



EMYNOS - nExt generation
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Current emergency systems and 112 services are based on legacy telecommunication technologies, which cannot cope with IP-based services that European citizens use every day. Some of the related limitations are the partial media support, the lack of integration of social media, and the use of an analogue modem for providing eCall services with limited data amount. As most operators have started migrating towards broadband IP-based infrastructures, current emergency systems need also to be upgraded and adapted in order to fulfil regulatory requirements in terms of Next Generation emergency services.

The main objective of the EMYNOS project is the design and implementation of a Next Generation platform capable of accommodating rich-media emergency calls that combine voice, text, and video, thus constituting a powerful tool for coordinating communication among citizens, call centers and first responders.

Additionally, EMYNOS addresses also issues such as call routing/redirection to the closest-available call center, retrieval of the caller location, hoax calls prevention, support for people with disabilities, and integration of social media.

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2. EMYNOS Objectives

EMYNOS will enable users to make emergency calls across heterogeneous devices such as PCs, TV sets, mobile devices, AAC and haptic devices, using various mature technologies (Session Initiation Protocol, IP Multimedia Subsystem (IMS), WebRTC). The project will also demonstrate how the eCall concept can benefit from the IP technologies by allowing audio-video calls towards the emergency call centers and complementing location information, with photos and videos.

Objectives

The actual emergency systems are based on old-fashioned telecommunication technologies that cannot cope with the new IP-based services that the European citizens use every day. Some of these limitations are summarized below:

1. There is no standard underlying technology for the separate emergency systems
2. There is no interconnection among the PSAPs (Public Safety Answering Points): this, unfortunately, limits the transfer of calls in case of congestion and network outage
3. Media limitation: currently only voice calls and sometimes SMS are accepted
4. No unified platform: currently emergency warning systems are completely separate from the 112 emergency centers
5. There are no advanced features, such as caller location
6. Emergency calls are unidirectional: they are established from the end-users towards the PSAP
7. There is no non-telecommunication platform as a backup in case the telecommunication infrastructure is not operational
8. The social media are not integrated: handling emergency situation should not only be the task of the rescue teams. Involving citizens especially through social media (twitter, Facebook, etc) in monitoring events and sharing information will lead to a better management
9. The eCall (the emergency solution for vehicles in case of crash) technology is based on the GSM, which limits the amount of emergency data to be sent

The aim of the EMYNOS project is to design, specify and develop a Next Generation emergency framework that resolves the above mentioned limitations.

3. Save the date: Second EMYNOS Stakeholders' Workshop in Madrid

The second EMYNOS stakeholders' workshop will be held on 27 November 2017 in Madrid, Spain, in the premises of the Spanish National Police.

For more information, please contact secretariat@psc-europe.eu

4. A Successful IP based Emergency Services Test Session

The EMYNOS technical meeting that took place on the 21-22 February 2017, at the Technological Educational Institute of Crete (TEIC) in Crete led to a successful test session. The test session was run by Fraunhofer Fokus, TEIC, HOU, MCS, Navcert, and Harpo, and multiple concurrent end-2-end IP based emergency calls were demonstrated. The scenarios follow the complete chain (caller, SIP proxy, ESInet, IP PSAP (Asterisk, call taker), and include the following:

- Emergency calls from Linphone to Linphone with audio, video, Real Time Text, location information, and sensor data
- Emergency calls from WebRTC enabled browser to WebRTC enabled browser including, audio, video, and location information
- Emergency calls from Linphone to WebRTC with audio, video, and location information, and vice versa

For more information please contact yacine.rebahi@fokus.fraunhofer.de

5. EVENT - NG112 Emergency Communications Plugtests 2nd edition

EMYNOS project successfully participated to the second emergency communications interoperability Plugtests™ event organized by ETSI in cooperation with the European Emergency Number Association (EENA). The event was located in Sophia-Antipolis from 06 to 10 March 2017 with the support of ETSI SC EMTEL.

This second NG112 Emergency Communications Plugtests™ event witnessed a testing campaign based on the use cases developed by ETSI and EENA and was a unique chance for vendors of emergency communication equipment to test their product against different implementations and scenarios.

While the first NG112 Emergency Communications Plugtest focused on voice and geo-localization, in this second edition, the scope was extended to content-rich emergency calling with existing IMS/RCS services such as video calling, instant messaging or file transfer.

The report of the plugtest concludes that Next Generation Technology is ready to use. More importantly, it is future proof as it can continuously integrate new features, as it was demonstrated with the AML, PEMEA and WebRTC integrations. The provision of SS7 to NG112 SIP gateways allows for a clear strategic migration path from legacy networks to an SIP only environment. The sensor enabled NG112 scenarios were tested and are a good starting point for future standardization activities.

Since the event was open to a broad range of vendors, the maturity of the tested technology was not equal. The event in particular welcomed newcomers with prototype implementations. However, the prototypes sometimes did not support all features and so the vendors used the event as an opportunity to gain a better understanding of the basic standards. At the end of the event it was concluded that several similar Plugtest events would be necessary to bring all NG112 vendors up to the same level of technology maturity and interoperability.

[Click here](#) for the full technical report.

6. EMYNOS presented at EENA Conference

On 5 April 2017 the EMYNOS coordinator Yacine Rebahi gave his speech at the EENA conference in Budapest, Hungary through a presentation entitled “The EMYNOS ESInet: Current Status and Future Perspectives”. The conference brought together emergency services, public authorities, researchers and industry representatives from all around the world to foster the sharing of best practices between all the relevant stakeholders. The conference was a great occasion to present the EMYNOS project, to reflect on the work that has been done so far and to think about future developments.

For more information, please contact secretariat@psc-europe.eu

7. EMYNOS at the standardization workshop in Munich organized by PSCE

On 3 May 2017, the EMYNOS project participated to the workshop on standardization.

Taking place in the premises of the German Red Cross in Munich, the event focused on standardization and more specifically, on the capacity of EU projects to generate standards. It emphasized that research projects have to put more efforts on standardization activities in order to bring innovation adapted to the fast-changing market. Current available solutions were addressed.

EU projects discussed their personal experience with standardization bodies and explained the outcomes of their work while industrials, researchers, European bodies and national authorities had the opportunity to exchange their point of views and discuss future perspectives.

[Click here](#) for more information or contact secretariat@psc-europe.eu

8. 112 Day & the Electronic Communication Code

Last 11th February marked the anniversary of the single European emergency number 112, which receives an average of 255 million mobile emergency calls every year and constitutes an important technological tool to help EU citizens in distress.

Since an EU legislation introduced in 1991, European citizens can dial 112 at no cost in any EU country to reach emergency services. Every year, about 300 000 people who call emergency services are not able to accurately describe their location. This occurs for a variety of reasons: they may not know the name of the place, because they are too young to tell, or even sometimes too injured to communicate properly. In these cases, knowing the precise location of the person in distress can significantly increase reaction time and save lives.

Thanks to contemporary mobile and smart devices, emergency services can now quickly access the caller's location via an SMS or data channel by using in-built Global Navigation Satellite System (GNSS) or Wi-Fi capabilities. A recently published report emphasized significant improvement for caller location in several EU countries. For instance, Lithuania upgraded its network based location solution to ensure significantly more accurate caller location. UK and Estonia deployed the Advance Mobile Location (AML) handset-based caller location solution which can locate a person to within 100m. An EU-financed project - HELP 112 – looked into how GNSS can improve caller location using the AML solution. It was tested in the UK, Lithuania, Italy and parts of Austria. Currently AML handset based caller location for emergency services is available only on Android phones.

The Vice-President for the Digital Single Market, Mr Andrus Ansip declared: "I welcome this very important step which helps people in distress and showcases how digital technologies can make our lives safer. I hope that in the future all Europeans will be able to benefit from more effective emergency services thanks to caller location solutions."

On the other hand, Commissioner Elżbieta Bienkowska, responsible for Internal Market, Industry highlighted the important role of the EU satellite based navigation system Galileo, underlining how space data is making a difference in daily lives of EU citizens.

Last September the Commission proposed an update of EU telecoms rules in the form of an electronic communication code. Through this, the Commission wants to improve the relevant provisions of the Universal Service Directive in order to facilitate the use of handset based caller location as complement to network based location data.

According to the proposal, Member States will be obliged to ensure that caller location, be it network based (provided by the mobile operator), or handset based (retrieved from a GNSS or WiFi enabled phone), arrives in a timely manner to the Public Safety Answering Point which handles emergency calls. Notwithstanding the technology used, caller location will be free for citizens and the Public Safety Answering Points.

Please [click here](#) to access the full text of the proposal.

9. 10th implementation report of 112

The 10th 112 implementation report, published on 12 February 2017, provides an analysis of the replies submitted by Member States on the Key Performance Indicators (KPI) reporting on the Implementation of 112. The KPI consist of 9 points on which the efficiency of 112 is evaluated.

1. **Calls to 112:** In total 158.605.429 calls we made to 112. 112 is the single emergency number in the following countries: Denmark, Estonia, Finland, Malta, the Netherlands, Portugal, Romania, Sweden and Iceland. In member states where 112 is not the single number such as Bulgaria, Germany, Hungary, Italy, Latvia, Lithuania, Luxembourg, Poland and Spain) more than 50% of the emergency calls were initiated by dialing 112.

2. **Access to 112 for disabled end-users:** The report also emphasized the importance of reaching 112 by other means than voice communication. SMS is the first alternative to access to emergency services is available in 19 Member states but Member states highlight other means such as Smartphone apps, Total conversation, Text relay services, Fax, Minicom.

3. **Answering time:** Because people in distress are often in desperate need to get in contact with the emergency services operator, the report also stressed the importance of a short answering time. 22 member states reported less than 10 seconds for the average answering time.

4. **Call abandon rate:** A call abandon rate of more than 20% was reported in Bulgaria, Czech Republic, France, Latvia, Malta, Poland and Portugal.

5. **Lack of availability of caller location:** The provision of caller location by undertakings concerned is an obligation under Article 26(5) of the Universal Service Directive. However, there are cases, where due to technical problems in the networks or on the PSAP side, the caller location information cannot be determined automatically or on request in both "push" and "pull" systems.

6. **Caller location accuracy and reliability:** The report shows that Handset based location, using GNSS or WiFi location, can bring about critical improvements to the accuracy of the caller location. The handset based location solutions already deployed in Member States are used as a complement to network based location data.

7. **Average time needed for receiving the caller location by the 112 operator:** Due to the implementation of the "push" system or the automatic "pull" system, near instant times (up to 10 seconds) were reported by most member states.

8. **Availability of EU roaming call to 112 and caller location by mobile network operators:** 25 Member States and Norway reported the availability of access to 112 and caller location in case of roaming calls.

9. **Awareness levels on 112:** Awareness of 112 as the single number to call has increased by six percentage points since 2014.

More information is available [here](#).

The EMYNOS Consortium

The EMYNOS framework will be implemented by partners with complementary expertise (telecom/satellite operators, VoIP provider, eCall testers, end users), which together form the chain for the provision of emergency services and which will deliver the EMYNOS demonstrator that will be validated in operational environment.

The EMYNOS consortium covers a wide set of complementary capabilities, expertise, background and understanding in dealing with Crisis management.



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