



**EUROPEAN COMMISSION**  
DIRECTORATE-GENERAL INFORMATION SOCIETY AND MEDIA  
Electronic Communications Policy  
**Implementation of Regulatory Framework (I)**

Brussels, 6th May 2011  
**M/493 EN**

**STANDARDISATION MANDATE TO THE EUROPEAN STANDARDS ORGANISATIONS (ESO)  
IN SUPPORT OF THE LOCATION ENHANCED EMERGENCY CALL SERVICE**

**1. TITLE**

Mandate to the ESO in support of the regulatory framework for electronic communications networks and services, namely:

- Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive)
- Directive 2009/140/EC of the European Parliament and the Council of 25 November 2009 amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, and 2002/20/EC on the authorisation of electronic communications networks and services
- Directive 2002/22/EC of the European Parliament and the Council of 7 March 2002 on universal service and user's rights relating to electronic communications networks and services (Universal Service Directive)
- Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications)
- Directive 2009/136/EC of the European Parliament and the Council of 25 November 2009 amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector and Regulation (EC) No 2006/2004 on cooperation between national authorities responsible for the enforcement of consumer protection laws
- Recommendation 2003/558/EC of the Commission of the European Communities of 25 July 2003 on the processing of caller location information in electronic communication networks for the purpose of location-enhanced emergency call services

This Mandate refers in particular to Article 26 of the Universal Service Directive 2002/22/EC on emergency services and the single European emergency call number as amended by Directive 2009/136/EC.

## **2. RATIONALE**

### **2.1. Introduction**

The ability to initiate an emergency communication to request help when needed is a right of all citizens, and this ability should be independent of the network and access technologies deployed for voice communications provision or the physical abilities of the citizen. The successful outcome of an emergency call could make the difference between life and death. It is therefore essential for the emergency responders to be provided with accurate location information via an automated process<sup>1</sup>.

For the telephone service provided by traditional circuit switched networks, mobile networks and IP-based networks the determination and conveyance of location information of emergency callers is not sufficiently standardized, hampering progress at national level (i.e. use of proprietary technical solutions). European standards do not provide complete architectural models and do not specify all protocol elements needed to support location enhanced emergency calling on existing infrastructures and future networks. Hence, implementable solutions are not readily available but required in Member States.

The lack of commonly agreed specifications and standards in support of the processing of caller location information in electronic communications networks for the purpose of the location enhanced emergency call service in Europe is a barrier for implementing future proof solutions which fulfil the requirements of article 26 of the amended Directive 2002/22/EC. The objective of this Mandate is to stimulate further standardisation work in this field to support harmonized European solutions also with regard to cost effective implementations.

### **2.2. The legal environment**

The current list of standards and/or specifications issued in accordance with Article 17 of the Framework Directive 2002/21/EC is set out in Commission Decision 2007/176/EC of 11 December 2006<sup>2</sup>.

In accordance with Paragraph (5) of Article 26 of the Universal Service Directive 2002/22/EC as amended by Directive 2009/136/EC Member States are obliged to ensure that undertakings concerned make caller location information available free of charge to the authority handling emergency calls as soon as the call reaches that authority. This shall apply to all calls to the single European emergency call number "112" and – where applicable – additional national emergency call numbers. The restriction “to the extent

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<sup>1</sup> See in this regard [ECC Report 143](#) “Practical Improvements in Handling 112 Emergency Calls: Caller Location Information”

<sup>2</sup> [Commission Decision 2007/176/EC](#) of 11 December 2006 establishing a list of standards and/or specifications for electronic communications networks, services and associated facilities and services and replacing all previous versions, OJ L 86 of 27.3.2007.

technically feasible”, which was mentioned in Article 26 of the former Directive 2002/22/EC, is no longer provided for.

Furthermore, the added Paragraph (2) of Article 26 of Directive 2002/22/EC extends the obligation to provide access to emergency services to the undertakings providing end-users with an electronic communications service for originating national calls to a number or numbers in a national telephone numbering plan, so that end users are able to call and access the emergency services using any service (telephone, VoIP or whatever voice service using E.164 numbers).

Finally, Paragraph (4) of Article 26 of Directive 2002/22/EC mandates that Member States have to ensure that access for disabled end-users to emergency services is equivalent to that enjoyed by other end-users.

In the light of the above extension of the scope of Article 26 of the Universal Service Directive, the existing specifications and standards concerning the provision of location information for emergency calls included in the current list of standards are insufficient.

Article 9 of Directive 2002/58/EC determines the general conditions for the processing of location data and provides that such data may only be processed when it is made anonymous or with the consent of the users or subscribers to the extent necessary for the provision of a value added service. Processing of location data must be restricted to persons acting under the authority of the provider of the communications or value added service.

Article 10 (b) of Directive 2002/58/EC requires Member States to ensure that there are transparent procedures governing the way in which a provider of a public communications network and/or a publicly available electronic communications service may override the elimination of the presentation of calling line identification and the temporary denial or absence of consent of a subscriber or user for the processing of location data, on a per-line basis for organisations dealing with emergency calls and recognised as such by a Member State, including law enforcement agencies, ambulance services and fire brigades, for the purpose of responding to such calls.

According to these provisions, it must be ensured that the capability of electronic communications networks and services to provide location data with emergency calls cannot be used to obtain location data for other purposes without the consent of the subscriber or user.

The mandated deliverable is expected to provide a viable technical solution coherent with these regulatory provisions.

### **2.3. The standardisation environment**

The two available technical specifications, which are related to the subject of caller location and included in the current list of standards published in 2006, only address (i) the application protocol of the interface between PSAP and location server for mobile networks (ETSI TS 102 164) and (ii) the functional description of Location Services in UMTS (ETSI TS 123 171). Emergency calling by means of VoIP is not covered at all by any ETSI standard or technical specification although VoIP is about to replace the traditional telephony service.

The ETSI technical specifications TS 102 650 and TS 102 660 address the subject of caller location information in next generation networks (NGN). However, TS 102 650, which analyses and reports on the work of various standardisation bodies, does not recommend a specific architecture nor a protocol for the provision of location information in NGN. And TS 102 660 suggests to wait for harmonized solutions with the NENA concept, which is suited for North American infrastructures. In contrast to this recommendation the requirements of Article 26 of the amended Directive 2002/22/EC do not provide for any delay in the implementation of the needed functionalities in the networks.

ETSI TS 102 660 recommends

“the TISPAN and 3GPP standards currently appear to be the most mature standards available to enable an emergency caller's location information to be obtained and transmitted over NGN and traditional access technologies. It is recognized that to completely achieve the full required functionality, it may be necessary for further development of the existing standards”.

Concerning NGN the requirements in ETSI TS 102 660 state

“it is expected that whatever existing solution is adopted as the basis for Signalling Requirements and Signalling Architecture for supporting Location Information Protocols for Emergency Services on the NGN, that it will require additional functionality to suit European networks and operational processes”.

The mandated technical specifications or standards should match the European regulatory context and specify a viable technical solution accordingly.

### **3. SCOPE OF THE MANDATE**

The determination and transport of caller location information for VoIP needs to be fully standardised including a single functional model, the necessary interfaces and protocols. The location information should be provided as a pure enhancement to the basic emergency call service. It should not interfere in any way with the quality or operation of the basic emergency call service. Because a PSAP continues to be connected by means of a fixed network, e.g. ISDN access line, it should be able to continue to behave in its traditional manner. The enhancement, i.e. location data provision, is expected to be determined by the originating telephony or electronic communications service provider, capable of originating voice calls through a number or numbers in national telephone numbering plans, and be provided at call setup to the PSAP as soon as the call reaches the authority handling the emergency calls. It may be delivered by means of traditional or new methods. If an IP-based solution for the provision of the location information is developed, the correlation between voice and data and timely provision at call setup time must be achieved, and special consideration should be given to data protection and privacy/security issues. In addition, the provision of caller location information should be implemented in a way that ensures that access for disabled end-users to emergency services is equivalent to that enjoyed by other end-users.

The process for the determination of the location of fixed and more importantly nomadic VoIP users in case of an emergency is required. This is particularly needed when the originating VoIP service provider is an enterprise separate from lower layer service providers as well as one or several contributing infrastructure operators. The information

exchanges between the service providers and network operators involved needs to be standardized. This should include also IP-biased VoIP providers, including also Skype out.

Experience shows that network operators tend to migrate from present implementations to a new and complex technology like NGN in a long-lasting and conservatively phased approach. A solution relying on a completely standardised and fully functional NGN being implemented by all parties involved is at present and in the near future of no use because it is not realistic to assume that this will be the case in the foreseeable future. A practical solution for today's pre-NGN IP-based networks is required, ensuring to the utmost extent possible forward compatibility with the future all-NGN technical environment.

The European Standardisation Organisations are invited to prepare a coherent and complete set of specifications or standards containing the architecture, the interfaces and the protocols in support of the requirements set by article 26 of the amended Directive 2002/22/EC concerning the determination, transport and delivery of caller location information. This work shall not be focused on NGN but shall address current implementations for all types of voice calls (fixed, mobile, static and nomadic VoIP) in EU countries. The standards should allow for the determination of the location information in the form of a geographical coordinate or a civic address as precisely as possible.

The specifications or standards should not expect from the PSAPs to apply any network access technologies other than those in use today on fixed network access lines, e.g. ISDN Basic/Primary Rate Interfaces and/or a broadband IP access, e.g. by xDSL. Furthermore, it must be pointed out that the obligations under the Universal Service Directive, such as unfettered bi-directional speech communication in real-time, fast call setup and provision of the caller's E.164 number, must not be hampered.

The mandated specifications or standards should not impact on the continued operation of the current emergency call service. The measures taken to provide the location information should not significantly delay the establishment of the emergency call. The measures should include a compatibility mechanism allowing future enhancements. Finally, the location information should be carried from all types of originating networks and providers, e.g. fixed, mobile, VoIP, NGN, in a uniform manner that allows the reception at a single homogenous interface at the PSAP.

The mandated specifications and standards should ensure that the determination and transport of caller information for emergency calls cannot be used to obtain location information for other purposes without the consent of the user or subscriber.

#### **4. OBJECTIVE**

The objective is to complete the standardisation work in support of the amended Universal Service Directive 2002/22/EC as soon as possible.

#### **5. EXECUTION OF THE MANDATE**

- 5.1. Within three months of the date of acceptance of this Mandate, the ESO shall present to the Commission a report setting out the arrangements they have

made for the execution of this Mandate and containing a list of planned deliverables.

- 5.2. Within twelve months of the date of acceptance of this Mandate, the ESO shall present a report containing the deliverables specified in this Mandate.
- 5.3. The ESO are invited to put in place as soon as possible adequate monitoring mechanisms for the execution of the work.
- 5.4. The ESO are invited to request the participation of representatives of ANEC (the European coordination body for consumer's representation in standardisation) in this Mandate.
- 5.5. The ESO are also requested to consult with the European Commission Directorate General Joint Research Centre in order to explore if the Commission's research institutes dispose of specific competence to support the standardisation work.