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Working Document

Subject: **Implementation of the European emergency number 112 –
Results of the eleventh data-gathering round**

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circumstances be regarded as stating an official position of the Commission. The
information transmitted is intended only for the Member State or entity to which it is
addressed for discussions and may contain confidential and/or privileged material.*

The data-gathering exercise based on Key Performance Indicators on the implementation of the European emergency number 112 was introduced with a view to implement performance measurements in order to get reliable data which would allow the assessment and optimisation of the access to emergency services at national level.

Quality of data

Member States were invited to follow the definitions of the measurements provided in the KPI reporting table. This year all Member States responded to the KPI questionnaire. Several of the responses received, however, were not complete or indicated explicitly that certain data was not available.

The quality of the reported data allows a good overview of the 112 implementation in the EU. Member States, which are not yet in the position to perform KPI measurements, are encouraged to follow best practice in this area to progressively introduce the necessary capabilities, thus further increasing the quality of their data.

Main findings

- Notable improvement is reported in terms of accuracy of caller location information is reported in several Member States. The main reason for this is that the Advanced Mobile Location (AML) handset based caller location solution took off in Belgium, Finland and Ireland raising the number of AML countries to seven. Currently AML is deployed in Austria, Belgium, Estonia, Finland, Ireland, Lithuania and United Kingdom.

- In order to boost the uptake of the AML for the benefit of citizens and emergency services, the European Commission launched in September 2017 a project with the goal of deploying AML in seven Member States in the next two years.[1]

- At the time of publishing this report the AML solution was available only for smartphones using the Android operational system. As of spring 2018, Apple foresees the upgrade of its iOS 11.3 to include "support for Advanced Mobile Location (AML) to automatically send a user's current location when making a call to emergency services in countries where AML is supported".[2]

- 20 Member States reported less than 10 seconds for the answering time needed to get in contact with emergency services.

- Of those 26 Member States which reported the time needed to receive the caller location, the longest periods were reported in Greece (more than 8 minutes). Austria and the Slovak Republic did not report relevant data for this KPI.

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[1] http://ted.europa.eu/TED/notice/udl;JSESSIONID=C49D0F9858D34A0C02F96C863367C14E.backendB2?uri=TED:NOTICE:371766-2017:TEXT:EN:HTML

[2] https://www.apple.com/newsroom/2018/01/apple-previews-ios-11-3/

- 24 Member States reported the implementation of an alternative access to emergency services for users with disabilities. SMS as alternative emergency communication is implemented in 20 Member States. User location for alternative means of access is available in only 10 Member States.

- According to the latest Eurobarometer E-communications household survey[3] almost half of EU citizens (49%) identified 112 as the single number to call throughout the EU. This represents a 1pp increase since 2015 and 7pp since 2014.

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[3] To be published

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INTRODUCTION

This Report provides an analysis of the replies submitted by Member States on the Key Performance Indicators (KPI) reporting on the Implementation of 112 emergency communications. This is the eleventh data gathering exercise following the previous exercises that are published on:

http://ec.europa.eu/digital-agenda/en/eu-actions-112

This Report is based on the KPI reporting table which was submitted to Member States on 30 June 2017 with a deadline for response on 6 November 2017 (COCOM 17-05REV-1). In order to provide the most recent data for the Key Performance Indicators, the reporting period was set for 1 July 2016 – 30 June 2017.

The current KPIs were established in cooperation with Member States experts. COCOM delegations were consulted on these indicators.

The Report follows the structure of the KPI reporting table and it is accompanied by the Annex providing a more detailed overview on the information submitted by Member States, in a harmonised manner.

The KPIs reflect the provisions of Article 26 of the Universal Service Directive concerning access to 112 for users with disabilities, provision of caller location and the accuracy and reliability of caller location information.

This year additional questions were asked with regards to the deployment of handset based location solutions and the implementation of eCall.

The report covers information submitted by all Member States. As agreed, the COCOM observers from Candidate and EEA Countries were also invited to submit replies to the questionnaire.

These performance indicators were agreed by emergency experts to reflect the efficiency and effectiveness of access to 112 calls. Member States are called on to develop their measuring tools for monitoring these indicators in order to optimise their 112 systems.

This Report was published on 9 February 2018, (more information on the Commission's '112' website: www.112.eu). On the '112' website country-specific information is also published.

ELEVENTH REPORT ON THE IMPLEMENTATION OF 112

1. Calls to 112

A number of 134,379,374 calls were made to 112 of a total of 301,256,952 emergency calls placed in the EU. This represents 45% of the calls placed. In 55% of the cases the calls were made to national numbers.

Calls from mobile phones largely outweighed the number of calls from fixed phones. 18 Member States reported the number of emergency calls that arrived from fixed and mobile phones, accounting for 182,897,700 of emergency calls placed in the reporting period. On the basis of this data 71% of the calls were places from a mobile phone. However, the use of the mobile phones for emergency communication purposes varies across Member States from only 52% in Croatia, 60% in Belgium and 64% in the United Kingdom to 91% in the Czech Republic and Hungary.

112 is the single emergency number in Denmark, Estonia, Finland, Malta, the Netherlands, Portugal, Romania and Sweden. In some Member States where 112 is not the single emergency number (such as Belgium, Bulgaria, Germany, Italy, Latvia, Lithuania, Luxembourg, Poland and Spain) more than 50% of the emergency calls were initiated by dialling 112.

eCall is not yet available in most of Member States but Ireland (117), Latvia (365 test calls), Lithuania (127 test calls), Slovenia (738) and UK (18,184 Telematic SOS calls – not eCalls) reported the number of car initiated emergency/test calls.

There were only 22 Member States that provided information on false calls[4].The ratio of false calls to the total number of calls still appears to vary considerably among the Member States: whereas in Cyprus the number of such calls is approximated at 8%, Greece reported 95,5%. The following Member States are between these two extremes: Belgium (32%), Bulgaria (29%), Croatia (38%), Cyprus (8%), Czech Republic (70%), Finland (19%), France (16%), Germany (27%), Greece (95,5%), Hungary (36,9%), Ireland (45,9%), Italy[5] (51% in PSAP regions), Latvia (26%), Lithuania (60%), Luxembourg (74,68%), Malta (22,12%), the Netherlands (38%), Poland (45,8%), Portugal (65,67%), Romania (56,49%), Spain (22%), Sweden (28,4%) and the United Kingdom (34,9%).

The United Kingdom was able to report that 70% of the car telematics calls received by PSAPs were false calls. These calls are not considered eCalls.

2. Access to emergency services for users with disabilities

The question on access to 112 by other means than voice communication reflects the requirements of the regulatory framework, which provides for the obligations of Member

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[4] False calls are calls which are not followed up with intervention or assistance from the PSAP or the emergency services. Calls that report an emergency event which has already triggered intervention or assistance from the part of the PSAP, therefore not triggering separate intervention or assistance, will not be considered false calls. Abandoned calls, as defined in KPI no. 4 are excluded from the category of false calls.

[5] PSAP regions in Italy are regions where a centralised Public-Safety Answering Point is deployed: Lombardia, Piemonte & Valle d'Aosta, Liguria, Trentino, Roma, Friuli VG, Sicilia

States to ensure that users with disabilities enjoy equivalent access to 112. Member States were invited to provide information on their measures, which ensure that users with disabilities enjoy tailored solutions for equal access to 112 taking into account aspects such as speed, mobility, reliability, coverage or language handling.

Out of the 28 replies received, 24 mentioned the existence of alternative means[6] to voice to provide access to emergency services.

SMS as an alternative means of access to emergency services is available in 20 Member states. The Member States concerned are: Austria, Belgium, Croatia[7], Cyprus, Denmark, Estonia, Finland, France, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Portugal, Romania, Slovenia, Spain, Sweden and United Kingdom. However, the SMS service is available only to a long number in Austria, Cyprus, Denmark, Italy, Malta and Portugal.

Total conversation[8] is available in the Netherlands and Sweden. Applications ensuring access to emergency services are available in Belgium[9], Italy[10], Lithuania and Spain. Text relay services are available in the Czech Republic, Germany, Netherlands, Spain, Sweden and United Kingdom. Fax is used in Austria, Belgium, Cyprus, Germany and Luxembourg. Minicom is deployed in Ireland in addition to 112SMS.

Fifteen, Member States, can monitor the uptake of access to emergency services through alternative means. Member States that reported the number of communications through these means to 112 or other dedicated numbers are: Austria, Croatia, Estonia, France, Germany, Ireland, Latvia, Luxembourg, Lithuania, Malta, Slovenia, Spain, Sweden, United Kingdom.

10 Member States reported that the alternative means of access allows the location of the users. SMS user location is available in Austria, Belgium, Finland, Luxembourg, Romania, Slovenia, Sweden and United Kingdom. Location through the application is available in Italy and Spain.

3. Answering time[11]

People in distress are often in desperate need to get in contact with the emergency services operator. 20 Member States reported less than 10 seconds for the average answering time needed to get in contact with the emergency services. The best performing Member States (14) where more than 90% of the calls are answered in 10 seconds are: Croatia, Czech Republic, Estonia, Finland, Hungary, Ireland, Latvia, the Netherlands, Poland, Portugal, Romania, Slovenia, Spain, United Kingdom.

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[6] Alternative means of access is a non-voice access, or voice access assisted by other type of non-voice service in order to permit the effective conveyance of a request for emergency relief. Examples: real-time text, sms, video streaming, relay services.

[7] Available as of June 2016

[8] Total Conversation means a standardised concept where you can use video, text and speech at the same time in a call. It can be seen as an extension of the videophone concept by consistent addition of the real-time text medium.

[9] As of 1 July 2017

[10] Where ARE U App available in Lombardia and Rome

[11] The time period between the moment the emergency call is presented to the stage 1 PSAP switch and the moment the call is being answered by a PSAP human operator.

A pre-recorded message is played before getting in contact with an operator in Cyprus, France, Poland and Spain.

4. Call abandon rate

The respondents were also invited to report on the calls that are presented to the PSAP switches but terminate prior to an answer by a human operator. 26 Member States could report on this data. Call abandons may be caused by network problems, call congestion, etc.

A call abandon rate of more than 20% was reported in Bulgaria, Czech Republic, France, Italy, Luxembourg, Malta, the Netherlands, 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, caller location information cannot be determined automatically or on request in both "push" and "pull" systems.

Only 19 Member States reported this data. In most Member States the lack of availability of caller location occurs in less than 10% of the calls. Higher rates of failure to provide caller location were reported for Belgium (not available in six call centres), Bulgaria (100% due to lack of technical maintenance), Croatia (100% due to lack of technical maintenance), Italy (42,6%), Poland (22% - false calls included), Portugal (25%), Slovenia (14%) and Spain (11,81%).

The deployment of handset based caller location solutions, in particular the Advanced Mobile Location (AML), was reflected in a new question in the Questionnaire. The lack of availability of handset based caller location was reported by Member States that deployed AML (see KPI 6). Finland, Ireland, Latvia and the United Kingdom reported the availability of AML only on Android phones.

6. Caller location accuracy and reliability

Member States were asked to provide the level of accuracy and reliability provided by network operators to the PSAP through network based location solutions. This year an additional question was asked on the deployment of handset based location solutions, anticipating the positive tendency of the uptake of Advanced Mobile Location[12].

As reported last year, in order to document the feasibility and effectiveness of handset based location, in particular through GNSS[13], the EU Commission financed the HELP 112 pilot project[14] on the design, implementation and execution of the transfer of GNSS (Global Navigation Satellite System) that confirmed that handset based location, using

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[12] When an emergency call is made with a smartphone that is AML enabled, the phone automatically activates its location capability (GNSS or Wifi) during 20 seconds to establish its position and sends this information via a text message to the emergency services. The radius is of 50 meters or less for 85% of the calls. This is a life-saving improvement when compared with Cell ID location that can have a radius of tens of kilometres in rural areas.

[13] Global Satellite Navigation System

[14] http://eena.org/pages/help-112#.WnIcZmd5ZtI

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.

Network based location

In 26 Member States the location of the caller from *fixed networks* is given by the installation address, street/mailing/billing address of the calling party, STD Code match or county match. This location technology is deemed reliable by the respondents.

All Member States reported that for calls from *mobile networks* the location is given by the Cell/sector ID providing a high reliability of the data transmitted to the PSAP operator. The accuracy reported ranges from 70 to 5000 meters.

More accurate mobile network based location solutions are deployed in Lithuania (Timing advance / Round trip time), Poland (Sector ID / Timing advance), Romania (Sector ID), Spain (Sector ID) and United Kingdom (Timing advance). The Czech Republic is planning to deploy Sector ID as of 1 March 2018. These positioning methods substantially improve the accuracy of network based location.

Handset based location solutions

In terms of handset based location solutions Member States reported two types of implementation:

1) Advanced Mobile Location (AML) solution

AML, first deployed in the United Kingdom, can improve accuracy levels to up to 4000 times providing accuracy under 100m. The solution does not ignore the Cell-Id information but rather supplements it with either GNSS information or Wifi information derived from the handset. In 2016 Estonia deployed AML as well. As part of the HELP 112 project[15] financed by the European Commission, in 2016 the AML architecture, was tested in UK, Lithuania, Austria and Italy. As a result the handset based location solution was deployed in Lithuania[16] and parts of Austria[17]. Hence last year we reported Austria, Estonia, Lithuania and United Kingdom as countries that deployed AML.

In the current reporting period three additional Member States deployed AML, raising the number of AML countries to seven: Belgium (as of July 2017), Finland and Ireland (October 2017). Three other Member States are reportedly in an advanced process of deployment: Czech Republic (planning to deploy in 2018), Latvia (testing phase) and Malta (to be launched on 11 February 2018).

In order to boost the uptake of the AML for the benefit of citizens and emergency services, the European Commission launched in September 2017 a project[18] with the goal of deploying AML in seven Member States. It is expected that next year more than half of Member States will have been deployed AML.

As already mentioned above (section 5), the AML solution is available only on smartphones using the Android operational system. As of spring 2018, Apple foresees the upgrade of its iOS 11.3 to include "support for Advanced Mobile Location (AML) to

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[15] http://eena.org/pages/help-112#.WnC1kGd5ZtI
[16] Accuracy of less than 100 meters in 63% of the cases
[17] The average GNSS or WIFI location has a radius of 37m
[18] http://ted.europa.eu/TED/notice/udl;JSESSIONID=C49D0F9858D34A0C02F96C863367C14E.backendB2?uri=TED:NOTICE:371766-2017:TEXT:EN:HTML

automatically send a user's current location when making a call to emergency services in countries where AML is supported".[19]

2) Implementation of an emergency application

Emergency applications are another handset based location solution that uses the GNSS or Wifi capability of the smartphone. Emergency applications are being deployed at a Member State or regional level. These applications require prior action from the citizen – as opposed to AML – as it has to be downloaded. The transmission of location data is possible only when an active data connection is available. These applications can provide a much more accurate GNSS/Wifi location than network based location solutions.

Member states that reported the deployment of an emergency application are: Belgium (112.be launched in July 2017), Denmark ("112app"), Italy ("Where Are U" in Lombardia and Rome, "FlagMii" in Piemonte), Finland (112 Suomi) and Latvia ("My safety" App). Cypus is planning to deploy an emergency application in 2018.

7. Average time needed for receiving the caller location by the 112 operator

The timely provision of caller location data is highlighted in Article 26(5) of the Universal Service Directive as amended by the "Citizens' Rights" Directive: Member States must 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.

Due to the implementation of the "push" system or the automatic "pull" system, near instant times (up to 10 seconds) were reported by Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Romania, Slovenia, Spain, Sweden and the United Kingdom.

Longer times were reported by Cyprus (20 s) and Croatia (10-50 s). Much more time is needed to receive the caller location in Malta[20] (5-10 minutes reported in 2014) and Greece (8 min 40 s). Austria and the Slovak Republic did not report relevant data for this Key Performance Indicator.

8. Availability of EU roaming call to 112 and caller location by mobile network operators

27 Member States reported the availability of access to 112 and caller location in case of roaming calls.

Slovakia – for roaming access – Croatia, France, Malta, Slovakia – for caller location – did not provide relevant information. The United Kingdom (for some networks) reported that for intra EU roaming calls caller location is not available, while Bulgaria reported that this function is temporary unavailable.

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[19] https://www.apple.com/newsroom/2018/01/apple-previews-ios-11-3/

[20] a new system is being deployed to ensure instant provision of caller location; the expected launch is foreseen for 11 February 2018

9. Awareness levels of 112

In the Annex to this document awareness data from April 2017 on 112 is presented (see point 9). Data was gathered in 2017 through the Eurobarometer E-communications household survey[21] commissioned by the European Commission.

The findings on the awareness levels at national[22] level are the following: most (61%) would call 112, while 31% would call the national emergency number. One in ten (10%) would call another number, while 5% do not know what number they would call.

The proportion that would call 112 stagnated since 2015, while the proportion that would call the national number increased slightly (+5pp).

The findings on the EU level[23] awareness levels are the following: almost half (49%) identified 112 as the single number to call throughout the EU. This represents a slight 1pp increase since 2015. Awareness of 112 as the single number to call has increased by seven percentage points since 2014.

Meanwhile 13% mentioned other numbers, some together with 112. 39% could not say what number to call.

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[21] To be published

[22] The question asked: Can you tell me what telephone number you would call in the event of an emergency in (OUR COUNTRY); for example, if someone needs urgent medical assistance or if you need to contact the police or the fire brigade?

[23] The question asked: Can you tell me what telephone number enables you to call emergency services anywhere in the EU?