EENA Operations Document

112 Apps Strategy

Pan European Mobile Emergency Apps

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1 Executive Summary

PSAPs and EROs across Europe want and need accurate location information to dispatch responders to where help is needed in an emergency. The standard and accuracy of location information provided by cellular networks across Europe is generally poor[1], with cell-level accuracy for mobile operators being the accepted norm.

The rapid growth of smartphones and tablets now form the majority of mobile devices, which communicate via the Internet as well as through traditional cellular channels. This extra data connectivity allows devices to enhance operator-provided location information with more accurate device-provided location and enriched personal data to better aid dispatched emergency crews to help the person in need.

The strong adoption of smartphones, combined with an increasingly common use of geolocation functions by users, make Applications ('Apps') a powerful tool to provide information for an emergency team to save lives and provide accurate location information using a combination of location techniques as GNSS, WI-FI and Cell-ID[2]. Such Apps are generally either or both A2C (Authority to Citizen) and/or C2A (Citizen to Authority) and it appears that the bi-directional communications flow is the typical structure for Apps in Europe today. 'Internal' Apps where EROs design and use Apps for their own purpose are not considered within the scope of this document.

Apps providing information to emergency services organisations need to comply with a number of requirements (technical, organizational, legal and human). The goal of this document is to describe the strategic objectives that underlie the implementation of a Pan-European Mobile Emergency Apps, henceforth called PEMEA,and propose a realistic plan to achieve this task with minimal delay.

The following strategic objectives have been identified:

- **Deliver the architecture** to become the reference for the implementation of PEMEA.
  This architecture incorporates the recommendations defined in [R1] (section 9) and proposes a simplified architecture for all stakeholders.

- **Deliver a set of requirements and deployment guidelines** that outline what needs to be done by each stakeholder to get data from caller applications and deploy the solution in each country to ensure that the data reaches the correct PSAP.

- **Develop a certification/authentication program to** ensure compliance of data formats, security, privacy and integrity of data transmitted by Apps Providers to PSAP and required intermediaries. The program includes two components, a certification for Application providers and one for PSAPs.

[1] https://ec.europa.eu/digital-agenda/en/news/112-day-room-improvement-locating-emergency-callers-says-ec-report
[2] In 2011, a COCOM questionnaire revealed that 19 countries believed at a smartphone App is a valuable supplement for location information.

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2 Abbreviations and References

All definitions of terms and acronyms related to 112 are available in the 112 Terminology EENA Operations Document.[3] For convenience, they are also listed below.

2.1 Abbreviations

AP	**Application Provider**
ERO	**Emergency Response Organization**
GNSS	**Global Navigation Satellite System**
MS	**Member State**
PSAP	**Public Safety Answering Point**
PSO	**Public Safety Organization**
SO	**Strategic Objective**
SP	**Service Provider**

2.2 References

[R1] EENA 2.2.3, "112 Smartphone Apps", February 2014

3 Introduction

The situation as of today

Over the last 2-3 years there have been great successes with mobile emergency Apps and these can be seen with the proliferation of 112 Apps and strong adoption of these Apps by thousands of citizens all across Europe.

These applications (some of those are given in the map shown below) provide more accurate information to emergency services organisations, however, they do not normally work outside the region or country in which they were created. This leads to confusion and the risk of using the wrong application in the wrong region when an emergency arises, and this may cause the Public Safety Organizations (PSOs) and citizens to lose confidence in the use of Apps to save lives. Moreover, citizens may be under the false impression that the App has delivered their request for assistance placing them at further risk.

[3] www.eena.org/view/en/Committees/112operations/index/generalframework.html

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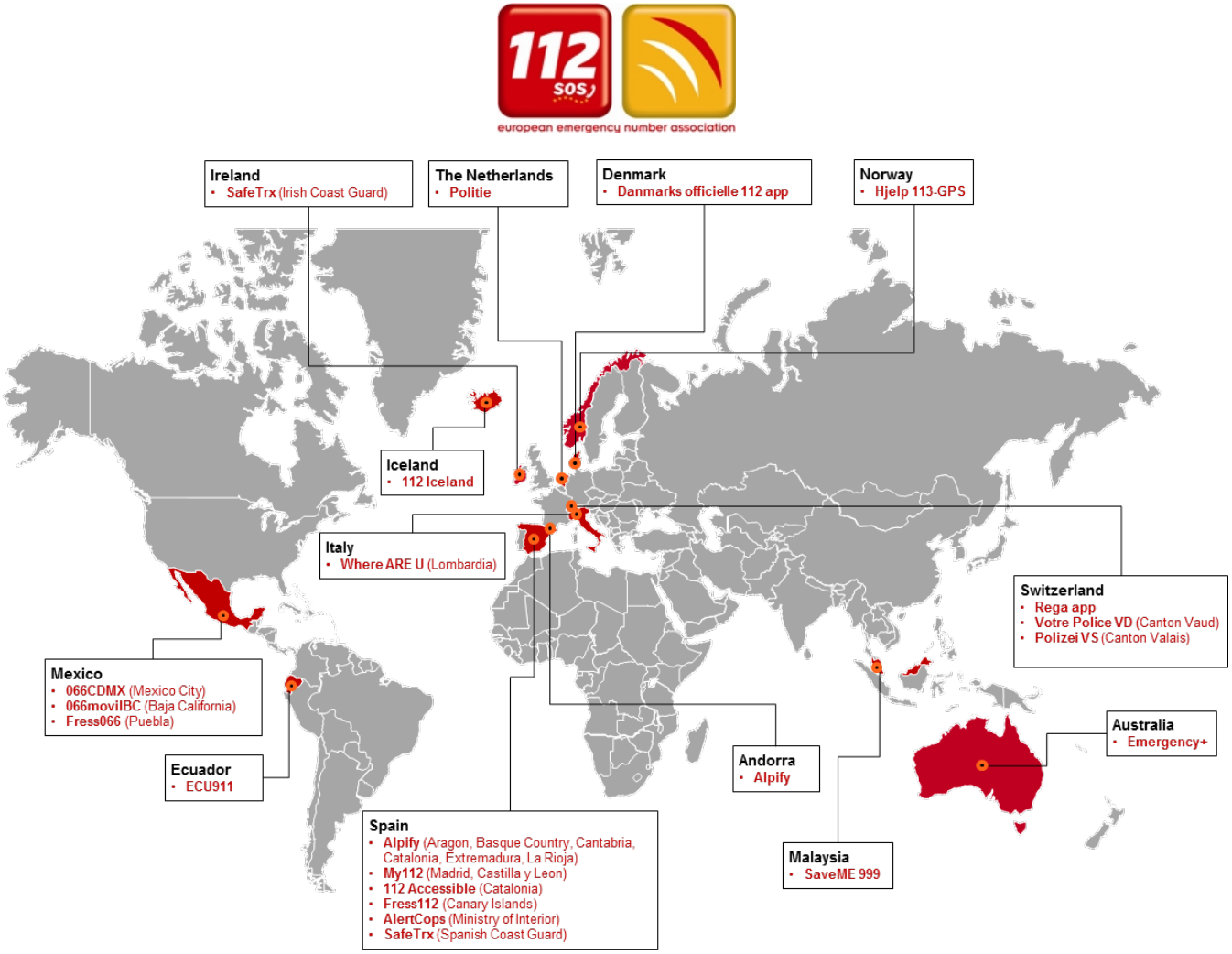

Figure 1: World map of Apps recognised by PSAPs / EROs (sample)

The benefits of the PEMEA

The PEMEA would **allow all European citizens** (including people with speech or hearing disabilities) to use the application in the event of an emergency regardless of where they are (in their own jurisdiction or roaming) and to send relevant personal data to PSAPs automatically when the emergency call is initiated and in a standard format that all PSAPs can interpret and display.

- ThePSAPs need to have access to the personal relevant data, but this data must remain **private**.
- The data provided to the PSAP needs to be in a standard format so there is no dependency on proprietary technologies or proprietary data formats.
- Any organisation (public or private) can introduce a 112 App on the market based upon the PEMEA architecture and technical specification[4].
- Citizens can send relevant data to PSAPs using their own language wherever they are in Europe for free.

A key stakeholder (Citizens, PSOs…) requirement is for emergency Apps to have ubiquitous coverage, working in the same way across all of Europe.

The main purpose of this paper is to provide a framework to give reality to this challenge.

[4]The Architecture refers to EENA deliverables while technical specifications are released by a standardization entity such as ETSI or similar Standards Development Organizations.

4 Description of the work

The description of work is the outline of the strategic objectives for the project and the timeline to complete each objective.

4.1 Strategic Objective #1: Architecture

What? Update the current technical architecture to address identified implementation issues.

How? This update will be based on:

- security requirements and identified implementation issues
- privacy/ethical requirements
- PSO requirements

Security requirements: Ensure information provided to PSAPs is verifiable and that the source is trusted. Controlling what Apps can provide information to the PSAPs reduces the chances of getting insufficient or inaccurate information. The current architecture relies on a central European certificate authority allowing any App deliver information to any PSO. Whilst ideal, this proposal suffers from impractical implementation issues. An update to the EENA App architecture is required in the first instance, supporting a collaborative approach between App providers, PSO Service-Provides and PSAPs to ensure the secure and reliable delivery of enhanced emergency information.

Privacy and ethic requirements: An obstacle to the integration of an App in PSO systems and processes is the global and decentralised nature of the Internet – and consequently, the uncertainty of legal frameworks. It is therefore a fundamental requirement that PEMEA respects ethical principles and fundamental rights, in addition to the EU legal framework[5].
An example is on the personal data exchanged between the citizens and PSOs, which may require data to traverse intermediaries.

PSO requirements: Collect the requirements and recommendations from PSOs.
This aims to measure how the PSO works in terms of organisation, processes, roles and functions. Unless the integration of the App architecture and data is carefully planned, it may result in disruption, resistance to adoption or failure in some areas. PEMEA must therefore suit the needs of public safety organizations.
For example, understand the way to integrate the solution with existing PSO emergency systems.

How? Conduct a survey with PSOs from different countries, those who have given their prior consent to participate in the collection of requirements and recommendations in the form of a questionnaire.

By compiling examples of best practice and lessons learned.

By looking at existing application providers and their partner PSOs to determine how the information was provided to, displayed and used by the PSO.

Deliverable: Technical architecture document

Timeline: Completed by the end of Q2 2015

4.2 Strategic Objective #2: Deliver a set of requirements and deployment guidelines

What? In order to ensure that the PEMEA works all over Europe, all stakeholders involved in the project (PSOs, MS, SP, AP) need to know the requirements and processes to follow to be successful in its implementation.
Member States need to ensure that the legal frameworks are in place to share data. PSAPs need to have established a data link with the SPs and be equipped to receive the data. APs need to meet all the criteria for

[5]Research and investigation to reach a set of recommendations in line with the new EU framework.

approval and be compliant with all the users' requirements and data formats. The APs also need to establish a relationship with an SP.

How? EENA will recommend through a deployment guideline what the PEMEA stakeholders need to deploy to get data from 112 Apps so that apps work across all countries.

Deliverable: A set of requirements and deployment guidelines.

Timeline: Completed by the end of Q32015

4.3 Strategic Objective #3: Certification and authentication Program

What? How App Providers should get certified and approved. Two level of certification is required, one for the PSAPs and one for the App Providers. The certification should ensure SPs receiving data from APs are able to send them to PSAPs as well as the interfaces used are the ones defined and validated.

How? EENA will develop a proposal for a certification / authentication program for the Apps on the market. The framework supporting the certification program will include the architecture document describing the data format and definition of interfaces as well as an agreement on the security framework

Deliverable: EENA Certification and Authentication Program proposal

Timeline: Complete by the end of Q42015

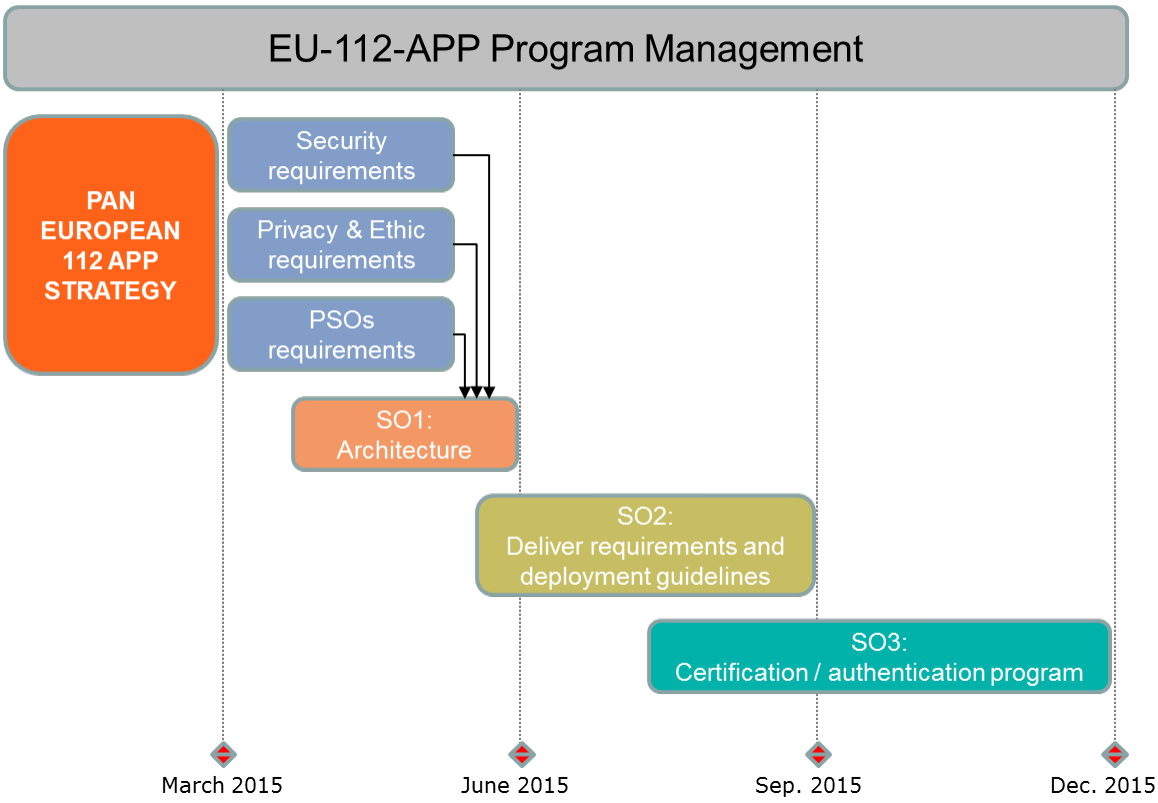

Figure 2: PEMEA Program Management

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5 Future Enhancements

Beyond the specific objectives described in this document that will be the base of the next implementation of PEMEA, EENA considers adding future enhancements to complement this baseline such as:

- Sending multimedia data (picture / video)
- Implement the reverse 112 functionality (ability for PSO to broadcast alerts or notifications in a specific zone after receiving a 112 call)
- Interaction with social media network

6 Conclusion

EENA recognises the strong need of emergency organisations for better location information for calls made from mobile devices. It also recognizes the disparity in caller information that is provided by operators over their fixed linecounterparts. In the short to medium term, EENA seeks to address these differences by recommending the use of a smartphone application architecture that can provide accurate caller and location information to PSAPs in a secure fashion no matter where the call is in Europe. EENA has taken firm steps in developing an aggressive roadmap that delivers the specifications necessary to make the PSAP and citizen Emergency-Calling Application dream a reality.

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7 Annex A – Officially recognised Apps by PSAPs/EROs (sample list)

Country	App	Recognisedby	Link
Andorra	Alpify	• Govern d'Andorra	• http://www.alpify.com
Australia	Emergency+	• Australian Government	• http://www.triplezero.gov.au/Pages/EmergencySmartphoneApp.aspx
Denmark	Danmarks officielle 112 app	• Politi • Københavns Brandvæsen (Copenhagen Fire Brigade)	• http://www.112app.dk
Ecuador	ECU911	• Servicio Integrado de Seguridad ECU 911	• http://www.ecu911.gob.ec/aplicacionparacelulares
Iceland	112 Iceland	• 112 Iceland	• http://www.112.is/neydarlinan/112-iceland-app/
Ireland	SafeTrx	• Irish Coast Guard	• http://www.safetrxapp.com/ • http://www.sailing.ie/Cruising/ISASafeTrx.aspx
Italy	Where ARE U	• AREU Lombardia	• https://where.areu.lombardia.it/
Malaysia	Save ME 999	• 999 Malaysia	• http://www.999.gov.my/
Mexico	066CDMX	• CAEPCCM (Mexico City)	• http://www.caepccm.df.gob.mx/066CDMX
	066movilBC	• SSPE (Baja California)	• http://www.seguridadbc.gob.mx/contenidos/movilayuda.php
	Fress066	• CESP Puebla	• http://www.fress066.com/
Norway	Hjelp 113-GPS	• Norskluftambulanse	• http://www.norskluftambulanse.no/forbered-deg-nodapp/
Spain	Alpify	• 112 Extremadura • 112 SOS Aragon • 112 SOS Cantabria • 112 SOS Deiak (Basque Country) • 112 SOS Rioja	• http://www.alpify.com
	Fress112	• 112 Canarias	• http://www.fress112.com/
	112 Accessible	• 112 Catalunya	• http://112.gencat.cat/ca/que-fem/apps-per-dispositius-mobils/
	My112	• 112 Madrid, • 112 Castilla y Leon	• http://www.madrid112.es/index.php/actualidad/app-de-emergencia • https://www.youtube.com/watch?v=2ncd6NpWIaE
	Alertcops	• Ministry of Interior	• https://alertcops.ses.mir.es/mialertcops/info/info.xhtml
	SafeTrx	• SASEMAR (Coast Guard)	• http://www.salvamentomaritimo.es/sm/safeTRX/
Switzerland	Rega App	• REGA Swiss Air Rescue	• http://www.rega.ch/en/multimedia/mobile-app.aspx
	Votre Police VD	• Police Canton Vaud	• http://www.policier.ch/applications.html
	Polizei VS	• Police Canton Valais	• http://www.polizeiwallis.ch/
The Netherlands	Politie App	• Politie (KLPD)	• https://www.politie.nl/onderwerpen/politie-app.html

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