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Results of the third 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 [COCOM09-21 Final](#)) in the context of the third data gathering exercise, which follows the first two exercises that resulted in the publication of COCOM Reports [COCOM08-17 Final](#) (with [Annex](#)) in July 2008 and [COCOM09-11 Final](#) (with [Annex](#)) in March 2009.

Further to discussions at the 35th COCOM meeting on 17 June 2009, the third 112 Questionnaire was distributed to COCOM delegations on 27 July 2009 with the deadline of 15 November 2009 to submit replies. The COCOM observer delegations from Candidate and EEA Countries were also invited to submit replies to this Questionnaire. A draft Report was presented for discussion and comments at the 37th COCOM meeting on 16 December 2009. The present final Report integrates the comments and additional information submitted by COCOM delegations after that COCOM meeting. It covers all Member States with the exception of Ireland, which did not reply to the Questionnaire, and in addition includes the replies of Croatia and Norway.

This 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 countries in a harmonised manner. However, 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 at the 37th COCOM meeting in December 2009, this Report is being published on 11 February 2010, the 'European 112 day' (more information on the [Commission's '112'](#) website). Its information was used to adjust the country-specific information on the '112' website.

The COCOM data-gathering exercise on 112 will continue on an annual basis with a view to publish its results on future 'European 112 days'. As it was the case with the previous two data-gathering exercises, the Commission services will analyse the experience of this third exercise and will review the Questionnaire for the next data-gathering round, which will be presented to delegations at one of the next COCOM meetings in 2010.

The 'core' questions of this and the first two data-gathering exercises will also remain in the future questionnaires, i.e. questions on the quality of service in call handling and caller location. Therefore, 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 telecom operators and PSAPs in these areas.

The results from the first three rounds have permitted a comparison of the performance of Member States over time to some extent and such comparison is included in this Report. However, for the moment, such comparative analysis is limited by the fact that a lot of information is still missing in the replies of several Member States. This third exercise continues to demonstrate some improvement in terms of comprehensiveness of responses; therefore it is expected that the comparability of results will continue to improve in the next years.

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THIRD REPORT ON THE IMPLEMENTATION OF 112

1. ACCESS TO 112

1.1. Availability of 112 and information to VoIP customers

As regards availability of 112, in the light of the regulatory framework, i.e. Article 26 of the Universal Service Directive, the third Questionnaire asked whether operators are required (not only by legislation but by any other act establishing such an obligation on them) to ensure access to 112 for users of VoIP services recognised as Publicly Available Telephone Services (PATS).¹ Out of the 28 countries (26 Member States, **Croatia** and **Norway**) that provided answers to this question, **26** confirmed that such legal requirements exist. However, **Greece** maintained that access to 112 is subject to ‘technical feasibility’. Only **Latvia** and **Belgium**² responded negatively.

The responses were mostly negative as regards the second question of this chapter about the obligation of VoIP providers (this time the reformulated question referred only to non-PATS, given that access to 112 should normally be provided by all operators providing PATS) to inform their customers in case access to 112 is not provided. Only **seven** Member States informed that such requirement existed. Among these countries, the **United Kingdom** specified that this obligation does not apply to operators who only offer Internet to Internet calls. **France** indicated that no such obligation exists because all VoIP operators must provide access to 112 and **Finland** replied that, despite the absence of legal requirements, this was recommended to the operators.

As it was already pointed out in the previous Report, an ordinary subscriber might not be aware of the different status of his/her chosen telecom provider (PATS or non-PATS); therefore information about the availability of 112 is quite relevant, in particular when the relevant operator is a non-PATS provider and does not ensure access to 112.

An overview of the replies is provided in Table 1 of the Annex.

1.2. Availability of 112 when out of coverage of home mobile network (national roaming)

The third question focused on the possibility for domestic mobile users to access 112 when they are outside their home network coverage by using another available domestic mobile network. This facility, which may be referred to as ‘national 112 roaming’³, 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.

¹ The newly adopted regulatory framework provides under the amended Article 26(2) that Member States, in consultation with national regulatory authorities, emergency services and providers, shall ensure that undertakings *providing end-users with an electronic communications service for originating national calls to a number or numbers in a national telephone numbering plan* provide access to emergency services.

² **Belgium** confirmed this feature within the second data-gathering exercise.

³ This questionnaire did not deal with the availability of 112 for users of international mobile roaming services since all Member States have already confirmed its availability.

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 new replies showed that of the 28 countries that provided answers to this question, **26** confirmed that such ‘national 112 roaming’ is available (the **United Kingdom**, which provided negative reply to the last questionnaire, has now also enabled ‘national 112 roaming’). **Belgium** maintained that this facility is currently only available on two of the three national mobile networks and **Estonia** specified that the user concerned has still to first remove SIM card to benefit from this facility.

By way of complementary information, the countries were invited to indicate how the ‘national 112 roaming’ is achieved, in particular whether it is a consequence of allowing SIM-less 112 calls in general. Out of the 28 States that provided this information, SIM-less 112 calls were reported possible in 20 States (21 in the previous exercise)⁴. The seven Member States that do not provide SIM-less 112 calls are: **Belgium, France, Romania, Slovenia, the United Kingdom, Germany**, which stopped this facility in June 2009, and **Bulgaria**, which stopped this facility on 1 July 2009. SIM-less 112 calls are also not possible in **Croatia**.

The respondents were finally invited to update the information as regards national emergency numbers⁵, distinguishing between numbers, which are advertised as national emergency numbers, and previous ‘legacy’ 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).

Denmark, the Netherlands and Romania have replied that no other emergency numbers exist beside 112. Moreover, **Finland, Malta, Portugal and Sweden** have 112 as their only advertised emergency number but these countries have also retained in operation their old (legacy) emergency numbers.

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

- First, there are two Member States with a *single additional* national emergency number to be used for all emergencies⁶ – **Cyprus** and the **United Kingdom**.
- Second, four Member States have *one additional* national emergency number for one of the main emergency services. These are **Germany, Estonia, Luxembourg and Slovenia**.
- Finally, the remaining 13 Member States – **Belgium, Bulgaria, the Czech Republic, Greece, Italy, Spain, France, Hungary, Austria, Poland, Slovakia, Latvia** and

⁴ As this Report does not cover Ireland.

⁵ This issue was covered by the more extensive first questionnaire, the results of which were presented in the COCOM 2008 Report [COCOM08-17 Final](#), but this question was not included in the second data gathering exercise.

⁶ Ireland 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.

Lithuania⁷, as well as **Croatia** and **Norway** 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).

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 **Latvia** 112 is the sole emergency number for mobile networks, while in **Lithuania** different three-digit emergency numbers for use on mobile networks are available. Notably, **Norway** has a special emergency number reserved for people with hearing disabilities and another one which can be reached by sending text messages (SMSs)

In conclusion, it can be observed that an increasing number of Member States have indicated that '112' is used as the sole or main emergency number. A detailed overview of the Member State responses concerning national emergency numbers is available in Table 1 in 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 telecommunications operators and networks, 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. Compared to the second questionnaire, this third questionnaire included a question relating to the state of play and the response to hoax/false calls which appear to affect a number of emergency call systems.

Compared to the previous exercise, the ratio of measurements-based responses (using the methodology of ETSI standards EG 202 057-1/2/3) to those based on 'estimates' remained basically unchanged, while a number of Member States provided estimated figures for the questions, to which they had provided no reply in the previous exercise.

As performance measurements clearly produce a lot more reliable data than estimates, the third Questionnaire 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.

⁷ Lithuania specified that 112 is allocated as single emergency response number in the national numbering plan and that the national emergency numbers are used during the transitional period.

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 2 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, 20 Member States, **Croatia** and **Norway** reported on their unsuccessful call ratio, among which **nine** countries – **Bulgaria, Czech Republic, Greece, Spain, Cyprus, Malta, Slovenia, Croatia** and **Norway** – provided data based on measurements, which ranged from 0.005% (fixed) and 0.065% to 1.13% (mobile) in **Cyprus**, 0.02% (fixed) and 0.24% (mobile) in **Spain**, 0.76 % (fixed) and 0.04% (mobile) in the **Czech Republic**, 0.52% in **Greece** (all calls), 0.34% (fixed) and 0.61% (mobile) in **Bulgaria**, 1.2% (all calls) in **Slovenia**, 0.083% in **Croatia** and 14.52% in **Norway**. **Malta** reported that 33.67% of calls were unanswered calls.

The estimated unsuccessful call ratio in the other respondent Member States ranged from 0% in **Denmark** to 10% in Latvia, whereas some Member States estimated their unsuccessful call ratio to be satisfactory or low (**Finland**, the **United Kingdom**) mainly due to the preferential treatment given to emergency calls.

This time there were more replies to this question (seven more States) although most of the new replies are based on estimates. The figures are generally comparable to those included in the previous report, although some results appear to have been improved (e.g. 0.61% from 4.95% for mobile in **Bulgaria**). When available, measuring parameters such as the period in which the measuring was pursued and the number of calls assessed were included in Table 2 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.

In total, 18 Member States, **Croatia** and **Norway** reported on call set-up times, among which **ten**⁸ countries – **Bulgaria, Czech Republic, Greece, Spain, Luxembourg**,

⁸ Unlike the previous exercise, Luxembourg and Hungary provided measured results while Austria provided estimated figures.

Hungary, Cyprus, Slovenia, Croatia and Norway – provided data based on measurements, according to which the average call set-up time ranged from 0.5 sec. in **Greece** (all calls), 1.78 sec. (fixed) and 0.72 sec. (mobile) in the **Czech Republic**, 0.415 sec. (fixed) and 2 sec. (mobile) in **Luxembourg**, 2.25 sec. (fixed) and 3.22 sec. (mobile) in **Spain**, 0.66 sec. (fixed) and 4.35 sec. (mobile) in **Bulgaria**, 2 sec. (fixed) and 3 to 5.8 sec. (mobile) in **Cyprus**, 4 sec. (all calls) in **Slovenia**, 9.3 sec. (fixed) and 5.8 sec. (mobile) in **Norway**, to 13.1 sec. (fixed) and 12.06 – 12.46 sec. (mobile) in **Hungary**.

The estimated average call set-up time in the other respondent Member States ranged from 0.4 to 6 sec. in **Lithuania**, most Member States indicating an estimated average of 2-3 sec. or a satisfactory / low call set-up time (**Finland**, the **United Kingdom**).

As regards the situation per country, some changes can be noticed: either a downtrend (from 9 to 0.5 sec. in **Greece** for all calls) or the reverse (from 0.7 to 1.78 sec. in the **Czech Republic** for fixed calls, or from 0.79 to 2-3 sec. for fixed and from 2.27 to 5.8 sec. for mobile in **Cyprus**). When available, measuring parameters such as the period in which the measuring was pursued and the number of calls assessed were included in Table 2 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, the third questionnaire requested information according to both ETSI methods, i.e. percentage of calls answered within 20 seconds and the average response time.

In total, 22 Member States, Croatia and Norway reported on call response times. The majority – **16** – Member States were able to provide data based on measurements⁹, which rank them in the following order as regards the percentage of calls answered in 20 seconds: the **Czech Republic** (100%), the **United Kingdom** (99.81%, and 97.72% in 5 sec.), **Bulgaria** (99.5%), **Slovenia** (97.5%), **Romania** (97.47%), **Germany** (97%), **Sweden** (93%), **Spain** (91.52%), **Austria** (85%, and 50% within 5 sec.) and **Slovakia** (77.4%). The measurements provided by the remaining three countries in this category followed a different methodology: **Latvia** (97% - in 10 sec.), **Finland** reported on the percentage of calls answered within 30, 10 and 5 seconds (96, 91 and 75% of calls respectively) and **Cyprus** (91.4% for fixed).

As regards the average response time based on measurements, the following data was reported: **Romania** (4 sec.), **Czech Republic** (4.1 sec.), **Bulgaria** (5 sec.), **Sweden** (6.9 sec.), **Germany** (7 sec.), **Estonia** (8.5 sec.), **Slovenia** (8.9 sec.), **Greece** (9 sec.), **Austria** (11 sec.), **Slovakia** (11.375 sec.), **Cyprus** (9.53 sec. for one operator) as well as **Norway** (7.67 sec.) and **Croatia** (8 sec.).

The estimated call response time in the other respondent Member States ranged from 98.02% of calls answered within 20 sec. (4.29 sec. the average response time) in **Luxembourg**, 8 sec. the average response time in **the Netherlands**, 93% of calls answered within 20 sec. (11 sec. on average) in **Poland**, 90% of calls answered within 20

⁹ Some of these Member States, Croatia and Norway were only able to provide measurements based on only one of the two methods.

sec. in **Lithuania** (4.9 – 15 sec on average), 14.6 sec. in **Portugal**, 20 sec. in **Denmark**, to as long as 30-45 sec. in **Hungary** (less than 1% of calls answered within 20 sec.).

As compared with the previous exercise it could be observed that the measured results improved for some countries (**Bulgaria, Germany, Latvia, Slovenia, Finland, Sweden**) and for some remained stable (**Czech Republic, Austria, the United Kingdom**). However, longer response times were reported by the rest of the responding Member States. The most significant difference between the two exercises appears to be in **Slovakia** where the percentage of calls answered within 20 sec. went down from 96% in 2008 to 77.4% in the first ten months of 2009.

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 exercise. 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** has also indicated the precise number of PSAPs using a relevant language). An overview of Member States' replies to these questions is provided in Table 2 in the Annex.

Among the 25 Member States, **Croatia** and **Norway**, which provided information on the language issue, **23** Member States¹⁰ (apart from the **United Kingdom**) reported on the ability of their PSAPs to handle calls in English (**Belgium, Bulgaria, the Czech Republic, Denmark, Germany, Estonia, Greece, Spain, France, Cyprus, Italy, Latvia, Luxembourg, Hungary, Malta, the Netherlands, Austria, Poland, Romania, Slovenia, Slovakia, Finland** and **Sweden**) plus **Croatia** and **Norway**. Out of these Member States, **Germany, France, Austria** and **Slovakia**, as well as **Croatia** indicated that English may not be available in all cases in all PSAPs and its availability depends on the linguistic resources of the PSAPs, while **Bulgaria** and **Latvia** said that calls in English can be forwarded for processing to another (central) PSAP where competent staff is available.

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

112 calls in German are also answered in **eleven** States (apart from Germany, Austria and Luxembourg) - **Bulgaria** (by call transfer to another PSAP if necessary), the **Czech Republic, Hungary** (subject to availability in the border region), **Spain, Italy** and **Norway** (may not be available in all PSAPs), the **Netherlands, Poland** (17 PSAPs can handle such direct calls), **Romania** (by transfer), **Slovakia** (by transfer) and **Finland** (by involving interpretation service).

112 calls in Italian are answered in **three** Member States (apart from Italy) – **Spain** (may not be available in all PSAPs), **Slovenia** and **Romania** (by call transfer to another PSAP if necessary), whereas Russian is available at least through interpretation services in **seven** Member States (**the Czech Republic, Estonia, Latvia, Poland, Romania, Slovakia, Finland**).

¹⁰ Relevant information or facility is not yet available in **Lithuania** and **Portugal**.

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 the **Czech Republic** (by call transfer to another PSAP if necessary), **Lithuania**, **Slovakia** (in PSAPs of certain areas) and **Germany** (along the Polish border); 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**; calls in Slovak – in **Poland** (3 PSAPs), calls in Italian – in **Slovenia** (in PSAPs of certain areas), calls in Portuguese – in **Spain** (may not be available in all PSAPs), calls in Slovenian – in **Italy** and calls in Finnish - in **Estonia**. Languages of the neighbouring EU countries are also catered for by **German** and **Hungarian** PSAPs in border areas.

Furthermore, in **Italy** and **Romania** the PSAPs can handle calls also in Spanish (by call transfer to another PSAP if necessary).

The **United Kingdom** indicated that its PSAPs can have recourse to interpretation services covering 170 languages, **Swedish** PSAPs can have recourse to an interpretation service covering all major EU languages and **French** PSAPs can use interpretation services in English and other languages. Italy also indicated that interpretation is available.

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 **Belgium** (reference manual), **Czech Republic** (linguistic support software), **the Netherlands** (phonetic texts), and **Slovakia** (basic conversation guide/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 calls¹¹

There were thirteen countries only that provided information on the hoax/false calls, out of which nine informed about the measures taken in relation to such calls. The ratio of hoax/false calls to the total number of calls appears to vary considerably among the States: whereas in **Estonia** the number of such calls is less than 1%, **Greece** reported 99%. Between these two extremes there are **Finland** (16%), **Austria** (30%), **Germany** (4 to 30%, varying due to the introduction of only SIM-bound emergency calls in June 2009 and different data gathering timeframes), **Netherlands** (55% fixed and 50% mobile), **Spain** (55%), **Sweden** (58%), **Romania** (61%) and **Slovakia** (85.36%). It is also worth noting that the majority of hoax/false calls come from SIM-less handsets (**Slovakia** 99.9%). A few Member States informed of the proportion of hoax calls: whereas **Spain** informed that the hoax calls prevail, **Romania** noted that these account for 18.63% of the total calls to 112 (compared to 26.16% of silent calls), **Finland** – 3% and **Sweden** – 3%. **Croatia** reported a reduced number of false calls (2.4%) and a negligible number of hoax calls (2-3 cases in 5 years). **Norway** indicated that during a measuring period of 32 days, only 3% of the calls taken by the emergency call handlers were genuine 112 calls and were hence forwarded to the PSAP's operators for emergency treatment; however the hoax/false calls have rarely got any response/reaction. A manual filtering of calls to 112 is done in the Oslo PSAP.

¹¹ This issue was covered by the more extensive first questionnaire, the results of which were presented in the COCOM 2008 Report [COCOM08-17 Final](#), while this question was not included in the second data gathering exercise.

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 stricter routines (**Sweden**), prioritisation of calls (**Spain**) and the exclusion of SIM-less 112-calls (as in **Germany**). In addition, in **Sweden** a filter for false calls has been tested in cooperation with the major telecoms operators.
- Second, there are both technical and legal measures to deal with individual cases of abuse. **Spain** has indicated the possibility, in the case of repeated hoax/false calls from one number, to put the caller (temporarily) on a 'blacklist'. **Spain** and **the Netherlands** operate automatic warning messages and **the Netherlands** issue warnings also via SMS, while **Romania** tested such a system at the beginning of 2009. **The Netherlands** has indicated that penal sanctions may be imposed on offenders (in serious cases). **Romania** and **Slovakia** have indicated that fines may be imposed (€ 638 in Slovakia).

Finally, the **United Kingdom** reported a large number of 'phantom calls' to 112 from landlines generated by pulses on the network, which triggered the use of a '4 second' gap to filter out many of these 'calls'. In **Croatia** it is possible to disconnect the subscriber on a temporary or permanent basis.

3. CALLER LOCATION

3.1. Introduction

An overview of the relevant information taken from the replies is available in Table 3 (fixed caller location) and Table 4 (mobile caller location) in the Annex. As in the first reports, this third 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 it¹², 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.

In the second COCOM Report it was pointed out that, even though the 2002 regulatory framework has not prescribed any specific time limit for providing caller location information, it was obvious that the relevant provision of the Universal Service Directive

¹² 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.

(Article 26(3)) should be read as requiring a timely provision of caller location data, so that this information be useful for the emergency services and serve the purpose it was intended for. However, it should be highlighted that the newly adopted regulatory framework provides under the amended Article 26(5) that Member States shall 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. Moreover, it also provides that the competent regulatory authorities *shall lay down criteria for the accuracy and reliability of the caller location information provided*.

3.2. Fixed caller location

3.2.1. Method and time needed to provide caller location on request

Out of the 26 Member States, **Croatia** and **Norway** that provided the relevant information, **ten**¹³ countries (**Bulgaria, Denmark, Lithuania, Hungary, Italy, the Netherlands, Portugal, Romania, Slovakia** and **Norway**) reported to be using the 'Push' method for providing fixed caller location. In addition, in **Slovenia** the 'Push' method is used by four operators, in **Latvia** it is used by one operator and in **Spain** by 13 PSAPs. Among the Member States, which use the 'Pull' method, **eight** countries - **Belgium, the Czech Republic, Spain, Latvia, Luxembourg, Finland, Sweden** and the **United Kingdom** - reported near-instant times to provide caller location (up to 3 sec. under normal conditions), which in practical terms render the performance of their caller location systems similar to that of 'Push' systems. Also **France** informed that the caller location is pulled in a few seconds for listed numbers, whereas **Austria** reported similar rapidity in case of electronically handled caller location information requests.

Data based on measurements were provided by the **Czech Republic, Spain, Latvia, Malta** and **Croatia**, while all the other respondent Member States used estimates.

A slightly longer time to provide caller location information (up to about 1 min. on average and/or maximum) was reported by **Estonia** (23 sec. on average – 95% location requests answered within 1 min.), **Germany** (70 sec. on average – 40% location requests answered within 1 min.), **Cyprus** (60 sec. for police on average – 90% location requests answered within 1 min.) and **Poland** (40 sec. on average – 77% location requests answered within 1 min.). On the other hand, the longest delays were reported in **Greece** (3 to 7 min.), **Slovenia** (10 min. on average – 80% location requests answered within 1 min.), **Austria** (up to 30 min. in case of verbal/written manual requests) and **Malta** (1 hour during office hours). **Croatia** reported the use of the 'Pull' method with an average of 60 sec.

For comparison, it appears that the use of the 'Push' method is increasing, two more Member States using it exclusively compared to the previous report. Second, it appears that the average time necessary to answer a caller location request is decreasing.

3.2.2. 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

¹³ Two Member States more as compared with the previous report: Lithuania and Hungary.

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 also highly relevant. 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.

In the light of this information, the second questionnaire had 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 third questionnaire. In addition, both questionnaires included a 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). This question seemed relevant since 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.

Similar to the previous exercise, out of the 26 Member States, **Croatia** and **Norway** that provided answers to the relevant question, **13** States - **Bulgaria**, the **Czech Republic**, **Denmark**, **Latvia**, the **Netherlands**, **Portugal**, **Romania**, **Slovenia**, **Slovakia**, **Finland**, **Sweden**, the **United Kingdom** and **Norway** – 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. On (electronic) request this point of contact retrieves the relevant data from the providers' databases and answers to the according request. Furthermore, a database covering part of the fixed operators is used in **Belgium**, while the centralised databases used in **France** and **Austria** do not include subscribers that are not included in the directory services. In **Malta**, separate unsynchronised offline databases exists, which are comprehensive except for subscribers wanting extra privacy.

The frequency of updating these databases was reported daily in most of the countries concerned except **Bulgaria** (twice a month), **Germany** (daily to weekly depending of the procedures of the providers), **France** (every 'few' days), **Romania** (monthly), **Slovakia** (every three months) and **Spain** (overall update every six months, partial updates every two weeks).

As regards the specific question on the availability of caller location in case of subscribers not included in directory services only **Estonia** and **Hungary** reported not being able to locate fixed subscribers falling within this category, while **Spain**, **France** and **Lithuania** indicated that location of calls is partially possible in this case. **Austria** and **Malta** indicated that it is possible to locate these subscribers by verbal/written request to their network operator (**Austria** - 30 minutes on average; **Malta** – a lengthier procedure than in ordinary cases). For **Croatia** no information was made available on this facility.

On the other hand, most of the respondent countries, with the exception of **Estonia** (and partially **Lithuania** where it is not possible in some PSAPs), 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).

Malta indicated that this requires a more lengthy procedure than in ordinary cases. For **France** no information was made available on this facility.

3.2.3. VoIP caller location

The Member States were also invited to indicate whether caller location is provided for subscribers of **VoIP** services that are recognised as **PATS** in their countries, an additional point being added to this question regarding the availability of the actual address in case of nomadic VoIP systems.

Of the 25 Member States, **Croatia** and **Norway** that submitted the relevant information, most confirmed that caller location is possible in case of such subscribers, with the exception of **Estonia, Latvia, Poland, Luxembourg, Hungary, Lithuania** - which indicated that caller location is provided only as regards the subscribers of two PATS VoIP provider, and **Belgium** - which indicated that VoIP cannot be used to call 112. **Denmark** and **Sweden** indicated that this facility is available, subject to technical feasibility.

Furthermore a number of countries, which in principle responded affirmatively, indicated that caller location available in case of using nomadic VoIP systems is the registered subscription address (the **Czech Republic, Denmark, Germany, Spain, Cyprus, Lithuania, the Netherlands, Austria, Romania**¹⁴, **Finland, Sweden, the United Kingdom** and **Norway**).

3.2.4. 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 asking Member States to indicate if there is an obligation on the part of VoIP operators (irrespective of whether they provide PATS or not) to inform their customers about the possible limitation on providing caller location to emergency services. **Thirteen** States have confirmed the existence of such an obligation (**Belgium, Denmark, Spain, Cyprus, Hungary, Italy, Portugal, Romania, Slovenia, Slovakia, Finland, 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. **Germany** reported that providers of PATS-VoIP Services have to provide 112-service like other providers of public available telephone services (at least on a pull-base); hence there is no need to inform the customers about a missing ability to provide of location information to the PSAPs. No information was made available as to the existence of such an obligation in **Greece, France, Luxembourg, the Netherlands** and **Croatia**¹⁵.

It should also be noted that in **Estonia, Latvia** and **Poland** where it appears that caller location is not available for the subscribers of the VoIP operators, there is also no obligation on these operators to inform their subscribers of the unavailability of caller location.

¹⁴ Unless the user updates the location in case of migration.

¹⁵ Caller location for VoIP subscribers is not provided in Luxembourg, whereas Greece has not made available information in this respect.

3.3. Mobile caller location

3.3.1. Method and time needed to provide caller location upon request

Out of the 26 Member States, **Croatia** and **Norway** that provided the relevant information, **ten** States (**Bulgaria, the Czech Republic, Denmark, Italy, Lithuania, Luxembourg, Portugal, Romania, Slovakia** and **Norway**) reported to be using the 'Push' method for providing mobile caller location. In addition there are **five** countries using the 'Push' system partially: in **Cyprus** the 'Push' method is used by one mobile operator, in **Latvia, Hungary**, and **Slovenia** this method is used by some or most of the mobile operators and in **Spain** it is used in 15 PSAPs. The **Netherlands** reported the use of a 'Semi-push' system. Among the Member States which use the 'Pull' system, **five** Member States - **Latvia, Spain, Finland, Sweden** and **the United Kingdom** - 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 (about 1 min. on average and/or maximum) was reported by **Estonia** (23 sec. on average – 95% location requests answered within 1 min.), **Poland** (55 sec., 70% within 1 min.), **Germany** (70 sec., 40% within 1 min.)¹⁶. **Croatia** reported 60 sec. on average. On the other hand, the longest delays were reported by **Slovenia** (10 min. one operator using the 'Pull' method), **France** (10 min during working hours and up to 30 min. outside working hours), **Austria** (10 to 30 min. in case of verbal/written manual requests), **Greece** (2 to 150 min, 35 min. on average), **Malta** (1 hour during office hours) and **Slovakia** (48 h – when using the 'Pull' system for additional information).

In order to illustrate the positive trend, in the first data gathering exercise **nine** countries reported using either the 'Push' system or 'Pull' system with near instant (up to 15 sec.) provision of caller information, within the second exercise there were **sixteen** such Member States¹⁷, whereas at present there are **twenty-one** such countries.

3.3.2. 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 in the meaning of Article 26(3) of the Universal Service Directive, which all mobile operators within the EU should be able to provide. In order to be understandable and usable by the emergency services it must obviously 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 depends on the mobile cell or sector coverage that varies considerably between urban and rural areas. The

¹⁶ Valid only for location information according to contract, i. e. address information of the subscriber; network-provided location information only available on special request and only by manually supported procedures.

¹⁷ And two other Member States reporting 'quick' pull systems for a part of operators or PSAPs.

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 28 respondent countries, **25 Member States, Croatia and Norway** reported Cell ID and/or Sector ID as the available mobile caller location information. Among these countries, **Denmark, Poland, Finland, Sweden, the United Kingdom 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**, ‘polygonal positioning’ is used in 3G location. **Estonia** reported that no information about accuracy is available, while in **France** the mobile caller location is given by the relevant postal code. These results are similar to those gathered within the previous exercise.

3.3.3. Possibility to additionally obtain the registered address of the mobile subscription

This appears as a useful additional facility, especially in the light of the fact that more and more customers give up 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 included in the third questionnaire, clarifying that it is referring to those mobile users who have actually registered their address.

Out of the total 26 Member States, **Croatia and Norway** that provided information on this point, a large majority - **19 States**, reported that it was possible for PSAPs to obtain also the address of the subscription. However out of these, **the Czech Republic, Germany, Greece, and the Netherlands** – have indicated that this information is to be obtained upon request, whereas several other countries reported that this information is available for a part of the operators: **Spain** (except for one operator for its pre-paid subscribers), **Cyprus** (except for one alternative operator), **Luxembourg** (only for the subscribers registered to the directory services), **Malta** (only if registered) and the **United Kingdom** (the registered address is not available for all pre-paid customers of all operators). In **Italy** this is not possible at the moment, but it could be made possible by adopting an appropriate solution. In **Croatia** this facility is not available.

3.3.4. 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 international 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 (international roaming), out of the 26 Member States, **Croatia and Norway** that provided the relevant information, only **Estonia and Sweden** replied negatively; in several other Member States this facility is partially available: **Spain** (except for 5 PSAPs) and the **Netherlands** (except for one

operator). In **Finland** it is available upon specific request to the operator and in the **United Kingdom** it is less accurate than as for domestic users. **Sweden** has started discussions on implementing this facility. **Germany** reported that international roamers are treated the same way as national customers but that for both groups no automatically generated location information is provided yet

As regards mobile users in the situation of 'national 112 roaming', out of the 26 Member States, **Croatia** and **Norway** that replied to the relevant question, **six** countries (**Belgium, Estonia, Latvia, Austria, Finland** and **Sweden**) reported that caller location is not provided for such users; in addition, **Sweden** indicated that they are considering the introduction of such possibility. In **Spain** this facility is not available in five PSAPs, in **Lithuania** it is possible for two of the three mobile networks, whereas in **Slovakia** it is available on two mobile networks and in the **United Kingdom** the caller location information is less accurate than in the case of domestic users. **Germany** reported that subscribers of other national publicly available mobile telephone networks are treated like own subscribers, but that for both groups no automatically generated location information is provided yet.

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

Finally, a new question was added to request 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 24 countries replying to this question, **thirteen** confirmed the availability of this facility: the **Czech Republic, Denmark, Greece, Spain** (except in 6 PSAPs), **Cyprus, Lithuania** (for two of the three mobile networks), **Luxembourg, Hungary, the Netherlands, Poland, Portugal, Slovakia** and **Norway**.

4. PROMOTION OF 112

In the same way as the first two questionnaires, the third 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 telecom 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).

In addition, two additional questions were included in the third questionnaire. First, the Member States were 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(4) to inform citizens about 112 as the European emergency number. Second, given the recent declaration of 11 February as

‘European 112 Day’, the Member States were inquired about any promotional activities planned at national level on the occasion of **11 February 2010**.

An overview of the different types of measures in each country is provided in Table 5. 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, Denmark, Germany, Estonia, Greece, Spain, Cyprus, the Netherlands, Poland, Romania, Slovenia, Finland and Slovakia**) while the list of activities is much shorter in case of some other countries.

As regards awareness-raising measures addressing travellers¹⁸, most of the respondent countries indicated that 112 is advertised through specialised tourist brochures, websites and multi-language guides distributed at tourist sites such as airports, stations, tourism agencies and hotels. Insofar as information about 112 provided to roaming mobile users is concerned, only **fourteen** Member States confirmed the implementation of the new roaming amendments¹⁹: **Bulgaria, Czech Republic, Denmark, Estonia, Spain, Italy, Lithuania, Malta, Austria, Romania**, some of which only for a part of their operators (**Cyprus, Finland, the United Kingdom**) or conditionally (**Slovakia** – subject to agreements between operators).

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, the majority of the respondent countries (22 Member States, **Croatia and Norway** in total) indicated that 112 is actively promoted at national level as the European emergency number: **Belgium, Czech Republic, Spain, Cyprus, Italy, Latvia, Luxembourg, Malta, Hungary, the Netherlands, Austria, Poland, Romania, Slovenia, Slovakia, United Kingdom and Croatia**, as well as **Finland, Germany and Greece** (partially), and **Portugal** (not completely).

Finally, promotional activities on the occasion of 11 February 2010 were planned in the **Czech Republic** (open doors days, radio broadcast, leaflets), **Spain** (special program on radio/TV, institutional events, open days, workshops with journalists), **Latvia** (public activities reflected in the press), **Denmark, Cyprus, Luxembourg, Slovenia**, (dedicated articles/information on specialised websites or in the press), **Poland** (promotional activities organised by the fire brigade), **Romania** (public campaign targeting schools and the press, open doors activities, use of the 112 anthem), **Slovakia** (public campaign targeting the youth - eBook), **Finland** (public thematic events involving emergency services), **Sweden** (public activities, films and media coverage in the 18 PSAP cities), **the United Kingdom** (general promotion activities), and **Croatia** (distribution of leaflets).

¹⁸ It should be highlighted that the newly adopted regulatory framework provides, under the amended Article 26(6), that Member States shall ensure that citizens are adequately informed about the existence and use of the single European emergency call number "112", in particular through initiatives specifically targeting persons travelling between Member States.

¹⁹ In case of **three** additional Member States, **Hungary, the Netherlands, Poland**, it is not clear whether their affirmative replies refer to the information SMS sent to roaming users or to other measures addressed to travellers (the 1st part of the question).

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 implementation of 112, and **references to national legislative and regulatory acts**, concerning 112 and national 112 websites are included in Table 6 of the Annex.