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## **COMMUNICATIONS COMMITTEE**

### **Working Document**

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

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## INTRODUCTION

This Report provides an analysis of the replies submitted by Member States to the Questionnaire on the Implementation of 112 (document [COCOM12-20Rev](#)) in the context of the sixth data gathering exercise.

Further to discussions at the 49<sup>th</sup> COCOM meeting on 28 June 2012, the sixth 112 Questionnaire was distributed to COCOM delegations on 16 July 2012 with the deadline of 3 November 2012 to submit replies. A set of key performance indicators (KPIs) were included in the Questionnaire in order to gather measured and comparable data on the performance of 112 systems in Member States in line with the requirements of the Regulatory Framework. In order to provide the most recent data for the KPIs, as well as for the questions in the Questionnaire, the reporting period was set for 1 July 2011 till 1 July 2012. However, given the short time-period available for putting in place relevant measurements systems and for measuring these indicators (July-November) insufficient relevant data was reported by Member States. This data is presented in Table 1 of the Annex to this report. Therefore, in this report only those indicators are analysed which were present in the Questionnaire. It is to be noted that for the next exercise the Commission services will propose to the COCOM members to restrict the reporting only to the KPIs, abandoning the "Questionnaire" format.

The current Report follows the structure of the Questionnaire and is accompanied by the Annex providing a more detailed overview of the information provided by the responding Member States in a harmonised manner. As in the previous report, questions reflecting the provisions of Article 26 of the amended [Universal Service Directive](#) concerning the access to 112 for disabled users, the accuracy and reliability of caller location information and the extended obligation for access to 112 of voice service providers. It covers the information submitted by all Member States. Several of the responses received were not complete or indicated explicitly that certain data was not available, in particular concerning quality of call handling criteria. As agreed, the COCOM observer delegations from Candidate and EEA Countries were also invited to submit replies to this questionnaire. Replies were received from Croatia, Iceland and Norway.<sup>1</sup>

This Report was published on 11 February 2012, (more information on the Commission's '112' website: [www.112.eu](http://www.112.eu)). The country-specific information published on the '112' website was adjusted at the same time. On the same date, also the original replies sent by the responding States were published on the COCOM Circa website as in the previous exercise.

## KEY FINDINGS

As a general conclusion, the number of countries providing measurable data dropped from last year. The number of Member States that indicated that 112 is their sole or main emergency number did not change. In Denmark, Netherlands, Romania and Finland 112 is the sole emergency number. Meanwhile national emergency numbers are becoming 'legacy numbers' and are not actively promoted in seven Member States: Portugal and Sweden, Bulgaria, Latvia, Lithuania, Malta.

Concerning access to 112 for disabled users the responses received from Member States point to the fact that there is a long way to go to implement the requirements of the new

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<sup>1</sup> The answers received from Liechtenstein in the previous exercise were kept in the report.

legislative framework. Only 11 Member States and Iceland reported alternative access to 112. Even smaller number of Member States (6) reported the possibility to provide caller location for alternative access for voice to emergency services.

There is slight improvement concerning the time in which the caller location is provided to the relevant authority. 11 Member States (compared with 10 last year) reported to be using the 'push' method for providing mobile caller location. Generally the 'pull' method proved to provide a near-instant timeframe for the caller location. Some Member States (Poland, Germany, Greece, Austria) reported still a relatively long time for the provision of caller location information (more than 1 minute) which does not fit with the obligation to make caller location information available to the authority handling emergency calls as soon as the call reaches that authority.

As regards requirements on caller location there is no improvement. The wide majority of Member States reported installation or billing address for fixed location and Cell ID for mobile caller location. No Member State imposed stricter caller location criteria for mobile calls than Cell/Sector ID, although the available technical solution allow today for a much better accuracy.

In general terms, since last year, there are no significant signs of improvement of effective access to 112 in the Member States. Therefore the COCOM data-gathering exercise will continue on an annual basis but solely on the basis of KPIs, with a view to publish its results on future 'European 112 days'. Member States are encouraged to pursue their efforts of putting in place the necessary systems for providing data based on measurements of the actual performance of telecoms operators and PSAPs in these areas.

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## FIFTH REPORT ON THE IMPLEMENTATION OF 112

### 1. ACCESS TO 112<sup>2</sup>

#### 1.1. Non-PATS VoIP service providers – obligation to inform end users

This question referred to non-PATS VoIP providers which, as explained in the comment to the questionnaire, could be providers of private and community-restricted electronic communication service. Hence, **16** Member states confirmed the existence of requirements to inform users that they do not provide access to 112. **11** Member States, **Croatia** and **Iceland** reported that there are no such requirements, some of them explaining that there was no need for such requirements as all PATS VoIP providers must ensure access to 112.

#### 1.2. Availability of 112 when out of coverage of home mobile network

The third question focused on the possibility for domestic mobile users to access 112 when they are out their home network coverage by using another available domestic mobile network. This facility, which sometimes is referred to as ‘national 112 roaming’, may be particularly relevant in areas of the national territory with limited mobile network coverage, for example, in areas where only one of the country’s several mobile network providers has rolled out its network.

In their replies to the previous questionnaire almost all Member States reported that it was possible for their domestic mobile users to access 112 when they were out of their home network coverage by using another available domestic mobile network. There were, however, exceptions and an update on this important facility was therefore requested. Countries were also invited to indicate if this facility is only available for customers of some mobile operators and if it is subject to any restrictions.

The replies indicated that out of the **31** countries that provided answer to this question all confirmed that such ‘national 112 roaming’ is available except **Slovakia**<sup>3</sup>.

#### 1.3. Availability of 112 from mobile handsets without SIM cards

By way of complementary information, the countries were invited to indicate whether SIM-less 112 calls were allowed. Out of the **31** countries that provided this information, SIM-less 112 calls were reported possible in **19** Member States, **Norway** and **Iceland**. The remaining **eight** Member States that do not provide this facility are **Bulgaria**, **Germany** (in both these countries the facility was removed in 2009), **the Netherlands** (removing the facility in 2011) **Belgium**, **France**, **Romania**, **Slovenia**, and **the United Kingdom**. Several Member States chose to remove this facility because of the high proportion of hoax calls originating from SIM less phones.

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<sup>2</sup> An overview of the replies on Availability of 112 is provided in Table 2 of the Annex

<sup>3</sup> If the area where the caller is located is covered by other mobile network, the 112 call is realized through this mobile network, but this call is presented as a call without SIM-card to the PSAP operator. The operator cannot see caller’s phone number but only the phone’s IMEI

#### 1.4. National emergency numbers

The respondents were also invited to update the information as regards the existence of national emergency numbers, distinguishing between numbers, which are advertised as national emergency numbers, and previous emergency numbers that are no longer advertised as emergency numbers but are maintained in service, for example in order to provide additional safety for users who may know only the previous emergency number(s).

**Four** Member States - **Denmark**, the **Netherlands**, **Romania**, **Finland** – and **Iceland** have replied that 112 is, accordingly, their *sole* emergency number.

The remaining majority of Member States can be divided into three groups as regards the existence of emergency numbers:

- First, there are **five** Member States with a *single additional* national emergency number to be used for all emergencies – **Cyprus**, **Ireland**, **Portugal**<sup>4</sup>, **Sweden** and the **United Kingdom**. Portugal and Sweden indicated that their respective national numbers are no longer advertised.
- Second, **five** Member States have *one additional* national emergency number for one of the main emergency services. These are **Belgium**, **Germany**, **Estonia**<sup>5</sup>, **Luxembourg** and **Slovenia**.
- Finally, the remaining **15** countries<sup>6</sup> – **Bulgaria**, the **Czech Republic**, **Greece**, **Spain**, **Italy**, **Hungary**, **Austria**, **Poland**, **Latvia**, **Lithuania**<sup>7</sup>, **Malta**, **France** and **Slovakia**, as well as **Norway**, **Croatia** and **Liechtenstein** have specific national emergency numbers for each of the three main emergency services and some of them also for other services (such as for maritime or mountain rescue). **Bulgaria**, **Italy**, **Lithuania**, **Malta** and partially **Spain** have indicated that their national emergency numbers are no longer promoted.

In addition, some countries have reported additional national numbers for other specific emergency services. Among those, **Austria** appears to have the longest list of distinct numbers for specific emergency services. Moreover, **Spain** has several different numbers for certain emergency services that are managed at national, regional or local level. In the case of **Latvia** and **Lithuania**, their two-digit national emergency numbers are only available from fixed networks.

In conclusion, it can be observed that the situation has not changed in the last year: ‘112’ is the only emergency number in **four** Member States *or* the main emergency number (with the national emergency numbers becoming ‘legacy numbers’ – **seven** Member States<sup>8</sup>). A detailed overview of the Member State responses concerning national emergency numbers is available in Table 2 of the Annex.

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<sup>4</sup> In Portugal there has been also a special number 117 dedicated to forest protection – no longer advertised.

<sup>5</sup> As of 2014 the 112 number will become the single emergency number

<sup>6</sup> Belgium had also indicated in the reply to the first questionnaire that it was in the same category but it has not replied to the current one.

<sup>7</sup> Lithuania specified that ‘112’ was allocated as single emergency response number in the national numbering plan and that the national emergency numbers are used in a transition period.

<sup>8</sup> Portugal and Sweden, Bulgaria, Latvia, Lithuania, Malta.

As regards the question relating to the ratio between the calls to 112 and the other national emergency numbers only ten Member States were able to provide partial or complete information. The ratio varies greatly (e.g. from 3,7% in the United Kingdom to 95% for Sweden). We expect that future data gathering exercises provide better information to enable meaningful comparison.

### **1.5. Measures for disabled users and access to 112 by means other than voice communication**

The question on access to 112 by other means than voice communication reflects the requirements of the regulatory framework<sup>9</sup>, which provides for the obligations on Member States to ensure that disabled end-users enjoy equivalent access to 112. Member States were invited to provide information on their measures, which ensure that disabled end-users enjoy tailored solutions for equal access to 112 taking into account aspects such as speed, mobility, reliability, coverage or language handling.

Generally, access to 112 by other means than voice communication is provided in the respondent countries for ensuring accessibility of disabled end-users to emergency services.

Out of the **31** replies received, **12** (with Iceland) mentioned the existence of alternative means to voice as measures to provide access to emergency services:

- In **Denmark, Spain, Luxembourg, Austria, Sweden, Slovenia, the United Kingdom**<sup>10</sup>, **France** and **Iceland** 112 services can be contacted by means of SMSs. **Finland** will introduce 112 SMS in 2015.
- **Germany, Spain** (partially), **Belgium**<sup>11</sup>, **France** and **Luxembourg** mentioned fax.
- In **Spain** also chat is available, in **the Netherlands** real time texting whereas in **the United Kingdom and the Czech Republic** – text relay using appropriate terminals; **Slovenia** through WAP 112
- **France, Hungary** and **Austria** provide the non-voice access to emergency services to another number than 112

7 Member States mentioned that there are either plans or ongoing trials to introduce in the near future alternative means for disabled end-users (such as SMS, video).

Detailed overview of the answers can be found in the Table 3, "Availability of 112 for disabled End-Users", of the Annex.

## **2. CALL HANDLING**

### **2.1. Introduction**

This part of the Questionnaire consists of questions on unsuccessful call attempts and call set-up times, which aim at evaluating the performance of telecoms operators and networks,

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<sup>9</sup> Article 26 of the Universal Service Directive as amended by the "Citizens' Rights" Directive [Directive 2009/136/EC, OJ L 337, 18.12.2009] provides for additional measures for disabled users.

<sup>10</sup> In Sweden and the United Kingdom, prior registration is required to be able to use these services.

<sup>11</sup> Belgium intends to implement SMS112 in 2013

as well as of questions on response times to emergency calls and handling of calls in foreign languages, which aim at evaluating the performance of PSAPs. Starting with the fourth questionnaire a question is enquiring into the state of play and the response to hoax/false calls which appear to affect a number of emergency call systems.

As performance measurements clearly produce a lot more reliable data than estimates, the Questionnaires specifically invited the Member States to indicate ‘estimated’ results only in the case if ‘measured’ results were not available. In case of providing estimates, Member States were invited to present them in the same format as measured results, which would improve their comparability. For these reasons, even if it is difficult to compare the performance between the responding Member States (mainly due to the different methodology applied), it is nevertheless possible to observe the developments in each country that provided relevant replies to the successive questionnaires.

Hopefully those Member States, which are not yet in the position to carry out such performance evaluation, will follow best practice in this area and will also progressively introduce the necessary capabilities, thus further increasing the quality of their data.

An overview of Member States’ replies to these questions is provided in Table 4 of the Annex.

## 2.2. Unsuccessful call attempts

‘Unsuccessful call’ was defined in the Questionnaire as a call attempt, properly dialled following dial tone, where neither called party busy tone, nor ringing tone, nor answer signal, is recognised at the access of the calling user within 30 seconds for fixed origination calls or 40 seconds for mobile origination calls from the instant when that last digit of the destination subscriber number is received by the network. The measurement method suggested this time for this call handling criterion was the percentage of unsuccessful emergency calls solely.

In total, **16** Member States<sup>12</sup> and **Norway** and **Croatia** reported on their unsuccessful call ratio, among which **9** countries – **Bulgaria, Cyprus** (for part of the operators), **Czech Republic, Ireland, Luxembourg** (for a part of the operators), **Malta, Portugal, Slovenia, Spain, Croatia** and **Norway** – provided data based on measurements 0.168% (fixed) and 0.37% (mobile) in **Spain**, 0.14% in **Malta**, 0.44% (fixed) and 0.07% (mobile) in the **Czech Republic**, 2.23% (fixed) and 0.29% (mobile) in **Bulgaria**, 1.09% (fixed) and 0.37% (mobile) in **Slovenia**, 0.94% in **Ireland**, 0% to 3% (various operators) in **Luxembourg**, 0% to 0.26% (1 operators) in **Cyprus**, 0.03% **Croatia**, 2.02% in **Portugal** and 0.78% in **Norway**.

The estimated unsuccessful call ratio in the other respondent Member States ranged from less than 0% in Denmark, 0.1% in **Estonia**, **1%** in **Austria, Germany and Greece**, and 2.65% in **Lithuania** to 10% in **Hungary**, 15% (one operator) in **Luxembourg**, 21% in **Latvia** whereas some Member States estimated their unsuccessful call ratio to be satisfactory or low (**Finland** and **the United Kingdom**) mainly due to the preferential treatment given to emergency calls.

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<sup>12</sup> Data is not available in Belgium, Denmark, France, Greece, Italy, UK, Netherlands, Poland, Romania, Finland Sweden and Island.

The figures are generally comparable to those included in the previous report. When made available, measuring parameters such as the period in which the measuring was pursued and the number of calls assessed were included in Table 4 of the Annex.

### 2.3. Call set-up time

Call set-up time was defined as the period starting when the address information required for setting up the call is received by the network and finishing when the called party busy tone or ringing tone or answer signal is received by the calling user. Regarding this call handling criterion, it was suggested to provide data on the average call set-up time in seconds and the time in seconds within which the fastest 95% of emergency calls are set up, the same as for the previous report.<sup>13</sup>

In total, **14** Member States<sup>14</sup> as well as **Croatia** reported on call set-up times, among which **9** countries – **Bulgaria, Czech Republic, Ireland, Spain, Luxembourg** (some operators), **Portugal, Malta, Slovenia and Croatia** – provided data based on measurements, according to which the average call set-up time was: 0.68 sec. (fixed) and 0.63 sec. (mobile) in the **Czech Republic**, 1,0832 fixed weighted average **Cyprus**, 0,3 to 8 sec. (mobile) in **Luxembourg**, 2,02 sec. (fixed) and 3.06 sec. (mobile) in **Spain**, 1.51 sec (all calls) in **Portugal**, 0.88 sec. (fixed) and 3.78 sec. (mobile) in **Bulgaria**, , 0.29 sec (fix) and 2.23 sec (mobile) in **Slovenia**, 2 sec. in **Malta** (all calls), 3.13 sec in **Ireland** (all calls) and 0.45 to 5.91 sec in **Croatia**.

The estimated average call set-up time in the other respondent Member States was: less than 1 sec (fixed) 1-3 sec. (mobile) in **Austria**, 0.5 – 1.5 sec. in **Hungary** up to 9 sec (mobile) in **Greece**, 2-5 sec. in **Germany**, 20 sec in **Denmark**, most Member States indicating an estimated average of 1-5 sec. or a satisfactory / low call set-up time (**Finland** and **the United Kingdom**).

The figures are generally comparable to those included in the previous report. When available, measuring parameters such as the period in which the measuring was pursued and the number of calls assessed were included in Table 3 of the Annex.

### 2.4. Response time to emergency calls

‘Response time’ was defined as the duration from the moment when the address information required for setting up the call is received by the network to the moment when the PSAP human operator answers the call. According to the relevant ETSI standard, the Member States were invited to indicate the percentage of emergency calls answered within 20 seconds. However, in order to improve comparability of the results among countries, starting with the third questionnaire information was requested according to both ETSI methods, i.e. percentage of calls answered within 20 seconds and the average response time.

In total, **23** Member States, as well as **Iceland** and **Norway**, reported on call response times. The majority – **17** – Member States were able to provide data based on

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<sup>13</sup> Only the first parameter appears in this report and the Annex, as for the moment a limited number of respondents made available data relating to the fastest 95% of emergency calls.

<sup>14</sup> Data is not available in Belgium, Denmark, Greece, Italy, Hungary, the Netherlands, Poland, Romania, Finland and Sweden whilst France and Cyprus have not replied to the questionnaire.

measurements<sup>15</sup>: the **Czech Republic** (100%), **Estonia** (100%), **Greece** (100%), **Ireland** (99.94%), **Romania** (97.97%), **Slovenia** (97,2% for fixed, 96.5 % for mobile calls), **Spain** (96.17%), **Latvia** (96 %), **Bulgaria** (95,2) **Sweden** (93%), **Slovakia** (91,5 sec), **Austria** (87,2.), **Portugal** (78,6%), **Malta** (70,52%) and **Luxemburg** (per operator between 60% and 91%). In **Iceland** 94 % calls answered in 20 seconds. The measurements provided by the remaining three countries in this category followed a different methodology: **Finland** reported on the percentage of calls answered within 30, 15 and 10 seconds (97,17%, 94,89% and 91,86% of calls respectively), and **the United Kingdom** (97.73% in 5 sec., 99,76% within 20 sec)).

As regards the average response time based on measurements, the following data was reported: **Czech Republic** (0.046 sec.), **Ireland** (0.58 sec.), **Bulgaria** (21,1+3,5 Answer time), **Latvia** (3 sec.), **the United Kingdom** (less than 5 sec.), **Romania** (3,74 sec.), **Sweden** (6.7 sec.), **Slovenia** (7 sec in fixed 8,86 sec in mobile networks), **Estonia** (5,6 sec.), **Greece** (9 sec.), **Malta** (5 sec.), **Slovakia** (7 sec.), **Austria** (10 sec.), **Luxembourg** – per operator (6.66 to 12 sec.), **Latvia** (3 sec.), **Portugal** (12.25 sec), **Norway** (7,49 sec.) as well as **Cyprus** (18,352 - fixed).

The estimated call response time in the other respondent Member States ranged from **Netherlands** (close to 100% - average 8), 99,44% of calls answered within 20 seconds in mobile networks in **Cyprus**, 92% of calls answered within 20 sec. (9.04 sec. on average) in **Poland**, more than 95% of calls answered within 20 sec. (5-20 sec. on average) in **Germany**, 6,9 sec. on average in **Spain**, 30 sec on average in **Denmark**, 77% of calls answered within 20 sec. in **Lithuania** (8,02 sec on average) and 15 sec in **Hungary** (20-30 sec. for automated answering machine).

## 2.5. Calls in foreign languages

The state of play in relation to handling emergency calls in foreign languages is similar to the one reported in the previous two exercises. Most of the responding Member States have specified whether answering of the 112 calls in the relevant language is provided in all of the country's 112 PSAPs (**Poland and Spain** have also indicated the precise number of PSAPs using a relevant language). An overview of Member States' replies to these questions is provided in Table 3 in the Annex.

Among the **27** Member States plus **Croatia, Iceland** and **Norway**, which also provided information on the language issue, **26** countries<sup>16</sup> (apart from **the United Kingdom, Ireland** and **Malta**) reported on the ability of their PSAPs to handle directly calls in English (**Belgium, Bulgaria, the Czech Republic, Denmark, Germany, Estonia, Greece, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, Portugal, the Netherlands, Austria, Poland, Romania, Slovenia, Finland** and **Sweden**) plus **Croatia, Iceland** and **Norway**. Out of these Member States, **Belgium, Bulgaria, the Czech Republic, Germany, Spain, Lithuania, Austria, and Poland** indicated that English may not be available in all cases in all PSAPs and its availability depends on the linguistic resources of the PSAPs; transfer to other PSAP may also be available. **Slovakia** pointed out that calls in English can be forwarded for processing to another PSAP where competent staff is available.

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<sup>15</sup> Some of these respondents were only able to provide measurements based on only one of the two methods.

112 calls in French are answered in **13** countries (apart from **France, Luxembourg** and **Belgium**)- **Bulgaria** (by call transfer to another PSAP if necessary), **Germany** (subject to availability/transfer in the border region), **Greece, Ireland, Italy, Romania** (direct calls), **Spain** and **Norway** (may not be available in all PSAPs), the **Netherlands** (most of the time), **Slovakia, Czech Republic, Poland and Lithuania** (by transfer), **Finland** (by involving interpretation service).

112 calls in German are answered in **12** States (apart from **Germany, Austria, Belgium** and **Luxembourg**) – **Bulgaria, Hungary, Italy, the Netherlands** and the **Czech Republic** (by call directly or by transfer to another PSAP if necessary), **Spain** and **Norway** (may not be available in all PSAPs), **Poland** (24 PSAPs can handle such direct calls), (by transfer), **Slovakia, Romania** and **Lithuania** (by transfer) and **Finland** (by involving interpretation service).

112 calls in Italian are answered in **five** countries (apart from Italy) – **Czech Republic** (language support), **Spain** (some PSAPs), **Slovenia** and **Romania** (by call transfer to another PSAP if necessary) and in **Croatia**, whereas Russian is available at least through interpretation services in **eight** Member States (**the Czech Republic, Estonia, Latvia, Lithuania, Poland, Romania, Slovakia** and **Finland**).

A number of Member States have indicated the ability of their PSAPs to answer calls in the languages of their neighbouring EU countries. Thus, calls in Polish can be handled by PSAPs in **Lithuania, Slovakia** (in PSAPs of certain areas), **Ireland**; calls in Hungarian – in **Romania** (by call transfer to another PSAP if necessary), **Slovenia** (in PSAPs of certain areas) and **Slovakia** (in PSAPs of certain areas); calls in Czech - in **Slovakia** and **Poland** (2 PSAPs); calls in Slovak – in **Poland** (2 PSAPs), calls in Italian – in **Slovenia** (in PSAPs of boarder areas) and **Croatia**, calls in Portuguese– in **Spain** (3 PSAPs), calls in Slovenian – in **Italy** and **Croatia**, calls in Finnish - in **Estonia**, and Swedish and Norwegian in **Danemark**. Languages of the neighbouring EU countries are also catered for by **German** and **Hungarian** PSAPs in border areas. **Germany** indicated that there is also a possibility to transfer calls to PSAPs of neighbouring countries in case of calls in languages of these countries.

The **United Kingdom** indicated that its PSAPs can have recourse to interpretation services covering 170 languages while **France** to 40 languages; **Swedish** PSAPs can have recourse to an interpretation service covering several languages.

Finally, a number of Member States indicated that the call takers in PSAPs have at their disposal other means to deal with foreign language calls such as **Czech Republic** (linguistic support software), **Germany** (involving the Federal Police, translating tools for French and Spanish, or in some cases employees of administration), **Poland** (Multicom 112 programme), and **Belgium, Slovakia** (basic conversation phrases). **Italy** indicated that it has set-up multi-language 19 'operation rooms' managed by 'Arma dei Carabinieri' located in the main towns and tourist sites, which handle calls in foreign languages also by taking up calls transferred by other PSAPs.

## 2.6. Hoax/false calls

There were only **26** countries that provided information on the hoax/false calls, and **15** that informed about the measures taken in relation to such calls. The ratio of hoax/false calls to the total number of calls still appears to vary considerably among the States: whereas in **Germany** the number of such calls is less than between 3% and 5% (however varying highly regionally and seasonally), **Greece** reported 99.354%. Between these two extremes

there are **Cyprus** (8%), Romania (14,57%), **Austria** (30%), **Bulgaria** (38%), Spain (56,26%), **Belgium** (46%), **Slovakia** (68%), Ireland (60%), **Czech Republic** (75 %), **Portugal** (77%), **Hungary** (90-95%), **Norway** (80% in Oslo and 90% in the rest of the country). It is also worth noting that the majority of hoax/false calls come from SIM-less handsets (**Lithuania** and the **Netherlands** more than 99%); this appears to have caused some countries to ban this feature. Some Member States informed about the proportion of various types of calls: silent, by mistake, mischievous. However, currently there are no common definitions or classifications to enable a sound comparison between various Member States.

The measures to reduce the number of hoax/false calls indicated by the Member States could be divided into two main groups.

- First, technical and organisational measures have been taken in a few countries to prevent hoax/false calls from reaching the PSAP in the first place. These include prioritisation of calls and filters in (**Spain**); concerning the SIM less 112 calls, there is a possibility in **Finland** to direct those calls first to an announcement and only after that to the emergency centre if the caller continues the call after hearing the announcement. Furthermore, **Finland** has planned to open a separate number for enquiry calls that cannot be considered emergency calls.
- Second, there are both technical and legal measures to deal with individual cases of abuse. **Spain** and **the Czech Republic** has indicated the possibility, in the case of repeated hoax/false calls from one number, to put the caller (temporary) on a 'blacklist'. In **Belgium**, SIM-cards from which emergency numbers are repeatedly abused may be temporary blocked. **The Netherlands** operate automatic warning messages and issue warnings calls. Penal sanctions are foreseen in **Germany**, **Finland**, the **United Kingdom**, **Slovakia**, **the Netherlands**, **the Czech Republic** and **Ireland**. In **Estonia**, penal action is possible only in case of dispatching resources when action has been taken. **Bulgaria** and **Slovakia** have indicated that fines may be imposed (€6 638 in Slovakia). In **Danemark** the Copenhagen Fire Brigade is preparing an initiative to blacklist repetitive offenders.

Supplementary details as regards the situation in the countries that responded to this question are included in Table 4 of the Annex.

### 3. CALLER LOCATION

#### 3.1. Introduction

An overview of the relevant information taken from the replies is available in Table 5 (requirements of accuracy and reliability), Table 6 (fixed caller location) and Table 7 (mobile caller location) in the Annex. As in the previous reports, this fifth Report also deals with caller location separately in relation to fixed and mobile calls using partially different sets of criteria for these two types of calls.

The two common questions for both types of calls were, firstly, the method used to provide caller location (i.e. either 'push' or 'pull' in the meaning of Commission Recommendation 2003/558/EC). The attention of the Member States was drawn to the fact that the application of 'push' method implies caller location data being provided and put at the disposal of the 112 call handler as soon as the call is answered, which would normally happen without delay.

If the method applied is 'Pull', i.e. caller location is provided upon specific request, the Questionnaire requested information on the time needed to provide it<sup>17</sup>, indicating whether this information is based on actual measurements or are estimates. For measurements, a preferred method for presenting results was proposed – (1) average time for providing caller location and (2) the percentage of calls for which caller location is provided within one minute.

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<sup>18</sup> requiring Member States 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. In light of the revised EU telecom rules, in order to better evaluate the capability of prompt provision of caller location information while using 'pull' method, Member State were asked to specify whether the implemented solution is an 'Automatic Pull' or 'Non-automatic Pull'.

Two new questions reflect the revised Universal Service Directive. Firstly, Member States are asked to provide information on the way their competent Regulatory Authorities fulfilled the obligation to define accuracy and reliability criteria of the caller location information. Secondly, in view of the new provisions on equal access for disabled end-users, a question was introduced asking Member States on the availability of caller location information for fixed/mobile subscribers accessing 112 by means of access other than voice communication.

### 3.2. Requirements on caller location

As provided in the revised regulatory framework, the “competent regulatory authorities shall lay down criteria for the accuracy and reliability of the caller location information provided”. The questionnaire provided for separate sets of questions for fixed and mobile caller location.

For fixed caller location installation address, billing address or client’s address was indicated as the accuracy requirement in **Austria, Belgium, Cyprus, Czech Republic, France, Germany, Greece, Hungary, Italy, Malta, Netherlands, Poland, Portugal, Romania, Spain, United Kingdom and Norway**. **Slovenia** pointed to its national regulation without explaining the requirements.

For fixed caller location reliability requirements are not in place in the majority of countries. Those who reported existence of such requirements understood it differently. While **Belgium, Latvia, Romania** refer to the updating of the client database, **Italy** refers to the architectural solution of the system, **Greece** to service responsibility within the operator’s human resource. **Slovakia** and **Spain** refer to national legislation without explaining the requirements. **Cyprus** mentions that no reliability problems were reported.

For mobile caller location Cell ID/coverage is the accuracy requirement reported by the following countries: **Belgium, Cyprus, Germany, Hungary, Ireland, Italy, Malta, Netherlands, Portugal, Romania, United Kingdom and Norway**. However, the majority of the countries did not report such requirements.

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<sup>17</sup> Defined in the Questionnaire as the period starting when the public safety answering point human operator requests the caller location information and finishing when the calling location information is received for pull systems.

<sup>18</sup> Directive 2009/136/EC, OJ L 337, 18.12.2009.

For mobile caller location reliability requirements, the lack of such is doubled with a different interpretation of the reliability criteria as in the case of fixed telephony.

### 3.3. Caller location for non-voice access to 112

Caller location for non-voice communication is of the essence of equivalent access to emergency services for disabled end-users. However, only a few countries reported the availability of caller location information for non-voice communication to emergency services: **Belgium, Finland** and **Luxembourg** for SMS services, **the Netherlands** for real time text, and GPS location for My SOS service, **United Kingdom** for SMS and text relay, while **France** for SMS to the 114 special emergency number for disabled end-users. In these cases the accuracy of caller location is similar with the voice communication CLI. Detailed information can be found in Table 3.

### 3.4. Fixed caller location

#### 3.4.1. Method and time needed to provide caller location on request

Out of the 27 Member States and **Croatia, Iceland, Norway and Liechtenstein**, 9 Member States (**Bulgaria, Denmark, Estonia, Ireland, Lithuania, Portugal, Romania, Slovenia** and **Slovakia**) and **Croatia, Liechtenstein, Iceland** reported to be using the 'Push' method for providing fixed caller location. **Germany** is still to introduce the Push system. In **Latvia** 'Push' is used by one operator and in **Spain** by 13 PSAPs (6 PSAPs are using 'Automatic Pull'). 'Automatic Pull' method was reported in 13 countries: **Austria, Belgium, Czech Republic, Cyprus** (for 1 operator), **Spain, Italy, Latvia, Luxembourg, Finland, the Netherlands, Sweden, the United Kingdom** and Norway reported near-instant times to provide caller location (up to 2 sec.), which in practical terms render the performance of their caller location systems similar to that of 'Push' systems.

Data based on measurements were provided by the **Czech Republic, Estonia, Spain, Italy** and **Latvia**, while other respondent Member States used estimates or were not able to provide data. However, **Greece** pointed out that it has never experienced a case of providing caller location. **Bulgaria** provided no data.

A longer time to provide caller location information (more than 1 min. on average) was reported by **Germany** (70 sec.), **Poland** (72,93 sec.), **Hungary** (20-30 sec. to 2-3 min.) and France (10 minutes to 30 minutes).

These responses confirm the conclusion that the average time necessary to answer a caller location request is slightly decreasing.

#### 3.4.2. Source, comprehensiveness and updating of fixed caller location data

In their responses to the first questionnaires, the majority of Member States reported that they have set up central databases, from which emergency services receive address information for fixed calls. Where a central database is used by the emergency services to retrieve caller location, it is highly relevant that operators provide updates to this database concerning their subscribers, in particular to include new subscribers and to update the address data of existing subscribers who have changed address.

The comprehensiveness of such databases is equally important. Some Member States indicated in their replies to the first questionnaires that customers of certain (alternative) operators were not included in the number/address database used by emergency services to

establish caller location for fixed calls. It was also reported by some Member States that location data of certain fixed subscribers is not available for the emergency services because these subscribers have chosen not to include their personal data in the directory service, which is used by the emergency service to find the subscriber address information. Moreover, it would appear that the ability to establish caller location in many instances depends on whether the PSAP concerned receives calling line identification, which enables it to make the request for caller location on the basis of the received calling telephone number.

In the light of this information, the previous questionnaires included a specific question on the availability of caller location in case of subscribers that are not included in directory services. This question was retained by the fifth questionnaire as well as the question concerning those subscribers who have exercised their right to prevent the presentation of their calling line identification (CLI, which is another facility made possible by Directive 2002/58/EC on privacy and electronic communications).

Similar to the previous exercise, out of the **27** Member States and **Croatia, Norway, Iceland and Liechtenstein** that provided answers to the relevant question, **20** countries – **Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Ireland, Latvia, Lithuania, Malta, the Netherlands, Portugal, Romania, Slovenia, Slovakia** (two databases), **Finland, Sweden, the United Kingdom, Norway, Croatia and Iceland** – reported having set up centralised comprehensive fixed caller location databases. **Germany** reported having a centralized point of contact that has access to the databases of the providers. Centralised databases used in **Belgium, Malta and Austria** do not include subscribers that are not included in the directory services – in case of which contacting directly the operator is necessary. **Estonia** reported to upgrade the caller location system to GIS112 system.

The frequency of updating these databases was reported daily in most of the countries concerned except Germany (daily to weekly depending on the relevant service provider), **Romania** (monthly), **Bulgaria, Lithuania** (2 month), **Slovakia** (every three months) and **Spain** (overall update every six months, cancellation: daily).

As regards the specific question on the availability of caller location in case of subscribers not included in directory services all Member States seem to provide such location. **Spain** indicated that location of calls is possible when the NRA database is used. **The Netherlands, Austria, Malta and Finland** indicated that it is possible to locate these subscribers by verbal/written request to their network operator or to another institution.

Like in the previous exercise most of the respondent countries confirmed the availability of caller location in case of subscribers that have prevented the calling line identification (because CLI is still delivered to the PSAP notwithstanding the choice of the subscriber).

### *3.4.3. VoIP caller location*

The Member States were also invited to indicate whether caller location is provided for subscribers of **VoIP** services providing for originating national calls to numbers in the national numbering plan. An additional point was being added to this question regarding the availability of the actual address in case of nomadic VoIP systems.

Of the **27** Member States and **Croatia, Norway and Iceland** most confirmed that caller location is possible in case of such subscribers, with the exception of **Latvia, Poland**, as well as **Hungary** (no information). **Denmark** and indicated that some VoIP operators

provide the actual location. **Belgium, Greece and Luxembourg** provide this facility partially.

Furthermore a number of countries, which in principle responded affirmatively, indicated that the caller location available in case of using nomadic VoIP systems is the registered subscription address: **Austria, Cyprus, Czech Republic, Denmark** (Some VoIP operators provide the actual location), **Greece, Germany, Ireland, Italy, Luxembourg, Spain, Cyprus, Malta, the Netherlands, Romania, Slovenia and Norway**.

#### *3.4.4. Information of VoIP subscribers about limitation on providing caller location*

Finally, in view of the fact that the availability of caller location is subject to technical feasibility and it may not be possible for all VoIP systems, a new question has been introduced in the third questionnaire and retained in the following ones, asking Member States to indicate whether there is an obligation on the part of VoIP operators to inform their customers about the possible limitation on providing caller location to emergency services. **19** States have confirmed the existence of such an obligation (**Belgium, Bulgaria, Czech Republic, Estonia, Denmark, Finland, Germany, Greece, Ireland, Italy, Latvia, Spain, Portugal, Romania, Slovenia, Slovakia, Sweden, the United Kingdom and Norway**) whereas **Austria** indicated that the information of this category of subscribers is a recommendation for the VoIP operators concerned and not a legal requirement. **The Netherlands** reported that, if 112 routing is supported by VoIP operator, the location information must be delivered.

### **3.5. Mobile caller location**

#### *3.5.1. Method and time needed to provide caller location*

Out of the **27** Member States and **Croatia, Iceland, Liechtenstein and Norway** that provided the relevant information, **twelve** States (**Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Ireland, Luxembourg, Portugal, Romania, Slovenia and Slovakia, Iceland**) reported to be using the 'Push' method for providing mobile caller location. In addition there are **five** countries using the 'Push' system partially: in **Latvia** this method is used by 2 of the mobile operators, in **Lithuania and Cyprus** both systems are used, in the **United Kingdom** a combination of the Push and Pull system is used and in **Spain** it is used in 19 PSAPs. The **Netherlands** reported the use of a 'Semi-push' system. Among the Member States which use the 'Automatic Pull' system, **seven** Member States – **Belgium, Finland, Italy, Latvia, Lithuania, Sweden, the United Kingdom and Norway** – reported near instant average times to provide caller location (i.e. within 15 sec.), which in practical terms render the performance of their caller location systems similar to that of 'Push' systems.

A longer time to provide caller location information was reported by **Poland** (72,93 sec., 58.38% within 1 min.), **Hungary** (between 20 sec. and 3 minutes) and **Germany** (70 sec. – data on the subscriber not the caller location, 40% within 1 min.). On the other hand, the longest delays were reported by **Austria** (10 minutes verbal/written manual requests), **Greece** (44,6 min. on average) and France (10 minutes to 30 minutes).. **Malta** reported that it will implement an Automatic Pull system in the near future. **Germany** reported that it is planning to introduce the push system.

The overall results are similar to those recorded in the previous exercise.

### 3.5.2. *Type and accuracy of mobile caller location*

In their replies to the first two questionnaires, most Member States indicated mobile network Cell ID and/or Sector ID as the available mobile caller location information. Accordingly, this type of caller location currently appears to be the ‘technically feasible’ minimum caller location information which all mobile operators within the EU should be able to provide. Consequently, the revised regulatory framework does not provide for technical feasibility as a condition for the provision of caller location. In order to be understandable and usable by the emergency services, it must be possible to link the Cell ID/Sector ID to a particular geographical area on a map, and appropriate technical arrangements should exist in the Member States for this purpose.

The accuracy of mobile caller location in the case of Cell ID/Sector ID highly depends on the mobile cell or sector coverage that varies considerably between urban and rural areas. The Member States were therefore invited to indicate the availability of any ‘enhanced’ mobile location technologies that allow for better results than Cell ID/Sector ID.

Out of the **31** respondent countries, **27** Member States, **Croatia, Iceland, Liechtenstein** and **Norway** reported Cell ID and/or Sector ID (or similar) as the available mobile caller location information. Among these countries, **Denmark, Poland, Finland, the United Kingdom, Croatia** and **Norway** indicated the existence of additional facilities to increase accuracy of mobile caller location, based on measurements and calculations (‘timing advance information’). As for the remaining countries, the **Czech Republic** uses specific area and Best Server Base Transceiver Station ID. In **Norway**, timing advance is used at one operator. In **France**, the mobile caller location is given by the relevant postal code. These results are similar to those gathered within the previous exercise.

In this context, it is relevant to recall that Article 26(5) of the Universal Service Directive as amended by the "Citizens' Rights" Directive provides that the competent regulatory authorities *shall lay down criteria for the accuracy and reliability of the caller location information provided.*

### 3.5.3. *Possibility to additionally obtain the registered address of the mobile subscription*

The possibility of obtaining the registered address of the mobile subscriber appears as a useful additional facility, especially in the light of the fact that more and more customers eliminate their fixed lines and use mobile telephones also at home, thus increasing the chance that the mobile customer’s registered home address is also the place from which the 112 call is being made. Building on the previous experience, a specific question on this additional feature of mobile caller location was therefore retained in the fourth questionnaire, clarifying that it is referring to those mobile users who have actually registered their address.

Out of the total **27** Member States and **Croatia, Iceland, Liechtenstein** and **Norway** that provided information on this point, 23 reported that it was possible for PSAPs to obtain the address of the subscription. Out of these, **the Czech Republic, Greece** and **the Netherlands** have indicated that this information is to be obtained upon request, **Belgium, Romania, Luxembourg** and **Liechtenstein** - only for the subscribers registered to the directory services, and the **United Kingdom** - the registered address is not available for all pre-paid customers of all operators.

### *3.5.4. Mobile caller location in case of roaming (international and national)*

According to the replies to the previous questionnaire, caller location was not available in all Member States for users of intra-EU and/or national 112 roaming. The current replies show that these categories of mobile users still cannot be located when calling 112 in several Member States. However, the fact that this facility is now available in the majority of countries shows that it is technically feasible within the meaning of the EU regulatory framework.

As regards the first category of mobile users (intra-EU roaming), out of the **27** Member States, **Croatia, Iceland, Liechtenstein** and **Norway** that provided the relevant information, **Belgium, Hungary and Ireland** replied negatively while **Sweden** has a formal requirement in place but still under implementation. In Slovakia is subject to relevant contractual relation with the caller's home operator. In **Finland** it is available upon specific request to the operator.

As regards mobile users in the situation of 'national 112 roaming', out of the **27** Member States, **Croatia, Iceland, Liechtenstein** and **Norway** that replied to this question, **eight** countries (**Austria, Belgium, the Czech Republic, Estonia, Hungary, Latvia, Netherlands and Poland**) reported that caller location is not provided for such users. In **Finland** and the **United Kingdom** the caller location information is available in most cases, by specific request.

### *3.5.5. Mobile caller location for SIM-less handsets (where such calls are possible)*

Finally, this question requested information on the availability of caller location information also in case of SIM-less calls to 112 (in those Member States where such calls are possible). Out of **31** countries replying to this question, **17** confirmed the availability of this facility: the **Czech Republic, Cyprus, Denmark, Estonia, Finland, Greece, Hungary, Ireland** (it can be handset dependant), **Italy, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Spain and Iceland**.

## **4. PROMOTION OF 112**

In the same way as the previous questionnaires, the fourth one also included questions about information and promotion activities in relation to 112. The specific questions continued to be grouped in two categories – (1) measures taken by the authorities/ NGOs (which included as examples dedicated programmes/ campaigns in mass media, display on posters, leaflets, websites etc., information in kindergartens / schools and display on vehicles of emergency services) and (2) measures taken by telecoms operators (which included as examples promotion on operators' websites, invoices etc, inclusion of 112 in SIM address books, display in telephone directories and in pay telephone booths).

The Member States were invited to indicate in particular if information about 112 is provided to roaming mobile users, taking into consideration the amendments to the Roaming Regulation (Regulation (EC) No 544/2009 of 18 June 2009)<sup>19</sup>.

The two final questions invited to indicate how the 'EU-wide' aspect of 112 is promoted, having regard to the fact that any citizen could potentially travel to another EU country as well as to the specific obligation under Article 26(6) to inform citizens about 112 as the European emergency number. Secondly, as in the previous exercise, given the declaration of 11 February as '**European 112 Day**', Member States were inquired about any promotional activities planned at national level on the occasion of **11 February**.

An overview of the different types of measures in each country is provided in Table 8. This overview continues to show a large diversity among the Member States, which provided the relevant information – there are countries that use almost a full spectrum of the mentioned promotional activities (**Bulgaria, the Czech Republic, Cyprus, Estonia, Germany, Latvia, the Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Croatia and Iceland**) while the list of activities is much shorter in case of some other countries.

Insofar as information about 112 provided to roaming mobile users is concerned, most of Member States and **Norway** confirmed the implementation of the roaming provisions. **Greece, Austria, Luxembourg, Poland** and **Sweden** reported partial implementation. **Belgium** responded negatively. As regards awareness-raising measures addressing travellers, 12 respondent countries, more than last year, indicated that they have taken additional measures to inform travellers in relation to 112.<sup>20</sup>

As regards the promotion of 112 as the 'EU-wide' emergency number, rendered necessary by the importance of travellers being aware that they may call 112 not only in their Member States but all across the EU, 21 countries indicated that 112 is actively promoted at national level as the European emergency number: **Austria** (partially), **Belgium, Bulgaria, the Czech Republic, Cyprus, Estonia, Finland** (partially), **Germany, Greece, Hungary, Ireland, Latvia, Luxembourg, Malta, the Netherlands, Poland** (awareness is the highest), **Portugal** (occasionally), **Romania, Slovakia, Spain, Sweden, Croatia** and **Norway** (partly).

Finally, promotional activities on the occasion of the 112 Day on the 11 February are planned in the majority of member states: Info days, press conferences, open door days, radio broadcasts, leaflet distributions, website info, press releases, school-events, involvement of local authorities and emergency services, campaigns targeting children and the youth.

## 5. GENERAL INFORMATION

The **names and contact information of the competent national authorities** in the area of 112, to which citizens can address questions or complaints regarding the

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<sup>19</sup> Distinct question IV.1.12.

<sup>20</sup> It should be recalled that Article 26(6) of the Universal Service Directive as amended by the "Citizens' Rights" Directive [Directive 2009/136/EC, OJ L 337, 18.12.2009] reinforces the requirement that Member States shall ensure that citizens are adequately informed about the existence and use of 112, providing that this should be done in particular through **initiatives specifically targeting persons travelling between Member States**.

implementation of 112, and **references to national legislative and regulatory acts**, concerning 112 and national 112 websites were included and updated in Table 8 of the Annex.