to ensure access to other media than voice, namely real-time text and video, additional functions such as text messaging and access to assisting services are also specified.

When voice, video and real-time text are provided together, the communication is called total conversation and makes communication more accessible than voice communication.

Video is commonly used for sign language communication. The provision of total conversation in emergency communications enables rapid and fluent emergency communications for sign language users, when competence in the sign language favoured by the user in emergency can be provided. In many cases, interpreters need to be invoked in the communication in a three-party fashion. The present document tells which technical solutions are to be implemented to support such interaction.

Technical details are provided for SIP based technologies, in particular communication services known as IMS and SIP based VoIP. Since the intention is that users shall be able to request emergency assistance through efficient emergency communications anywhere in Europe, it is essential that communication interoperability is established for travelling users. That requires few and well specified interfaces for the communication. Openings for emergency apps and other technologies are briefly mentioned. The present document describes these interfaces, which are consistent with the default interoperability solutions prescribed in EN 301 549 [1], clause 6, enhancing them with the specific requirements needed for accessible emergency communications.

General accessibility requirements are specified in EN 301 549 [1].

# Introduction

When communication is made accessible for persons they are provided with accessible complements in communications. This may be done in the communication media, where real-time text and video are accessible complements for voice in various situations. Larger fonts and a spoken user interface are also used as complements to regular visual user interfaces.

The emergency communications related requirements on accessible electronic communications are specified in the present document, including media and technical details for interoperability in emergency communication situations as well as addressing, routing, and providing location information and other contextual information. The inclusion of relay services and other assisting services during emergency communication is also covered.

General accessibility requirements on emergency communications as well as everyday communications including media performance aspects, functional details of the accessible media and general user interface requirements for accessibility are specified in EN 301 549 [1].

The present document presents in clause 4 the operational profile concept for expressing a scope for the requirements. Clause 5 of the present document provides a symbolic technical architecture with the division in the components involved in emergency communications from user terminal to PSAP.

In clause 6 the functional accessibility and interoperability requirements are expressed, in most cases on the whole chain involved in an emergency communication.

Clauses 7 through 10 show how these different parts of the emergency communications chain fulfil their requirements when providing accessible and interoperable emergency communications, referring to the functional requirements of clause 6 by a set of labels for requirements established in clause 6, and cross referenced in Annex D.

The division between clauses 7 through 10 is:

- Clause 7: user equipment requirements.
- Clause 8: originating service requirements.
- Clause 9: emergency communications system including PSAP.
- Clause 10: assisting services.

Clause 11 contains the requirements on provision and contents of information.

The annexes contain the following:

- Annex AA provides a table showing how the essential requirements of Directive (EU) 2019/882 [i.3] regarding the emergency communications are addressed in the present document.
- Annex AB provides a table showing how requirements from other directives relate to the clauses of the present document according to EAA Annex I, Section VI.
- Annex B is a normative annex that sets out sufficient means to determine conformance with the requirements by tests.
- Annex C is a collection of user level use cases.
- Annex D is a cross reference list between requirement labels and clauses.
- Annex E is background information about the communication situation for persons with disabilities.

The present document is one of a set of documents related to Directive (EU) 2019/882 of the European Parliament and of the Council on the accessibility requirements for products and services [i.3] (EAA), developed under the Commission's standardisation request C(2022) 6456 final [i.1] (M/587). The documents in the set are interrelated and together are intended to provide a full coverage of the essential requirements of the EAA.

The present document is limited to cover accessible and interoperable emergency communications and answering emergency communications to demonstrate compliance with the relevant essential requirements of Annex I of the EU Directive 2019/882 [i.3] (EAA), covering the following parts of the EAA:

- Annex I Section III: General accessibility requirements regarding services involved in emergency communications and answering of emergency communications. The services being real-time bidirectional communication services intended for emergency communications, the services answering emergency communications, and assisting services intended to facilitate emergency communications (mainly relay services). The requirements on provision of information about services and products to be used in service provision are limited to the requirements on provision and contents of information and cover:
  - Annex I Section I. 1 (b): Requirements on the provision of, and contents of information about products used by users for access to emergency communications, limited to what is specific for that use.
  - Annex I Section I. 2 (o)(iii): consumer terminal equipment with interactive computing capability, used for the provision of electronic communications services and to be enabled for emergency communications, regarding their accessibility and involvement in emergency communications as referenced from Annex I, Section III (a).
  - Annex I Section II (b): provision and contents of instructions about products' use in emergency communications as referenced from Annex I, Section III (a).

  The present document does not cover requirements for making information formats accessible.
- Annex I Section IV (a) iii: Electronic communications services, including emergency communications, limited to what is specific for provision of emergency communications.

- Annex I Section V: Specific accessibility requirements regarding the answering of emergency communications by the most appropriate PSAP.

Additionally:

- the mapping of requirements set out in other Union acts to requirements of the present document is provided as required by Annex I Section VI.
- Requirements for provision and contents of information on how the service meets the accessibility requirements for emergency communications, how the service for emergency communications is delivered and monitored, including how users can issue complaints, as required by Annex V.

The other documents related to Directive (EU) 2019/882 of the European Parliament and of the Council on the accessibility requirements for products and services [i.3] (EAA), are described in and developed under the Commission's standardisation request C(2022) 6456 final [i.1] (M/587).

# 1 Scope

The present document specifies accessibility and interoperability characteristics for the following types of products and services when used in emergency communications. They form together a chain of items involved in accessible emergency communications:

- Communication terminals used in electronic communications
- Electronic communication services
- Emergency communications systems including PSAPs
- Assisting services used in electronic communication services (relay services, language translation services, expert services)

The present document addresses technical aspects of interoperability between user equipment, originating services and emergency communications systems, and the interoperability and functionality required to be able to route emergency communications to the most appropriate PSAP and include assisting services when required. It specifies interoperable and accessible emergency communications, which incorporates voice, video, and real-time text.

Focus is on SIP and IMS technologies for user equipment and originating services, and SIP technology for the emergency communications systems. Brief information is provided on how to arrange emergency communications access also for other technologies.

General accessibility requirements on emergency communications as well as everyday communications including media performance aspects, functional details of the accessible media and general user interface requirements for accessibility are specified in EN 301 549 [1].

NOTE: The relationship between the present document and essential requirements of Directive (EU) 2019/882 [i.3], Annex I and Annex V is given in Annex AA and Annex AB.

# 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 referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found in the ETSI docbox.

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] ETSI/CEN/CENELEC EN 301 549 (V.4.1.0): "Accessibility requirements for ICT products and services".

[2] ETSI TS 103 479 (V1.3.1) (09-2025): "Emergency Communications (EMTEL); Core elements for network independent access to emergency services".

[3] ETSI TS 103 698 (V1.1.1) (12-2020): "Emergency Communications (EMTEL); Lightweight Messaging Protocol for Emergency Service Accessibility (LMPE)".

[4] ETSI TS 122 101 (V18.6.0) (05-2024): "Universal Mobile Telecommunications System (UMTS); LTE; 5G; Service aspects; Service principles (3GPP TS 22.101 version 18.6.0 Release 18)".

[5] ETSI TS 122 173 (V18.0.1) (05-2024): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia Core Network Subsystem (IMS) Multimedia Telephony Service and supplementary services; Stage 1 (3GPP TS 22.173 version 18.0.1 Release 18)".

[6] ETSI TS 123 167 (V19.1.1) (07-2025): "Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia Subsystem (IMS) emergency sessions (3GPP TS 23.167 version 19.1.1 Release 19)".

[7] ETSI TS 124 229 (V19.3.0) (07-2025): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; 5G; IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3 (3GPP TS 24.229 version 19.3.0 Release 19)".

[8] ETSI TS 126 114 (V18.9.0) (01-2025): "Universal Mobile Telecommunications System (UMTS); LTE; 5G; IP Multimedia Subsystem (IMS); Multimedia telephony; Media handling and interaction (3GPP TS 26.114 version 18.9.0 Release 18)".

[9] Recommendation ITU-T H.264 (08/24): "Advanced video coding for generic audiovisual services".

[10] Recommendation ITU-T G.722 (09/12): "7 kHz audio-coding within 64 kbit/s".

[11] Recommendation ITU-T T.140: "Protocol for multimedia application text conversation" (including its Addendum 1).

## 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 referenced 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 may be useful in implementing an ETSI deliverable or add to the reader's understanding, but are not required for conformance to the present document.

[i.1] C(2022)6456 final Commission Implementing Decision of 14.9.2022 on a standardisation request to the European standardisation organisations as regards the accessibility requirements of products and services in support of Directive (EU) 2019/882 of the European Parliament and of the Council.

[i.2] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code.

[i.3] Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services.

[i.4] Commission Delegated Regulation (EU) 2023/444 of 16 December 2022 supplementing Directive (EU) 2018/1972 of the European Parliament and of the Council with measures to ensure effective access to emergency services through emergency communications to the single European emergency number '112'.

[i.5] ETSI TS 101 470 (V1.2.1): "Emergency Communications (EMTEL); Total Conversation Access to Emergency Services".

[i.6] ETSI TS 122 228 (V19.0.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Service requirements for the Internet Protocol (IP) multimedia core network subsystem (IMS); Stage 1 (3GPP TS 22.228 version 19.0.0 Release 19)".

[i.7] ETSI TS 103 478 (V1.3.1): "Emergency Communications (EMTEL); Pan-European Mobile Emergency Application".

[i.8] ETSI TS 103 755 (V1.1.1): "Emergency Communications (EMTEL); PEMEA ESInet Shared Services".

[i.9] ETSI TS 103 871 (V1.2.1): "Emergency Communications (EMTEL); PEMEA Real-Time Text Extension".

[i.10] ETSI TS 103 872 (V1.1.1): "Emergency Communications (EMTEL); PEMEA Service Discovery Extension".

[i.11] ETSI TS 103 945 (V1.1.1): "Emergency Communications (EMTEL); PEMEA Audio Video Extension".

[i.12] ETSI ES 204 009 (V1.1.1): "Human Factors (HF); Requirements for interoperable total conversation services".

[i.13] IETF RFC 3261 (2002): "Session Initiation Protocol (SIP)", Rosenberg J., et al.

[i.14] IETF RFC 3550 (2003): "RTP: A Transport Protocol for Real-Time Applications", H. Schulzrinne et al.

[i.15] IETF RFC 3840 (2004): "Indicating User Agent Capabilities in the Session Initiation Protocol (SIP)", Rosenberg J., et al.

[i.16] IETF RFC 3841 (2004): "Caller Preferences for the Session Initiation Protocol (SIP)", Rosenberg J., et al.

[i.17] IETF RFC 4103 (2005): "RTP Payload for Text Conversation".

[i.18] IETF RFC 4575(2006): "A Session Initiation Protocol (SIP) Event Package for Conference State".

[i.19] IETF RFC 4579 (2006): "Session Initiation Protocol (SIP) Call Control - Conferencing for User Agents", Johnston A., Levin O.

[i.20] IETF RFC 4596 (2006): "Guidelines for Usage of the Session Initiation Protocol (SIP) Caller Preferences Extension", Rosenberg J., Kyzivat P.

[i.21] IETF RFC 7090 (2014): "Public Safety Answering Point (PSAP) Callback", Schulzrinne H., et al.

[i.22] IETF RFC 7852 (2016): "Additional Data Related to an Emergency Call", Gellens R., Tschofenig H., Rosen B., Marschall R., Winterbottom J.

[i.23] IETF RFC 8373 (2018): "Negotiating Human Language in Real-Time Communications", Gellens R.

[i.24] IETF RFC 8866 (2021): "SDP Session Description Protocol", Began A., et al.

[i.25] IETF RFC 9071 (2021): "RTP-Mixer Formatting of Multiparty Real-Time Text".

[i.26] ISO 9241-11:2018: "Ergonomics of human-system interaction; Part 11: Usability: Definitions and concepts".

[i.27] ETSI ES 202 975: "Human Factors (HF); Requirements for relay services".

# 3 Definition of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the following terms apply:

**accessibility:** extent to which products, systems, services, environments, and facilities can be used by people from a population with the widest range of user needs, characteristics, and capabilities, to achieve identified goals in identified contexts of use (from ISO 9241-11:2018 [i.26])

NOTE 1: Context of use includes direct use or use supported by assistive technologies.

NOTE 2: The context in which the ICT is used may affect its overall accessibility. This context could include other products and services with which the ICT may interact.

**assisting service:** service invoked during a communication, assisting the user or the call taker with specific tasks in the communication

NOTE: Typical examples of assisting services are relay services and language translation services.

**assistive technology:** any item, piece of equipment, service or product system including software that is used to increase, maintain, substitute, or improve functional capabilities of persons with disabilities or for, alleviation and compensation of impairments, activity limitations or participation restrictions

**emergency communication:** communication by means of interpersonal communications services between an end-user and the PSAP with the goal to request and receive emergency relief from emergency services [i.2]

**emergency communications system:** interconnected packet-switched network, including one or more PSAPs for emergency communication handling and additional functions such as emergency communication routing

NOTE: This interconnected network is also referred to in technical standards as the Emergency Services IP Network (ESInet). In European regulation it is also referred to as "PSAP domain" [i.4].

**Forest Guide:** special instance of a LoST server within an emergency communications system enabling mapping service entities to find routing information that lies outside their own domain

**initiation of emergency communication:** transactional process defined by sending a request to address emergency communications and subsequently receiving a final response

NOTE: This sequence explicitly establishes a technical agreement on resource allocation and media capabilities, thereby creating a connection between two endpoints that is necessary for media transmission.

**interpersonal communications service:** service normally provided for remuneration that enables direct interpersonal and interactive exchange of information via electronic communications networks between a finite number of persons, whereby the persons initiating or participating in the communication determine its recipient(s) and does not include services which enable interpersonal and interactive communication merely as a minor ancillary feature that is intrinsically linked to another service [i.2]

**modality:** way in which communication is perceived or is expressed

NOTE: The most valid examples for the present document are signed (= using sign language), written and spoken modalities.

**most appropriate PSAP:** PSAP established by responsible authorities to cover emergency communications from a certain area or for emergency communications of a certain type

**Public Safety Answering Point (PSAP):** physical location where an emergency communication is first received under the responsibility of a public authority or a private organization recognized by the Member State [i.2]

**Real-Time Text (RTT):** form of text conversation in point-to-point situations or in multipoint conferencing where the text being entered is sent in such a way that the communication is perceived by the user as being continuous on a character-by-character basis

**total conversation:** bidirectional symmetric real time transfer of motion video, real-time text and voice between users in two or more locations

**user equipment:** combined hardware and software used by a user

**user initiation of emergency communication:** human action of initiating emergency communications through the UE by dialling "112", selecting an emergency contact, pressing a dedicated button, or other action (including audio or visual command)

## 3.2 Symbols

Void.

## 3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

| | |
|---|---|
| 3GPP | 3rd Generation Partnership Project |
| AEC | Accessible Emergency Communication |
| EAA | European Accessibility Act |
| EFTA | European Free Trade Area |
| EU | European Union |
| GTT | Global Text Telephony |

NOTE: GTT is equivalent to RTT in general including circuit switched variants with lower performance than for current RTT requirements.

| | |
|---|---|
| GTT-IP | Global Text Telephony - Internet Protocols |

NOTE: GTT-IP is equivalent to IP based RTT meeting all requirements on RTT.

| | |
|---|---|
| ICT | Information and Communications Technology |
| IMS | IP-Multimedia Subsystem |
| IP | Internet Protocols |
| LoST | Location to Service Translation |
| LTE | Long Term Evolution |
| MTSI | Multimedia Telephony Service for IMS |
| PEMEA | Pan-European Mobile Emergency Application |
| PLMN | Public Land Mobile Network |
| PSAP | Public Safety Answering Point |
| RTP | Real Time Protocol |
| RTT | Real-Time Text |
| SIP | Session Initiation Protocol |
| UE | User Equipment |
| VoIP | Voice over IP |

# 4 Operational Profile

The technical requirements of the present document apply under the operational profile for the equipment and services, which shall be in accordance with the requirements of the present document and its intended use, but as a minimum, shall be that specified in the applicable operational scenarios for testing contained in clause B.4.2 of the present document. The equipment and services shall comply with all the technical requirements of the present document when operating within the boundary limits of the operational profile defined by its intended use.

# 5 Architecture of functional entities

Figure 5.1 presents a symbolic figure over the functional entities participating in the emergency communication and the interfaces between them.

The user equipment resides in an originating service, where the user can initiate emergency communications, perform emergency communications and receive emergency communication callback.

The originating communication service initiates emergency communications through an interface with an emergency communications system (PSAP domain).

The hierarchical architecture routes communication to the designated emergency communications system (PSAP domain) responsible for emergency handling within the target area (referred to as "other emergency communications system"). The Forest Guide is the topmost element in this architecture, functioning as a specialized server, as described in ETSI TS 103 479 [2], clause 5.3. This design enables mapping service entities to retrieve routing information that is external to their emergency communications system.

Routing based on location and other factors takes place so that the most appropriate PSAP receives the communication setup and starts handling it.

Information in the communication establishment, either automatically provided, or manually with the call taker and the user concludes further details in the handling of the emergency communication, e.g. if any assisting service will be invoked in the communication.

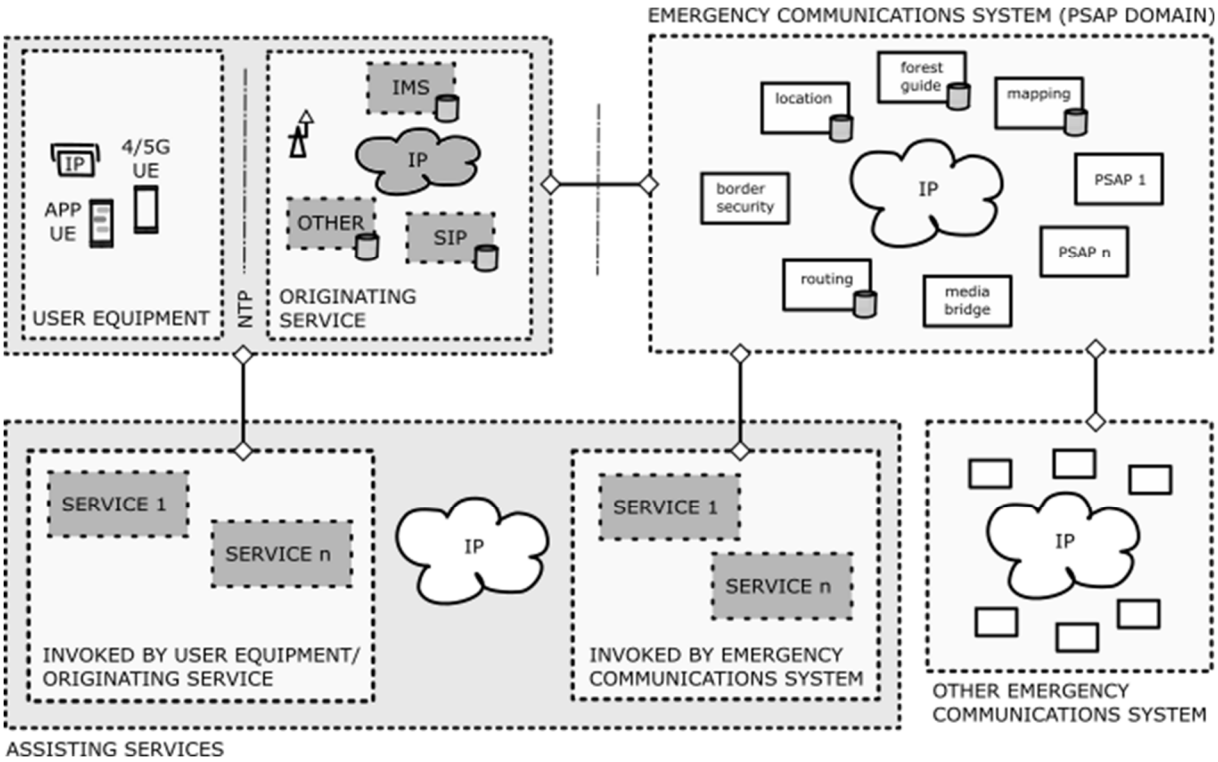


**Figure 5.1: Conceptual architecture of emergency communications domains**

IP Multimedia Subsystem (IMS) and Session Initiation Protocol (SIP) are both integral components in current communication systems of originating service, but they serve different purposes and have distinct features. IMS works with multiple access networks, including Wi-Fi®, LTE, and 5G, and provides a standardized platform for mobile network operators to deliver multimedia services. SIP is used in traditional Voice over IP services.

- Although SIP is a component of IMS, there are aspects of accessible emergency communication that need to be considered differently for IMS and SIP based communication system. For this reason, both solutions required for accessible emergency communication are described in detail in the present document. For the user equipment and the communication service within the originating service domain, the range of technologies to be implemented are: IMS based, using packet switched technologies in mobile or fixed networks, using the specifications being developed and maintained by 3GPP, available from ETSI and introduced in ETSI TS 122 228 [i.6].

- SIP based, meaning equipment and services using the session initiation protocol SIP (IETF RFC 3261 [i.13]) in a general way, commonly on the Internet. This is the technology specified for the packet switched emergency communications systems and interfaces to PSAPs and often used by Voice and multimedia over IP (VoIP) services.

The present document includes also a category called "other technologies for emergency communications". That includes any other technology than the above intended for communication establishment and media communication with potential to implement the requirements on accessible and interoperable emergency communication. One reason to introduce this category is to indicate a potential for evolution of emergency communications without causing fragmentation and degradation of service level.

Within clause 6 of the present document, functional requirements are assigned specific labels to facilitate reference and traceability. These labels are systematically repeated in clauses 7 through 10, and in the test Annex B, appearing in parentheses alongside the relevant technical requirements or test for a given component of, or functional entity within, the introduced emergency communications architecture (figure 5.1). This approach ensures that it is clear which technical requirements need to be met by each individual component or functional entity within the emergency communications chain to resolve the functional requirements of clause 6, and where it is tested in Annex B. The same method is used to link requirements for information in clause 11 of the present document with the corresponding test in clause B.11.

# 6 Accessible emergency communication

## 6.1 General

Making sure that emergency communications are accessible to persons with a range of capabilities implies considerations on many levels. Annex E describes the use considerations that determine the need for the functional requirements contained in the present clause 6. These functional requirements concern interoperability and accessibility aspects of the complete chain of emergency communication technology including the user equipment, interpersonal communications services, emergency communications systems, as well as relay services and other assisting services.

NOTE: An explanatory picture (figure 5.1) is included in clause 5.

All requirements or recommendations in clause 6 of the present document are clearly labelled to enable reference to them in the present document. Thereby it is possible to follow up how a functional requirement can be fulfilled. The label consists of three parts: three letters, being AEC for the main area: accessible emergency communication; two letters indicating a sub-area (example ML for modality and language) and a sequence number. The labels are repeated where the requirements are met by a technical requirement. The labels are also used in Annex B to indicate where a function is tested.

A cross-reference table is provided in Annex D, providing the clause numbers where requirements are provided corresponding to the functional requirements labels and clauses.

Many aspects of accessible emergency communication are described in ETSI TS 101 470 [i.5], where the total conversation access to emergency communications is specified. The use of media for different purposes is described and implementations in various technical environments are specified.

## 6.2 Modality and language

Proper support for the modalities and languages in communication managed by the user in emergency is a prerequisite for efficient emergency communications. The means for provision of such support is by the user or user equipment providing information about the preferences and capabilities for modality and language. For the PSAP it is to collect this information and assess and decide how to best provide the support needed, by routing to suitable call takers and possible invocation of assisting services. Modality competence has two directions and therefore, can be different for the two directions of expression and perception. The settings are expected to be part of the user profile available in the user equipment to be used in emergency communication establishment.

To support speech as well as other communication modalities, accessible emergency communications:

AEC-ML-01: shall enable users to set their modality and language preferences in a user profile.

NOTE 1: The modalities include signed, written and spoken expression carried in video, real-time text and audio media together called total conversation enabling language use in all three modalities.

AEC-ML-02: shall enable the users to set their modality and language preferences separately for expression and perception.

NOTE 2: An often-appearing preference for accessibility reasons is to get received speech complemented with a received real-time text representation of the speech to enable an assured perception of the contents of the speech. That causes a preference for speech expression and both speech and real-time text perception.

AEC-ML-03: shall use the language selected for the user interface of the user equipment as default language preference, if not set by the user.

AEC-ML-04: shall provide a means of transmitting information on modality and language unchanged to the PSAP at initiation of emergency communication.

AEC-ML-05: shall enable the emergency communications system to extract the language and modality preference information and include it in the routing decision.

AEC-ML-06: shall upon PSAP answering emergency communication, send a greeting and a brief standardized question in the enabled media.

NOTE 3: A brief standardized question can be "112, what is your emergency?" The question is assumed to be expressed in the preferred language and modality.

AEC-ML-07: shall upon PSAP or test PSAP answering an emergency communications test session, send a text response containing the received location, modality and language preferences and other additional data provided by the user.

AEC-ML-08: shall provide a means of transmitting information on assisting services desired in the communications unchanged to the PSAP at initiation of emergency communication.

AEC-ML-09: shall enable the emergency communications system to extract any information on the preferred assisting service for modality or language translation to be used and include the indicated service in the emergency communication.

## 6.3 User interface and general accessibility

Emergency communications users are best provided with emergency communications when such communications are supported by the end user equipment and electronic communications used in everyday communication.

The user interface and communication features used for accessible emergency communications shall:

AEC-UI-01: comply with the applicable accessibility requirements of EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11, and 13.

AEC-UI-02: provide a means to initiate a general emergency communication recognized as 112.

NOTE 1: Even if dialling the number "112" is a common way for a user to initiate an emergency communication, pressing an emergency call button can be more accessible than operating a numeric keypad. With the emergency call button solution, a risk for communication initiation by mistake increases. Other ways to initiate the emergency communication without exactly relating it to a number could be considered e.g. because of accessibility reasons.

NOTE 2: The means for the user to initiate the emergency communications in accessible ways to be accessible are expressed by AEC-UI-01.

AEC-UI-03: support the input and output of voice.

AEC-UI-04: support the input and output of real-time text.

AEC-UI-05: support the input and output of video.

The user interface used for accessible emergency communications may:

AEC-UI-06: provide means to include services or specific features thereof specialized in different communication modalities and languages or motivated by accessibility reasons.

NOTE 3: This may be a way to request connection of both a relay service and initiate emergency communication in one user action.

AEC-UI-07: support the input and output of text messaging.

## 6.4 Communication features

### 6.4.1 General

Clause 6.4 of the present document specifies general communications operations used in the processing of emergency communications.

### 6.4.2 Session control and emergency contextual information

AEC-SC-01: The user initiation of emergency communication shall result in established emergency communication including the desired communication media and the needed service.

NOTE: The device detects that this is an emergency communication request and the user input is mapped to the emergency type.

The initiation of emergency communication shall:

AEC-SC-02: include accurate location information.

AEC-SC-03: include information describing the desired media.

AEC-SC-04: include an identifier or address of the user equipment of a type and content suitable to be used for emergency callback.

AEC-SC-05: support the technical possibility to establish and handle the media best matching the media preferred by the user and the media supported by the parties involved.

AEC-SC-06: include other contextual information about the user and the emergency, if available, to enable the communication to be routed to the most appropriate PSAP, considering accessibility factors.

Once the user emergency communication is received by the emergency communications system, the emergency communications system shall:

AEC-SC-07: when the communication is placed in a queue (is in a wait state), send the information about the wait state in all enabled media, informing the user about this status through all activated media.

### 6.4.3 Routing

Depending on the national organization of emergency communications, multiple factors influence routing of the emergency communication from the user in emergency. Those factors include responsibility over the location of the emergency, the load of the PSAP, and additional factors that may be of concern in decision to determine the most appropriate PSAP. The additional factors are technical capability of handling the media that the user in emergency requests, the capabilities of given PSAP that depend on the competence of the call takers in handling the preferred sign language or spoken or written language, their experience in assessing the needs of persons with disabilities and invoking appropriate support in the communication.

To achieve routing to the most appropriate PSAP in accessible emergency communications, an emergency communications system shall:

AEC-RO-01: have a mapping hierarchy of PSAP regions of responsibility, including those of remote interconnected emergency communications systems.

NOTE 1: PSAP region of responsibility corresponds to a geographical area that is in practice handled by a given PSAP, i.e. it constitutes the PSAP's operational coverage. A PSAP's region of responsibility can match its jurisdiction - a geographical area over which the PSAP has the legal authority. However, PSAP's regions of responsibility may be larger or smaller than their formal legal jurisdictions.

NOTE 2: The mapping hierarchy of PSAP regions of responsibilities also identifies PSAPs delivering specific emergency service subtype e.g. mountain rescue, coast guard, etc. the request for which may be coded into the initiation of the emergency communications.

AEC-RO-02: identify a group of relevant PSAPs based on the immediately available location information (AEC-SC-02) and using mapping information of PSAP regions of responsibility (AEC-RO-01).

NOTE 3: Depending on the national organization, a group of relevant PSAPs may consist of one or more PSAPs.

AEC-RO-03: have a policy routing function to select the most appropriate PSAP, based on the location and any additional characteristics of the emergency communication, such as information on the media desired for the emergency communication (AEC-SC-03), if available, and other contextual information for the emergency communication (AEC-SC-06).

The emergency communications system shall identify the most appropriate PSAP (or group of call takers) within the group of relevant PSAPs (AEC-RO-02) by retrieving and using the following information, subject to national organization:

NOTE 4: The most appropriate PSAP may indicate an entire PSAP entity or a group of call takers within a PSAP who have best capabilities to answer the emergency request.

AEC-RO-04: preferred modalities and language preferences.

NOTE 5: Within the concept of modalities and languages are sign language use, real-time text use and speech use, with possibility to express different preferences in different directions.

AEC-RO-05: knowledge of the region of the emergency and how to request actions of first responders.

NOTE 6: This requirement reflects the national organization and if there is a preference for routing to a regional PSAP close to the location of the emergency, or if no geographical preference is assigned within the country.

AEC-RO-06: knowledge of call takers (within a PSAP) about how to communicate with persons with specific needs during communication.

NOTE 7: This knowledge may be about how it is to communicate in sign language, or with persons with different kinds of disabilities.

AEC-RO-07: location information (AEC-SC-02) for routing decision within the PSAP region of responsibility.

AEC-RO-08: information on how to use mechanisms to support users travelling to other countries than the home country (e.g. availability of contact and service details and communication addresses to relay services, language translation services and PSAPs in other countries and regions, and information on how to invoke them in communications).

NOTE 8: For some cases combinations of PSAPs or PSAP and assisting service may best correspond to the term "most appropriate PSAP".

AEC-RO-09: media information provided in the connection setup to select the PSAP with the best match.

### 6.4.4 Transferred emergency communications

When transfer of accessible emergency communications is available, the emergency communications system performing the transfer shall:

AEC-CT-01: have the means to make transfer of the communication (including all media used in the communication before the transfer) to other parties within the emergency communications system, where the original party stays as long as needed in the transferred communication and the user is not placed on hold.

AEC-CT-02: have the means to make transfer of the communication (including all media used in the communication before the transfer) to enable regional or international cooperation, if coordination between emergency services in different countries is needed to resolve an emergency, where the original party stays as long as needed in the transferred communication and the user is not placed on hold.

NOTE: Examples related to accessibility is when a person with a disability visiting a country gets into an emergency and only relies on their fluent communication with a relative in the home country, who gets asked to initiate an emergency communication about the emergency case. That communication will end up in the home country and a need for cooperation appears.

### 6.4.5 Conferencing emergency communications

The conferencing functions shall:

AEC-CO-01: have means to invoke and support multiparty communications in an emergency communication (e.g. in case of a communication transfer or when including relay services), where the multiparty communication shall be able to support all media, and information be provided to the parties about the other parties and their connection status.

AEC-CO-02: if there is a difference in media support by different parties, support all common media types in common for each pair of communication parties.

NOTE 1: If in a three-party conference only one party does not support RTT, ensure that RTT is still available for the other two parties.

AEC-CO-03: have the means to invoke multiparty communications to enable international cooperation if coordination between emergency services in different countries is required to resolve an emergency.

NOTE 2: Examples related to accessibility is when a person with a disability visiting a country gets into an emergency and only relies on their fluent communication with a relative in the home country, who gets asked to initiate an emergency communication about the emergency case. That communication will end up in the home country and a need for cooperation appears.

### 6.4.6 Callback

Accessible emergency communications shall:

AEC-CB-01: be enabled to call back to the user in emergency.

The callback feature shall have the following characteristics:

AEC-CB-02: By default, enabling the same media as used in the incoming communication.

AEC-CB-03: Having the option to vary the media composition compared to the incoming communication.

AEC-CB-04: By default, if an assisting service was included during the initial communication, include the same assisting service in the callback.

AEC-CB-05: Having the option to vary the inclusion of an assisting service.

AEC-CB-06: Use globally routable addressing achieved from the incoming communication.

## 6.5 Communication media

### 6.5.1 General

Many of the accessibility considerations are related to the availability of media for the communication suitable for the capabilities of the user in emergency. The electronic communication service used by the user in an emergency shall support multiple communication participants for all media used in emergency communication.

### 6.5.2 Audio

Audio in emergency communications is needed for spoken communication, and for providing sounds from the emergency scene for assessing the emergency.

Accessible emergency communications shall:

AEC-CM-01: include bidirectional audio media for use in the communication from the beginning of the communication and during the communication.

AEC-CM-02: provide audio communication fulfilling the requirements on audio as in EN 301 549 [1], clause 6.1 for the emergency communications related scenarios of EN 301 549 [1], clause 6.0. This includes providing negotiation for wide band audio codecs and include Recommendation ITU-T G.722 [10] among the choices between the originating communication service and the emergency communications system.

NOTE 1: Recommendation ITU-T G.722 [10] is a fallback. In most cases other more modern wide band audio codecs will be selected by negotiation.

NOTE 2: The audio frequency range is 250 Hz to 7 000 Hz.

### 6.5.3 Video

Video in emergency communications is needed for sign language communication, for enhancing understanding of spoken language, for conveying calming influence and for providing views from the scene of the emergency for efficient assessment of the emergency.

Accessible emergency communications system shall:

AEC-CM-03: provide means to include and use bidirectional video communications.

When video is provided in user equipment and originating service, accessible emergency communications shall:

AEC-CM-04: provide the user the possibility to include and use bidirectional video media in emergency communication from the beginning of the communication as well as by addition during the communication.

Accessible emergency communications shall:

AEC-CM-05: provide the possibility to disconnect video if video was established in the communication.

AEC-CM-06: when video is supported, provide video communication verified to fulfil the requirements on video as specified in EN 301 549 [1], clause 6.5 for the emergency communications related scenarios of EN 301 549 [1], clause 6.0. This includes providing negotiation for video codecs and include Recommendation ITU-T H.264 [9] at least version 10 and constrained baseline level 3.0, among the choices between the originating communication service and the emergency communications system.

NOTE: In most cases the same video coding is used by the user equipment as in the interface to the emergency communications system.

### 6.5.4 Real-time text

Accessible emergency communications shall:

AEC-CM-07: enable the inclusion and use of real-time text media.

AEC-CM-08: provide real-time text fulfilling the requirements on real-time text as in EN 301 549 [1], clause 6.2 for the emergency communications related scenarios of EN 301 549 [1], clause 6.0.

NOTE: The transport of real-time text is specified in the present document to be done by following IETF RFC 4103 [i.17] updated by IETF RFC 9071 [i.25] in the interface to the emergency communications system. In most cases the user equipment makes use of the same transport protocols.

### 6.5.5 Text messaging

Accessible emergency communications may:

AEC-CM-09: enable the user to include the text messaging in the communication as well as by addition during the communication.

AEC-CM-10: support emergency communications that started with messaging to be upgraded to a communication with real time media by adding audio and any other real time media.

NOTE: Users of sentence-wise text messaging could have a preference to use text messaging also in an emergency because of their familiarity with the user interface even if it is slower than real-time text. When the electronic communications service used by the user in emergency offers messaging for regular user-to-user communication, the service can be used also during and outside of an emergency communication.

### 6.5.6 Total conversation

Total conversation is real-time text, video and audio enabled and synchronized in a bidirectional communication and fulfilling the performance, quality, synchronization and interoperability requirements on these media set in EN 301 549 [1], clause 6 as required in clause 6.7. This includes provision of real-time text, video and audio simultaneously, all three meeting their performance requirements and audio and video being synchronized within a range of 100 milliseconds.

Accessible emergency communications in an emergency communications system shall:

AEC-CM-11: fulfil the requirements on total conversation in EN 301 549 [1], clause 6.7 for the emergency communications related scenarios of EN 301 549 [1], clause 6.0.

Accessible emergency communications in user equipment and originating service, when video is provided, shall:

AEC-CM-12: fulfil the requirements on total requirement as in EN 301 549 [1], clause 6.7 for the emergency communications related scenarios of EN 301 549 [1], clause 6.0.

NOTE: Detailed information on total conversation can be found in ETSI ES 204 009 [i.12].

## 6.6 Relay service invocation in emergency communications by the user

AEC-RS-01: when a relay service is available and requested for emergency communications by the user, the relay service shall be invoked as a three-party communication involving the user, the relay service and the PSAP, with the communication being established as soon as any party (relay service or PSAP) answers the incoming emergency communication.

NOTE 1: This immediate start of communication is in contrast to relay service invocation in non-emergency communications, when the invocation procedures of some types of relay services do not enable communication until the relay service has answered. The reason for that is to not cause confusion or embarrassment. The urgency of the emergency communication case motivates the communication to the PSAP to be connected immediately even if the relay service answering is delayed.

AEC-RS-02: The relay service and the PSAP shall be provided with information about the emergency situation.

NOTE 2: When direct RTT communication with the PSAP is available, text relay service may be not necessary.

All other aspects of requirements on accessible emergency communications apply in this case.

## 6.7 Assisting services in emergency communications

Some situations require assistance to PSAPs from other organizations or services. Such assisting services may be relay services for modality translation, language assisting services for language translation and expert assisting services for assistance in the emergency situations. See EN 301 549 [1], clause 13, and ETSI ES 202 975 [i.27].

Emergency communications system shall:

AEC-SS-01: have means to invoke assisting services in a multiparty fashion in the emergency communication.

AEC-SS-02: have means to automatically and manually include, extract and use addresses to such assisting services provided in user data related to the emergency communication.

AEC-SS-03: have means to find addresses to such assisting services in other ways for manual invocation.

AEC-SS-04: have means to establish chains of assisting services for situations where a modality translating service needs to be combined with a spoken language translation service.

Use the conference feature for the invocation and provide information to the parties about the other parties and their connection status (AEC-CO-01).

NOTE 1: This situation can e.g. appear when a sign language user causes invocation of a sign language interpreter, but there is no interpreter available for translating any spoken language supported by the PSAPs in the country of the emergency. Then also a spoken language interpreter needs to be invoked in the communication.

NOTE 2: When direct RTT communication with the PSAP is available, text relay service may be not necessary.

NOTE 3: For information on types of relay services, see ETSI ES 202 975 [i.27].

# 7 User equipment requirements

## 7.1 General

The User Equipment (UE) handles the emergency communications with the user in emergency together with the electronic communications service it resides in. The result is that the emergency communications in the interface between the service and the emergency service network are aligned with the conventions in that interface as specified in ETSI TS 103 479 [2], clause 6 except 6.1.3, 6.2, 6.3, 6.4 and 6.8. The part of the User Equipment for these procedures is specified in this clause for two closely related technologies, IMS and SIP. In general, other technologies may distribute the procedures in other ways to accomplish the same result in the emergency service network interface.

The present clause 7 has focus on factors related to accessibility of emergency communications for the user equipment. For general aspects of emergency communications, see ETSI TS 103 479 [2].

EN 301 549 [1], contains general accessibility aspects valid for the user equipment.

## 7.2 IMS based user equipment

### 7.2.1 General

The User Equipment (UE) handles the emergency communications with the user in emergency together with the IMS service it resides in. The result is that the emergency communications in the interface between the IMS service and the emergency service network are aligned with the conventions in that interface as specified in ETSI TS 103 479 [2], clause 6 except clauses 6.1.3, 6.2, 6.3, 6.4 and 6.8. The part of the User Equipment for these procedures is specified in the present clause.

The present document has focus on factors related to accessibility of emergency communications. For general emergency communication aspects, see ETSI TS 103 479 [2].

For general accessible functionality in emergency communications, see clause 6 of the present document.

For general accessible functionality of user equipment, the applicable requirements of EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11 and 13 shall be fulfilled. (AEC-UI-01)

IMS based user equipment is user equipment using the IP multimedia subsystem concept (IMS) ETSI TS 122 228 [i.6].

Real-time text (RTT) shall be supported as specified in ETSI TS 126 114 [8], in the clauses about real-time text and text; 4.2, 5.1, 5.2.3, 6.2.4, 6.3, 7.1, 7.2, 7.3.4, 7.4.4, 7.5.2.3, 7.5.3.2, 8.4, 9.4, 10.4, 12.7.4, 18.2.4, A.5, A.10, as well as EN 301 549 [1]. (AEC-CM-08), (AEC-UI-04)

NOTE 1: Real-time text is varyingly called text, real-time text, GTT, GTT-IP and RTT in the ETSI IMS documents.

NOTE 2: The reference in the paragraph above in its turn refers to the standards for RTT required by EN 301 549 [1], clause 6.2.10 alternative (b), and therefore supports interoperability. For IMS implementations it is preferred to use IMS references.

Wide band audio shall be supported as specified in ETSI TS 126 114 [8] in the clauses about audio 4.1, 5.1, 5.2.1, 6.2.2, 7.3.2, 7.4.2, 7.5.1, 7.5.2.1, 7.5.3.1, 8.2, 9.2, 10.1, 10.2. (AEC-CM-02), (AEC-UI-03)

When video is supported, it shall be supported as specified in ETSI TS 126 114 [8] in the clauses about video: 4.1, 5.1, 5.2.2, 6.2.3, 7.3.3, 7.4.3, 7.4.5, 7.5.1, 7.5.2.2, 7.5.3.1, 8.3, 9.3, 10.1, 10.3, 12.7.3, with quality as required by ETSI TS 103 479 [2], clause 6.6.2.3. (AEC-CM-03), (AEC-CM-06), (AEC-UI-05)

When video is supported, it shall be possible to include video from the beginning of the communication and to add or delete video during the communication. (AEC-CM-04), (AEC-CM-05)

When video is supported, total conversation shall be supported. This includes provision of real-time text, video and audio simultaneously, all three meeting their performance requirements and audio and video being synchronized within a range of 100 milliseconds. (AEC-CM-12)

Multiparty handling shall be supported for multiparty bridge operations as specified in ETSI TS 103 479 [2], clause 5.6 and the specific procedures required for multiparty handling of each supported media. (AEC-CT-01)

NOTE 3: These bridging procedures are based on IETF RFC 4579 [i.19].

### 7.2.2 Settings

The user equipment shall enable the user to set accessibility related preferences of importance for emergency communications. The settings shall be stored in the UE and synchronized with the communications service so that it is available for emergency communications in visited services as well as home services and during UE replacement.

These settings shall contain but are not limited to the following:

- Data about Subscriber/Owner (user) including data of interest from accessibility point of view to be provided in the Additional information in emergency communications according to ETSI TS 103 479 [2] clauses 5.4.1, 6.1.2.7 and 6.8 on use of Additional Data. (AEC-SC-06)

NOTE 1: This information is provided as specified in IETF RFC 7852 [i.22].

- Any indication of preferred modality or language shall be provided in the initiation as specified in ETSI TS 103 479 [2] clause 6.1.2.11. If the user has not made any settings about preferred modality and language, then the language of the user equipment platform shall be included as the language preference. See also clause 9.3 of the present document. (AEC-SC-05), (AEC-ML-01), (AEC-ML-02), (AEC-ML-03), (AEC-ML-04)

NOTE 2: The indication of modality and language is specified in IETF RFC 8373 [i.23].

- Preferred assisting service address shall, if specified by the user, be included in the RELATED property of the vCard element of the *SubscriberData* according to ETSI TS 103 479 [2] clauses on modality and language indication 6.1.2.8 and 6.1.2.11. (AEC-SS-02), (AEC-ML-08)

NOTE 3: This information is provided as specified in IETF RFC 7852 [i.22].

### 7.2.3 Initiation of emergency communications

The user equipment shall allow the initiation of emergency communications to start with a user initiation of emergency communications (AEC-SC-01), (AEC-UI-02), for any desired modality, language and media support.

The emergency communications shall be initiated according to the procedures specified in ETSI TS 126 114 [8], ETSI TS 122 101 [4], clause 10 except clauses 10.2 and 10.3, and ETSI TS 124 229 [7], clauses 4.7 and 5.1.6 for emergency communications in IMS. (AEC-SC-01), (AEC-SC-02), (AEC-SC-03)

NOTE 1: This implies that the SIP Request URI contains a Service URN on the form "urn:service:sos" or possibly any subservice thereof. This Request URI is maintained through the routing procedure. Routing from the user equipment to the originating IMS service is instead based on the Route header.

Location information shall be included as specified in ETSI TS 103 479 [2], clauses 6.1.2.2 and 6.1.4. (AEC-SC-02)

Any media preferences indicated by the user shall influence the initiation by including the preferred media in the initiation and include indications of preferred modalities and language if provided by the user. (AEC-SC-03), (AEC-SC-05)

The initiation of emergency communication in limited-service state (i.e. the home PLMN is not available, but another PLMN) shall be supported according to the procedures defined in ETSI TS 123 167 [6].

NOTE 2: This case is represented in clause B.4.2 scenario 1 (b) and clause 7.2.5 of the present document.

When the user equipment has access to a routable address to the user equipment, this routable address shall be included by the user equipment in the information provided with the initiation of the emergency communication. (AEC-SC-04)

Additional data including its settings for the Subscriber/Owner (user) shall be included in the Call-Info header according ETSI TS 103 479 [2], clauses 5.4.1, 6.1.2.7 and 6.8 on use of Additional Data. (AEC-SC-06)

NOTE 3: This information is provided as specified in IETF RFC 7852 [i.22].

### 7.2.4 Callback

A call back from the PSAP is indicated to the user equipment by the SIP Priority header with value "psap-callback", as specified in ETSI TS 103 479 [2], clause 5.7.

NOTE 1: The callback procedure makes use of the indication specified in IETF RFC 7090 [i.21].

Any callback from the PSAP detected by the user equipment shall be handled by the user equipment and indicated to the user as emergency communication. (AEC-CB-01)

The media shall be handled as in any incoming communication. If the user has preference for including RTT, and RTT is not included in the callback, then the user equipment shall modify the SIP dialog to add RTT as specified in ETSI TS 103 479 [2], clause 6.6.2.4. (AEC-CB-02)

If video is available in the communication service and the user responds with an indication to add video to the call, and video is not included initially in the callback, then the user equipment shall modify the SIP dialog to add video as specified in ETSI TS 103 479 [2], clause 6.6.2.3. (AEC-CB-03)

NOTE 2: The mechanism described allows the PSAP to reject media offered by the user equipment for operational reasons in any case.

### 7.2.5 Visiting regions and networks

The IMS system includes roaming functionality, which means that user equipment in a visited network performs emergency communications through the functional entities in the visited network. That causes specific considerations in roaming conditions, specified in ETSI TS 123 167 [6] and ETSI TS 124 229 [7], clauses 4.7 and 5.1.6 which user equipment in roaming conditions shall follow. (AEC-SC-01)

The UE shall in this situation be able to use the media supported by the UE and provide the required functionality to the same extent as when communicating in its home network. (AEC-CM-02), (AEC-CM-06), (AEC-CM-08), (AEC-CM-12)

NOTE: The present clause outlines the basic requirement for maintained functionality when users visit other than their home countries. All requirements apply in all operational scenarios specified in clauses 4 and B.4 of the present document. Tests for the situations with a user in a visited country are achieved by selecting corresponding scenarios and performing all tests.

### 7.2.6 Relay service invocation in emergency communications by the user

Users who are users of relay services shall be enabled to initiate establishment of relay service connection and emergency communication simultaneously. The communication shall be enabled as soon any party answers to minimize the delay. (AEC-RS-01)

The initiation may be made by the UE, initiating one connection to a preferred relay service and an emergency connection fulfilling the requirements of clause 7.2 of the present document and combining these connections in a three-party communication. (AEC-RS-01)

The relay service and the PSAP shall be provided with information about the situation and the progress of the connections. (AEC-RS-02)

Information stored in settings as specified in clause 7.2.2 shall be used as base for the relay service invocation. (AEC-RS-01), (AEC-ML-08)

NOTE 1: Ways to achieve this kind of invocation and information are specified in IETF RFC 4579 [i.19] and IETF RFC 4575 [i.18].

NOTE 2: This functionality is only feasible when the communication initiation request can combine the destination of the communication establishment with a request to invoke a relay service.

The initiation may be made by the UE requesting the combined relay service and emergency service communication to be initiated by the originating service as further specified in clause 8.2.6 of the present document. (AEC-RS-01)

If a relay service was invoked by the UE or by request from the UE in the originated emergency communication, the relay service shall be enabled to be invoked or requested to be invoked also in an emergency callback. (AEC-CB-04)

## 7.3 SIP based user equipment

### 7.3.1 General

User equipment is classified as "SIP based" in the present document when they implement IETF RFC 3261 [i.13] and IETF RFC 8866 [i.24] for session and media control and are not included within the IP Multimedia Subsystem concept (IMS) ETSI TS 122 228 [i.6].

For general accessible functionality in emergency communications, see clause 6 of the present document.

For general accessible functionality of user equipment, the applicable requirements of EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11 and 13 shall be fulfilled. (AEC-UI-01)

Real-time text (RTT) shall be supported as specified in ETSI TS 103 479 [2], clause 6.6.2.4. (AEC-CM-08), (AEC-UI-04)

Wide band audio shall be supported as specified in the wide band parts of ETSI TS 103 479 [2], clause 6.6.2.2 (AEC-CM-02), (AEC-UI-03)

When video is supported by the user equipment in general bidirectional communication, it shall be supported in emergency communication as specified in ETSI TS 103 479 [2], clause 6.6.2.3. (AEC-CM-06), (AEC-UI-05)

When video is supported, it shall be possible to include video from the beginning of the communication and add or delete video during the communication. (AEC-CM-04), (AEC-CM-05)

When video is supported, total conversation shall be supported. This includes provision of real-time text, video and audio simultaneously, all three meeting their performance requirements and audio and video being synchronized within a range of 100 milliseconds. (AEC-CM-12)

Multiparty handling shall be supported as specified in ETSI TS 103 479 [2], clause 5.6 and the specific procedures required for multiparty handling of each supported media. (AEC-CT-01)

NOTE: These bridging procedures are based on IETF RFC 4579 [i.19].

Text messaging may be supported as defined in ETSI TS 103 698 [3]. (AEC-UI-07), (AEC-CM-09), (AEC-CM-10)

### 7.3.2 Settings

The user equipment shall enable the user to set accessibility related preferences of importance for emergency communications. The settings may be stored in the user equipment or in the service or both as decided by the service.

These settings shall contain but are not limited to the following:

- Data about Subscriber/Owner including data of interest from accessibility point of view to be provided in the Additional information in emergency communications as specified in ETSI TS 103 479 [2], clause 6.1.2.7. (AEC-SC-06)

NOTE 1: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

- Any indication of preferred modality or language shall be provided in the initiation as specified in ETSI TS 103 479 [2] clause 6.1.2.11. If the user has not made any settings about preferred modality and language, then the language of the user equipment platform shall be included as the language preference. See also clause 9.3 of the present document. (AEC-SC-05), (AEC-ML-01), (AEC-ML-02), (AEC-ML-03), (AEC-ML-04)

NOTE 2: The indication of modality and language is specified in IETF RFC 8373 [i.23].

- Preferred assisting service address shall, if specified by the user, be included in the RELATED property of the vCard element of the *SubscriberData* according to ETSI TS 103 479 [2] clauses on modality and language indication 6.1.2.8 and 6.1.2.11. (AEC-SS-02), (AEC-ML-08)

NOTE 3: This information is provided as specified in IETF RFC 7852 [i.22].

### 7.3.3 Initiation of emergency communications

Emergency communications is initiated by a method for the user to initiate communication. At least one of the following methods shall be supported: dialling the 112 number, selecting a contact identified by the number 112, pressing a dedicated button marked with "112". The same way shall be available regardless of desired modality, language and media support. (AEC-UI-02)

Location information shall be included as specified in ETSI TS 103 479 [2], clauses 6.1.2.2 and 6.1.4. (AEC-SC-02)

The media preferences indicated by the user shall influence the initiation by including the preferred media in the initiation and include indications of preferred modalities and language. (AEC-SC-03), (AEC-SC-05)

A routable address to the UE shall be included by the user equipment if the UE has access to that information. (AEC-SC-04)

Additional data including the settings for the user shall be included according to ETSI TS 103 479 [2], clause 6.1.2.7. (AEC-SC-06)

NOTE 1: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

Preferred modality and language shall be indicated in the initiation according to the procedures for negotiation of human language in as specified in ETSI TS 103 479 [2], clause 6.1.2.11. If the user has not made any settings about preferred modality and language, then the language of the user equipment platform shall be included as the language preference. (AEC-ML-03), (AEC-SC-05)

NOTE 2: The indication of modality and language is specified in IETF RFC 8373 [i.23].

Preferred assisting service address shall, if specified by the user, be included in the RELATED property of the vCard element of the *SubscriberData* as specified in ETSI TS 103 479 [2], clauses 6.1.2.8 and 6.1.2.11. (AEC-ML-08)

NOTE 3: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

The emergency communications shall be initiated according to the procedures specified in ETSI TS 103 479 [2], clause 6 except 6.1.3, 6.2, 6.3, 6.4 and 6.8. (AEC-SC-01)

NOTE 4: This implies that the SIP Request URI contains a Service URN on the form "urn:service:sos" or possibly any subservice thereof. This Request URI is maintained through the routing procedure. Routing from the user equipment to the originating SIP service is instead based on the Route header.

### 7.3.4 Callback

A call back from the PSAP is indicated to the user equipment by the SIP Priority header with value "psap-callback", as specified in ETSI TS 103 479 [2], clause 5.7.

NOTE 1: The callback procedure makes use of the indication specified in IETF RFC 7090 [i.21].

Any call back from the PSAP detected by the user equipment shall be handled by the user equipment and indicated to the user. (AEC-CB-01)

The media shall be handled as in any incoming communication. If the user has preference for including RTT, and RTT is not included in the callback, then the user equipment shall modify the SIP dialog to add RTT as specified in ETSI TS 103 479 [2], clause 6.6.2.4. (AEC-CB-02)

If the user responds with an indication to add video to the call, and video is not included initially in the callback, then the user equipment shall modify the SIP dialog to add video as specified in ETSI TS 103 479 [2], clause 6.6.2.3. (AEC-CB-03)

NOTE 2: The mechanism described allows the PSAP to reject media offered by the user equipment for operational reasons in any case.

### 7.3.5 Visiting regions and networks

SIP based user equipment usually do not do anything differently in the communication procedures depending on where it is located when initiating an emergency communication.

The routing of an emergency communication in SIP starts as specified in clause 7.3.3 of the present document regardless of the location of the user equipment.

### 7.3.6 Relay service invocation in emergency communications by the user

Users who are users of relay services shall be enabled to initiate establishment of relay service connection and emergency communication simultaneously. The connection shall start as soon any party answers to minimize the delay. (AEC-RS-01)

The initiation may be made by the UE, initiating one connection to a preferred relay service and an emergency connection fulfilling the requirements of clause 7.3 of the present document and combining these connections in a three-party communication. (AEC-RS-01)

The relay service and the PSAP shall be provided with information about the situation and the progress of the connections. (AEC-RS-02)

Information stored in settings as specified in clause 7.2.2 shall be used as base for the relay service invocation. (AEC-RS-01), (AEC-ML-08)

NOTE 1: Ways to achieve this kind of invocation and information are specified in IETF RFC 4579 [i.19] and IETF RFC 4575 [i.18].

NOTE 2: This functionality is only feasible when the communication initiation request can combine the destination of the communication establishment with a request to invoke a relay service.

The initiation may be made by the UE requesting the combined relay service and emergency service communication to be initiated by the originating service as further specified in clause 8.3.6 of the present document. (AEC-RS-01)

If a relay service was invoked by the UE or by request from the UE in the originated emergency communication, the relay service shall be enabled to be invoked or requested to be invoked also in an emergency callback. (AEC-CB-04)

## 7.4 Other technologies for user equipment

If other technologies in addition to IMS and SIP are used for session and media control by the user equipment, the underlying communication service shall perform emergency communication according to the procedures described in clause 8.4 of the present document. In that case, the service shall involve the user equipment in the emergency communications procedures as specified for the interpersonal communications service in clause 8.4 of the present document. The same accessibility functional requirements in emergency communications as those for the IMS and SIP shall be fulfilled. (AEC-CB-01), (AEC-CB-02), (AEC-CB-03), (AEC-CB-04), (AEC-CM-02), (AEC-CM-04), (AEC-CM-05), (AEC-CM-06), (AEC-CM-08), (AEC-CM-12), (AEC-CT-01), (AEC-RS-01), (AEC-RS-02), (AEC-SC-01), (AEC-SC-02), (AEC-SC-03), (AEC-SC-04), (AEC-SC-05), (AEC-SC-06), (AEC-SS-02), (AEC-ML-01), (AEC-ML-02), (AEC-ML-03), (AEC-ML-04), (AEC-UI-01), (AEC-UI-02), (AEC-UI-03), (AEC-UI-04), (AEC-UI-05)

For general accessibility, the applicable requirements of EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11 and 13 shall be fulfilled. (AEC-UI-01)

# 8 Originating service requirements

## 8.1 General

The originating service handles the emergency communications with the PSAP as requested by the user equipment. The result is that the emergency communications in the interface between the communication service and the emergency communications system is aligned with the conventions in that interface as specified in ETSI TS 103 479 [2], clause 6 except 6.1.3, 6.2, 6.3, 6.4 and 6.8. The part of the originating service for these procedures is specified in the present clause 8 for IMS, SIP, and other technologies in addition to IMS and SIP.

The present clause 8 has focus on factors related to accessibility of emergency communications. For general aspects of emergency communications, see ETSI TS 103 479 [2].

For general accessible functionality of originating services. see EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11, 12 and 13.

For accessible functionality, see also clause 6 of the present document.

## 8.2 IMS based originating service

### 8.2.1 General

The IMS multimedia telephony service, to which the UE is connected when the emergency communications is established, handles the emergency communications between the user in emergency and the PSAPs. The result shall be that the emergency communications in the interface between the IMS service and the emergency communications system are aligned with the conventions in that interface as specified in ETSI TS 103 479 [2], clause 6 except 6.1.3, 6.2, 6.3, 6.4 and 6.8. The part of the originating service for these procedures is specified in clause 8.2.

The present clause has focus on factors related to accessibility of emergency communications. For general aspects of emergency communications, see ETSI TS 103 479 [2].

For accessible functionality in emergency communications, see clause 6 of the present document.

For general accessibility, the applicable requirements of EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11 and 13 shall be fulfilled. (AEC-UI-01)

IMS based multimedia telephony services implement the IP multimedia subsystem concept (IMS) ETSI TS 122 228 [i.6] and the IMS Multimedia Telephony services as specified in ETSI TS 122 173 [5].

Real-time text (RTT) shall be supported as specified in ETSI TS 126 114 [8], clauses about real-time text and text: 4.2, 5.1, 5.2.3, 6.2.4, 6.3, 7.1, 7.2, 7.3.4, 7.4.4, 7.5.2.3, 7.5.3.2, 8.4, 9.4, 10.4, 12.7.4, 18.2.4, A.5, A.10 as well as EN 301 549 [1] clause 6.2. (AEC-CM-08)

Wide band audio shall be supported as specified in ETSI TS 126 114 [8] audio related clauses 4.1, 5.1, 5.2.1, 6.2.2, 7.3.2, 7.4.2, 7.5.1, 7.5.2.1, 7.5.3.1, 8.2, 9.2, 10.1, 10.2. (AEC-CM-02)

When video is supported, it shall be supported as specified in ETSI TS 126 114 [8] video related clauses 4.1, 5.1, 5.2.2, 6.2.3, 7.3.3, 7.4.3, 7.4.5, 7.5.1, 7.5.2.2, 7.5.3.1, 8.3, 9.3, 10.1, 10.3, 12.7.3, with quality as required by ETSI TS 103 479 [2], clause 6.6.2.3. (AEC-CM-06)

When video is supported, total conversation shall be supported. This includes provision of real-time text, video and audio simultaneously, all three meeting their performance requirements and audio and video being synchronized within a range of 100 milliseconds. (AEC-CM-12)

Multiparty handling shall be supported as specified in ETSI TS 103 479 [2], clause 5.6 and the specific procedures required for multiparty handling of each supported media. (AEC-CT-01)

NOTE: These bridging procedures are based on IETF RFC 4579 [i.19].

### 8.2.2 Settings

The IMS service shall enable the user to set accessibility related preferences of importance for emergency communications. The settings are stored in the service.

These settings shall contain, but are not limited to the following:

- Data about Subscriber/Owner including data of interest from accessibility point of view to be provided in the Additional information in emergency communications as specified in ETSI TS 103 479 [2] clause 6.1.2.7. (AEC-SC-06)

NOTE: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

- Preferred modality and language. See clause 9.3 of the present document. (AEC-ML-01), (AEC-ML-02)
- Address to preferred assisting service. (AEC-SS-02), (AEC-ML-08)

### 8.2.3 Initiation of emergency communications

The emergency communications shall be initiated according to the procedures specified in ETSI TS 126 114 [8], ETSI TS 122 101 [4], clause 10 except clauses 10.2 and 10.3, and ETSI TS 124 229 [7], clauses 4.7 and 5.1.6 for emergency communications in IMS. The exchange with the PSAP shall be performed as specified in ETSI TS 123 167 [6]. (AEC-SC-01), (AEC-SC-02), (AEC-SC-03), (AEC-SC-05)

Location information shall be included as specified in ETSI TS 123 167 [6] so that it can be retrieved as specified in ETSI TS 103 479 [2], clauses 6.1.2.2 and 6.1.4. (AEC-SC-02)

The media preferences indicated by the user shall, when available, be conveyed in the initiation. (AEC-SC-03)

The initiation of emergency communication in limited-service state (i.e. the home PLMN is not available, but another PLMN) shall be supported according to the procedures defined in ETSI TS 123 167 [6].

A routable address to the user equipment shall be included in the initiation. (AEC-SC-04)

Additional data including service information and settings for the user shall, when available, be included as specified in ETSI TS 103 479 [2] clause 6.1.2.7. (AEC-SC-06)

NOTE 1: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

Preferred modality and language shall, when available, be conveyed in the initiation. (AEC-ML-04), (AEC-SC-02), (AEC-SC-06)

Preferred assisting service address shall, if specified by the user, be included in the RELATED property of the vCard element of the *SubscriberData* as specified in ETSI TS 103 479 [2] clause 6.1.2.7. (AEC-ML-08)

NOTE 2: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

### 8.2.4 Callback

Any callback from the PSAP shall be handled by the IMS service and conveyed to the user equipment. (AEC-CB-01), (AEC-CB-02), (AEC-CB-03)

The IMS service shall convey the SIP Priority header with value "psap-callback" from the PSAP to the user equipment, as specified in ETSI TS 103 479 [2], clause 5.7.

NOTE: The callback procedure makes use of the indication specified in IETF RFC 7090 [i.21].

### 8.2.5 Visiting regions and networks

Support for roaming user equipment to have emergency communications shall be provided by the visited IMS service. (AEC-SC-01)

That causes specific considerations in roaming conditions, specified in ETSI TS 123 167 [6] and ETSI TS 124 229 [7], clauses 4.7 and 5.1.6 which services and user equipment in roaming conditions shall follow. The procedures result in the emergency communication being routed in the visited country to the emergency communications system in the visited country (known as IMS local breakout). (AEC-SC-01)

If the UE supports communication in all three media of total conversation in the visiting scenario, the visited IMS shall support the communication in all the originally supported media. (AEC-CM-02), (AEC-CM-06), (AEC-CM-08), (AEC-CM-12)

NOTE 1: The present clause outlines the basic requirement for maintained functionality when users visit other than their home countries. All requirements apply in all operational scenarios specified in clauses 4 and B.4 of the present document. Tests for the situations with a user in a visited country are achieved by selecting corresponding scenarios and performing all tests.

NOTE 2: When a person with disabilities in a foreign country needs emergency communication in another modality than speech and a different language, rapid assessment and interoperable solutions are of essence. Solutions involve linking PSAPs in the visited country with relay and translation services and PSAPs in the user's home country. These specific considerations are not the focus of the present clause but are detailed in clauses 9.7 and 9.8 of the present document.

### 8.2.6 Relay service invocation requested by the user in emergency communication

When the originating service receives an initiation of an emergency communication, and analysis of user profiles or the request indicates that a relay service is also requested to be invoked, the originating service shall establish a three-party bridged communication with the inclusion of the relay service and the PSAP being requested to be done in parallel. (AEC-RS-01)

The initiation of the emergency communication shall be continued as any other emergency communication.

Information about the state of the connection establishment shall be provided to the parties. (AEC-RS-02)

NOTE: Ways to achieve this kind of invocation and information are specified in IETF RFC 4579 [i.19] and IETF RFC 4575 [i.18]. An IMS Application Server may be a suitable functional entity to perform the related functions.

Restrictions against multi-party communication during emergency communication that may be specified for the originating IMS service shall not apply for this case.

If a relay service was invoked by request from the UE in the originated emergency communication, the relay service shall be enabled to be invoked or requested to be invoked also in an emergency callback. (AEC-CB-04)

## 8.3 SIP based originating service

### 8.3.1 General

Originating services here called "SIP based" when they implement IETF RFC 3261 [i.13] and IETF RFC 8866 [i.24] for session and media control and are not included within the IP Multimedia Subsystem concept (IMS) ETSI TS 122 228 [i.6].

For accessible functionality in emergency communications, see clause 6 of the present document.

For general accessibility, the applicable requirements of EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11 and 13 shall be fulfilled. (AEC-UI-01)

RTT shall be supported as specified in ETSI TS 103 479 [2], clause 6.6.2.4. (AEC-CM-08)

Wide band audio shall be supported as specified in the wide band parts of ETSI TS 103 479 [2], clause 6.6.2.2. (AEC-CM-02)

When video is supported, it shall be supported as specified in ETSI TS 103 479 [2], clause 6.6.2.3. (AEC-CM-06)

When video is supported, total conversation shall be supported. This includes provision of real-time text, video and audio simultaneously, all three meeting their performance requirements and audio and video being synchronized within a range of 100 milliseconds. (AEC-CM-12)

Multiparty handling shall be supported as specified in ETSI TS 103 479 [2], clause 5.6 and the specific procedures required for multiparty handling of each supported media. (AEC-CT-01)

NOTE: Bridging procedures are based on IETF RFC 4579 [i.19].

### 8.3.2 Settings

The originating service shall enable the user to set accessibility related preferences of importance for emergency communications. The settings may be stored in the user equipment or in the service as decided by the service.

These settings shall contain, but are not limited to the following:

- Data about Subscriber/Owner including data of interest from accessibility point of view to be provided in the Additional information in emergency communications as specified in ETSI TS 103 479 [2], clause 6.1.2.7. (AEC-SC-06)

NOTE: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

- Preferred modality and language. See clause 9.3 of the present document. (AEC-ML-01), (AEC-ML-02)
- Address to preferred assisting service. (AEC-ML-08), (AEC-SS-02)

### 8.3.3 Initiation of emergency communications

The emergency communications shall be initiated according to the procedures specified in ETSI TS 103 479 [2], clause 6 except 6.1.3, 6.2, 6.3, 6.4 and 6.8. (AEC-SC-02), (AEC-SC-03), (AEC-SC-01)

NOTE: This implies that the Service URN inserted by the user equipment as the Request URI is maintained and the emergency communication is routed by the Route header containing an address leading to an entry into an emergency communications system.

The initiation of the emergency communication shall be routed through an entry into an emergency communications system supporting hierarchical international routing. (AEC-SC-01)

Location information shall be included as specified in ETSI TS 103 479 [2], clauses 6.1.2.2 and 6.1.4.

Any media preferences indicated by the user shall be conveyed to the PSAP to enable the communication to be routed to the most appropriate call taker to handle the communication. (AEC-SC-02), (AEC-SC-05)

A routable address to the user equipment for use in callbacks shall be included by the originating service. (AEC-SC-04)

Additional data for the service and the settings for the user shall when available be included as specified in ETSI TS 103 479 [2], clause 6.1.2.7.

NOTE: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

Preferred modality and language shall when available be conveyed in the initiation. (AEC-SC-02), (AEC-SC-05), (AEC-ML-04)

Preferred assisting service address shall when available be conveyed included in the RELATED property of the vCard element of the *SubscriberData* as specified in ETSI TS 103 479 [2], clause 6.1.2.7. (AEC-ML-08)

### 8.3.4 Callback

Any call back from the PSAP shall be handled by the SIP service and conveyed to the user equipment. (AEC-CB-01), (AEC-CB-02), (AEC-CB-03)

The SIP service shall convey the SIP Priority header with value "psap-callback" from the PSAP to the user equipment, as specified in ETSI TS 103 479 [2], clause 5.7.

NOTE: The callback procedure makes use of the indication specified in IETF RFC 7090 [i.21].

### 8.3.5 Visiting regions and networks

When an emergency communication is initiated from a region other than the home region of the user in emergency, the originating service is using the same procedure as for other cases, routing the emergency communication via an emergency communications system known to support international routing of emergency communications, as specified in clause 8.3.3 of the present document.

NOTE 1: The present clause outlines the basic method for maintained functionality when users visit other than their home countries. All requirements apply in all operational scenarios specified in clauses 4 and B.4 of the present document. Tests for the situations with a user in a visited country are achieved by selecting corresponding scenarios and performing all tests.

NOTE 2: When a person with disabilities in a foreign country needs emergency communication in another modality than speech and a different language, rapid assessment and interoperable solutions are of essence. Solutions involve linking PSAPs in the visited country with relay and translation services and PSAPs in the user's home country. These specific considerations are not the focus of the present clause but are detailed in clauses 9.7 and 9.8 of the present document.

### 8.3.6 Relay service invocation requested by the user in emergency communication

When the originating service receives an initiation of an emergency communication, and analysis of user profiles or the request indicates that a relay service is also requested to be invoked, the originating service shall establish a three-party bridged communication with the inclusion of the relay service and the PSAP being requested to be done in parallel. (AEC-RS-01)

The initiation of the emergency communication shall be continued as any other emergency communication.

Information about the state of the connection establishment shall be provided to the parties. (AEC-RS-02)

NOTE: Ways to achieve this kind of invocation and information are specified in IETF RFC 4579 [i.19] and IETF RFC 4575 [i.18].

Restrictions against multi-party communication during emergency communication that may be specified for the originating SIP service shall not apply for this case.

If a relay service was invoked by request from the UE in the originated emergency communication, the relay service shall be enabled to be invoked or requested to be invoked also in an emergency callback. (AEC-CB-04)

# 8.4 Other technologies for emergency communication

## 8.4.1 General

If other or emerging technologies in addition to IMS and SIP are used for session and media control by the user equipment, the underlying communication service shall perform emergency communication according to the procedures described in the present clause 8.4.

If other technologies in addition to IMS and SIP are used for session and media control within the originating communications service, including with its user equipment, the originating service is responsible to perform the emergency communications as required in the interface to the emergency communications system. Regardless of how these services are implemented, they shall provide an accurate location, shall make routing decisions that are consistent with the principles of the present document, and shall provide a globally routable identity or address used for the emergency callback.

All functional requirements in emergency communications specified in clause 6 of the present document that are applicable to user communication devices and interpersonal communications services, shall be fulfilled by such other technologies in addition to IMS and SIP if used for emergency communications. (AEC-CB-01), (AEC-CB-02), (AEC-CB-03), (AEC-CB-04), (AEC-CB-06), (AEC-CM-02), (AEC-CM-06), (AEC-CM-08), (AEC-CM-12), (AEC-CT-01), (AEC-ML-01), (AEC-ML-02), (AEC-ML-04), (AEC-ML-08), (AEC-RS-01), (AEC-RS-02), (AEC-SC-01), (AEC-SC-02), (AEC-SC-03), (AEC-SC-04), (AEC-SC-05), (AEC-SC-06), (AEC-SS-02)

For general accessibility, the applicable requirements of EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11 and 13 shall be fulfilled. (AEC-UI-01)

Options for interworking with ETSI TS 103 479 [2] are described in the following clauses.

## 8.4.2 Conversion to ETSI TS 103 479 emergency communication interfaces

To establish the required pan-European interoperability for emergency communications when using other technologies in addition to IMS and SIP, the following shall apply in addition to clause 8.4.1 of the present document:

- The communication between the communication service and the emergency communications system in the region of the emergency shall be as specified in ETSI TS 103 479 [2], clause 6 except 6.1.3, 6.2, 6.3, 6.4 and 6.8. In that case, any conversions needed to adapt to the procedures in the emergency communications system interface shall be done by the originating communications service.
- The procedure shall use the location information of the user in emergency to route the communication to the appropriate emergency communications system. (AEC-SC-02)
- The media preferences indicated by the user shall if available be conveyed in the initiation. (AEC-SC-05)
- A routable address to the user equipment shall be included in the initiation for use in callback situations. (AEC-SC-04). (AEC-CB-01), (AEC-CB-02), (AEC-CB-06)
- Additional data including service information and settings for the user shall if available be included as specified in ETSI TS 103 479 [2], clause 6.1.2.7. (AEC-SC-06)

NOTE: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

- Preferred modality and language shall if available be conveyed in the initiation. (AEC-SC-05), (AEC-ML-04)
- Preferred assisting service address shall be included if specified by the user. (AEC-SS-02), (AEC-ML-08)

## 8.4.3 Use of ETSI TS 103 479 together with PEMEA

### 8.4.3.1 General

In addition to IMS and SIP technologies, PEMEA specifications according to ETSI TS 103 478 [i.7] is another complementary method for establishing emergency communications.

The PEMEA specification provides standardized interfaces for multimedia emergency communications and emergency context information. Refer to ETSI TS 103 478 [i.7] for the general aspects, ETSI TS 103 871 [i.9] for RTT, ETSI TS 103 945 [i.11] for video and audio and ETSI TS 103 755 [i.8] for integration with ETSI TS 103 479 [2]. (AEC-SC-01), (AEC-SC-05), (AEC-SC-06), (AEC-ML-04)

The use of ETSI TS 103 479 [2] together with PEMEA (refer to ETSI TS 103 478 [i.7] clause 8), and ETSI TS 103 755 [i.8] shall be under conditions described in clause 8.4.3 of the present document.

Further guidelines on interoperability, re-use, and enhancement of PEMEA can be found in ETSI TS 103 755 [i.8].

#### 8.4.3.2 Initiating emergency communication with PEMEA support

When a user of a mobile application initiates emergency communications from a User Equipment (UE) as described in ETSI TS 103 478 [i.7], the application should establish the emergency communication according to the procedures defined in ETSI TS 126 114 [8], ETSI TS 122 101 [4], clause 10 except clauses 10.2 and 10.3, and ETSI TS 124 229 [7], clauses 4.7 and 5.1.6 for emergency communications in IMS. The exchange with the emergency communications system and PSAP shall in this case be performed as specified in ETSI TS 123 167 [6]. (AEC-SC-01), (AEC-SC-02), (AEC-SC-03), (AEC-SC-06)

#### 8.4.3.3 Emergency communications by IMS in regions without PEMEA support

If a mobile application discovers that a PEMEA service is not available as described in ETSI TS 103 872 [i.10], and the UE supports IMS emergency sessions as specified in ETSI TS 123 167 [6], it shall immediately establish an emergency communication according to the procedures defined in ETSI TS 126 114 [8], ETSI TS 122 101 [4], clause 10 except clauses 10.2 and 10.3, and ETSI TS 124 229 [7], clauses 4.7 and 5.1.6 for emergency communications in IMS. The exchange with the emergency communications system and PSAP shall be performed as specified in ETSI TS 123 167 [6]. (AEC-SC-01), (AEC-SC-02), (AEC-SC-03), (AEC-SC-05)

#### 8.4.3.4 Emergency communications by SIP in regions without PEMEA support

If an application discovers that a PEMEA service is not available as described in ETSI TS 103 872 [i.10], and the UE supports SIP based emergency sessions as specified in clause 8.3.3 of the present document, it shall immediately establish an emergency communication according to the procedures defined in clause 8.3.3 of the present document. (AEC-SC-01), (AEC-SC-02), (AEC-SC-03), (AEC-SC-04), (AEC-SC-05)

#### 8.4.3.5 Accessibility related details in use of PEMEA

The *emergencyDataSend* information as described in ETSI TS 103 478 [i.7], clause 6.2 includes an identity or address to be used for emergency callback. (AEC-SC-04)

To utilize the multimedia capabilities of PEMEA or to enrich emergency communications with additional media capabilities, the media and modality preferences, if indicated by the user, are conveyed in the initiation of emergency communications by the means described in ETSI TS 103 478 [i.7] in the Additional Data element in clause 13.6.2.4 "SubscriberData :- language for both ways". (AEC-ML-04)

Additional media capabilities are described in ETSI TS 103 871 [i.9] and ETSI TS 103 945 [i.11].

If language preference both ways are not specified, a general language and modality preference can be specified in the Additional Data element in clause 13.6.2.1 "SubscriberData :- vcard profile", the language field. (AEC-ML-04)

Callback shall be done by default with the same media as used in the initial communication, with the possibility to vary from that default. (AEC-CB-01), (AEC-CB-02), (AEC-CB-03)

Preferred assisting service address shall be included if specified by the user. (AEC-SS-02), (AEC-ML-08)

# 9 Emergency communications system requirements

## 9.1 General

The emergency communications system and PSAPs shall support the mandatory interfaces listed in clause 4.3 and defined in clause 6 of ETSI TS 103 479 [2] and may support optional interfaces listed in clause 4.4 and defined in clause 6 of ETSI TS 103 479 [2] to provide an interface to the originating communication services. (AEC-AI-07), (AEC-AI-08), (AEC-SC-01)

The services provided by the emergency communications system and PSAPs shall fulfil the applicable accessibility requirements of EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11, 12, 13 as well as the specific requirements of the present document. (AEC-UI-01)

## 9.2 Media

The media: video, audio and real-time text (RTT) shall be supported as specified in ETSI TS 103 479 [2], clauses 6.6.2.4, 6.6.2.2 and 6.6.2.3. (AEC-CM-01), (AEC-CM-02), (AEC-CM-03), (AEC-CM-04), (AEC-CM-05), (AEC-CM-06), (AEC-CM-07), (AEC-CM-08)

Total conversation shall be supported. This includes provision of real-time text, video and audio simultaneously, all three meeting their performance requirements and audio and video being synchronized within a range of 100 milliseconds. (AEC-CM-11)

Audio and RTT shall be supported in all media handling elements. (AEC-CM-01), (AEC-CM-02), (AEC-CM-07), (AEC-CM-08)

Multiparty handling according to ETSI TS 103 479 [2], clause 5.6 shall be supported by media handling elements and in the external interfaces. (AEC-CO-01), (AEC-CO-02)

NOTE: These bridging procedures are based on IETF RFC 4579 [i.19].

## 9.3 Modality and language indication

The following indications shall be supported by emergency communications systems and PSAPs and be used to convey the need for support of efficient communication with users with disabilities involving specific modality and language needs with call takers. (AEC-ML-03), (AEC-ML-04), (AEC-ML-05)

- Fields for negotiating human language as specified in ETSI TS 103 479 [2] clause 6.1.2.11. (AEC-SC-05), (AEC-ML-05)

NOTE 1: The indication of modality and language is specified in IETF RFC 8373 [i.23].

- Additional data in an emergency call, conveying contextual information about the user and the emergency. (AEC-SC-06)

NOTE 2: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

The following indications should be supported by emergency communications systems and PSAPs and may be used to convey the need for support of efficient connection with users with disabilities involving specific modality and language needs with call takers:

- Languages attribute used in Contact header and Language attribute in Accept-Contact header in SIP according to ETSI TS 103 479 [2], clauses 6.1.2.3 and 6.1.2.4. (AEC-ML-05)

NOTE 3: This indication is based on IETF RFC 3841 [i.16] and IETF RFC 3840 [i.15] with examples in IETF RFC 4596 [i.20].

- Lang element in xCard for Subscriber's data in additional data in an emergency call as specified in ETSI TS 103 479 [2], clause 6.1.2.7. (AEC-ML-05)

NOTE 4: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

- The "Data provider" element of "Additional Data" can be from a "Relay Provider" or an "Emergency Modality Translation" or a "Relay Provider" including "lang" elements indicating languages used in the communication as specified in ETSI TS 103 479 [2], clause 6.1.2.7. (AEC-ML-05)

NOTE 5: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

- The session description protocol Lang attribute with the use specified in ETSI TS 103 479 [2], clauses 5.2 and 5.3. (AEC-ML-05)

NOTE 6: This indication is based on the lang attribute specified in IETF RFC 8866 [i.24].

## 9.4 Routing

Routing within emergency communications systems relies on different factors to dynamically select the most appropriate PSAP capable of handling the emergency based on jurisdiction and service availability. This technical process ensures that emergency communications is forwarded immediately to a PSAP or, depending on regional responsibilities, to another emergency communications system.

Mapping procedures that are performed to route emergency communications are described in ETSI TS 103 479 [2]. To ensure international routing of emergency communications, a packet-switched infrastructure shall be operated to connect regions with each other. (AEC-RO-01)

The regional network infrastructures of emergency communications systems shall be interconnected and support the mandatory interfaces according to clause 4.3 of ETSI TS 103 479 [2] via this interconnection and may implement optional interfaces according to clause 4.4 of ETSI TS 103 479 [2] via this interconnection. (AEC-RO-01)

Mapping functions shall be deployed in a hierarchical structure (tree-like) with a Forest Guide as the element to navigate between those trees (LoST servers). Regional Forest Guides and LoST servers maintain a LoST interface, as described in in ETSI TS 103 479 [2], clause 5.3. (AEC-RO-02)

NOTE: In the context of LoST, the tree structure refers to the hierarchical arrangement of LoST servers that are responsible for mapping a location (geodetic or civic) and a service identifier (URN) to a service contact Uniform Resource Identifier (URI), such as the address of the most appropriate PSAP or the emergency communication system entry point. Lower nodes of the tree, hold the specific, authoritative mapping data for a defined service area. The conceptual root of the LoST tree (top) is corresponding to large geopolitical regions (like countries) and is responsible for delegating authority to the top-level Forest Guides. Forest Guides manage information about the coverage regions of their child nodes. For a functioning international LoST hierarchy, each country operates at least one Forest Guide and one LoST server with authoritative mappings, regardless of the PSAP model.

Routing to the most appropriate PSAP shall be performed using location information (AEC-RO-02), any type or subtype of emergency service indicated (AEC-RO-02), and relevant parts of the following accessibility related characteristics shall be enabled to influence the decisions by the routing logic: (AEC-RO-03)

- Is video offered in the communication? (AEC-RO-09)
- Is preference for a specific sign language indicated? (AEC-RO-04)
- Is preference for a specific spoken or written language indicated? (AEC-RO-04)
- Is preference for RTT indicated? (AEC-RO-04)
- Is preference for RTT in a specific language indicated? (AEC-RO-04)
- Is a call taker available with competence in the same spoken language as the assisting service? (AEC-RO-08)

Considering this information, the communication shall be routed to a suitable call taker and include if needed an assisting service and if needed a spoken language interpreter. (AEC-RO-02), (AEC-RO-04), (AEC-RO-05), (AEC-RO-06), (AEC-RO-07), (AEC-RO-08), (AEC-RO-09), (AEC-ML-08), (AEC-SS-01), (AEC-SS-02), (AEC-SS-03), (AEC-SS-04)

If language and preferred modality do not match available call takers and assisting services, the communication shall be routed to a call taker being the best match regarding media capability and language capability and have the call taker sort out best communications support in communication with the user in emergency. (AEC-RO-02), (AEC-RO-04), (AEC-RO-05), (AEC-RO-06), (AEC-RO-07), (AEC-RO-08), (AEC-RO-09)

## 9.5 Bridging

The PSAP shall have access to multiparty bridging.

The bridge operations shall include all media used in the original emergency communication.

The multiparty bridging shall be used when needed for call transfer between call takers (including call takers in other countries) where the first call taker can stay as long as needed in the communication. (AEC-CT-01), (AEC-CT-02)

The multiparty bridging shall also be possible to be used when needed for call taker training and monitoring, for including experts, for including first responders, assisting services, relay services, interpreters and foreign PSAPs. (AEC-CO-01), (AEC-CO-02), (AEC-CO-03)

The bridge shall use procedures as specified in ETSI TS 103 479 [2], clause 5.6 for the multiparty operations and be able to mix all media in ways suitable for presentation. (AEC-CO-01)

NOTE 1: These bridging procedures are based on IETF RFC 4579 [i.19].

NOTE 2: Information about state and parties in the bridged communication can be made available as notifications according to IETF RFC 4575 [i.18].

## 9.6 Callback

A PSAP shall have the possibility to call back to the equipment of the user in emergency, using the routable uri provided in the original emergency communications and the call control and media control procedures specified in ETSI TS 103 479 [2]. (AEC-SC-04), (AEC-CB-01), (AEC-CB-06)

The default action shall be to include the same media as in the original communication. (AEC-CB-02)

If an assisting service was included in the original communication by the emergency communications system, the default action shall be to include the same assisting service in the callback. (AEC-CB-04)

NOTE 1: If the assisting service instead was invoked by the UE or originating service, that same procedure will be used for invocation during emergency callback.

The call taker shall be provided with means to select other media in the call back than in the original communication. (AEC-CB-03)

The call taker shall be provided with means to exclude an assisting service which was included by the emergency communications system in the original communication and to include other assisting services in the callback. (AEC-CB-05)

The PSAP shall include the SIP Priority header with value "psap-callback" in the callback, as specified in ETSI TS 103 479 [2], clause 5.7.

NOTE 2: The callback procedure makes use of the indication specified in IETF RFC 7090 [i.21].

## 9.7 Communications handling

ETSI TS 103 479 [2] specifies communications handling for letting incoming emergency communications wait for handling by appropriate call takers. The functional accessibility requirements on the PSAP are specified in clause 6 of the present document.

To arrange for efficient answering on emergency communications from persons with various needs and capabilities, the following functionality should be supported:

- Call takers to select a brief standard phrase to answer emergency communications. If a preferred language and modality is expressed in the incoming emergency communication, it is preferred that this greeting phrase is expressed in that language and modality. Otherwise, the phrase should be expressed in all media enabled in the established emergency communication and in any suitable language. (AEC-ML-06)

When an emergency communication is in a wait state, information about the wait state shall be sent in all real time media enabled in the communication. (AEC-SC-07)

ETSI TS 103 479 [2], clause 6.1.2.10 specifies a way to briefly test the whole emergency communications chain automatically by the user equipment initiating a specifically emergency communication test transaction with a "test" mark. The emergency communications system shall answer such emergency communications test transactions by send a text response containing the received location, as specified in ETSI TS 103 479 [2], clause 6.1.2.10, extended with modality and language preferences and other additional data provided by the user equipment. (AEC-ML-07)

## 9.8 Considerations for PSAPs

### 9.8.1 General

When an emergency communication or an emergency callback communication is initiated, the actions specified in clause 9.8 of the present document shall be taken by the emergency communications systems including the PSAPs handing the emergency communication.

NOTE: Some of the considerations are of extra importance when the user in emergency is visiting another region than the home region.

### 9.8.2 LoST server for routing to PSAPs

When an emergency communication enters an emergency communications system with multiple regions, from a communication service, the emergency communication shall request information regarding routing to the PSAP responsible for the location of the emergency from a LoST server. (AEC-RO-02)

NOTE: See also clause 9.4 of the present document about hierarchical structure of international and regional routting information.

### 9.8.3 Language capabilities and inclusion of assisting services

For efficient handling of the emergency communication, when the user and the call taker have no spoken or written language capabilities in common, the PSAP and call taker shall be provided with the ability to transfer the communication to a call taker with matching language capabilities (AEC-CT-01), (AEC-CT-02) or to invoke a relay service or language translation service (or even a foreign PSAP call taker for assistance) to enable communication (AEC-SS-01), (AEC-SS-02), (AEC-SS-03), (AEC-SS-04), (AEC-CO-01), (AEC-CO-02), (AEC-CO-03).

Preferred relay service type and address may, if specified by the user, be extracted from the RELATED property of the vCard element of the *SubscriberData* according to ETSI TS 103 479 [2] clauses 6.1.2.8 and 6.1.2.11. and used for automatic or manual invocation of the assisting service (AEC-SS-02), (AEC-ML-09).

NOTE: The communication, for example, may involve the PSAP in a region and a text relay service in a user's home country, which requires strict adherence to specified interface standards for successful interoperation.

### 9.8.4 Sign language handling

All PSAPs shall have capability to invoke proper sign language competence in the emergency communication with sign language users. (AEC-ML-09), (AEC-SS-01), (AEC-SS-02), (AEC-SS-03), (AEC-SS-04), (AEC-CO-01), (AEC-CO-02)

Bridging according to clause 9.5 of the present document shall be used for such invocation.

Preferred relay service address may, if specified by the user, be extracted from the RELATED property of the vCard element of the *SubscriberData* according to ETSI TS 103 479 [2] clauses 6.1.2.8 and 6.1.2.11. (AEC-SS-02), (AEC-ML-09)

NOTE: The sign language user usually have needs to use one specific sign language which requires video media support in the answering PSAP and language competence by either the call taker or a suitable sign language interpreter.
Competence in sign languages among call takers is expected to be continued to be low, especially in foreign sign languages. Therefore, it is expected that most communications with sign language users will need support by a video relay service assigned to the user, and possibly also by a spoken language interpreter to match any gap in spoken language competence between the sign language interpreter and the call taker.
For sign language emergency communications in visited countries, it may be preferred to route this kind of communication to an English-speaking call taker to make language matching easier. The communication, involving the PSAP in the visited region and the video relay service in the user's home country requires strict adherence to specified interface standards for successful interoperation.

# 10 Relay service and other assisting services

Assisting services include relay services, language translating services and expert services, which may be invoked during emergency communications to support resolving the emergency. These specialized services facilitate the emergency communications with the assistance of a human or automated resource.

Some of the services, especially text relay service or translation services may become less used with an advent of automated tools such as speech-to-text conversation and/or translation that are available directly to the users on their communication equipment.

A common method to invoke assisting services in the communication is to include it by automatic or manual means by the emergency communications system through one multimedia communication in multiparty bridge. operations as specified in ETSI TS 103 479 [2], clause 5.6. (AEC-SS-01), (AEC-SS-02), (AEC-SS-03), (AEC-SS-04), (AEC-CO-01), (AEC-CO-02), (AEC-ML-08), (AEC-ML-09)

Another way is to be invoked by user request in emergency communication and with the invocation established by bridge operations in the UE or originating service. (AEC-RS-01), (AEC-RS-02)

Voice shall be supported as specified by (AEC-CM-02). When RTT is supported by the assisting service, it shall be supported as specified by (AEC-CM-08).

When video is supported, total conversation shall be supported. Supporting total conversation includes provision of real-time text, video and audio simultaneously, all three meeting their performance requirements and audio and video being synchronized within a range of 100 milliseconds. (AEC-CM-06), (AEC-CM-12)

Any assisting service should include "Data provider" elements of Additional Data for information to the PSAP as specified in ETSI TS 103 479 [2], clause 6.1.2.7. This information can be coded as from a "Relay Provider" or an "Emergency Modality Translation" service including language elements indicating languages and modalities used in the communication. (AEC-SS-04)

NOTE 1: The provision of Additional Data is specified in IETF RFC 7852 [i.22].

Information about the participants and progress of communication establishment shall be provided to the staff operating the assisting service as well as to the PSAP.

NOTE 2: One format of such information is notifications according to IETF RFC 4575 [i.18], provided in the conference model based on IETF RFC 4579 [i.19].

# 11 Information provision requirements

## 11.1 General on information

Clause 11 of the present document contains requirements to provide various forms of information and especially information in accessible formats and information about accessibility of products and services exclusively regarding their involvement in providing emergency communications. The requirements are valid for the following entities:

1) consumer terminal equipment with interactive computing capability, used for electronic communications services including emergency communications;

2) emergency apps;

3) electronic communications services providing emergency communications;

4) emergency communications systems including PSAP services;

5) assisting services (relay service, interpretation service and expert service used to support emergency communications) that may be involved in emergency communications.

NOTE: Even if a product is only intended for emergency communications, such as an emergency app, it is still user equipment used for the provision of electronic interpersonal communication and therefore expected to be provided with information about its accessibility features for the communication in general as well as its accessibility features in general according to other documents related to the EAA.

Labels on the requirements are used in the same way as between clause 6 and Annex B in the present document to link the requirements in clause 11 with the corresponding tests of the requirements in Annex B.

## 11.2 Accessible information formats (informative)

### 11.2.1 Accessible information in digital format

Requirements for making any information required by the present clause 11 accessible, when provided in digital formats, are specified in EN 301 549 [1], clause 12.1 for information about products and clause 12.2 for information about services.

### 11.2.2 Accessible information in non-digital format

Requirements for making any information required in the present clause 11 accessible, when provided in non-digital formats, may be found in a document related to Directive (EU) 2019/882 [i.3].

### 11.2.3 Accessible information by support services

When support services are offered, requirements for making any information required by the present clause 11 accessible through these services may be found in a document associated with Directive (EU) 2019/882 [i.3].

## 11.3 Contents of information about products involved in emergency communications

### 11.3.1 Instructions for installation and maintenance

AEC-AI-01: The product that is enabled for use in emergency communications shall be provided with publicly available instructions for the installation and maintenance of product's features that may be needed in emergency communications.

### 11.3.2 Instructions for use

AEC-AI-02. The product that is enabled for use in emergency communications shall be provided with publicly available instructions for use of the product in emergency communications, including instructions for the use of the relevant accessibility functions, how to activate them and their interoperability with assistive technologies.

### 11.3.3 Description of user interface

AEC-AI-03. The instructions required in clause 11.3.2 of the present document shall include a description indicating which of the following features are provided in its user interface for handling, control, feedback, input and output in emergency communications:

1) provides operation, information, control and orientation for emergency communications via more than one sensory channel; including providing alternatives to vision, auditory, speech and tactile elements;

2) when the product uses speech, it provides alternatives to speech and vocal input for communication, operation control and orientation;

3) when the product uses visual elements it provides for flexible magnification, brightness and contrast for communication, information and operation;

4) when the product uses visual elements, it ensures interoperability with programmes and assistive devices to navigate the interface;

5) when the product uses colour to convey information, indicate an action, require a response or identify elements, it provides an alternative to colour;

6) when the product uses audible signals to convey information, indicate an action, require a response or identify elements, it provides an alternative to audible signals;

7) when the product uses visual elements, it provides for flexible ways of improving vision clarity;

8) when the product uses audio, it provides for user control of volume and speed, and enhanced audio features including the reduction of interfering audio signals from surrounding products and audio clarity;

9) when the product requires manual operation and control, it provides for sequential control and alternatives to fine motor control, avoiding the need for simultaneous controls for manipulation, and shall use tactile discernible parts;

10) the product does not have modes of operation requiring extensive reach and great strength;

11) the product avoids triggering photosensitive seizures;

12) the product protects the user's privacy when he or she uses the accessibility features;

13) the product provides an alternative to biometrics identification and control;

14) the product is consistent in its functionality and operation within its functions for emergency communications as well as between these and the other functions of the product;

15) the product provides sufficient time for interaction;

16) the product provides the means needed for interfacing with assistive technologies;

17) when the product or its platform is a consumer terminal equipment with interactive computing capability used for the provision of electronic communication services:

    a) provides voice in emergency communications, with support for wide-band frequency range;

    b) when the product or its platform provides text functions in general, provides for real-time text in emergency communications;

    c) when the product or its platform provides video communication, total conversation is provided for emergency communications with video quality sufficient for sign language communication;

    d) provides for wireless coupling to hearing technologies during emergency communication;

18) does not interfere with assistive technologies.

NOTE 1: Emergency communications products used for emergency communications will typically also include user interface elements common for general interpersonal communication in addition. The present requirement is by its wording limited to require the provision of a description of the user interface elements that are specifically provided for emergency communications.

NOTE 2: An example of a user interface element that enhances the accessibility of emergency communications is for example a dedicated physical button on a user equipment that provides an accessible way for user initiation of an emergency communication.

NOTE 3: The detailed requirements and tests for these user interface elements are covered in EN 301 549 [1], while the requirement to provide information about their fulfilment related specifically to the use for emergency communications is placed in the present clause of the present document.

### 11.3.4 Information about product functionality

AEC-AI-04. The instructions required in clause 11.3.2 of the present document shall include a description of the product's functions that aim to address the needs of persons with disabilities, and in particular which of the following features the product provides in emergency communications:

1) provides operation, information, control and orientation for emergency communications via more than one sensory channel; including providing alternatives to vision, auditory, speech and tactile elements;

2) when the product uses speech, it provides alternatives to speech and vocal input for communication, operation control and orientation;

3) when the product uses visual elements it provides for flexible magnification, brightness and contrast for communication, information and operation;

4) when the product uses visual elements, it ensures interoperability with programmes and assistive devices to navigate the interface;

5) when the product uses colour to convey information, indicate an action, require a response or identify elements, it provides an alternative to colour;

6) when the product uses audible signals to convey information, indicate an action, require a response or identify elements, it provides an alternative to audible signals;

7) when the product uses visual elements, it provides for flexible ways of improving vision clarity;

8) when the product uses audio, it provides for user control of volume and speed, and enhanced audio features including the reduction of interfering audio signals from surrounding products and audio clarity;

9) when the product requires manual operation and control, it provides for sequential control and alternatives to fine motor control, avoiding the need for simultaneous controls for manipulation, and shall use tactile discernible parts;

10) the product does not have modes of operation requiring extensive reach and great strength;

11) the product avoids triggering photosensitive seizures;

12) the product protects the user's privacy when he or she uses the accessibility features;

13) the product provides an alternative to biometrics identification and control;

14) the product is consistent in its functionality and operation within its functions for emergency communications as well as between these and the other functions of the product;

15) the product provides sufficient time for interaction;

16) the product provides the means needed for interfacing with assistive technologies;

17) when the product or its platform is a consumer terminal equipment with interactive computing capability used for the provision of electronic communication services:

    a) provides voice in emergency communications, with support for wide-band frequency range;

    b) when the product or its platform provides text functions in general, provides for real-time text in emergency communications;

    c) when the product or its platform provides video communication, total conversation is provided for emergency communications with video quality sufficient for sign language communication;

    d) provides for wireless coupling to hearing technologies during emergency communication;

    e) does not interfere with assistive technologies.

### 11.3.5 Information about interface to assistive technology

AEC-AI-05. The instructions required in clause 11.3.2 of the present document shall include detailed descriptions regarding the interfacing of assistive devices specifically intended for emergency communication, including a list of assistive devices intended to be used in emergency communications with which the product has been tested, as well as clear indications of those devices for which compatibility has been verified.

NOTE: For most of the products used for emergency communications, the use of assistive technology is common for general interpersonal communication and the specific use for emergency communication. In such cases, the list can be limited to features specifically for the use for emergency communications, if any, while the full list is expected to be provided for the general use of the product.

## 11.4 Contents of information about services involved in emergency communications

AEC-AI-06. Services providing emergency communications shall provide information about products used for user access to emergency communication, including information about their accessibility features that are relevant for emergency communications and how they interoperate with assistive devices and services in emergency communications.

AEC-AI-07. Services providing emergency communications shall provide information about their functions provided for use in emergency communications.

AEC-AI-08. The information about services involved in emergency communications shall contain accessible information about accessibility functions of the service specifically for the use in emergency communications.

AEC-AI-09. The information on services involved in emergency communications shall contain accessible information about the interoperability with available assisting services in accessible ways.

The following notes are valid for all topics in the present clause.

NOTE 1: Assisting services include relay services, expert services and language translation services.

NOTE 2: Information on accessible formats of information can be found in clause 11.2.

NOTE 3: Interpersonal communication services involved in emergency communications are most often expected to also be used for other forms of interpersonal communication. Therefore, it may be feasible to integrate the information related to the use for emergency communication specified in the present document as a minor part in the general information about the service. For other cases, e.g. PSAPs and services related only to emergency apps, all information is expected to be provided for the emergency communications use.

## 11.5 Contents of information about services for the assessment of their accessibility

AEC-AI-10. Any service which is required or else enabled to be involved in emergency communications shall in its terms and conditions or similar publicly available document provide information about its conformance with the accessibility requirements contained in the present document, and about characteristics of the service regarding its involvement in emergency communications.

AEC-AI-11. Any service which is required or else enabled to be involved in emergency communications shall in its terms and conditions or similar publicly available document provide information about characteristics of the service regarding its involvement in emergency communications describing.

AEC-AI-12. what the service provides related to emergency communications.

AEC-AI-13. the design and the operation of the service as far as relevant for the assessment of the service involvement in emergency communications.

AEC-AI-14. how the service is accessed and used related to emergency communications.

AEC-AI-15. how the applicable functional requirements in clauses 6 of the present document are satisfied by the service.

NOTE 1: Topics may be the factors which are provided for routing to the most appropriate PSAP, the possibility to include an assisting service and how provided information can speed up that process.

AEC-AI-16. how products used by users during provision of the service meet the applicable requirements in clauses 6 and 7 of the present document with indications of how these functions relate to emergency communications and its accessibility.

NOTE 2: Topics may be settings for language and modality and relay service address and how they may influence efficiency, it can be about use of RTT, video and audio media, and about accessible ways to make user initiation of "112" communications.

AEC-AI-17. procedures applied on the service to demonstrate compliance of the service delivery process with the relevant requirements of the present document.

AEC-AI-18. how users can submit complaints about the service including in accessible ways.

NOTE 3: Information on accessible formats is found in clause 11.2 of the present document.

NOTE 4: Other directives, may also be applicable for provision of information on a service.

# Annex AA (informative): Relationship between the present document and the essential requirements of Directive (EU) 2019/882

The present document has been prepared under the Commission's standardisation request C(2022) 6456 final [i.1] to provide one voluntary means of conforming to the essential requirements of Directive (EU) 2019/882 on the accessibility requirements of products and services [i.3].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table AA.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

Table AA.1 presents the relationship between the present document and the essential requirements of Directive (EU) 2019/882 [i.3].

NOTE: When applied by reference from Annex AB of the present document, the information in the title and rows of table AA.1 is valid inter alia for the range of products and services covered in the other Directive referring to Annex AB of the present document.

**Table AA.1: Relationship between the present document and the essential requirements of Directive (EU) 2019/882**

| ETSI EN 303 919 | | | | | |
|---|---|---|---|---|---|
| Requirement | | | | Requirement Conditionality | |
| **No** | **Description** | **Essential requirements of Directive** | **Clause(s) of the present document** | **U/C** | **Condition** |
| 1 | Requirements on the provision and contents of information about products | Annex I, Section I; (1) (b) provision and contents of information about products used for the provision of emergency communications not placed on the product itself | 11.3.2, 11.3.3, 11.3.4, 11.3.5 | U | |
| 2 | Accessibility of user interface and functionality design of **products in general used for providing** emergency communications | Annex I, Section I; (2) a-n as referred to by Annex I; Section III; (a) for services of Article 2(2)(a) | 6.3, 7.1, 7.2.1, 7.3.1, 7.4 | U | |
| 3 | Accessibility of user interface and functionality of **terminals used for electronic communications services for emergency communication** | Annex I; Section I; (2) o (iii) as referred to by Annex I; Section III; (a) for services of Article 2(2)(a) | 6.3, 6.4, 6.5, 7 | U | |
| 4 | Providing accessible instructions for products used to provide emergency communications | Annex I; Section II (b) | 11.3.1 | U | |
| 5 | Providing **accessible information** about the services and products used for the services | Annex I; Section III; (b) for services of Article 2(2)(a) | 11.4 | U | |
| 6 | Electronic communications **services** including emergency communications **shall provide real-time text in addition to voice** | Annex I; Section IV (a)(i) | 6.5.2, 6.5.4, 8.2.1, 8.3.1 | U | |

| ETSI EN 303 919 | | | | | |
|---|---|---|---|---|---|
| Requirement | | | | Requirement Conditionality | |
| No | Description | Essential requirements of Directive | Clause(s) of the present document | U/C | Condition |
| 7 | Electronic communications **services** including emergency communications shall **provide total conversation where video is provided in addition to voice** | Annex I; Section IV (a)(ii) | 6.5.6, 8.2.1, 8.3.1 | C | When video is provided by the electronic communication service and the user equipment |
| 8 | Electronic communications **services** including emergency communications **shall synchronize media** | Annex I; Section IV (a)(iii) | 6.5, 8.2.1, 8.3.1 | U | |
| 9 | Electronic communications **services** including emergency communications **shall provide the emergency communications to the most appropriate PSAP** | Annex I;Section IV (a)(iii) | 6.4.3, 8, 9.4, 9.8.2 | U | |
| 10 | Electronic communications **services** including emergency communications **shall ensure interoperability with assistive technologies** | Annex I, Section IV (a) | 6.3, 7.1 | U | |
| 11 | The emergency communications enables **two-way interactive communication** between the **end-user with disabilities and the PSAP** | Annex I, Section IV (a) referring to Article 109 of Directive (EU) 2018/1972, amended by the Commission delegated regulation (EU) 2023/444 [i.4] Article 4 (a) | 6.4.2, 6.5, 6.6, 6.7, 7.2, 7.3, 8.2, 8.3, 8.4, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 10 | U | |
| 12 | The emergency communications is **available in a seamless way,** without pre-registration, to end-users with disabilities **travelling in another Member State** | Annex I, Section IV (a) referring to Article 109 of Directive (EU) 2018/1972, amended by the Commission delegated regulation (EU) 2023/444 [i.4] Article 4 (b) | 6.4.2, 6.4.3, 6.5, 7.2.3, 7.2.5, 7.3.3, 7.3.5, 8.2.3, 8.2.5, 8.3.3, 8.3.5, 8.4, 9.4, 9.8 | U | |
| 13 | The emergency communications is routed without delay to the **most appropriate PSAP that is qualified and equipped to appropriately answer** and process the emergency communications from end-users with disabilities | Annex I, Section IV (a) referring to Article 109 of Directive (EU) 2018/1972, amended by the Commission delegated regulation (EU) 2023/444 [i.4] Article 4 (d) | 6.4.2, 6.4.3, 6.4.9, 8.2.3, 8.3.3, 9 | U | |
| 14 | Equivalent levels of accuracy and reliability of **caller location information** are ensured for the emergency communications for end-users with disabilities as for emergency calls by other end-users | Annex I, Section IV (a) referring to Article 109 of Directive (EU) 2018/1972, amended by the Commission delegated regulation (EU) 2023/444 [i.4] Article 4 (e) | 6.4.2, 6.4.3, 7.2.3, 7.3.3, 8.2.3, 8.3.3, 8.4, | U | |

| ETSI EN 303 919 | | | | | |
|---|---|---|---|---|---|
| Requirement | | | | Requirement Conditionality | |
| No | Description | Essential requirements of Directive | Clause(s) of the present document | U/C | Condition |
| 15 | Member states shall ensure that emergency communications and caller location information are **routed without delay to the most appropriate PSAP** | Annex I, Section IV (a) referring to Article 109 of Directive (EU) 2018/1972, amended by the Commission delegated regulation (EU) 2023/444 [i.4] Article 5 | 6.4.3, 9.4, 9.8.2 | U | |
| 16 | **Answering emergency communications** shall include functions and **procedures for persons with disabilities** | Annex Section V, first paragraph | 9.3, 9.4, 9.7, 9.8, 10 | U | |
| 17 | **Answering** emergency communications shall use **the same means as in the received** communications | Annex I; Section V, second paragraph | 6.4.2, 9.2, 9.4, 9.8, 10 | U | |
| 18 | Emergency communications to the single European emergency number '112' shall be **appropriately answered** | Annex I; Section V, second paragraph | 6.2, 9.4, 9.7 | U | |
| 19 | Emergency communications to the single European emergency number '112' shall be appropriately answered, **by the most appropriate PSAP** | Annex I; Section V, second paragraph | 6.4.3, 9.7, 9.8 | U | |
| 20 | Emergency communications to the single European emergency number '112' shall be appropriately answered**, by using synchronized voice and text (including real-time text** | Annex I; Section V, second paragraph | 6.5.2, 6.5.4, 6.5.5, 9.2 | U | |
| 21 | Emergency communications to the single European emergency number '112' shall be appropriately answered, **where video is provided, voice, text (including real-time text) and video** | Annex I; Section V, second paragraph | 6.5.3, 6.5.6, 6.7, 9.2 | U | |
| 22 | Emergency communications to the single European emergency number '112' shall be appropriately answered, where video is provided, voice, text (including real-time text) and **video synchronized as total conversation** | Annex I; Section V, second paragraph | 6.5.6, 9.2 | U | |

| ETSI EN 303 919 | | | | | |
|---|---|---|---|---|---|
| Requirement | | | | Requirement Conditionality | |
| No | Description | Essential requirements of Directive | Clause(s) of the present document | U/C | Condition |
| 23 | Include the information assessing how the service meets the accessibility requirements referred to in Article 4 in the general terms and conditions, or equivalent document<br><br>Provide information demonstrating that the service delivery process and its monitoring ensure compliance of the service with point 1 of this annex and with the applicable requirements of this Directive | Annex V, points 1 and 3 | 11.5 | C | Services involved in emergency communications |

**Key to columns:**

**Requirement:**

**No** A unique identifier for one row of the table which may be used to identify a requirement.

**Description** A textual reference to the requirement.

**Essential requirements of Directive**

Identification of article(s) defining the requirement in the Directive.

**Clause(s) of the present document**

Identification of clause(s) defining the requirement in the present document unless another document is referenced explicitly.

**Requirement Conditionality:**

**U/C** Indicates whether the requirement is unconditionally applicable (U) or is conditional upon the manufacturer's claimed functionality of the product or the providers claimed functionality of a service (C).

**Condition** Explains the conditions when the requirement is or is not applicable for a requirement which is classified "conditional".

Presumption of conformity stays valid only as long as a reference to the present document is maintained in the list published in the Official Journal of the European Union. Users of the present document should consult frequently the latest list published in the Official Journal of the European Union.

Other Union legislation may be applicable to the product(s) and services falling within the scope of the present document.

# Annex AB (informative): Relationship between the present document and the essential requirements of other Directives according to Directive 2019/882 Section VI of Annex I

The present document has been prepared under the Commission's standardisation request C(2022) 6456 final [i.1] to provide one voluntary means of conforming to the essential requirements of Directive 2019/882 on the accessibility requirements of products and services [i.3].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table AA.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of other Directives and associated EFTA regulations according to Directive 2019/882 [i.3] Section VI of Annex I.

The presumption to fulfil the relevant obligations set out in other Union acts concerning features, elements or functions of products and services requires the following requirements that are listed in table AB.1 apply to all products and services within the scope of that other Directive.

When applying the references to table AA.1 from table AB.1, the expressions about for which products and services the tables and rows are valid are intended to be read as replaced inter alia with the products and services covered by the other Directive.

**Table AB.1: Relationship between the present document and the additional accessibility requirements related to other Directives (Directive 2019/882/EU, Annex I, Section VI)**

| ETSI EN 303 919 | | | | | | |
|---|---|---|---|---|---|---|
| Requirement | | | | | Requirement condition | |
| **No** | **Essential requirements of Directive: Annex I Section VI** | **Conditions (from EAA)** | **Description (from EAA)** | **Clause(s) of the present document** | **U/C** | **Condition** |
| 1 | 1(a) | Information about products | The accessibility of the information concerning the functioning and accessibility features related to products complies with the corresponding elements set out in point 1 of Section I of EAA Annex I, namely information on the use of the product provided on the product itself and the instructions for use of a product, not provided in the product itself but made available through the use of the product or other means such as a website. | Clauses for applicable requirements referenced from table AA.1 Row 1 | U | |

| ETSI EN 303 919 | | | | | | |
|---|---|---|---|---|---|---|
| Requirement | | | | | Requirement condition | |
| **No** | **Essential requirements of Directive: Annex I Section VI** | **Conditions (from EAA)** | **Description (from EAA)** | **Clause(s) of the present document** | **U/C** | **Condition** |
| 2 | 1(b) | Accessibility of products | The accessibility of features, elements and functions of the user interface and the functionality design of products complies with the corresponding accessibility requirements of such user interface or functionality design set out in point 2 of Section I of EAA Annex I. | Clauses for applicable requirements referenced from table AA.1 Rows 2, 3 | U | |
| 3 | 1(c) | Products | The accessibility of the instructions for the installation and maintenance, of the product not provided in the product itself but made available through other means such as a website, requirements set out in Section II of EAA Annex I. | Clauses for applicable requirements referenced from table AA.1 Row 4 | U | |
| 4 | 2 | Services | The accessibility of the features, elements and functions of services complies with the corresponding accessibility requirements for those features, elements and functions set out in the services-related Sections of EAA Annex I. | Applicable clauses referenced from table AA.1 Row 5-22 | U | |

**Key to columns:**

**Requirement:**

**No** A unique identifier for one row of the table which may be used to identify a requirement.

**Description** A textual reference to the requirement.

**Essential requirements of Directive**

Identification of article(s) defining the requirement in the Directive.

**Clause(s) of the present document**

Identification of clause(s) defining the requirement in the present document unless another document is referenced explicitly.

**Requirement Conditionality:**

**U/C** Indicates whether the requirement is unconditionally applicable (U) or is conditional upon the manufacturer's claimed functionality of the product or the providers claimed functionality of a service (C).

**Condition** Explains the conditions when the requirement is or is not applicable for a requirement which is classified "conditional".

Presumption of conformity stays valid only as long as a reference to the present document is maintained in the list published in the Official Journal of the European Union. Users of the present document should consult frequently the latest list published in the Official Journal of the European Union.

Other Union legislation may be applicable to the product(s) and services falling within the scope of the present document.

# Annex B (normative): Testing for compliance with technical requirements

## B.1 Introduction

This annex contains text cases corresponding to the requirement clauses in the main body of the present document.

For ease of reference, the clause numbering is in line with the clause numbering for the corresponding requirements. Therefore, there are empty clauses in this annex corresponding to clauses where no requirements are expressed.

## B.2 Specific concerns when testing emergency communications

When testing emergency communications, it is of importance that the tests are done in a way that they do not cause excessive load on the PSAP. Whenever possible, the test method described in ETSI TS 103 479 [2], clause 6.1.2.10 should be used. When test communications which engage personnel in an operational PSAPs are planned, this should be in agreement with the target PSAP. An alternative is to establish specific test environments.

## B.3 Testing methods

The tests are intended to be possible to be performed by human initiation and human observations. That implies that in most cases the whole technical chain of entities involved in emergency communications is involved, even if the test is intended to focus on the performance of a specific entity in the chain. This approach results in that failure of a test can be caused by malfunction of other entities in the chain than the entity under test. Therefore the normal action is case of a failing test would be to investigate which entity caused the failure rather than directly regarding the entity under test to have failed.

The tests are intended to be possible to perform both in test environments and in implemented services.

The tests contain procedure steps to perform the tests. These procedure steps contain actions to do, verification steps to just verify that the procedure is progressing in the intended way, and checks of the requirements.

The tests are provided in clauses B.6 through B.11:

- Clause B.6 tests determine conformance with the accessible emergency communications functional requirements contained in clause 6 of the present document. Each of the functional requirements is labelled with a unique "AEC-*-*" label. Depending on the part of the emergency chain under test, different tests will be needed. The applicable set of tests is identified in clause B.6 for each of the "AEC-*-*" requirement.
- Clauses B.7 through B.10 contain tests for determining conformance of user equipment (B.7), originating communication service (B.8), emergency communications system including PSAP (B.9), and relay service and other assisting services (B.10).
- Clause B.11 contains tests for determining conformance with the clause 11 requirements.
- The functional requirements labels corresponding to the functions tested in each test clause appear in the first row of each test clause. The labels are also included at the end of the **check** procedure steps where the function corresponding to the label is verified. In some cases, labels are included in procedure steps, also marked **Check**, where a verification of functionality is performed without being the central topic of the test clause.

# B.4 Operational scenarios for testing

## B.4.1 Introduction of operational scenarios for testing

Tests defined in the present document shall be carried out at representative points within the boundary limits of the operational profile of the products and services under test defined by its intended use, which, as a minimum, shall be that specified in the applicable operational scenarios for testing contained in clause B.4.2 of the present document.

Where technical performance of the products or services under test can be expected to vary depending on the selected operational scenario, tests shall be carried out under a sufficient variety of operational scenarios as specified in the present clause, to give confidence of compliance with the applicable technical requirements. The variations for video support are included in the test specifications, while the variations in other aspects of operational scenarios are covered by explicit test clauses.

Testing may be performed in variations of the provided test scenarios as motivated by any reason appearing during testing.

## B.4.2 Set of operational scenarios for testing

The tests shall be performed at least in the operational scenarios, consisting of the applicable combinations of one sub-point of each numbered point in the following list of situations.

NOTE 1: "Applicable" means cases when the item under test is required or otherwise intended to support the situation to be tested.

NOTE 2: The specified scenario variations form the minimal set. Any other variations can be added, e.g. with cases where only voice media is enabled, which is a valid accessibility case for users in need of accessible user interfaces or good quality audio or speech-to-speech relay services.

1) Location

   a) The user equipment is in the home country of the user.

   b) The user equipment is in a visited country.

2) Video

   a) Including video in the communication.

   b) Not including video in the communication.

3) Relay service

   a) No relay service included in the communication.

   b) The emergency communication with the request for invocation of the relay service. Test for each of the available relay service types as specified in ETSI ES 202 975 [i.27].

# B.5 Architecture of functional entities

Clause 5 of the present document has no testable requirements.

# B.6 Accessible emergency communication

## B.6.1 General (informative)

Clause B.6 of the present document specifies which tests provided in clauses B.7 through B.10 of the present document will be needed to determine conformance with the functional requirements of clause 6 of the present document. One functional requirement AEC-*-* typically needs to be met by one or more parts of the emergency communications chain (user equipment, originating service, emergency communications system or assisting services). For each of the clause B.6 subclauses there is first an overview of the applicable technical tests (contained in clauses B.7 through B.10), followed by the functional test procedure. The clause B.6 functional tests can be performed for cases when it is of interest to verify the functionality of the whole emergency communications chain without focusing on any of its components.

For testing specific elements in the chain, the technical tests in clauses B.7 through B.10 are provided. These tests are intended to show compliance with that the relevant functional requirements for the specific element of the chain are met.

## B.6.2 Modality and language

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-ML-01 | | | |
| | User equipment: | IMS | B.7.2.2 |
| | | SIP | B.7.3.2 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.2 |
| | | SIP | B.8.3.2 |
| | | Other | B.8.4.1 |
| AEC-ML-02 | | | |
| | User equipment: | IMS | B.7.2.2 |
| | | SIP | B.7.3.2 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.2 |
| | | SIP | B.8.3.2 |
| | | Other | B.8.4.1 |
| AEC-ML-03 | | | |
| | User equipment: | IMS | B.7.2.2 |
| | | SIP | B.7.3.2<br>B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.3 |
| AEC-ML-04 | | | |
| | User equipment | IMS | B.7.2.2 |
| | | SIP | B.7.3.2 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.3 |
| | | SIP | B.8.3.3 |
| | | Other | B.8.4.1<br>B.8.4.2<br>B.8.4.3.1<br>B.8.4.3.2<br>B.8.4.3.5 |
| | Emergency communications system | | B.9.3 |
| AEC-ML-05 | | | |
| | User equipment | IMS | |
| | | SIP | |
| | | Other | |

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.3 |
| AEC-ML-06 | | | |
| | User equipment | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.7 |
| AEC-ML-07 | | | |
| | User equipment | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.7 |
| AEC-ML-08 | | | |
| | User equipment: | IMS | B.7.2.2<br>B.7.2.3 |
| | | SIP | B.7.3.2<br>B.7.3.3, |
| | | Other | B.8.4.1 |
| | Originating service | IMS | B.8.2.2<br>B.8.2.3 |
| | | SIP | B.8.3.3<br>B.8.3.2 |
| | | Other | B.8.4.2<br>B.8.4.3.2<br>B.8.4.3.5 |
| | Emergency communications system | | B.9.4<br>B.9.7 |
| | Relay services and other assisting services | | B.10 |
| AEC-ML-09 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications services | | B.9.8.3<br>B.9.8.4 |
| | Relay services and other assisting services | | B.10 |

Functional test

| | |
|---|---|
| Test of: | AEC-ML-01, AEC-ML-02, AEC-ML-03, AEC-ML-04, AEC-ML-05, AEC-ML-06, AEC-ML-07, EC-ML-08, AEC-ML-09 |
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Find in the user interface of the end user equipment a setting of preferred language in emergency calls.<br>2. **Check** that a list of languages and modalities (signed, written, spoken) for expression and perception is available for selection. (AEC-ML-01)<br>3. **Check** that one language and modality can be set for each direction. (AEC-ML-02)<br>4. **Check** that the user interface allows the user to set a digital address to a relay service, and set it. (AEC-ML-08)<br>5. Initiate a test emergency communication with a PSAP, indicate that RTT and audio is wanted and video if that is available in the tested communication service.<br>6. **Check** that the PSAP answers with a short phrase in audio and RTT. (AEC-ML-06) (preferably in the language and modality set for perception)<br>7. **Check** with the PSAP that the language and modality preferences are visible in the PSAP user interface. (AEC-ML-04), (AEC-ML-05)<br>8. **Check** with the PSAP that a relay service address is available from the communication and ask the PSAP to connect to the relay service. (AEC-ML-08)<br>9. **Check** that the relay service gets connected and that the PSAP is still connected. AEC-ML-09)<br>10. Disconnect the communication.<br>11. Delete the language and profile settings in the user equipment.<br>12. Initiate an emergency communication with audio and RTT.<br>13. **Check** that the PSAP has an indication of the preferred language and modality to be the same as the user equipment user interface language. (AEC-ML-03)<br>14. **Check** that a short phrase in speech and RTT is presented on the UE. (AEC-ML-06) (preferably in the language of the UE user interface)<br>15. Disconnect the communication.<br>16. Make an emergency test communication marked as test.<br>**17**. **Check** that the emergency communications system answers and sends language and modality back, contextual information and the correct location of the UE. (AEC-ML-07)<br>18. Disconnect the communication. |
| Result | Pass: All checks are true<br>Fail: Any check is false |

## B.6.3 User interface and general accessibility

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-UI-01 | User equipment | IMS | B.7.2.1, |
| | | SIP | B.7.3.1 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.1 |
| | | SIP | B.8.3.1 |
| | | Other | B.8.4.1 |
| | Emergency communications system | | B.9.1 |
| | Relay services and other assisting services | | |
| AEC-UI-02 | | | |
| | User equipment | IMS | B.7.2.1<br>B.7.2.3, |
| | | SIP | B.7.3.1<br>B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | |

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-UI-03 | | | |
| | User equipment | IMS | B.7.2.1<br>B.7.2.3 |
| | | SIP | B.7.3.1<br>B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.8.3 |
| AEC-UI-04 | | | |
| | User equipment | IMS | B.7.2.1<br>B.7.2.3 |
| | | SIP | B.7.3.1<br>B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | - |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.8.3 |
| AEC-UI-05 | | | |
| | User equipment | IMS | B.7.2.1<br>B.7.2.3 |
| | | SIP | B.7.3.1<br>B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.8.3 |
| AEC-UI-06 | | | A may-requirement - no test |
| | User equipment | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| AEC-UI-07 | | | A may-requirement - no test |
| | User equipment | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |

Functional test

| | |
|---|---|
| Test of: | AEC-UI-01, AEC-UI-02, AEC-UI-03, AEC-UI-04, AEC-UI-05, AEC-UI-06, AEC-UI-07 |
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. **Check** that an emergency communication can be initiated in accessible ways and reach a PSAP. (AEC-UI-02)<br>2. **Check** that the user interface and communication functions comply with applicable requirements of EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11, 13. (AEC-UI-01)<br>3. Connect assistive technology for the user interface of the UE.<br>4. **Recheck** the tests for EN 301 549 compliance with clauses 4, 5, 6, 8, 9, 11, 13 again through assistive technology. (AEC-UI-01)<br>5. Disconnect assistive technology and initiate emergency communication again.<br>6. **Check** that speech input/output works with the PSAP and fulfils the bandwidth requirements of EN 301 549 [1], clause 6.1. (AEC-UI-03)<br>7. **Check** that the RTT communication works with both the UE and the PSAP according to EN 301 549 [1], clause 6.2. (AEC-UI-04)<br>8. **Check** that video between the UE and the PSAP works and fulfils the video quality requirements of EN 301 549 [1], clause 6.5 in both directions if video is included in the selected scenario. (AEC-UI-05)<br>9. **Check** if text message transmission to the PSAP is an available function that works. (recommended). (AEC-UI-07)<br>10. Disconnect.<br>11. **Check** if a possibility is available to initiate communication with a relay service, e.g. a speech-to-speech relay service and initiate an emergency communication in one user action. and if so, initiate it. (AEC-UI-06)<br>12. **Check** if both relay service and PSAP gets connected. (AEC-UI-06) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.4 Communication Features

### B.6.4.1 General

Clause 6.4.1 of the present document has no testable requirements.

### B.6.4.2 Session control and emergency contextual information

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-SC-01 | | | |
| | User equipment: | IMS | B.7.2.3, B.7.2.5 |
| | | SIP | B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.3<br>B.8.2.5 |
| | | SIP | B.8.3.3 |
| | | Other | B.8.4.1<br>B.8.4.3.1<br>B.8.4.3.2<br>B.8.4.3.3<br>B.8.4.3.4 |
| | Emergency communications system | | B.9.1 |
| AEC-SC-02 | | | |
| | User equipment: | IMS | B.7.2.3 |
| | | SIP | B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.3 |

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| | | SIP | B.8.3.3 |
| | | Other | B.8.4.1<br>B.8.4.2<br>B.8.4.3.2<br>B.8.4.3.3<br>B.8.4.3.4 |
| | Emergency communications system | | |
| AEC-SC-03 | | | |
| | User equipment: | IMS | B.7.2.3 |
| | | SIP | B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.2<br>B.8.2.3 |
| | | SIP | B.8.3.2<br>B.8.3.3 |
| | | Other | B.8.4.1<br>B.8.4.3.2<br>B.8.4.3.3<br>B.8.4.3.4 |
| | Emergency communications system | | |
| AEC-SC-04 | | | |
| | User equipment | IMS | B.7.2.3 |
| | | SIP | B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.3 |
| | | SIP | B.8.3.3 |
| | | Other | B.8.4.1<br>B.8.4.2<br>B.8.4.3.4<br>B.8.4.3.5 |
| | Emergency communications system | | B.9.6 |
| AEC-SC-05 | | | |
| | User equipment | IMS | B.7.2.2<br>B.7.2.3 |
| | | SIP | B.7.3.2<br>B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.2<br>B.8.2.3 |
| | | SIP | B.8.3.2<br>B.8.3.3 |
| | | Other | B.8.4.1<br>B.8.4.2<br>B.8.4.3.1<br>B.8.4.3.3<br>B.8.4.3.4 |
| | Emergency communications system | | B.9.3 |
| AEC-SC-06 | | | |
| | User equipment | IMS | B.7.2.2<br>B.7.2.3 |
| | | SIP | B.7.3.2<br>B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.2<br>B.8.2.3 |
| | | SIP | B.8.3.2 |
| | | Other | B.8.4.1<br>B.8.4.2<br>B.8.4.3.1<br>B.8.4.3.2 |
| | Emergency communications system | | B.9.3 |
| | Relay service and other assisting services | | B.10 |
| AEC-SC-07 | | | |
| | User equipment | | |
| | Originating service | | |
| | Emergency communications system | | B.9.7 |

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| | Relay service and other assisting services | | |

Functional test

| Test of: | AEC-SC-01, AEC-SC-02, AEC-SC-04, AEC-SC-05, AEC-SC-06, AEC-SC-07 |
|---|---|
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT, voice and also video if video is included in the selected scenario.<br>2. **Check** that the requested media are established with the PSAP. (AEC-SC-01)<br>3. **Check** that the PSAP gets accurate location information. (AEC-SC-02)<br>4. **Check** that the established communication chain can technically support spoken language, written language in RTT and also sign language if video was included in the tested scenario. (AEC-SC-05)<br>5. **Check** if contextual information about language and modality and other information about the emergency is provided and visible for the PSAP. (AEC-SC-06)<br>6. Disconnect.<br>7. **Check** that the PSAP can call back using a call back identification provided in the incoming communication. (AEC-SC-04)<br>8. Disconnect and set the PSAP in a mode that it does not connect incoming communication immediately, but instead placing incoming communications in a queue.<br>9. Initiate an emergency communication.<br>10. **Check** that the communication is answered by queue information in all activated media. (AEC-SC-07) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.4.3 Routing

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-RO-01 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4 |
| | Relay service and other assisting services | | |
| AEC-RO-02 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4<br>B.9.8.2 |
| | Relay service and other assisting services | | |
| AEC-RO-03 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4 |

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| | Relay service and other assisting services | | |
| AEC-RO-04 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4 |
| | Relay service and other assisting services | | |
| AEC-RO-05 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4 |
| | Relay service and other assisting services | | |
| AEC-RO-06 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4 |
| | Relay service and other assisting services | | |
| AEC-RO-07 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4 |
| | Relay service and other assisting services | | |
| AEC-RO-08 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4 |
| | Relay service and other assisting services | | |
| AEC-RO-09 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4 |
| | Relay service and other assisting services | | |

Functional test

| | |
|---|---|
| Test of: | AEC-RO-01, AEC-RO-02, AEC-RO-03, AEC-RO-04, AEC-RO-05, AEC-RO-06, AEC-RO-07, AEC-RO-08, AEC-RO-09 |
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Make settings in the user equipment under test for preference of another language than what is common in the country where the emergency communication is expected to be routed.<br>2. Initiate an emergency communication according to the selected scenario.<br>3. **Check** that if the emergency communication is of VoIP type and initiated from a visited country, that the communication is routed to a PSAP in the visited country. (AEC-RO-02)<br>4. **Check** that an emergency communication is established with a PSAP in the region where the user equipment is located. (AEC-RO-01)<br>5. **Check** that the emergency communication is routed to a PSAP responsible for the emergency communication subtype indicated by the user if subtypes are supported. Redo the test for different subtypes if available. (AEC-RO-02)<br>6. **Check** that the emergency communication is routed to a PSAP responsible for handling of emergency communications in the modalities and language indicated as preferred by the user. Redo the test with varied preference settings. (AEC-RO-04)<br>7. **Check** that the emergency communications are routed to call takers with knowledge about the region and how to handle communication with users having the indicated preferences of modalities and languages. (AEC-RO-06), (AEC-RO-05)<br>8. **Check** that the location of the user equipment is immediately available to the PSAP. (AEC-RO-07)<br>9. **Check** that the emergency communication is routed to the PSAP in a way matching the type of communication, e.g. as a mobile communication using a local breakout in the responsible region of PSAPs vs VoIP-type communication starting the routing in the Forest Guide. (AEC-RO-08)<br>10. **Check** that a PSAP is selected with matching media capabilities to the initiated emergency communication. (AEC-RO-09)<br>11. **Check** that at least one of checks 5-10 is true. (AEC-RO-03) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.4.4 Communication transfer

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-CT-01 | | | |
| | User equipment: | IMS | B.7.2.1 |
| | | SIP | B.7.3.1 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.1 |
| | | SIP | B.8.3.1 |
| | | Other | B.8.4.1 |
| | Emergency communications system | | B.9.5<br>B.9.8.3 |
| AEC-CT-02 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.5<br>B.9.8.3 |

Functional test

| | |
|---|---|
| Test of: | AEC-CT-01, AEC-CT-02 |
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate a RTT + voice emergency communications. Include video if video is included in the selected scenario, and make sure that the communication and intended media gets established.<br>2. Let the call taker include another call taker in the communication to make an attended communication transfer.<br>3. **Check** that RTT and voice is enabled and functional with all three parties, and also video if video is included in the selected scenario. (AEC-CT-01)<br>4. **Check** that the initial call taker can leave the communication that continues with the user and the second call taker with all media functional. (AEC-CT-01)<br>5. Redo steps 1-5 with the second PSAP being in another country for co-operation with the emergency case. (AEC-CT-02) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.4.5 Conferencing

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-CO-01 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.2<br>B.9.5<br>B.9.8.3<br>B.9.8.4 |
| | Relay services and assisting services | | B.10 |
| AEC-CO-02 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.2<br>B.9.5<br>B.9.8.3<br>B.9.8.4 |
| | Relay services and assisting services | | B.10 |
| AEC-CO-03 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.5<br>B.9.8.3 |

Functional test

| | |
|---|---|
| Test of: | AEC-CO-01, AEC-CO-02, AEC-CO-03 |
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate a RTT + voice emergency communications with a PSAP. Include video if video is included in the selected scenario.<br>2. **Check** that RTT and voice is enabled and functional and also video, if video is included in the selected scenario. (AEC-CO-01)<br>3. Let the call taker include another call taker in the call to create a three-party call.<br>4. **Check** that RTT and voice is enabled and functional, and also video if video is included in the selected scenario. (AEC-CO-01)<br>5. Let the call takers send RTT text simultaneously.<br>6. **Check** that RTT is presented in real time in a readable way on the user equipment indicating an approximate time order of the received text. (AEC-CO-01)<br>7. **Check** that RTT from the user equipment is presented in real time to both call takers. (AEC-CO-01)<br>8. **Check** that voice is mixed. (AEC-CO-01)<br>9. **Check** that if video is included in the tested scenario, video is included in the communication and is presented to all three participants. (AEC-CO-01)<br>10. **Check** that at least one common media is enabled and functional between each pair of the three parties. (AEC-CO-02)<br>11. Redo steps 1-10 with the second PSAP being in another country for co-operation with the emergency case. (AEC-CO-03) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.4.6 Callback

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-CB-01 | | | |
| | User equipment: | IMS | B.7.2.4 |
| | | SIP | B.7.3.4 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.4 |
| | | SIP | B.8.3.4 |
| | | Other | B.8.4.1<br>B.8.4.3.5 |
| | Emergency communications system | | B.9.6 |
| | Relay services and assisting services | | |
| AEC-CB-02 | | | |
| | User equipment: | IMS | B.7.2.4 |
| | | SIP | B.7.3.4 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.4 |
| | | SIP | B.8.3.4 |
| | | Other | B.8.4.1<br>B.8.4.3.5 |
| | Emergency communications system | | B.9.6 |
| AEC-CB-03 | | | |
| | User equipment: | IMS | B.7.2.4 |
| | | SIP | B.7.3.4 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.4, |
| | | SIP | B.8.3.4 |
| | | Other | B.8.4.1<br>B.8.4.3.5 |
| | Emergency communications system | | B.9.6 |
| AEC-CB-04 | | | |

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| | User equipment: | IMS | B..7.2.6 |
| | | SIP | B.7.3.6 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.6 |
| | | SIP | B.8.3.6 |
| | | Other | B.8.4.1 |
| | Emergency communications system | | B.9.6 |
| AEC-CB-05 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.6 |
| AEC-CB-06 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.6 |

Functional test

| Test of: | AEC-CB-01, AEC-CB-02, AEC-CB-03, AEC-CB-04, AEC-CB-05, AEC-CB-06 |
|---|---|
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice from the user equipment to a PSAP. Include also video if video is included in the selected scenario.<br>2. Verify that communication is possible in voice and RTT, and also in video if video is included in the selected scenario.<br>3. Ask the call taker to disconnect and call back.<br>4. **Check** that the callback is initiated and answered. (AEC-CB-01), (AEC-CB-06)<br>5. **Check** that the same media can be used as was used in the initial communication. (AEC-CB-02)<br>6. Disconnect.<br>7. Initiate an emergency communication with RTT and voice from the user equipment to a PSAP. Include also video if video is included in the selected scenario.<br>8. If inclusion of a relay service is included in the selected scenario, perform the whole test twice, first Including a relay service by user or user requested automatic request in the initial communication, and then by asking the call taker to invoke a relay service after answering the communication.<br>9. Verify that communication is possible in voice and RTT, and also in video if video is included in the selected scenario.<br>10. Verify that a relay service is included in the communication.<br>11. Ask the call taker to disconnect and call back.<br>12. Verify that the callback is initiated and answered.<br>13. **Check** that the same media can be used as was used in the initial communication. (AEC-CB-02)<br>14. **Check** that the same relay service is included in the communication as in the initial emergency communication. (AEC-CB-04)<br>15. Disconnect and redo the steps 1-6 with the following variations:<br>16. In step 5 ask the call taker to call back with a different set of media than in the initial communication.<br>17. **Check** in step 5 that the media selected by the PSAP for the callback are enabled and functional. (AEC-CB-03)<br>18. If a relay service was included by the emergency communications system in step 7-10, redo the steps 7 to 14 with the following variations:<br>19. Ask in step 11 the call taker to not include the relay service in the call back.<br>20. **Check** in step 14 that no relay service is included in the call back. (AEC-CB-05) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.5 Communication media

### B.6.5.1 General

Clause 6.5.1 of the present document has no testable requirements.

### B.6.5.2 Audio

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-CM-01 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.2 |

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| | Relay services and assisting technologies | | |
| AEC-CM-02 | | | |
| | User equipment: | IMS | B.7.2.1<br>B.7.2.5 |
| | | SIP | B.7.3.1 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.1<br>B.8.2.5 |
| | | SIP | B.8.3.1 |
| | | Other | B.8.4.1 |
| | Emergency communications system | | B.9.2 |
| | Relay service and assisting services | | B.10 |

Functional test

| Test of: | AEC-CM-01, AEC-CM-02 |
|---|---|
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP0.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication.<br>2. **Check** that audio is included and working. (AEC-CM-01)<br>3. **Check** that audio frequencies between 250 Hz and 7 000 Hz can be transferred in both directions. (AEC-CM-02)<br>4. **Check** that the documentation of the PSAP and the communication service indicates that audio codec G.722 [10] is supported in the interface between the communication service and the emergency communications service. (AEC-CM-02) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.6.5.3 Video

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-CM-03 | | | |
| | User equipment: | IMS | B.7.2.1<br>B.7.2.2<br>B.7.2.5 |
| | | SIP | B.7.3.2 |
| | | Other | B.7.4 |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.2 |
| | Relay service and assisting services | | |
| AEC-CM-04 | | | |
| | User equipment: | IMS | B.7.2.1 |
| | | SIP | B.7.3.1 |
| | | Other | B.7.4 |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.2 |
| | Relay service and assisting services | | |
| AEC-CM-05 | | | |
| | User equipment: | IMS | B.7.2.1 |
| | | SIP | B.7.3.1 |
| | | Other | |
| | Originating service | IMS | |

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.2 |
| | Relay service and assisting services | | |
| AEC-CM-06 | | | |
| | User equipment: | IMS | B.7.2.1<br>B.7.2.5 |
| | | SIP | B.7.3.1 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.1<br>B.8.2.5 |
| | | SIP | B.8.3.1 |
| | | Other | B.8.4.1 |
| | Emergency communications system | | B.9.2 |
| | Relay service and assisting services | | B.10 |

Functional test

| Test of: | AEC-CM-03, AEC-CM-04, AEC-CM-05, AEC-CM-06 |
|---|---|
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2.<br>4. The selected scenario does contain video (otherwise do not perform the test). |
| Procedure | 1. Initiate an emergency communication including real-time text, video and voice.<br>2. **Check** that video is included and working both ways. (AEC-CM-03)<br>3. **Check** that video can be stopped. (AEC-CM-05)<br>4. **Check** that video can be started again. (AEC-CM-04)<br>5. **Check** documentation of the emergency communications system that Recommendation ITU-T H.264 [9] video codec is supported. (AEC-CM-06)<br>6. **Check** documentation of the communication service that Recommendation ITU-T H.264 [9] video codec is supported. (AEC-CM-06) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.5.4 Real-time text

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-CM-07 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.2 |
| | Relay service and assisting services | | |
| AEC-CM-08 | | | |
| | User equipment: | IMS | B.7.2.1<br>B.7.2.5 |
| | | SIP | B.7.3.1 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.1<br>B.8.2.5 |
| | | SIP | B.8.3.1 |
| | | Other | B.8.4.1 |
| | Emergency communications system | | B.9.2 |
| | Relay service and assisting services | | B.10 |

Functional test

| | |
|---|---|
| Test of: | AEC-CM-07, AEC-CM-08 |
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication including RTT.<br>2. **Check** that RTT is included and working. Both ways. (AEC-CM-07)<br>3. **Check** that RTT can be stopped. (AEC-CM-07)<br>4. **Check** that RTT can be started again and work both ways. (AEC-CM-07)<br>5. **Check** documentation about the communication service that Recommendation ITU-T T.140 [11] can be used in the interface to the emergency communications system. (AEC-CM-08)<br>6. **Check** documentation about the emergency communications system that Recommendation ITU-T T.140 [11] can be used in the interface to the communications service. (AEC-CM-08) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.5.5 Text messaging

Clause 6.5.5 of the present document contains no testable requirement.

## B.6.5.6 Total conversation

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-CM-11 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.2 |
| | Relay service and assisting services | | |
| AEC-CM-12 | | | |
| | User equipment: | IMS | B.7.2.1<br>B.7.2.5 |
| | | SIP | B.7.3.1<br>B.7.3.3 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.1<br>B.8.2.5 |
| | | SIP | B.8.3.1 |
| | | Other | B.8.4.1 |
| | Emergency communications system | | |
| | Relay service and assisting services | | B.10 |

Functional test

| | |
|---|---|
| Test of: | AEC-CM-11, AEC-CM-12 |
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2.<br>4. The selected scenario does contain video (otherwise do not perform the test). |
| Procedure | 1. Initiate an emergency communication as total conversation.<br>2. **Check** that real-time text, video and voice are enabled and working. (AEC-CM-11)<br>3. **Check** that the tests for total conversation in emergency communications specified in EN 301 549 [1], clause C.6.7 pass. (AEC-CM-12) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.6 Relay service invocation in emergency communications by the user

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-RS-01 | | | |
| | User equipment: | IMS | B.7.2.6 |
| | | SIP | B.7.3.6 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.6 |
| | | SIP | B.8.3.6 |
| | | Other | B.8.4.1 |
| | Emergency communications system | | |
| | Relay service and assisting services | | B.10 |
| AEC-RS-02 | | | |
| | User equipment: | IMS | B.7.2.6 |
| | | SIP | B.7.3.6 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.6 |
| | | SIP | B.8.3.6 |
| | | Other | B.8.4.1 |
| | Emergency communications system | | |
| | Relay service and assisting services | | B.10 |

Functional test

| | |
|---|---|
| Test of: | AEC-RS-01, AEC-RS-02 |
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication, a relay service, communications service, and emergency communications system with PSAP.<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate emergency communication and indicate to the UA that relay service is wanted.<br>2. **Check** that the emergency communication is initiated and the PSAP answers. (AEC-RS-01)<br>3. **Check** that the relay service is invoked and that the three parties can communicate in all requested media in a three-party fashion. (AEC-RS-01)<br>4. **Check** that the relay service and the PSAP got information about the communication and the progress of the connection establishment. (AEC-RS-02) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.6.7 Assisting services in emergency communications

Overview of relations to technical tests

| Test of: | Emergency communication chain part | Technology | Applicable test |
|---|---|---|---|
| AEC-SS-01 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4<br>B.9.8.3<br>B.9.8.4 |
| | Relay service and assisting services | | B.10 |
| AEC-SS-02 | | | |
| | User equipment: | IMS | B.7.2.2 |
| | | SIP | B.7.3.2 |
| | | Other | B.7.4 |
| | Originating service | IMS | B.8.2.2 |
| | | SIP | B.8.3.2 |
| | | Other | B.8.4.1<br>B.8.4.2<br>B.8.4.3.5 |
| | Emergency communications system | | B.9.4<br>B.9.7<br>B.9.8.3<br>B.9.8.4 |
| | Relay service and assisting services | | B.10 |
| AEC-SS-03 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4<br>B.9.7<br>B.9.8.3<br>B.9.8.4 |
| | Relay service and assisting services | | B.10 |
| AEC-SS-04 | | | |
| | User equipment: | IMS | |
| | | SIP | |
| | | Other | |
| | Originating service | IMS | |
| | | SIP | |
| | | Other | |
| | Emergency communications system | | B.9.4<br>B.9.8.3<br>B.9.8.4 |
| | Relay service and assisting services | | B.10 |

Functional test

| | |
|---|---|
| Test of: | AEC-SS-01, AEC-SS-02, AEC-SS-03, AEC-SS-04 |
| Precondition | 1. The ICT under test is a complete chain of user equipment for electronic communication intended for emergency communications, communications service, emergency communications system with PSAP, and an assisting service (a relay service).<br>2. The PSAP is a test PSAP, or a test agreement is in place with the PSAP.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate a RTT + voice emergency communications with a PSAP. Include video if video is included in the selected scenario.<br>2. Verify that RTT and voice is enabled and functional, and also video, if video is included in the selected scenario.<br>3. Ask the call taker to include an assisting service (e.g. a spoken language translation service in the call to create a three-party call.<br>4. **Check** that RTT and voice is enabled and functional, with all parties in a three-party fashion, and also video if video is included in the selected scenario. (AEC-SS-01)<br>5. Disconnect.<br>6. Set an address to an assisting service (a relay service) in the user interface of the user equipment and enable the address to be indicated in initiation of emergency communications.<br>7. Initiate an emergency communication.<br>8. **Check** that the PSAP gets information about the assisting service address and can include the assisting service in the communication in a three-party fashion. (AEC-SS-02)<br>9. Disconnect.<br>10. Initiate an emergency communication.<br>11. Ask the call-taker to invoke an assisting service (e.g. a relay service) of a specific type and language combination (e.g. text relay service between written Dutch and spoken Dutch).<br>12. **Check** that the call-taker have means to rapidly find information about such service and how to invoke the service in the communication. (AEC-SS-03)<br>13. **Check** that the service is successfully invoked. (AEC-SS-03)<br>14. **Check** that the communication is arranged as a three-party communication. (AEC-SS-01)<br>15. Ask the call-taker to invoke one more assisting service in the communication (e.g. a spoken language translation service between spoken Dutch and spoken Finnish).<br>16. **Check** that the extra assisting service is invoked in the communication and that communication between the test user and the call-taker can be performed through the chain of assisting services. (AEC-SS-04)<br>17. Disconnect.<br>18. Repeat steps 1-5 for an agreed number of available assisting services. |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

# B.7 User equipment

## B.7.1 General

Clause 7.1 of the present document has no testable requirements.

## B.7.2 IMS based user equipment

### B.7.2.1 General

| | |
|---|---|
| Test of | AEC-UI-01, AEC-UI-03, AEC-UI-04, AEC-UI-05, AEC-CM-02, AEC-CM-03, AEC-CM-04, AEC-CM-05, AEC-CM-06, AEC-CM-08, AEC-CM-12, AEC-CT-01 |
| Precondition | 1. The ICT under test is user equipment for electronic communication in the IMS mobile environment including SIP for call control and media as specified in ETSI TS 126 114 [8] transported by RTP for voice and RTT, and video, if video is included in the selected scenario in precondition 5.<br>2. An IMS MTSI communication service is available where the equipment under test resides.<br>3. An emergency communications system including a PSAP is available, being either a test PSAP or with an agreement to accept test communications.<br>4. The IMS MTSI communication service maintains a connection to an emergency communications system.<br>5. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication to "112" with RTT voice and also video, if video is included in the selected scenario.<br>2. **Check** that an emergency communication can be initiated, answered and performed with the emergency communications system. (AEC-SC-01)<br>3. **Check** that input and output for voice is provided and allow the communication. (AEC-UI-03)<br>4. **Check** that input and output for RTT is provided and allow the communication. (AEC-UI-04)<br>5. **Check,** if video is included in the tested scenario, that input and output for video is provided and allow for the communication. (AEC-UI-05)<br>6. **Check,** if video is included in the selected scenario, that video can be turned off during communication.<br>7. Disconnect and if video was included in the scenario, connect again without video.<br>8. **Check** that video can be turned on during the communication. (AEC-CM-04)<br>9. Ask the call taker to initiate a transfer to another call taker workstation but stay in the communication and then all three communicate in all media.<br>10. **Check** that the three-party communication in all media is presented in accessible ways. (AEC-CT-01)<br>11. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also, if video is included in the tested scenario, (AEC-CM-06) for video and (AEC-CM-12) for total conversation. |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.7.2.2 Settings

| | |
|---|---|
| Test o f | AEC-ML-01, AEC-ML-02, AEC-ML-03, AEC-ML-04, AEC-ML-08, AEC-SS-02, AEC-SC-05, AEC-SC-06 |
| Precondition | 1. The ICT under test is user equipment for electronic communication in the IMS mobile environment including SIP for call control and media as specified in ETSI TS 126 114 [8] transported by RTP for voice and RTT and video, if video is included in the selected scenario in precondition 4.<br>2. An IMS communication service is available where the equipment under test resides.<br>3. The IMS communication service maintains a connection to the emergency communications system.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. **Check** the user interface for a setting of preferred language and modality in emergency calls. (AEC-ML-01)<br>2. Configure language and modality according to the selected scenario (consider video, if video is included in the selected scenario).<br>3. **Check** that the user interface allows to set a distinct preferred language and modality for expression and perception of emergency communications. (AEC-ML-02)<br>4. Configure preferred language and modality for expression and perception (consider use of video, if video is included in the selected scenario).<br>5. **Check** that the user interface allows to set contact details of a preferred relay service, and if so, set it. (AEC-ML-08), (AEC-SS-02)<br>6. **Check** that the user interface allows setting other contextual data about the user or the emergency. If so, configure it. (AEC-SC-06)<br>7. **Check** that the user interface, when used for emergency communications, includes means to select configured language and modality to be used when initiating emergency communications (also check for video, if video is included in the selected scenario).<br>8. Initiate emergency communications with the emergency communications system including RTT, and also video if video is included in the selected scenario.<br>9. **Check** that the emergency communication is received and answered at the PSAP, and a communication is set up. (AEC-CM-07), (AEC-SC-05)<br>10. **Check** that video is included and working if it is included in the selected scenario. (AEC-CM-04)<br>11. **Check** that communication is possible in voice and RTT (AEC-CM-01), (AEC-CM-07).<br>12. **Check** with the PSAP that the language and modality preference is visible in the PSAP user interface. (AEC-ML-01), (AEC-ML-02), (AEC-ML-04)<br>13. **Check** that when an address to a preferred relay service is included in the settings, it is conveyed to the PSAP. (AEC-SS-02), (AEC-ML-08)<br>14. **Check** with the PSAP that other contextual information is presented. (AEC-SC-06)<br>15. Repeat the test with the variation that in step 4 no language and modality preference is set.<br>16. **Check** that a default language being the same as the language of the setting of the general user interface of the user equipment is provided and presented in the PSAP user interface in step 12. (AEC-ML-03) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.7.2.3 Initiation of emergency communications

| Test of | AEC-SC-01, AEC-SC-02, AEC-SC-03, AEC-SC-04, AEC-SC-05, AEC-SC-06, AEC-UI-02 |
|---|---|
| Precondition | 1. The ICT under test is user equipment for electronic communication in the IMS mobile environment including SIP for call control and media as specified in ETSI TS 126 114 [8] transported by RTP for voice and RTT and video, if video is included in the selected scenario in precondition 4.<br>2. An IMS MTSI communication service is available where the equipment under test resides.<br>3. The IMS MTSI communication service maintains a connection to the emergency communications system.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication to "112" with RTT voice and also video, if video is included in the selected scenario.<br>2. **Check** that an emergency communication can be initiated in accessible ways as tested in clause B.7.2.1 and reach the emergency communications system. (AEC-UI-02), (AEC-SC-01)<br>3. **Check** that the IMS MTSI electronic communications service initiates communication with the expected emergency communications system. (AEC-UI-02), (AEC-SC-02), (AEC-SC-03)<br>4. **Check** that the emergency communication is received and answered and a communication with a PSAP is set up. (AEC-SC-01), (AEC-SC-05)<br>5. **Check** with the PSAP that other contextual information is presented. (AEC-SC-06)<br>6. **Check** that communication is possible in all selected media. (AEC-CM-01), (AEC-CM-07) and video and total conversation if video was included in the selected scenario. (AEC-CM-03), (AEC-CM-11)<br>7. Disconnect and ask the call taker to make a callback with the provided callback address<br>8. **Check** that the address for callback was correct. (AEC-SC-04) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.7.2.4 Callback

| Test of | AEC-CB-01, AEC-CB-02, AEC-CB-03 |
|---|---|
| Precondition | 1. The ICT under test is user equipment for electronic communication in the IMS mobile environment SIP for call control and media as specified in ETSI TS 126 114 [8] transported by RTP for voice and RTT and video, if video is included in the selected scenario in precondition 4.<br>2. An IMS MTSI communication service is available where the equipment under test resides.<br>3. The IMS communication service maintains a connection to the emergency communications system.<br>4. A selected scenario from clause B.4.2.<br>5. Initiate an emergency communication with RTT and voice. Include video, if it is included in the selected scenario.<br>6. Verify that the IMS electronic communications service initiates communication with the emergency communications system.<br>7. Verify that the emergency communication is received and answered at a PSAP, and a communication is set up.<br>8. Verify that communication is possible in voice and RTT and also video if video was included in the selected scenario.<br>9. Verify that video communication is included and working if it is included in the selected scenario. |
| Procedure | 1. Ask the call taker to disconnect and call back.<br>2. **Check** that the callback is received and can be answered. (AEC-CB-01)<br>3. **Check** that the same media can be used as what was available in the initial emergency communication. (AEC-CB-02)<br>4. Perform the following steps only if video was included in the selected scenario.<br>5. Ask the call taker to disconnect and call back without video.<br>6. **Check**. that the callback can be answered, and video be added by request from the answering user. (AEC-CB-03) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.7.2.5 Visiting regions and networks

| Test of | AEC-SC-01, AEC-CM-02, AEC-CM-06, AEC-CM-08, AEC-CM-12 |
|---|---|
| Precondition | 1. The ICT under test is user equipment for electronic communication in the visited IMS mobile environment including SIP for call control and media as specified in ETSI TS 126 114 [8] transported by RTP for voice and RTT and video, if video is included in the selected scenario in precondition 5.<br>2. An IMS MTSI communication service is available where the equipment under test resides.<br>3. The equipment under test is located where it is roaming in another IMS service.<br>4. The IMS communication service maintains a connection to the emergency communications system.<br>5. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice. Include video, if included in the selected scenario.<br>2. **Check** that the emergency communication is conveyed by the visited IMS MTSI electronic communications service and initiates communication with the emergency communications system in the visited region. (AEC-SC-01)<br>3. **Check** that the emergency communication is received and answered by the expected PSAP, and a communication is set up. (AEC-SC-01)<br>4. **Check** that communication is possible in RTT and voice, and in video, if video is included in the selected scenario. (AEC-CM-02), (AEC-CM-06), (AEC-CM-08), (AEC-CM-12) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.7.2.6 Relay service invocation in emergency communications by the user

| Test of | AEC-RS-01, AEC-RS-02, AEC-CB-04, AEC-ML-08 |
|---|---|
| Precondition | 1. The ICT under test is user equipment for electronic communication in the IMS mobile environment SIP for call control and media as specified in ETSI TS 126 114 [8] transported by RTP for voice and RTT and video, if video is included in the selected scenario in precondition 5.<br>2. An IMS MTSI communication service is available where the equipment under test resides.<br>3. The ICT under test has availability of a relay service.<br>4. The IMS communication service maintains a connection to the emergency communications system.<br>5. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate emergency communication and request inclusion of a relay service in the communication. Include voice and RTT and include also video if video is included in the selected scenario.<br>2. **Check** that the expected PSAP gets rapidly included in the communication. (AEC-RS-01)<br>3. **Check** that the expected relay service gets invoked in the communication in a full three-party fashion. (AEC-RS-01), (AEC-ML-08)<br>4. **Check** that the relay service and the PSAP got information about the fact that this was an emergency communication with relay service support, and the state of the communication establishment. (AEC-RS-02)<br>5. **Check** that accessibility, voice and RTT (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>6. Disconnect and ask the calltaker to call back.<br>7. **Check** that the user gets the same relay service invoked as in the originated communication, or is enabled to request invocation of the relay service in the incoming call back as in the originated communication and if so, request invocation.<br>8. **Check** that communication with the PSAP can start immediately and that the relay service gets invoked and all included media works in a three-party fashion. (AEC-RS-01), AEC-CB-04).<br>9. **Check** that the Relay service staff and the PSAP got information about the parties and the progress of the invocation. (AEC-RS-02) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.7.3 SIP based user equipment

### B.7.3.1 General

| | |
|---|---|
| Test of | AEC-UI-01, AEC-UI-03, AEC-UI-04, AEC-UI-05, AEC-CM-02, AEC-CM-04, AEC-CM-05, AEC-CM-06, AEC-CM-08, AEC-CM-12, AEC-CT-01 |
| Precondition | 1. The ICT under test is user equipment for electronic communication including SIP for call control and media as specified in ETSI TS 103 479 [2] clause 6.6.2 transported by RTP for voice and RTT, and video, if video is included in the selected scenario in precondition 4.<br>2. A SIP based VoIP type communication service is available where the equipment under test resides.<br>3. The communication service maintains a connection to the emergency communications system.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication to "112" with RTT voice and also video, if video is included in the selected scenario.<br>2. **Check** that an emergency communication can be initiated, answered and performed with the emergency communications system. (AEC-SC-01)<br>3. **Check** that communication in voice is provided and allow the communication. (AEC-UI-03)<br>4. **Check** that input and output for RTT is provided and allow the communication. (AEC-UI-04)<br>5. **Check,** if video is included in the tested scenario, that communication in video is supported and accessible. (AEC-UI-05)<br>6. **Check,** if video is included in the selected scenario, that video can be turned off during communication. (AEC-CM-04)<br>7. Disconnect and if video was included in the scenario, connect again without video.<br>8. **Check** that if video was included in the scenario, video can be turned on during the communication. (AEC-CM-05)<br>9. Ask the call taker to initiate a transfer to another call taker workstation but stay in the communication and then all three communicate in all media.<br>10. **Check** that the three-party communication in all media is presented in accessible ways. (AEC-CT-01)<br>11. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario. |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.7.3.2 Settings

| | |
|---|---|
| Test of | AEC-ML-01, AEC-ML-02, AEC-ML-03 AEC-ML-04, AEC-ML-08, AEC-SS-02, AEC-SC-05, AEC-SC-06 |
| Precondition | 1. The ICT under test is user equipment for electronic communication including SIP for call control and media as specified in ETSI TS 103 479 [2] clause 6.6.2 transported by RTP for voice and RTT, and video, if video is included in the selected scenario in precondition 4 3.<br>2. A SIP based VoIP type communication service is available where the equipment under test resides.<br>3. The communication service maintains a connection to the emergency communications system.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. **Check** the user interface for a setting of preferred language and modality in emergency calls. (AEC-ML-01)<br>2. Configure language and modality according to the selected scenario (consider video, if video is included in the selected scenario).<br>3. **Check** that the user interface allows to set a distinct preferred language and modality for expression and perception of emergency communications. (AEC-ML-02)<br>4. Configure preferred language and modality for expression and perception (consider use of video, if video is included in the selected scenario).<br>5. **Check** that the user interface allows to set contact details of a preferred relay service, and if so set it. (AEC-ML-08), (AEC-SS-02)<br>6. **Check** that the user interface allows setting other contextual data about the user or the emergency. If so, configure it. (AEC-SC-06)<br>7. **Check** that the user interface, when used for emergency communications, includes means to select configured language and modality to initiate emergency communications (check for video, if video is included in the selected scenario).<br>8. Initiate emergency communications with the emergency communications system including RTT, and also video if video is included in the selected scenario.<br>9. **Check** that the emergency communication is received and answered at the PSAP, and a communication is set up. (AEC-CM-07), (AEC-SC-05)<br>10. **Check** that video is included if it is included in the selected scenario. (AEC-CM-04)<br>11. **Check** that communication is possible in voice and RTT. (AEC-CM-01), (AEC-CM-07)<br>12. **Check** with the PSAP that the language and modality preference is visible in the PSAP user interface. (AEC-ML-01), (AEC-ML-02), (AEC-ML-04)<br>13. **Check** that when an address to a preferred relay service is included in the settings, it is conveyed to the PSAP. (AEC-SS-02), (AEC-ML-08)<br>14. **Check** with the PSAP that other contextual information is presented. (AEC-SC-06)<br>15. Repeat the test with the variation that in step 4 no language and modality preference is set.<br>16. **Check** that a default language being the same as the language of the setting of the general user interface of the user equipment is provided and presented in the PSAP user interface in step 12. (AEC-ML-03) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.7.3.3 Initiation of emergency communications

| | |
|---|---|
| Test of | AEC-ML-03, AEC-ML-08, AEC-SC-01, AEC-SC-02, AEC-SC-03, AEC-SC-04, AEC-SC-05, AEC-SC-06, AEC-UI-02 |
| Precondition | 1. The ICT under test is user equipment for electronic communication including SIP for call control and media as specified in ETSI TS 103 479 [2] clause 6.6.2 transported by RTP for voice and RTT, and video, if video is included in the selected scenario in precondition 4.<br>2. A SIP Based VoIP type communication service is available where the equipment under test resides.<br>3. The communication service maintains a connection to the emergency communications system.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication to "112" with RTT, voice, and also video if video is included in the selected scenario.<br>2. **Check** that an emergency communication can be initiated in accessible ways as tested in clause B.7.2.1 and reach the emergency communications system. (AEC-UI-02), (AEC-SC-01)<br>3. **Check** that the originating communications service initiates communication with the expected emergency communications system. (AEC-UI-02), (AEC-SC-02), (AEC-SC-03)<br>4. **Check** that the emergency communication is received and answered and a communication with a PSAP is set up. (AEC-SC-01), (AEC-SC-05)<br>5. **Check** that communication is possible in all selected media (AEC-CM-01), (AEC-CM-07), and video and total conversation if video was included in the selected scenario. (AEC-CM-04), (AEC-CM-11) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.7.3.4 Callback

| | |
|---|---|
| Test of | AEC-CB-01, AEC-CB-02, AEC-CB-03 |
| Precondition | 1. The ICT under test is user equipment for electronic communication including SIP for call control and media as specified in ETSI TS 103 479 [2] clause 6.6.2 transported by RTP for voice and RTT, and video, if video is included in the selected scenario in precondition 4.<br>2. A SIP based VoIP type communication service is available where the equipment under test resides.<br>3. The communication service maintains a connection to the emergency communications system.<br>4. A selected scenario from clause B.4.2.<br>5. Initiate an emergency communication with RTT and voice. Video is included if included in the selected scenario.<br>6. Verify that the electronic communications service initiates communication with the emergency communications system.<br>7. Verify that the emergency communication is received and answered at the PSAP, and a communication is set up.<br>8. Verify that communication is possible in voice and RTT media, and in video if video is included in the selected scenario. |
| Procedure | 1. Ask the call taker to disconnect and call back.<br>2. **Check** that the callback is received and can be answered. (AEC-CB-01)<br>3. **Check** that the same media can be used in the callback as in the initial emergency communication. (AEC-CB-02)<br>4. Perform the following steps only if video was included in the selected scenario.<br>5. Ask the call taker to disconnect and call back without video.<br>6. **Check**. that the callback can be answered, and video be added by request from the answering user. (AEC-CB-03) |
| Result | Pass: All checks are true<br>Fail: At least one check fails. |

### B.7.3.5 Visiting regions and networks

Clause 7.3.5 of the present document refers to clause 7.3.3 for testable requirements done for users in visited countries.

### B.7.3.6 Relay service invocation in emergency communications by the user

| | |
|---|---|
| Test of | AEC-RS-01, AEC-RS-02, AEC-CB-04, AEC-ML-08 |
| Precondition | 1. The ICT under test is user equipment for electronic communication including SIP for call control and media as specified in ETSI TS 103 479 [2], clause 6.6.2 transported by RTP for voice and RTT, and video, if video is included in the selected scenario in precondition 4.<br>2. A SIP based VoIP type communication service is available where the equipment under test resides.<br>3. The ICT under test has availability of a relay service<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate emergency communication and request inclusion of a relay service in the communication. include voice and RTT and include also video if video is included in the selected scenario.<br>2. **Check** that the expected PSAP gets rapidly included in the communication. (AEC-RS-01)<br>3. **Check** that the expected relay service gets invoked in the communication in a full three-party fashion. (AEC-RS-01), (AEC-ML-08)<br>4. **Check** that the relay service and the PSAP got information about the fact that this was an emergency communication with relay service support, and the state of the communication establishment. (AEC-RS-02)<br>5. **Check** that accessibility, voice and RTT (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>6. Disconnect and ask the calltaker to call back.<br>7. **Check** that the user gets the same relay service invoked as in the originated communication, or is enabled to request invocation of the relay service in the incoming call back as in the originated communication and if so, request invocation.<br>8. **Check** that communication with the PSAP can start immediately and that the relay service gets invoked and all included media works in a three-party fashion. (AEC-RS-01), (AEC-CB-04)<br>9. **Check** that the Relay service staff and the PSAP got information about the parties and the progress of the invocation.(AEC-RS-02) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.7.4 Other technologies for emergency communication

| | |
|---|---|
| Test of | AEC-CB-01, AEC-CB-02, AEC-CB-03, AEC-CB-04, AEC-CM-02, AEC-CM-04, AEC-CM-05 AEC-CM-06, AEC-CM-08, AEC-CM-12, AEC-CT-01, AEC-ML-01, AEC-ML-02, AEC-ML-03, AEC-ML-04, AEC-RS-01, AEC-RS-02, AEC-SC-01, AEC-SC-02, AEC-SC-03, AEC-SC-04, AEC-SC-05, AEC-SC-06, AEC-SS-02, AEC-UI-01, AEC-UI-02, AEC-UI-03, AEC-UI-04, AEC-UI-05, AEC-UI-05 |
| Precondition | 1. The ICT under test is user equipment for electronic communication using another technology than SIP or IMS for call control. Voice and RTT is supported. Video is included if it is included in the scenario selected in precondition step 3.<br>2. A communication service is available where the equipment under test resides.<br>3. A selected scenario from clause B.4.2. |

| | |
|---|---|
| Procedure | 1. **Check** the user interface for a setting of preferred language in emergency calls. (AEC-ML-01), (AEC-ML-02)<br>2. **Check** that a list spoken/written languages are available for selection. (AEC-ML-01), (AEC-ML-02)<br>3. Select and set one language.<br>4. Set any other contextual data to be sent with the emergency communication.<br>5. Initiate a test emergency communication with voice, RTT and also video if video is included in the selected scenario.<br>6. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-01)<br>7. **Check** if video is included in the selected scenario, that video can be turned off during communication. (AEC-CM-04)<br>8. Disconnect and if video was included in the scenario, connect again without video.<br>9. **Check** that if video was included in the scenario, video can be turned on during the communication. (AEC-CM-05)<br>10. **Check** that other contextual data is presented to the call taker. (AEC-SC-06)<br>11. **Check** that the user interface is accessible, and that communication is possible in RTT and voice, and also video if video is included in the selected scenario. (AEC-SC-03), AEC-SC-05), (AEC-UI-01), (AEC-UI-02), (AEC-UI-03), (AEC-UI-04), (AEC-UI-05)<br>12. **Check** with the PSAP that the language preference is visible in the PSAP user interface. (AEC-ML-01), (AEC-ML-02), (AEC-ML-04)<br>13. **Check** that the expected PSAP for the region where the user is located receives the communication. (AEC-SC-02)<br>14. Ask the call taker to initiate a transfer to another call taker workstation but stay in the communication and then all three communicate in all media.<br>15. **Check** that the three-party communication in all media is presented in accessible ways. (AEC-CT-01)<br>16. Disconnect, delete the language and modality setting, set a relay service address and initiate an emergency communication again.<br>17. Check with the call taker that this time the preferred language was according to the user interface of the user equipment. (AEC-ML-03)<br>18. Ask the call taker to disconnect and callback.<br>19. **Check** that the callback is received and can be answered. (AEC-CB-01), (AEC-SC-04)<br>20. **Check** that the same media can be used in the callback as in the initial emergency communication. (AEC-CB-02)<br>21. Ask the PSAP call taker to disconnect and repeat the call back with added media and with reduced media.<br>22. **Check** that all callback communications are completed with the intended media. (AEC-CB-03)<br>23. Ask the call taker to include and use the relay service with the address conveyed in step 11.<br>24. **Check** that a relay service is attached in 3-party fashion and communication can flow. (AEC-SS-02)<br>25. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>26. Ask the calltaker to disconnect and call back.<br>27. **Check** that the callback is received by the UA and that the same relay service is included and that communication works in all included media. (AEC-CB-04)<br>28. Disconnect.<br>29. Make settings or initiate next emergency communication so that the UA or originating service invokes the relay service in a three-way connection.<br>30. **Check** that the communication is received to the PSAP without delay and that the relay service is invoked and that the parties are informed about the parties and the progress of the communication establishment. (AEC.RS-01, (AEC-RS-02)<br>31. **Check** that the included media can be used in a three-party fashion. (AEC-RS-01) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

# B.8 Originating service

## B.8.1 General

Clause 8.1 of the present document has no testable requirements.

## B.8.2 IMS based originating service

### B.8.2.1 General

| | |
|---|---|
| Test of | AEC-UI-01, AEC-CM-02, AEC-CM-06 AEC-CM-08 AEC-CM-12, AEC-CT-01 |
| Precondition | 1. The ICT under test is an IMS electronic communication service using SIP for call control and voice and RTT media and also video if video is included in the selected scenario in precondition 3.<br>2. An IMS MTSI equipment for test is available registered in the service.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice from the test equipment. Include video media if video is included in the selected scenario.<br>2. Verify that the SIP electronic communications service initiates communication with a PSAP.<br>3. Verify that the emergency communication is received and answered, and a communication is set up.<br>4. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>5. Let the call taker include another call taker in the call to create a three-party call.<br>6. **Check** that the three parties get included in the communication and that the media works between the parties. (AEC-CT-01) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.2.2 Settings

| | |
|---|---|
| Test of | AEC-SC-06, AEC-ML-01, AEC-ML-02, AEC-ML-08, AEC-SS-02 |
| Precondition | 1. The ICT under test is an IMS electronic communication service using SIP for call control and voice and RTT media and also video if video is included in the selected scenario in precondition 3.<br>2. An IMS MTSI equipment for test is available registered in the service.<br>3. A selected scenario from clause B.4.2.<br>4. Find the setting in the end user equipment for a preference to include RTT in all calls.<br>5. Set this setting on.<br>6. Find in the user interface of the end user equipment a setting of preferred language and modality in emergency calls.<br>7. Find a list of spoken/written/signed languages available for selection.<br>8. Select one language. |
| Procedure | 1. Initiate a test emergency communication with a PSAP including voice and RTT and also video if video is included in the selected scenario.<br>2. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-01)<br>3. **Check** that communication is possible in voice and RTT media, and that also video communication is possible if video is included in the selected scenario. (AEC-CM-01), (AEC-CM-03), (AEC-CM-07), (AEC-SC-03) (AEC-SC-05)<br>4. **Check** with the PSAP that the language preference is visible in the PSAP user interface. (AEC-ML-01), (AEC-ML-02)<br>5. **Check** that the PSAP can extract and see the address of a relay service. (AEC-ML-08), (AEC-SS-02)<br>6. **Check** that other contextual data is presented to the call taker. (AEC-SC-06) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.2.3 Initiation of emergency communications

| | |
|---|---|
| Test of | AEC-SC-01, AEC-SC-02, AEC-SC-03, AEC-SC-04, AEC-SC-05, AEC-SC-06, AEC-ML-04, AEC-ML-08 |
| Precondition | 1. The ICT under test is an IMS electronic communication service using SIP for call control and voice and RTT and also video if that is included in the selected scenario in precondition 3.<br>2. An IMS MTSI equipment for test is available registered in the service.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice from the test equipment. Include video media if video is included in the selected scenario. Include a setting of an address to a relay service.<br>2. **Check** that the SIP electronic communications service initiates communication with the expected PSAP. (AEC-SC-01), (AEC-SC-02)<br>3. **Check** that additional data including service information and settings for the user is available. (AEC-ML-04), (AEC-SC-06)<br>4. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-05)<br>5. **Check** that communication is possible in voice and RTT media, and that video communication is possible, if video is included in the selected scenario. (AEC-SC-03), (AEC-SC-05)<br>6. **Check** that the address to a preferred relay service is extracted and presented at the PSAP. (AEC-ML-08)<br>7. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>8. Disconnect and ask the call taker to make a callback with the provided callback address.<br>9. **Check** that the callback is successful. (AEC-SC-04) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.2.4 Callback

| | |
|---|---|
| Test of | AEC-CB-01, AEC-CB-02, AEC-CB-03 |
| Precondition | 1. The ICT under test is an IMS electronic communication service using SIP for call control and voice and RTT media and also video if that is included in the selected scenario in precondition 3.<br>2. An IMS MTSI equipment for test is available registered in the service.<br>3. A selected scenario from clause B.4.2.<br>4. Initiate an emergency communication with RTT and voice from the IMS test user equipment and include also video if video is included in the selected scenario.<br>5. Verify that the IMS electronic communications service initiates communication with the expected PSAP.<br>6. Check that the emergency communication is received and answered, and a communication is set up.<br>7. Check that communication is possible in voice, and RTT media and also in video if video is included in the selected scenario. |
| Procedure | 1. Ask the call taker to disconnect and callback.<br>2. **Check** that the callback is received and can be answered. (AEC-CB-01)<br>3. **Check** that the same media as in the initial communication can be used. (AEC-CB-02)<br>4. Disconnect and repeat the callback test with fewer media and more media.<br>5. **Check** that the callback is received by the user equipment and that the requested media is established and can be used. (AEC-CB-03) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.2.5 Visiting regions and networks

| Test of | AEC-SC-01, AEC-CM-02, AEC-CM-06 AEC-CM-08 AEC-CM-12 |
|---|---|
| Precondition | 1. The ICT under test is an IMS electronic communication service using SIP for call control and voice and RTT media and also video if that is included in the selected scenario in precondition 3.<br>2. An IMS MTSI equipment for test from another IMS service is available roaming in the service.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice. Include also video if video is included in the selected scenario.<br>2. **Check** that the emergency communication is conveyed by the visited IMS electronic communications service and initiates communication with the expected PSAP. (AEC-SC-01)<br>3. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-05)<br>4. **Check** that communication is possible in voice and RTT, and also in video if video is included in the selected scenario. (AEC-CM-02), (AEC-CM-06), (AEC-CM-08), (AEC-CM-12) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.2.6 Relay service invocation in emergency communications by the user

| Test of | AEC-RS-01, AEC-RS-02, AEC-CB-04 |
|---|---|
| Precondition | 1. The ICT under test is an IMS electronic communication service using SIP for call control and voice and RTT media and also video if that is included in the selected scenario in precondition 4.<br>2. An IMS MTSI equipment for test is available registered in the service.<br>3. The ICT under test has availability of a relay service.<br>4. The IMS communication service maintains a connection to the emergency communications system.<br>5. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate emergency communication and request inclusion of a relay service in the communication. include voice and RTT and include also video if video is included in the selected scenario.<br>2. **Check** that the expected PSAP gets rapidly included in the communication. (AEC-RS-01)<br>3. **Check** that the expected relay service gets invoked in the communication in a full three-party fashion. (AEC-RS-01)<br>4. **Check** that the relay service and the PSAP got information about the fact that this was an emergency communication with relay service support, and the state of the communication establishment. (AEC-RS-02)<br>5. **Check** that accessibility, voice and RTT (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>6. Disconnect and ask the calltaker to call back.<br>7. **Check** that the user gets the same relay service invoked as in the originated communication, or is enabled to request invocation of the relay service in the incoming call back as in the originated communication and if so, request invocation.<br>8. **Check** that communication with the PSAP can start immediately and that the relay service gets invoked and all included media works in a three-party fashion. (AEC-RS-01), (AEC-CB-04).<br>9. **Check** that the Relay service staff and the PSAP got information about the parties and the progress of the invocation. (AEC-RS-02) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.8.3 SIP Based originating service

### B.8.3.1 General

| | |
|---|---|
| Test of | AEC-UI-01, AEC-CM-02, AEC-CM-06 AEC-CM-08 AEC-CM-12, AEC-CT-01 |
| Precondition | 1. The ICT under test is an electronic communication service using SIP for call control and voice and RTT media and also video if that is included in the selected scenario in precondition 3.<br>2 An end user equipment for test is available registered in the service.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice from the test equipment. Include video media if video is included in the selected scenario.<br>2. Verify that the SIP electronic communications service initiates communication with a PSAP.<br>3. Verify that the emergency communication is received and answered, and a communication is set up.<br>4. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>5. Let the call taker include another call taker in the call to create a three-party call.<br>6. **Check** that the three parties get included in the communication and that the media works between the parties. (AEC-CT-01) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.3.2 Settings

| | |
|---|---|
| Test of | AEC-SC-06, AEC-ML-01, AEC-ML-02, AEC-ML-08, AEC-SS-02 |
| Precondition | 1. The ICT under test is an electronic communication service using SIP for call control and voice and RTT media, and also video if that is included in the selected scenario in precondition 3.<br>2. An end user equipment for test is available registered in the service.<br>3. A selected scenario from clause B.4.2.<br>4. Find in the user interface of the end user equipment a setting of preferred language in emergency calls.<br>5. Find a list of sign languages and spoken/written languages available for selection.<br>6. Select a language.<br>7. Set the address of a relay service |
| Procedure | 1. Initiate a test emergency communication with a PSAP to include voice and RTT, and also video if video is included in the selected scenario.<br>2. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-01)<br>3. **Check** that communication is possible in voice and RTT media and that video communication is possible, if video is included in the selected scenario. (AEC-CM-01), (AEC-CM-03), (AEC-CM-07), (AEC-SC-03) (AEC-SC-05)<br>4. **Check** with the PSAP that the language and modality preference is visible in the PSAP user interface. (AEC-ML-01), (AEC-ML-02)<br>5. **Check** that the PSAP can extract and see the address of a relay service. (AEC-ML-08), (AEC-SS-02)<br>6. **Check** that other contextual data is presented to the call taker. (AEC-SC-06) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.3.3 Initiation of emergency communications

| | |
|---|---|
| Test of | AEC-SC-01, AEC-SC-02, AEC-SC-03, AEC-SC-04, AEC-SC-05, AEC-ML-04, AEC-ML-08 |
| Precondition | 1. The ICT under test is an electronic communication service using SIP for call control and voice and RTT media and also video if that is included in the selected scenario in precondition 3.<br>2 An end user equipment for test is available registered in the service.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice from the test equipment. Include video media if video is included in the selected scenario. Include a setting of an address to a relay service.<br>2. **Check** that the SIP electronic communications service initiates communication with the expected PSAP. (AEC-SC-01), (AEC-SC-02)<br>3. **Check** that additional data including service information and settings for the user is available. (AEC-ML-04)<br>4. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-05)<br>5. **Check** that communication is possible in voice and RTT media, and that video communication is possible, if video is included in the selected scenario. (AEC-SC-03), (AEC-SC-05)<br>6. **Check** that the address to a preferred relay service is extracted and presented at the PSAP. (AEC-ML-08)<br>7. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>8. Disconnect and ask the call taker to make a callback with the provided callback address.<br>9. **Check** that the callback is successful. (AEC-SC-04) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.3.4 Callback

| | |
|---|---|
| Test of | AEC-CB-01, AEC-CB-02, AEC-CB-03 |
| Precondition | 1. The ICT under test is an electronic communication service using SIP for call control and RTP [i.14] for voice and RTT, and also video if that is included in the selected scenario in precondition 3.<br>2. End user equipment is available registered in the service.<br>3. A selected scenario from clause B.4.2.<br>4. Initiate an emergency communication with video RTT and voice. Include also video, if video is included in the selected scenario.<br>5. Verify that the electronic communications service initiates communication with a PSAP.<br>6. Verify that the emergency communication is received and answered, and a communication is set up.<br>7. Verify that communication is possible in all voice and RTT and also in video, if video is included in the selected scenario. |
| Procedure | 1. Ask the call taker to disconnect and callback.<br>2. **Check** that the callback is received and can be answered. (AEC-CB-01)<br>3. **Check** that the media which were included in the original communication establishment can be used. (AEC-CB-02)<br>4. Disconnect and repeat the callback test with fewer media and more media.<br>5. **Check** that the callback is received by the user equipment and that the requested media is established and can be used. (AEC-CB-03) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.3.5 Visited region

Clause 8.3.5 of the present document refers to clause 8.3.3 for testable requirements done for users in visited countries.

### B.8.3.6 Relay service invocation in emergency communications by the user

| | |
|---|---|
| Test of | AEC-RS-01, AEC-RS-02, AEC-CB-04 |
| Precondition | 1. The ICT under test is an electronic communication service using SIP for call control and RTP [i.14] for voice and RTT, and also video if that is included in the selected scenario in precondition 4.<br>2. End user equipment is available registered in the service.<br>3. The ICT under test has availability of a relay service.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate emergency communication and request inclusion of a relay service in the communication. include voice and RTT and include also video if video is included in the selected scenario.<br>2. **Check** that the expected PSAP gets rapidly included in the communication. (AEC-RS-01)<br>3. **Check** that the expected relay service gets invoked in the communication in a full three-party fashion. (AEC-RS-01)<br>4. **Check** that the relay service and the PSAP got information about the fact that this was an emergency communication with relay service support, and the state of the communication establishment. (AEC-RS-02)<br>5. **Check** that accessibility, voice and RTT (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>6. Disconnect and ask the calltaker to call back.<br>7. **Check** that the user gets the same relay service invoked as in the originated communication, or is enabled to request invocation of the relay service in the incoming call back as in the originated communication and if so, request invocation.<br>8. **Check** that communication with the PSAP can start immediately and that the relay service gets invoked and all included media works in a three-party fashion. (AEC-RS-01), (AEC-CB-04)<br>9. **Check** that the Relay service staff and the PSAP got information about the parties and the progress of the invocation. (AEC-RS-02) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.8.4 Other technologies for emergency communication

### B.8.4.1 General

| | |
|---|---|
| Test of | AEC-CB-01, AEC-CB-02, AEC-CB-03, AEC-CB-04, AEC-CB-06, AEC-CM-02, AEC-CM-06, AEC-CM-08, AEC-CM-12, AEC-CT-01, AEC-ML-01, AEC-ML-02, AEC-ML-04, AEC-ML-08, AEC-SC-01, AEC-SC-02, AEC-SC-03, AEC-SC-04, AEC-SC-05, AEC-SC-06, AEC-SS-02, AEC-UI-01 |
| Precondition | 1. The ICT under test is an electronic communication service using other technologies than SIP or IMS for call control and voice and RTT. Video media is included in the test, if video is included in the selected scenario in precondition 3.<br>2. An end user equipment for test is available registered in the service.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice from the test equipment. Include also video media, if video is included in the selected scenario.<br>2. **Check** that the electronic communications service initiates communication with the expected PSAP. (AEC-SC-01), (AEC-SC-02)<br>3. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-05)<br>4. **Check** that communication is possible in video and RTT media, and also in video, if video is included in the selected scenario. (AEC-SC-05)<br>5. **Check** that emergency context information, modality and language, media preferences relay service address are made available to the PSAP. (AEC-ML-01), (AEC-ML-02), (AEC-ML-04), (AEC-SC-06)<br>6. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation, when video is included in the tested scenario.<br>7. **Check** that the call taker got information about the location. (AEC-SC-02)<br>8. **Check** that the PSAP got information on the preferred languages and modalities of the user in both directions. (AEC-ML-04)<br>9. **Check** that the PSAP can get information about and invoke the preferred relay service in the communication and get the conversation translated. (AEC-SS-02), (AEC-ML-08)<br>10. Ask the PSAP call taker to disconnect and call back.<br>11. **Check** that communication is initiated by the PSAP and can be answered by the user equipment and contain the same media and relay service as in the original communication. (AEC-CB-01), (AEC-CB-02), (AEC-CB-06), (AEC-SC-04), (AEC-CB-04)<br>12. Disconnect and repeat the callback test with fewer media and more media.<br>13. **Check** that the callback is received by the user equipment and that the requested media is established and can be used. (AEC-CB-03)<br>14. Let the call taker include another call taker in the call to create a three-party call.<br>15. **Check** that the three parties get included in the communication and that the media works between the parties. (AEC-CT-01)<br>16. Disconnect.<br>17. Make settings or initiate next emergency communication so that the originating service invokes the relay service in a three-way connection.<br>18. **Check** that the communication is received to the PSAP without delay and that the relay service is invoked and that the parties are informed about the parties and the progress of the communication establishment. (AEC.RS-01), (AEC-RS-02)<br>19. **Check** that the included media can be used in a three-party fashion. (AEC-RS-01) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.4.2 Conversion to ETSI TS 103 479 emergency communication interfaces

| | |
|---|---|
| Test of | AEC-CB-01, AEC-CB-02, AEC-CB-06, AEC-SC-02, AEC-SC-04, AEC-SC-05, AEC-SC-06, AEC-SS-02, AEC-ML-04, AEC-ML-08 |
| Precondition | 1. The ICT under test is an electronic communication service using other technologies than SIP or IMS for call control and voice and RTT. Video media is included in the test, if video is included in the selected scenario in precondition 3.<br>The interfaces specified in ETSI TS 103 479 [2] are used for communication with the emergency communications system.<br>2. An end user equipment for test is available registered in the service.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice from the test equipment. Include also video media, if video is included in the selected scenario.<br>2. **Check** that the electronic communications service initiates communication with a PSAP. (AEC-SC-01)<br>3. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-05)<br>4. **Check** that communication is possible in video and RTT media, and also in video, if video is included in the selected scenario. (AEC-SC-05)<br>5. **Check** that emergency context information is made available to the PSAP. (AEC-ML-04), ((AEC-SC-06)<br>6. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation, when video is included in the tested scenario.<br>7. **Check** that the call taker got information about the location. (AEC-SC-02)<br>8. **Check** that the PSAP got information on the preferred languages and modalities of the user in both directions. (AEC-ML-04)<br>9. **Check** that the PSAP can get information about and invoke the preferred relay service in the communication and get the conversation translated. (AEC-SS-02), (AEC-ML-08)<br>10. Ask the PSAP call taker to disconnect and call back.<br>11. **Check** that communication is initiated by the PSAP and can be answered by the user equipment and contain the same media as in the original communication. (AEC-CB-01), (AEC-CB-02), (AEC-CB-06), (AEC-SC-04) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.4.3 Use of ETSI TS 103 479 together with PEMEA

#### B.8.4.3.1 General

| | |
|---|---|
| Test of | AEC-SC-01, AEC-SC-05, AEC-SC-06, AEC-ML-04 |
| Precondition | 1. The ICT under test is a system for emergency communication based on the PEMEA standards.<br>2. The user equipment of the ICT under test is located in a region with PEMEA support.<br>3. A PSAP is available with support for PEMEA and PEMEA-based communication in voice, RTT and also video if video is included in the selected scenario in precondition 4.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate a PEMEA based emergency communications with RTT and voice and video from the user equipment if video is included in the selected scenario.<br>2. **Check** that an emergency communication based on PEMEA is initiated. (AEC-SC-01))<br>3. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-01)<br>4. **Check** that communication is possible in voice and RTT and also video if video is included in the selected scenario. (AEC-SC-05)<br>5. **Check** that emergency context information is made available to the PSAP. (AEC-ML-04), ((AEC-SC-06) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.4.3.2 Initiating emergency communication with PEMEA support

| | |
|---|---|
| Test of | AEC-SC-01, AEC-SC-02, AEC-SC-03, AEC-SC-06 |
| Precondition | 1. The ICT under test is a system used to convey emergency context information based on the PEMEA standards.<br>2. The user equipment of the ICT under test is located in a region with PEMEA support.<br>3. The user equipment is also capable of making IMS emergency calls with voice and RTT and also video if video is included in the selected scenario in precondition 4.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice and also video if video is included in the selected scenario, so that it makes use of PEMEA system for emergency context information but makes use of IMS for the real-time emergency communication.<br>2. **Check** that an emergency communication based on IMS is initiated. (AEC-SC-05), (AEC-SC-01), (AEC-SC-02)<br>3. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-SC-01)<br>4. **Check** that communication is possible in the media supported by the IMS MTSI service. (AEC-SC-05), (AEC-SC-03)<br>5. **Check** that the PEMEA based emergency context information is available to the PSAP. (AEC-SC-06)<br>6. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>6. **Check** that the call taker got information about the location. (AEC-SC-02)<br>7. **Check** that the PSAP got information on the preferred languages and modalities of the user in both directions. (AEC-ML-04), (AEC-ML-05)<br>8. **Check** that the PSAP can invoke the preferred relay service in the communication and get the conversation translated. (AEC-SS-01), (AEC-SS-02), (AEC-ML-08) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.8.4.3.3 Emergency communications by IMS in regions without PEMEA support

| | |
|---|---|
| Test of | AEC-SC-01, AEC-SC-02, AEC-SC-03, AEC-SC-05 |
| Precondition | 1. The ICT under test is a system for emergency communication based on the PEMEA standards, including video if that is included in the scenario in precondition 4.<br>2. The user equipment of the ICT under test is located in a region without PEMEA support.<br>3. The user equipment is also capable of making IMS emergency calls.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication from the PEMEA based user equipment with RTT and voice and video, if video is included in the selected scenario.<br>2. **Check** that an emergency communication based on IMS is initiated as a fall-back where PEMEA is not supported. (AEC-SC-01), (AEC-SC-05)<br>3. **Check** that location is provided to the PSAP. (AEC-SC-02)<br>4. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-ML-06)<br>5. **Check** that communication is possible in the media supported by the IMS MTSI service. (AEC-SC-03), (AEC-SC-05)<br>6. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario. |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.8.4.3.4 Emergency communications by SIP in regions without PEMEA support

| | |
|---|---|
| Test of | AEC-SC-01, AEC-SC-02, AEC-SC-03, AEC-SC-04, AEC-SC-05 |
| Precondition | 1. The ICT under test is a system for emergency communication based on the PEMEA standards and includes video if that is included in the selected scenario.<br>2. The user equipment of the ICT under test is located in a region without PEMEA support.<br>3. The user equipment is also capable of initiating SIP based emergency communications.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication from the PEMEA based user equipment with RTT and voice and video if video is included in the selected scenario.<br>2. **Check** that an emergency communication based on SIP is initiated as a fall-back where PEMEA is not supported. (AEC-SC-01), (AEC-SC-05),<br>3. **Check** that the emergency communication is received and answered, and a communication is set up. (AEC-ML-06)<br>4. **Check** that location is provided to the PSAP. (AEC-SC-02)<br>5. **Check** that communication is possible in the media supported by the SIP service. (AEC-SC-03), (AEC-SC-05)<br>6. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video and (AEC-CM-12) for total conversation if video is included in the tested scenario.<br>7. Ask the PSAP call taker to disconnect and call back.<br>8. **Check** that communication is initiated by the PSAP and can be answered by the user equipment and contain the same media as in the original communication. (AEC-CB-01), (AEC-CB-02), (AEC-CB-06), (AEC-SC-04) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.8.4.3.5 Accessibility related details in use of PEMEA

| | |
|---|---|
| Test of | AEC-CB-01, AEC-CB-02, AEC-CB-03, AEC-ML-04, AEC-ML-08, AEC-SC-04, AEC-SS-02 |
| Precondition | 1. The ICT under test is a system for emergency communication based on the PEMEA standards.<br>2. The user equipment of the ICT under test makes use of PEMEA and is located in a region with PEMEA support.<br>3. A PSAP is available with support for PEMEA and PEMEA-based communication in voice, RTT and video if video is included in the selected scenario in precondition 5.<br>4. A relay service is available with interface suitable for connection to the PSAP with PEMEA implementation.<br>5. A selected scenario from clause B.4.2. |
| Procedure | 1. Make settings for preferred modality and language in both directions in the user interface of the PEMEA based app.<br>2. Make settings for the address of the relay service available to the user.<br>3. Initiate a PEMEA based emergency communication from the user equipment with RTT and voice and also video, if video is included in the selected scenario.<br>4. **Check** that an emergency communication based on PEMEA is initiated. (AEC-SC-01)<br>5. **Check** that the emergency communication is received and answered and a communication is set up. (AEC-ML-06)<br>6. **Check** that the call taker got information about the location. (AEC-SC-02)<br>7. **Check** that the PSAP got information on the preferred languages and modalities of the user in both directions. (AEC-ML-04)<br>8. **Check** that the PSAP can invoke the preferred relay service in the communication and get the conversation translated. (AEC-SS-01), (AEC-SS-02), (AEC-ML-08)<br>9. Ask the PSAP call taker to disconnect and call back.<br>10. **Check** that communication is initiated by the PSAP and can be answered by the user equipment and contain the same media as in the original communication. (AEC-SC-04), (AEC-CB-01), (AEC-CB-02), (AEC-CB-06)<br>11. Ask the PSAP call taker to disconnect and repeat the call back with added media and with reduced media.<br>12. **Check** that all callback communications are completed with the intended media. (AEC-CB-03) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false. |

# B.9 Emergency communications system including PSAP

## B.9.1 General

| | |
|---|---|
| Test of | AEC-AI-07, AEC-AI-08, AEC-UI-01, AEC-SC-01 |
| Precondition | 1. The ICT under test is an emergency communications system and PSAP using ETSI TS 103 479 [2] with SIP for call control and RTP [i.14] for video and voice and RTT media.<br>2. A SIP based communication service with end user equipment to be used as a counterpart is available capable of handling RTT, video and voice.<br>NOTE: Since IMS services also use SIP according to ETSI TS 103 479 [2] in their emergency communications interface to the emergency communications system, this test can be performed with an IMS MTSI service as counterpart.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. **Check** in the service information that the emergency communications system including PSAPs provide the required interfaces of ETSI TS 103 479 [2]. (AEC-AI-07), (AEC-AI-08)<br>2. **Check** that the services in general of the emergency communications system including PSAPs are accessible according to EN 301 549 [1], clauses 4, 5, 6, 8, 9, 11, 12, 13 when not tested through tests elsewhere in the present document. (AEC-UI-01).<br>3. Initiate an emergency communication with RTT, voice and also video if video is included in the selected scenario.<br>4. **Check** that the requested media are established with the PSAP. (AEC-SC-01) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.9.2 Media

| | |
|---|---|
| Test of | AEC-CM-01, AEC-CM-02, AEC-CM-03, AEC-CM-04, AEC-CM-05, AEC-CM-06, AEC-CM-07, AEC-CM-08. AEC-CM-11, AEC-CO-01, AEC-CO-02 |
| Precondition | 1. The ICT under test is an emergency communications system and PSAP using ETSI TS 103 479 [2] with SIP for call control and RTP [i.14] for video and voice and RTT media.<br>2. A SIP based communication service with end user equipment to be used as a counterpart is available capable of handling RTT, video and voice.<br>NOTE: Since IMS services also use SIP according to ETSI TS 103 479 [2] in their emergency communications interface to the emergency communications system, this test can be performed with an IMS MTSI service as counterpart.<br>3 A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT, video and voice from the test equipment.<br>2. Verify that the expected PSAP receives the initiation.<br>3. Verify that the emergency communication is answered, and a communication is set up.<br>4. **Check** that (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-03) and (AEC-CM-06) for video and (AEC-CM-11) for total conversation.<br>5. Connect also another PSAP workstation and answer that with all media for a three-party communication.<br>6. **Check** that (AEC-CM-02), (AEC-CM-08) are fully verified for multiparty communication in RTT, and voice, and (AEC-CM-03), (AEC-CM-06) for video and (AEC-CM-11) for total conversation (AEC-CO-01), (AEC-CO-02).<br>7. **Check** that video can be disconnected from the original PSAP workstation, and the other media continue, and also video between the other two participants. (AEC-CM-05) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.9.3 Modality and language indication

| Test of | AEC-ML-03, AEC-ML-04, AEC-ML-05, AEC-SC-05, AEC-SC-06 |
|---|---|
| Precondition | 1. The ICT under test is an emergency communications system and PSAP using ETSI TS 103 479 [2] with SIP for call control and RTP [i.14] for video, voice and RTT media.<br>2. A SIP based communication service with end user equipment for test is available capable of handling RTT, and voice, and also video if that is included in the selected scenario in precondition 5.<br>NOTE: Since IMS services also use SIP according to ETSI TS 103 479 [2] in their emergency communications interface to the emergency communications system, this test can be performed with an IMS MTSI service as counterpart.<br>3. The end user equipment is provided with a setting of language preference and the language is set to a selected language.<br>4. The ICT under test is set in a mode where only some PSAPs are set to handle the selected spoken and written language.<br>5. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication from the test equipment with RTT and voice, and also video if video is included in the selected scenario.<br>2. **Check** that a PSAP assigned to handle the selected spoken or written language received in the emergency communication and that it is answered, and a communication is set up. (AEC-ML-04), (AEC-ML-05), (AEC-SC-05)<br>3. Verify that the PSAP can begin communication in RTT and voice and also video.<br>4. Disconnect and erase the language and modality setting in the user equipment.<br>5. Initiate an emergency communication from the test equipment with RTT and voice, and also video if video is included in the selected scenario.<br>6. **Check** that a PSAP assigned to handle the language of the user interface in the user equipment receives the emergency communication and that it is answered, and a communication is set up. (AEC-ML-04), (AEC-ML-03), (AEC-SC-05) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.9.4 Routing

| | |
|---|---|
| Test of | AEC-RO-01, AEC-RO-02, AEC-RO-03, AEC-RO-04, AEC-RO-05, AEC-RO-06, AEC-RO-07, AEC-RO-08, AEC-RO-09, AEC-SS-01, AEC-SS-02, AEC-SS-03, AEC-SS-04, AEC-ML-08 |
| Precondition | 1. The ICT under test is an emergency communications system and PSAP using ETSI TS 103 479 [2] with SIP for call control and RTP [i.14] for video, voice and RTT media.<br>2. A SIP based communication service with end user equipment to be used as a counterpart, is available capable of handling RTT, video and voice.<br>NOTE: Since IMS services also use SIP according to ETSI TS 103 479 [2] in their emergency communications interface to the emergency communications system, this test can be performed with an IMS MTSI service as counterpart.<br>3. The ICT under test is set in a mode where only some PSAPs have video capability.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT, video and voice from the test equipment.<br>2. **Check** that the expected regional emergency communications system receives the initiation. (AEC-RO-01), (AEC-RO-02)<br>NOTE: This includes international routing when the selected scenario from clause B.4.2 has the user in another country, and regional routing when the user is in a country with multiple regions of responsible PSAPs.<br>3. **Check** that a video capable PSAP receives the emergency communications and that it is answered, and a communication is set up. (AEC-RO-09)<br>4. Verify that the PSAP can begin communication in all media.<br>5. **Check** that the emergency communication is routed to a PSAP responsible for handling of emergency communications in the modalities and language indicated as preferred by the user. (AEC-RO-04)<br>6. Redo step 5 with varied preference settings.<br>7. **Check** that the emergency communications are routed to call takers with knowledge about how to handle communication with users having the indicated preferences of modalities and languages in the region. (AEC-RO-06), (AEC-RO-05),(AEC-SS-04)<br>8. **Check** that the location of the user equipment is immediately available to the PSAP. (AEC-RO-07)<br>9. **Check** that the emergency communication is routed to a call taker who has access to information on addresses and facts about relay services, translation services and PSAPs in other regions and how to invoke them in emergency communications. (AEC-RO-08)<br>10. **Check** that at least one of the checks 3 to 9 is true. (AEC-RO-03)<br>11. Connect to an available relay service via the bridge.<br>12. **Check** that all media work with the caller and the relay service. (AEC-SS-03)<br>13. Disconnect and add setting of relay service address in user equipment and initiate a new communication.<br>14. **Check** that the address of the relay is presented to the call taker and that the relay service can be invoked and all media work. (AEC-SS-01), (AEC-SS-02), (AEC-ML-08) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

## B.9.5 Bridging

| Test of | AEC-CO-01, AEC-CO-02, AEC-CO-03, AEC-CT-01, AEC-CT-02 |
|---|---|
| Precondition | 1. The ICT under test is an emergency communications system and PSAP using ETSI TS 103 479 [2] with SIP for call control and RTP [i.14] for video, voice and RTT media, having at least two call takers and a multiparty bridge for RTT, video and voice.<br>2. A SIP based communication service with end user equipment is available capable of handling RTT, and voice. Video is also used if included in the selected scenario in precondition 3.<br>NOTE: Since IMS services also use SIP according to ETSI TS 103 479 [2] in their emergency communications interface to the emergency communications system, this test can be performed with an IMS MTSI service as counterpart.<br>3. A selected scenario from clause B.4.2.<br>4. Initiate a RTT + voice emergency communications. Include video if video is included in the selected scenario.<br>5. Verify that the communication is answered by the PSAP.<br>6. Verify that RTT and voice is enabled and functional and also video, if video is included in the selected scenario. |
| Procedure | 1. Let the call taker include another call taker in the call to create a three-party call.<br>2. **Check** that the three parties get included in the communication. (AEC-CT-01), (AEC-CO-01)<br>3. Let the call takers send RTT text simultaneously.<br>4. **Check** that RTT is presented in real time in a readable way on the user equipment indicating an approximate time order of the received text. (AEC-CM-07)<br>5. **Check** that RTT from the user equipment is presented in real time to both call takers. (AEC-CM-08)<br>6. **Check** that voice is mixed. (AEC-CO-01), (AEC-CM-01), (AEC-CM-02)<br>7. **Check** that if video was included in the selected scenario, video is included in the communication, it is presented to all three participants. (AEC-CO-01), (AEC-CM-03), (AEC-CM-06)<br>8. Disconnect the third party and connect with a third party having only voice.<br>9. **Check** that voice is mixed between all three parties and that RTT works between the two first participants and also video if video was included in the scenario. (AEC-CO-02)<br>10. Disconnect and repeat steps 1 to 7 with the second call taker in a PSAP in a foreign country.<br>11. **Check** that all checks in steps 1-7 were true. (AEC-CO-03), (AEC-CT-02) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

## B.9.6 Callback

| Test of | AEC-CB-01, AEC-CB-02, AEC-CB-03, AEC-CB-04, AEC-CB-05, AEC-CB-06, AEC-SC-04 |
|---|---|
| Precondition | 1. The ICT under test is an emergency communications system and PSAP using ETSI TS 103 479 [2] with SIP for call control and RTP [i.14] for video, voice and RTT media.<br>2. A SIP based communication service with end user equipment is available to be used as a counterpart, capable of handling RTT, and voice and video if video is included in the selected scenario in precondition 4.<br>NOTE 1: Since IMS services also use SIP according to ETSI TS 103 479 [2] in their emergency communications interface to the emergency communications system, this test can be performed with an IMS MTSI service as counterpart.<br>NOTE 2: Since the test is expressed in general functionality terms, the test can be performed also with other technologies than SIP and IMS in the originating service.<br>3. A selected scenario from clause B.4.2. |
| Procedure | 1. Initiate an emergency communication with RTT and voice from the equipment for test. Include also video if video is included in the selected scenario.<br>2. Verify that the electronic communications service initiates communication with the emergency communications system.<br>3. Verify that the emergency communication is received and answered, and a communication is set up.<br>4. Verify that communication is possible in voice and RTT, and also in video if video is included in the selected scenario.<br>5. Ask the call taker to disconnect and call back.<br>6. **Check** that the callback is initiated and answered. (AEC-CB-01), (AEC-CB-06), (AEC-SC-04)<br>7. **Check** that voice and RTT media can be used, and also video media if included in the selected scenario. (AEC-CB-02)<br>8. Ask the PSAP call taker to disconnect and repeat the call back with added media and with reduced media.<br>9. **Check** that all callback communications are completed with the intended media. (AEC-CB-03)<br>10. Disconnect and initiate an emergency communication with RTT and voice from the user equipment for test. Include also video if video is included in the selected scenario.<br>11. Ask the call taker to include a relay service in the communication by the PSAP bridge.<br>12. Ask the call taker to disconnect and call back and include the same relay service.<br>13. **Check** that all parties are connected. (AEC-CB-04)<br>14. Disconnect and initiate an emergency communication with RTT and voice from the user equipment for test. Include also video if video is included in the selected scenario.<br>15. Ask the call taker to disconnect and call back without including the relay service.<br>16. **Check** that only the PSAP and the user equipment are included in the communication. (AEC-CB-05) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.9.7 Communications handling

| Test of | AEC-SC-07, AEC-ML-06, AEC-ML-07 |
|---|---|
| Precondition | 1. The ICT under test is an emergency communications system and PSAPs using ETSI TS 103 479 [2] with SIP for call control and RTP [i.14] for video, voice and RTT media.<br>2. A SIP based communication service with end user equipment for test is available capable of handling RTT, voice, and video.<br>NOTE: Since IMS services also use SIP according to ETSI TS 103 479 [2] in their emergency communications interface to the emergency communications system, this test can be performed with an IMS MTSI service as counterpart.<br>3. The ICT under test is set in a mode where an incoming communication for test is placed in queue.<br>4. The ICT under test is set in a mode where only some PSAPs have video capability.<br>5. User equipment with ability to initiate emergency test communications marked as test is available.<br>6. A selected scenario from clause B.4.2. |
| Procedure | 1. Set in the user interface of the user equipment a preferred language and modality.<br>2. Initiate an emergency communication with RTT, video and voice from the test equipment.<br>3. Verify that the expected emergency communications system receives the initiation.<br>4. **Check** that the emergency communication is answered and a communication with queueing functions is established. (AEC-SC-07)<br>5. **Check** that queue information is sent in all three media and received by the test equipment. (AEC-SC-07)<br>6. Enable the PSAPs to take communication.<br>7. **Check** that a PSAP with video capability is offered the test communication and can begin communication in all media with a greeting phrase. (AEC-ML-06)<br>8. **Check** that the communication was routed to a call taker well suited to handle the preferred modality and language. (AEC-ML-08), (AEC-RO-01), (AEC-RO-02), (AEC-RO-03), (AEC-RO-04), (AEC-RO-05), (AEC-RO-06), (AEC-RO-07), (AEC-RO-08), (AEC-RO-09)<br>9. **Check** that communication in RTT, and voice is accessible and fully verified (AEC-UI-01), (AEC-CM-02), (AEC-CM-08), and also for video (AEC-CM-06) and for total conversation (AEC-CM-11) if video is included in the tested scenario.<br>10. Disconnect.<br>11. Make an emergency test communication marked as test from User Equipment capable of initiating such test transactions. Include language and modality preferences.<br>12. **Check** that the emergency communications system answers and sends language and modality indication back, contextual information and the correct location of the UE, and media packets of all requested media. (AEC-ML-07) |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

## B.9.8 Considerations for PSAP

### B.9.8.1 General

Clause 9.8.1 is an introduction and has no testable requirements.

### B.9.8.2 LoST Server for routing to PSAPs

| Test of | AEC-RO-02 |
|---|---|
| Precondition | 1. The ICT under test is an emergency communications system including PSAPs using ETSI TS 103 479 [2] with SIP for call control and RTP [i.14] for video, voice and RTT media.<br>2. A SIP based communication service with end user equipment for test is available.<br>3. Select a scenario containing a visited country as in clause B.4.2 1) (b). |
| Procedure | 1. Place the user equipment for test in another country or region of responsibility than the one of the emergency communications under test.<br>2. Initiate an emergency communication from the test equipment.<br>3. **Check** that the expected emergency communications system receives the initiation. (AEC-RO-02)<br>NOTE: This includes regional routing when the user is in a country with multiple regions of responsible PSAPs. |
| Result | Pass: All checks are true<br>Fail: At least one Check is false |

### B.9.8.3 Call taker's language capabilities and inclusion of assisting services

| | |
|---|---|
| Test of | AEC-CT-01, AEC-CT-02, AEC-ML-09, AEC-SS-01, AEC-SS-02, AEC-SS-03, AEC-SS-04, AEC-CO-01, AEC-CO-02, AEC-CO-03 |
| Precondition | 1. The ICT under test is an emergency communications system including PSAP.<br>2. A SIP based communication service with end user equipment for test is available capable of handling RTT, and voice and also video if video is included in the selected scenario in precondition 4.<br>NOTE 1: The test can also be performed without RTT for the cases of using speech-to-speech relay services and for accessible emergency communication in need of spoken language translation. For that case, all "RTT" in the test can be ignored.<br>NOTE 2: Since IMS services also use SIP according to ETSI TS 103 479 [2] in their emergency communications interface to the PSAP domain, this test can be performed with an IMS MTSI service as counterpart.<br>3. Text relay services and language translation services are available. Speech-to-speech and cognitive support relay service may be available.<br>4. A selected scenario from clause B.4.2. |
| Procedure | 1. Make a setting for a relay service address in the user equipment.<br>2. Initiate an RTT + voice emergency communications from the user equipment and also video if video is selected to be included in the scenario.<br>3. Verify that the communication is answered by the PSAP.<br>4. **Check** that RTT and voice is enabled and functional and also video if video is included in the scenario. (AEC-CM-01, AEC-CM-03, AEC-CM-07)<br>5. **Check** that the call taker can retrieve a relay service address conveyed in the initiated emergency communication. (AEC-SS-02), (AEC-ML-09)<br>6. **Check** that the call taker has other means to manually find addresses to relay services and language support services and other assisting services. (AEC-SS-03)<br>7. Ask the call taker to use a relay service or other assisting service.<br>8. Let the call taker include the assisting service in the call to create a three-party call in the established media.<br>9. **Check** that the inclusion of the assisting service is successful and that the parties got information about the parties and the progress. (AEC-SS-01), (AEC-SS-02), (AEC-SS-03), (AEC-CO-01), (AEC-CO-02)<br>10. **Check** that media works. (AEC-CM-02), (AEC-CM-08), (AEC-CM-06)<br>11. **Check** an agreed number of the available relay and assisting services by performing steps 1-10 or 6-10 for each assisting service and noting which are available and which pass the test steps.<br>12. **Check** that both a relay service and a language translation service can be invoked to assist communication by connection to the same bridge. (AEC-SS-04)<br>13. **Check** that the call taker can transfer the communication to a better matching call taker nationally. (AEC-CT-01)<br>14. **Check** that the call taker can conference in an assisting call taker internationally. (AEC-CO-03) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

### B.9.8.4 Sign language handling

| | |
|---|---|
| Test of | AEC-CO-01, AEC-CO-02, AEC-ML-09, AEC-SS-01, AEC-SS-02, AEC-SS-03, AEC-SS-04 |
| Precondition | 1. The ICT under test is an emergency communications system including PSAP.<br>2. A SIP based communication service with end user equipment for test is available capable of handling RTT, and voice and also video.<br>NOTE: Since IMS services also use SIP according to ETSI TS 103 479 [2] in their emergency communications interface to the PSAP domain, this test can be performed with an IMS MTSI service as counterpart.<br>3. Video relay services and language translation services are available.<br>4. A selected scenario from clause B.4.2 containing video. |
| Procedure | 1. Make a setting for a video relay service address in the user equipment and preference for a sign language.<br>2. Initiate an video + RTT + voice emergency communications from the user equipment.<br>3. **Check** that the communication is answered by the PSAP. (AEC-ML-06).<br>4. **Check** that all media are enabled and functional. (AEC-CM-01, AEC-CM-03, CM-07)<br>5. Verify that the information about language and modality was extracted by the PSAP.<br>6. **Check** that if the emergency communications system region has own competence in the preferred sign language, then the communication was routed to and answered by a call taker with matching competence. (AEC-RO-04)<br>7. If step 6 was done, redo the test with other sign language preferences, otherwise continue.<br>8. **Check** that the call taker can retrieve a relay service address conveyed in the initiated emergency communication. (AEC-SS-02), (AEC-ML-09)<br>9. **Check** that the call taker has other means to manually find addresses to relay services and language support services and other assisting services. (AEC-SS-03)<br>10. Ask the call taker to use a video relay service.<br>11. Let the call taker include the video relay service in the call to create a three-party call in the established media.<br>12. **Check** that the inclusion of the video relay service is successful. (AEC-SS-01), (AEC-SS-02), (AEC-SS-03), (AEC-CO-01), (AEC-CO-02)<br>13. **Check** that media works. (AEC-CM-02), (AEC-CM-08), (AEC-CM-06)<br>14. **Check** that both a relay service and a language translation service can be invoked to assist communication by connection to the same bridge. (AEC-SS-04) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

# B.10 Relay service and other assisting services

| | |
|---|---|
| Test of | AEC-CM-02, AEC-CM-06, AEC-CM-08, AEC-CM-12, AEC-RS-01, AEC-RS-02, AEC-SS-01, AEC-SS-02, AEC-SS-03, AEC-SS-04, AEC-CO-01, AEC-CO-02, AEC-ML-08, AEC-ML-09 |
| Precondition | 1. The ICT under test is an assisting service (e.g. a relay service or a language translation service).<br>2. An originating service with user equipment being capable of handling RTT, and voice and also video if video is included in the selected scenario in precondition 5.<br>3. If the invocation of assisting service by the UE or originating service is to be tested, then the communication service with end user equipment for test has availability to request invocation of the assisting service.<br>4. An emergency communications system for test is available.<br>5. A selected scenario from clause B.4.2. |
| Procedure | 1. Go to step 7 when invocation of the assisting service by the emergency communications system shall be tested.<br>2. Initiate a RTT + voice emergency communications from the user equipment and also video if video is selected to be included in the scenario. Make the initiation in a way that is intended to invoke also a relay service by the UA or the originating service.<br>3. **Check** that the communication is rapidly answered by the PSAP regardless of if the relay service has answered or not. (AEC-RS-01), (AEC-RS-02)<br>4. **Check** that the relay service gets connected in a three-party connection. (AEC-RS-01)<br>5. **Check** that the PSAP and relay service staff gets information about the communication participants and the progress of the connections. (AEC-RS-02)<br>6. Go to step 14.<br>7. Initiate a RTT + voice emergency communications from the user equipment and also video if video is selected to be included in the scenario.<br>8. Verify that the communication is answered by the PSAP.<br>9. Verify that RTT and voice is enabled and functional and also video if video is included in the scenario.<br>10. **Check** that the call taker can retrieve a relay service address conveyed in the initiated emergency communication or by manual means. (AEC-SS-02), (AEC-ML-08), (AEC-ML-09)<br>11. **Check** that the call taker has other means to manually find addresses to relay services and language support services and other assisting services. (AEC-SS-03)<br>12. Ask the call taker to use a relay service or expert advice or other assisting service.<br>13. Let the call taker include the assisting service in the call to create a three-party call in the established media.<br>14. **Check** that the inclusion of the assisting service is successful. (AEC-SS-01), (AEC-SS-02), (AEC-SS-03), (AEC-CO-01), (AEC-CO-02)<br>15. **Check** that the PSAP and the assisting service got information about the parties in the communication and the connection establishment status. (AEC-CO-01)<br>16. **Check** that RTT is presented in real time in a readable way on the user equipment indicating an approximate time order of the received text. (AEC-CM-08)<br>17. **Check** that the RTT from the user is presented in real time to the call taker and assisting service.<br>18. **Check** that voice is mixed. (AEC-CM-02)<br>19. Perform steps 20 to 22 if video is included in the scenario selected in precondition 5, and the relay service supports video.<br>20. **Check** that if video is included in the scenario, that video presents both other parties to each party in the communication. (AEC-CM-06)<br>21. **Check** that (AEC-UI-01), (AEC-CM-02), (AEC-CM-08) are fully verified for communication in RTT, and voice, and also (AEC-CM-06) for video if video is included in the tested scenario.<br>22. **Check** that the tests for total conversation for the relay service in emergency communications specified in EN 301 549 [1], clause C.6.7 pass. (AEC-CM-12) |
| Result | Pass: All checks are true<br>Fail: At least one check fails |

# B.11 Information

## B.11.1 General on information

Clause 11.1 is informative and does not contain any testable requirements.

## B.11.2 Accessible format of information

Clause 11.2 is informative and does not contain any testable requirements.

## B.11.3 Contents of information about products involved in emergency communications

### B.11.3.1 Instructions for installation and maintenance

| | |
|---|---|
| Test of | AEC-AI-01 |
| Precondition | 1. The ICT under test is a product which may be involved in emergency communications. |
| Procedure | 1. Retrieve and inspect information about the product not placed on the product itself.<br>2. **Check** that the information contains instructions about the installation and maintenance, storage and disposal of the product specifically for its use for emergency communications. (AEC-AI-01)<br>3. **Check** that the information is publicly available. (AEC-AI-01). |
| Result | Pass: All checks are true<br>Fail: At least one check is false |

### B.11.3.2 Instructions for use

| | |
|---|---|
| Test of | AEC-AI-02 |
| Precondition | 1. The ICT under test is a product which may be involved in emergency communications. |
| Procedure | 1. Retrieve and inspect information about the product.<br>2. **Check** that information about the product related to its use for emergency communication is publicly available including instructions for the use of the relevant accessibility functions, how to activate them and their interoperability with assistive technologies. (AEC-AI-02) |
| Result | Pass: All checks are true<br>Fail: At least one check is false |

### B.11.3.3 Description of user interface

| | |
|---|---|
| Test of | AEC-AI-03 |
| Precondition | 1. The ICT under test is a product which may be involved in emergency communications. |
| Procedure | 1. Retrieve and inspect information about the product not placed on the product.<br>2. **Check** that the information contains a description of the user interface for the use in emergency communications regarding handling, control, feedback, input and output. (AEC-AI-03)<br>3. **Check** that the information contains a list of which accessible user interface elements the product provides of the ones enumerated in clause 11.3.3 of the present document. (AEC-AI-03) |
| Result | Pass: All checks are true<br>Fail: At least one check is false |

### B.11.3.4 Information about product functionality

| | |
|---|---|
| Test of | AEC-AI-04 |
| Precondition | 1. The ICT under test is a product which may be involved in emergency communications. |
| Procedure | 1. Retrieve and inspect information about the product not placed on the product.<br>2. **Check** that the information contains descriptions of the functionality of the product related to its use for emergency communication. (AEC-AI-04)<br>3. **Check** that the information contains a list of which accessibility functions of the ones enumerated in clause 11.3.4 of the present document. (AEC-AI-04) |
| Result | Pass: All checks are true<br>Fail: At least one check is false |

### B.11.3.5 Information about interface to assistive technology

| | |
|---|---|
| Test of | AEC-AI-05 |
| Precondition | 1. The ICT under test is a product which may be involved in emergency communications. |
| Procedure | 1. Retrieve and inspect information about the product not placed on the product.<br>2. **Check** that the information contains descriptions about the interfaces to assistive devices specifically for the use in emergency communication. (AEC-AI-05).<br>3. **Check** that a list of assistive devices with which the product has been tested, including information about with which assistive devices the product has been verified to work for its specific functions related to emergency communications. (AEC-AI-05) |
| Result | Pass: All checks are true<br>Fail: At least one check is false |

## B.11.4 Contents of information about services involved in emergency communications

| | |
|---|---|
| Test of | AEC-AI-06, AEC-AI-07, AEC-AI-08, AEC-AI-09 |
| Precondition | 1. The ICT under test is a service which may be involved in emergency communications. |
| Procedure | 1. Retrieve and inspect information about the service.<br>2. **Check** that information about products used in the provision of the service is available including its use for emergency communication and their accessibility features and interface to assistive technologies. (AEC-AI-06)<br>3. **Check** that information is provided on the functions of the service, and how products are used in provision of the service. (AEC-AI-07)<br>4. **Check** that information of the service contains descriptions of the accessibility features of the service. (AEC-AI-08)<br>5. **Check** that information on the service contains information about the interoperability with available assisting services. (Relay service, Language translation service, Expert service). (AEC-AI-09) |
| Result | Pass: All checks are true<br>Fail: At least one check is false |

## B.11.5 Contents of information about services for the assessment of their accessibility

| | |
|---|---|
| Test of | AEC-AI-10, AEC-AI-11, AEC-AI-12, AEC-AI-13, AEC-AI-14, AEC-AI-15, AEC-AI-16, AEC-AI-17, AEC-AI-18 |
| Precondition | 1. The ICT under test is a service which may be involved in emergency communications. |
| Procedure | 1. Retrieve and inspect information about the service for assessment of the accessibility of the information and the service from the terms and conditions or similar document.<br>2. **Check** that such information is available. (AEC-AI-10)<br>3. **Check** that the information is publicly available. (AEC-AI-11)<br>4. **Check** that general information about what the service provides in relation to emergency communications is available. (AEC-AI-12)<br>5. **Check** that information is provided on the design and operation of the service. (AEC-AI-13)<br>6. **Check** that descriptions of how the service is accessed and used is available. (AEC-AI-14)<br>7. **Check** that information contains descriptions on how the service meets the requirements of clauses 6.1 to 6.7 of the present document. (AEC-AI-15)<br>8. **Check** that information contains descriptions on how products used by users during provision of the service meets the requirements of clauses 6.1 to 6.7 of the present document. (AEC-AI-16)<br>9. **Check** that information contains information on procedures applied on the service to demonstrate compliance of the service delivery process with the applicable requirements of the present document. (AEC-AI-17)<br>10. **Check** that Information is available on how users can submit complaints including in accessible ways about the service. (AEC-AI-18) |
| Result | Pass: All checks are true<br>Fail: At least one check is false |

# Annex C (informative): User Level Use Cases

## C.1 Introduction

The present informative annex contains a set of use case descriptions for emergency communication situations involving users with disabilities in emergency situations. The use cases can be used as examples and clarifications for situations which may appear in emergency cases and be handled through emergency communications.

The collection of use cases has no ambition to cover all possible cases.

## C.2 Users with mobile phones with voice and RTT

C.2.1 General.

The following use cases are examples of use of mobile phones with only voice or with voice and real-time text:

C.2.2 User with low vision calling emergency with voice in home country.

C.2.3 Blind user calling in emergency, calling with voice in foreign country.

C.2.4 Hard-of-hearing user in emergency calling with RTT and voice in home country.

C.2.5 Call back to hard of hearing user with voice and RTT.

C.2.6 Deaf user in emergency calling with RTT and being transferred to mountain guard using RTT, alternatively needing support for modality conversion between RTT and speech.

C.2.7 Deaf user in emergency in foreign country calling with RTT and getting language support in RTT.

C.2.8 Call back to deaf user in foreign country with voice and RTT and including same language support as in original call.

C.2.9 Deaf user in emergency not trusting the PSAP to be able to use text, calling text relay service and requesting emergency communication.

C.2.10 Hard-of-hearing user in emergency visiting other country, not believing she will be able to communicate with the local emergency centre, therefore calling relative in home country asking the relative to make emergency call.

C.2.11 Deaf-blind user in emergency having mobile phone with built-in assistive technology providing Braille display and QWERTY keyboard, initiating emergency communication and being served with RTT.

C.2.12 Hard-of-hearing user in emergency calling with RTT and voice in home country. Being able to talk but not hear. The answering call taker attaches automatic speech-to-text to the call in a way that displays the call takers transmitted text also to the call taker for catching any mistakes. The call handling continues mainly by speech, vs speech-to-text occasionally complemented by manual RTT corrections.

C.2.13 User with mental disability in emergency calling emergency call with mobile phone including assistive technology software enabling the user to communicate by sending pictograms translated to text and voice by the assistive technology. The call taker transfers the call by attended transfer to a call taker with competence in communicating with persons with disabilities. The caller understands speech, so the call taker can answer by speech. Alternatively, the user sends Blisscode, and the call taker answers in RTT which the caller's assistive technology software converts to Blissymbols.

C.2.14 User with mental disability in emergency calling emergency call with mobile phone including assistive technology software enabling the user to communicate by sending Blissymbols translated to text and voice by the assistive technology. The call taker transfers the call by attended transfer to a call taker with competence in communicating with persons with disabilities. The call taker answers in rtt which the caller's assistive technology software converts to Blissymbols.

C.2.15 A user in medical emergency initiates an emergency communication with a mobile phone with voice. The call taker includes a medical expert in a three-party fashion. They discuss pharmaceuticals which the user has. A medicine name "phlyxophentine" is hard to pronounce so that the medical expert understands, so the user adds RTT to the call and types the name. The medical expert reads the name and the call can continue to solve the issue.

C.2.16 A deaf user in emergency initiates an emergency communication. There is a catastrophic situation, so all call takers are busy for the moment. The calling user gets calming queue messages in both voice and RTT until a call taker is free and can take the call.

## C.3 Users with mobile phones with total conversation

C.3.1 General.

The following use cases are examples of use of mobile phones with users who have use of total conversation:

C.3.2 Hard-of-hearing user in emergency communication with total conversation in mobile phone, wanting to use voice and support understanding by seeing the call taker and having RTT as fallback when something gets hard to understand, reaching call taker using voice and having corresponding features.

C.3.3 Deaf sign language user in emergency initiating emergency communication with total conversation in mobile phone, including preferred language indication in the communication, reaching call taker with sign language competence. Using RTT for fallback for phrases requiring exact spelling.

C.3.4 Callback to deaf sign language user in emergency with total conversation in mobile phone, using video for sign language and RTT for fallback for phrases requiring exact spelling.

C.3.5 Deaf sign language user in emergency initiating emergency communication with total conversation in mobile phone, including preferred language indication in the call, reaching call taker without sign language competence. The call taker seeing the language preference invokes sign language interpreter as third party in the communication. Using RTT to begin handling the case before the interpreter is included, then continuing in translated sign language with RTT fallback when needed.

C.3.6 Deaf sign language user in emergency initiating emergency communication with total conversation in mobile phone, not including any preferred language indication in the communication, reaching call taker without sign language competence, communicating in RTT and gestures about language preferences and invoking sign language interpreter as third party in the communication. But the call taker and the interpreter have no common competence in spoken languages, so the call taker transfers the communication to a call taker with competence in the same spoken language as the interpreter. The first call taker staying in the communication until it is verified that the communication is efficient. The communication continues in translated sign language with RTT fallback when needed.

C.3.7 Deaf sign language user in emergency not trusting that the emergency centre has competence in the user's sign language, therefore initiating a communication with his usual video relay service from his total conversation app in a mobile device, and asks for emergency communication. The relay service redirects the communication to emergency communication in a way that makes the user terminal make a proper emergency call, and causing the relay service to be connected in tree-party mode in the communication. Reaching call taker without sign language competence, communicating in translated sign language with RTT fallback when needed.

## C.4 Users with app or web based total conversation

C.4.1 General.

The following use cases are examples of use of app or web-based communication with users who have use of total conversation:

C.4.2 Hard-of-hearing user in emergency initiates communication with app or web based total conversation, wanting to use voice and support understanding by seeing the call taker and having RTT as fallback when something gets hard to understand, reaching call taker using voice and having corresponding features.

C.4.3 Deaf sign language user in emergency initiates emergency communication with app or web based total conversation, including preferred language indication in the communication, reaching call taker with sign language competence. Using RTT for fallback for phrases requiring exact spelling.

C.4.4 Callback to deaf sign language user in emergency with app or web based total conversation, using video for sign language and RTT for fallback for phrases requiring exact spelling.

C.4.5 Deaf sign language user in emergency initiates emergency communication with app or web based total conversation, including preferred language indication in the communication, reaching call taker without sign language competence. The call taker seeing the language preference invokes sign language interpreter as third party in the communication. Using RTT to begin handling the case before the interpreter is included, then continuing in translated sign language with RTT fallback when needed.

C.4.6 Deaf sign language user in emergency initiates emergency communication with app or web based total conversation, not including any preferred language indication in the communication, reaching call taker without sign language competence, communicating in RTT and gestures about language preferences and invoking sign language interpreter as third party in the communication. But the call taker and the interpreter have no common competence in spoken languages, so the call taker transfers the communication via attended call transfer to a call taker with competence in the same spoken language as the interpreter. Then continuing in translated sign language with RTT fallback when needed.

C.4.7 Deaf sign language user in emergency not trusting that the emergency centre has competence in the user's sign language, therefore initiating communication with their usual video relay service from his app or web based total conversation account, and asks for emergency communication. The relay service redirects the communication to emergency communications in a way that makes the user terminal make a proper emergency communication, and causing the relay service to be connected in tree-party mode in the communication. Reaching call taker without sign language competence, communicating in translated sign language with RTT fallback when needed.

# Annex D (informative): Cross references between requirements labels and clauses

The present annex contains table D.1 presenting where the labels representing functional requirements and information appear in the technical requirements clauses, and table D.2 presenting the labels in alphabetical order with information on their main topic and where in clauses 6 and 11 they are defined.

**Table D.1: Cross reference table between functional requirements and information labels and clauses where they are used**

| Clause of functional requirement | Main topic | Label of functional requirement | Clause with technical requirement |
|---|---|---|---|
| 6.2 | Modality and Language | | |
| | | AEC-ML-01 | 7.2.2, 7.3.2, 7.4, 8.2.2, 8.3.2, 8.4.1 |
| | | AEC-ML-02 | 7.2.2, 7.3.2, 7.4, 8.2.2, 8.3.2, 8.4.1 |
| | | AEC-ML-03 | 7.2.2, 7.3.2, 7.3.3, 7.4, 9.3 |
| | | AEC-ML-04 | 7.2.2, 7.3.2, 7.4, 8.2.3, 8.3.3, 8.4.1, 8.4.2, 8.4.3.1, 8.4.3.5, 9.3 |
| | | AEC-ML-05 | 9.3 |
| | | AEC-ML-06 | 9.7 |
| | | AEC-ML-07 | 9.7 |
| | | AEC-ML-08 | 7.2.2, 7.3.2, 7.3.3, 8.2.2, 8.2.3, 8.3.3, 8.4.1, 8.4.3.5, 9.4, 10 |
| | | AEC-ML-09 | 9.8.3, 9.8.4, 10 |
| 6.3 | User Interface and general accessibility | | |
| | | AEC-UI-01 | 7.2.1, 7.3.1, 7.4, 8.2.1, 8.3.1, 8.4.1, 9.1 |
| | | AEC-UI-02 | 7.2.3, 7.3.3, 7.4 |
| | | AEC-UI-03 | 7.2.1, 7.3.1, 7.4 |
| | | AEC-UI-04 | 7.2.1, 7.3.1, 7.4 |
| | | AEC-UI-05 | 7.2.1, 7.3.1, 7.4 |
| | | AEC-UI-06 | |
| | | AEC-UI-07 | 7.3.1 |
| 6.4.2 | Session Control and emergency contextual information | | |
| | | AEC-SC-01 | 7.2.3, 7.3.3, 7.4, 8.2.3, 8.3.3, 8.4.1, 8.4.2, 8.4.3.2, 8.4.3.3, 8.4.3.4 |
| | | AEC-SC-02 | 7.2.3, 7.3.3, 7.4, 8.2.3, 8.3.3, 8.4.1, 8.4.2, 8.4.3.2, 8.4.3.3, 8.4.3.4 |
| | | AEC-SC-03 | 7.2.3, 7.3.3, 7.4, 8.2.3, 8.3.3, 8.4.1, 8.4.3.2, 8.4.3.3, 8.4.3.4 |
| | | AEC-SC-04 | 7.2.3, 7.3.3, 7.4, 8.2.3, 8.3.3, 8.4.1, 8.4.2, 8.4.3.4, 8.4.3.5, 9.6 |
| | | AEC-SC-05 | 7.2.2, 7.2.3, 7.3.2, 7.3.3, 7.4, 8.2.3 8.3.3, 8.4.1, 8.4.2, 8.4.3.1, 8.4.3.3, 8.4.3.4, 9.3 |
| | | AEC-SC-06 | 7.2.2, 7.2.3, 7.3.2, 7.3.3, 7.4, 8.2.2, 8.2.3, 8.3.2, 8.4.1, 8.4.2, 8.4.3.1, 8.4.3.2, 9.3, 10 |
| | | AEC-SC-07 | 9.7 |
| | | AEC-SC-08 | |
| 6.4.3 | Routing | | |
| | | AEC-RO-01 | 9.4 |
| | | AEC-RO-02 | 9.4, 9.8.2 |
| | | AEC-RO-03 | 9.4 |
| | | AEC-RO-04 | 9.4 |
| | | AEC-RO-05 | 9.4 |
| | | AEC-RO-06 | 9.4 |
| | | AEC-RO-07 | 9.4 |
| | | AEC-RO-08 | 9.4 |
| | | AEC-RO-09 | 9.4 |

| Clause of functional requirement | Main topic | Label of functional requirement | Clause with technical requirement |
|---|---|---|---|
| 6.4.4 | Communication Transfer | | |
| | | AEC-CT-01 | 7.2.1, 7.3.1, 7.4, 8.2.1 8.3.1, 8.4.1, 9.5, 9.8.3 |
| | | AEC-CT-02 | 9.5, 9.8.3 |
| 6.4.5 | Conferencing | | |
| | | AEC-CO-01 | 9.2, 9.5, 9.8.3, 9.8.4,10 |
| | | AEC-CO-02 | 9.2, 9.5, 9.8.3, 9.8.4, 10 |
| | | AEC-CO-03 | 9.5, 9.8.3 |
| 6.4.6 | Callback | | |
| | | AEC-CB-01 | 7.2.4, 7.3.4, 7.4, 8.2.4, 8.3.4, 8.4.1, 8.4.3.5, 9.6 |
| | | AEC-CB-02 | 7.2.4, 7.3.4, 7.4, 8.2.4, 8.3.4, 8.4.1, 9.6 |
| | | AEC-CB-03 | 7.2.4, 7.3.4, 8.2.4, 8.3.4, 8.4.1, 9.6 |
| | | AEC-CB-04 | 7.2.6, 7.3.6, 7.4, 8.2.6, 8.3.6, 8.4.1, 9.6 |
| | | AEC-CB-05 | 9.6 |
| | | AEC-CB-06 | 9.6 |
| 6.5.2 | Audio | | |
| | | AEC-CM-01 | 9.2 |
| | | AEC-CM-02 | 7.2.1, 7.2.5, 7.3.1, 7.4, 8.2.1, 8.2.5, 8.3.1, 8.4.1, 9.2, 10 |
| 6.5.3 | Video | | |
| | | AEC-CM-03 | 7.2.1, 9.2 |
| | | AEC-CM-04 | 7.2.1, 7.3.1, 7.4, 9.2 |
| | | AEC-CM-05 | 7.2.1, 7.3.1, 7.4, 9.2 |
| | | AEC-CM-06 | 7.2.1, 7.2.5, 7.3.1, 7.4, 8.2.1, 8.2.5, 8.2.5, 8.3.1, 8.4.1, 9.2, 10 |
| 6.5.4 | Real-time Text | | |
| | | AEC-CM-07 | 9.2 |
| | | AEC-CM-08 | 7.2.1, 7.2.5, 7.3.1, 7.4, 8.2.1, 8.2.5, 8.2.1, 8.2.5, 8.3.1, 8.4.1, 9.2, 10 |
| 6.5.5 | Text Messaging | | |
| | | AEC-CM-09 | 7.3.1 |
| | | AEC-CM-10 | 7.3.1 |
| 6.5.6 | Total Conversation | | |
| | | AEC-CM-11 | 9.2 |
| | | AEC-CM-12 | 7.2.1, 7.2.5, 7.3.1, 7.4, 8.2.1, 8.2.5, 8.3.1, 8.4.1, 10 |
| 6.6 | Relay Service Invocation in emergency communications by the user | | |
| | | AEC-RS-01 | 7.2.6, 7.3.6, 7.4, 8.2.6, 8.3.6,8.4.1, 10 |
| | | AEC-RS-02 | 7.2.6, 7.3.6, 7.4, 8.2.6, 8.3.6,8.4.1, 10 |
| 6.7 | Assisting services in emergency communications | | |
| | | AEC-SS-01 | 9.4, 9.8.3, 9.8.4, 10 |
| | | AEC-SS-02 | 7.2.2, 7.3.2, 7.4, 8.2.2, 8.3.2, 8.4.1, 8.4.2, 8.4.3.5, 9,4, 9.7, 9.8.3, 9.8.4, 10 |
| | | AEC-SS-03 | 9,4, 9.7, 9.8.3, 9.8.4, 10 |
| | | AEC-SS-04 | 9.4, 9.8,3, 9.8.4, 10 |
| 11 | Information | | |
| | | AEC-AI-01 | 11.3.1 |
| | | AEC-AI-02 | 11.3.2 |
| | | AEC-AI-03 | 11.3.3 |
| | | AEC-AI-04 | 11.3.4 |
| | | AEC-AI-05 | 11.3.5 |
| | | AEC-AI-06 | 11.4 |
| | | AEC-AI-07 | 11.4 |
| | | AEC-AI-08 | 11.4 |
| | | AEC-AI-09 | 11.4 |
| | | AEC-AI-10 | 11.5 |
| | | AEC-AI-11 | 11.5 |
| | | AEC-AI-12 | 11.5 |
| | | AEC-AI-13 | 11.5 |

| Clause of functional requirement | Main topic | Label of functional requirement | Clause with technical requirement |
|---|---|---|---|
| | | AEC-AI-14 | 11.5 |
| | | AEC-AI-15 | 11.5 |
| | | AEC-AI-16 | 11.5 |
| | | AEC-AI-17 | 11.5 |
| | | AEC-AI-18 | 11.5 |

**Table D.2: List of functional requirements and information labels and their locations in clauses 6 and 11**

| Functional Requirements Label | Defined in clause | Clause header |
|---|---|---|
| AEC-AI-01 | 11.3.1 | Information |
| AEC-AI-02 | 11.3.2 | Information |
| AEC-AI-03 | 11.3.3 | Information |
| AEC-AI-04 | 11.3.4 | Information |
| AEC-AI-05 | 11.3.5 | Information |
| AEC-AI-06 | 11.4 | Information |
| AEC-AI-07 | 11.4 | Information |
| AEC-AI-08 | 11.4 | Information |
| AEC-AI-09 | 11.4 | Information |
| AEC-AI-10 | 11.5 | Information |
| AEC-AI-11 | 11.5 | Information |
| AEC-AI-12 | 11.5 | Information |
| AEC-AI-13 | 11.5 | Information |
| AEC-AI-14 | 11.5 | Information |
| AEC-AI-15 | 11.5 | Information |
| AEC-AI-16 | 11.5 | Information |
| AEC-AI-17 | 11.5 | Information |
| AEC-AI-18 | 11.5 | Information |
| AEC-CB-01 | 6.4.6 | Callback |
| AEC-CB-02 | 6.4.6 | Callback |
| AEC-CB-03 | 6.4.6 | Callback |
| AEC-CB-04 | 6.4.6 | Callback |
| AEC-CB-05 | 6.4.6 | Callback |
| AEC-CB-06 | 6.4.6 | Call back |
| AEC-CM-01 | 6.5.2 | Audio |
| AEC-CM-02 | 6.5.2 | Audio |
| AEC-CM-03 | 6.5.3 | Video |
| AEC-CM-04 | 6.5.3 | Video |
| AEC-CM-05 | 6.5.3 | Video |
| AEC-CM-06 | 6.5.3 | Video |
| AEC-CM-07 | 6.5.4 | Real-time Text |
| AEC-CM-08 | 6.5.4 | Real-time Text |
| AEC-CM-09 | 6.5.5 | Text Messaging |
| AEC-CM-10 | 6.5.5 | Text Messaging |
| AEC-CM-11 | 6.5.6 | Total conversation |
| AEC-CM-12 | 6.5.6 | Total conversation |
| AEC-CO-01 | 6.4.5 | Conferencing |
| AEC-CO-02 | 6.4.5 | Conferencing |
| AEC-CO-03 | 6.4.5 | Conferencing |
| AEC-CT-01 | 6.4.4 | Communication Transfer |
| AEC-CT-02 | 6.4.4 | Communication Transfer |
| AEC-ML-01 | 6.2 | Modality and Language |
| AEC-ML-02 | 6.2 | Modality and Language |
| AEC-ML-03 | 6.2 | Modality and Language |
| AEC-ML-04 | 6.2 | Modality and Language |
| AEC-ML-05 | 6.2 | Modality and Language |
| AEC-ML-06 | 6.2 | Modality and Language |
| AEC-ML-07 | 6.2 | Modality and Language |
| AEC-ML-08 | 6.2 | Modality and Language |

| Functional Requirements Label | Defined in clause | Clause header |
|---|---|---|
| AEC-ML-09 | 6.2 | Modality and Language |
| AEC-RO-01 | 6.4.3 | Routing |
| AEC-RO-02 | 6.4.3 | Routing |
| AEC-RO-03 | 6.4.3 | Routing |
| AEC-RO-04 | 6.4.3 | Routing |
| AEC-RO-05 | 6.4.3 | Routing |
| AEC-RO-06 | 6.4.3 | Routing |
| AEC-RO-07 | 6.4.3 | Routing |
| AEC-RO-08 | 6.4.3 | Routing |
| AEC-RO-09 | 6.4.3 | Routing |
| AEC-RS-01 | 6.6 | Relay service invocation in emergency communications by the user |
| AEC-RS-02 | 6.6 | Relay service invocation in emergency communications by the user |
| AEC-SC-01 | 6.4.2 | Session Control and emergency contextual information |
| AEC-SC-02 | 6.4.2 | Session Control and emergency contextual information |
| AEC-SC-03 | 6.4.2 | Session Control and emergency contextual information |
| AEC-SC-04 | 6.4.2 | Session Control and emergency contextual information |
| AEC-SC-05 | 6.4.2 | Session Control and emergency contextual information |
| AEC-SC-06 | 6.4.2 | Session Control and emergency contextual information |
| AEC-SC-07 | 6.4.2 | Session Control and emergency contextual information |
| AEC-SC-08 | 6.4.2 | Session Control and emergency contextual information |
| AEC-SS-01 | 6.7 | Assisting services in emergency communications |
| AEC-SS-02 | 6.7 | Assisting services in emergency communications |
| AEC-SS-03 | 6.7 | Assisting services in emergency communications |
| AEC-SS-04 | 6.7 | Assisting services in emergency communications |
| AEC-UI-01 | 6.3 | User Interface and general accessibility |
| AEC-UI-02 | 6.3 | User Interface and general accessibility |
| AEC-UI-03 | 6.3 | User Interface and general accessibility |
| AEC-UI-04 | 6.3 | User Interface and general accessibility |
| AEC-UI-05 | 6.3 | User Interface and general accessibility |
| AEC-UI-06 | 6.3 | User Interface and general accessibility |
| AEC-UI-07 | 6.3 | User Interface and general accessibility |

# Annex E (informative): Emergency communications use by persons with disabilities

Emergency communications for persons with disabilities needs to be arranged so that it provides the same communication modes and media as used by these users in their everyday communication.

As in general communication, the real time voice communication remains the most widespread means for emergency communication. Still, other or complementing means are needed to meet the needs of persons with no or limited capability for voice communication.

Persons who are fully capable of using voice communication, but have low vision or mobility disabilities, may rely on voice communication in daily life. For both everyday use and emergency use, they would require user equipment with interfaces that allow communication control without vision, or with reduced physical strength or dexterity. Such user interface adaptations are not addressed in the present documents and are specified in other documents, for example in EN 301 549 [1].

One alternative to voice is text. Real-Time Text (RTT) enables conversational text communication at a pace determined by the texting speed of the user and the PSAP call taker. The receiving part can follow the sender's thoughts as they are typed, without additional delay. RTT is a feasible medium for emergency communications, even though text communication is usually only 1/3 the speed of speech or slower. This reduced speed makes text less favourable than other conversational means as voice and sign language in emergency communications. However, RTT remains valuable because most PSAP call takers can be expected to handle it, enabling direct communication between the user in emergency who cannot speak - whether due to a disability or other reasons - and the PSAP call taker, which is essential for effective emergency handling.

The ability to handle text communication with users whose native language differs from the PSAP call taker's may be limited. In such cases, direct RTT communication may need to be complemented by invoking a text relay service, routing the communication to a PSAP with enhanced foreign-language capabilities, or both. Enhancements with automated text-to-text translations may also be implemented to facilitate the communication.

For sign language users, the sign language communication can flow as rapid as speech, and it is therefore preferred over text communication in emergency communication. Some countries may choose to staff PSAPs with sign-language-competent call takers and route sign-language emergency communications accordingly. More commonly, video relay services are expected to be used. In both cases, successful emergency handling depends on the relay service or call taker being competent in the specific sign language used by the individual. A video relay service selected by the user or matching the language competence of the user needs to be connected.

Many sign language users are also capable of text communication. allowing emergency interaction to begin with RTT while waiting for a video relay service to join and accelerated the communication. Some sign language users have less text proficiency and benefit less from an initial direct RTT connection with just the PSAP call taker prior to involvement of a video relay service.

There are also users with speech related disabilities who usually use a speech-to-speech relay service for remote communication. For these users, the effectiveness of an initial direct connection with only the PSAP call taker may vary significantly before a relay service is engaged. Additionally, speech-to-speech relay services may have limited availability, especially during nighttime hours. Still, these users may be proficient and feel comfortable with text based communication. For these reasons, it may be most effective to establish communication using as many media types as possible from the outset.

Some persons with communication-related disabilities seldom or never engage in remote voice communication and may be unaware of the possibility to request a relay service or alternative media during an emergency. In such cases, rapid assessment by the PSAP call taker, combined with the ability to transfer the call to a specialist PSAP call taker experienced in communicating with persons with disabilities, may be a good approach. Such specialist PSAP call takers may also have access to additional resources like language translators and relay services for optimal handling of the communication.

# History

| Version | Date | Status | |
|---|---|---|---|
| V1.0.0 | February 2026 | SRdAP process | EV 20260520: 2026-02-19 to 2026-05-20 |
| | | | |
| | | | |
| | | | |
| | | | |