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REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

on the effectiveness of the implementation of the single European emergency number '112'

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1. INTRODUCTION

This report reviews the effectiveness of the implementation of the single European emergency number '112' in line with Article 109(4) of the European Electronic Communications Code[1] (EECC). The report is based on the responses of Member States and two EEA countries, Iceland and Norway, to the questionnaire[2] submitted to the Communications Committee (COCOM)[3] on the implementation of emergency communications and the European emergency number '112'. This data-gathering was the fourteenth such exercise conducted by the Commission services since 2007.

Under Article 109(4) EECC the Commission is required to submit by 21 December 2020, and every two years thereafter, a report to the European Parliament and to the Council on the effectiveness of the implementation of the single European emergency number '112'.

The data gathering relied on specific questions that serve to assess the level of implementation of EU law requirements and the improvement of the national Public Safety Answering Point (PSAP) systems. The reporting period for the quantitative data (e.g. number of emergency calls to '112') is 1 January 2019 to 31 December 2019. When assessing the availability of a system (e.g. deployment of a caller location solution, application, etc.) the latest information available is reflected in this report. Member States and COCOM observers from Candidate and EEA Countries were invited on 10 June 2020 to submit their responses by 4 September 2020.

Member States were called on to develop their measuring tools for monitoring a number of indicators in order to provide accurate data on the functioning of their 112 systems. Throughout the report, where Member States are not mentioned with regard to a qualitative or quantitative assessment, it means that relevant data was not provided to the Commission services. The detailed statistical data are provided in the annexes to this report.

2. CALLS TO '112'

In 2019 end-users in the EU called the single European emergency number '112' close to 150 million times. While the number of calls to '112' remained at the same level as the year before[4], the total number of emergency calls dropped by 4.5% to 267 million. Calls to '112' represented 56% of all emergency calls.

'112' is the single emergency number in Denmark, Estonia, Finland, Malta, the Netherlands, Portugal, Romania and Sweden and, among the EEA countries, in Iceland. However, only 20% of calls to '112' in the EU are placed in these countries. The large majority of calls to '112' are placed in Member States where national numbers are still in use. In these Member States, the use of the single European emergency number varies largely, from 9% in France to 99% in Bulgaria.

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[1] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (OJ L 321, 17.12.2018, p. 36).

[2] COCOM20-19

[3] Communications Committee established on the basis of Article 118 EECC.

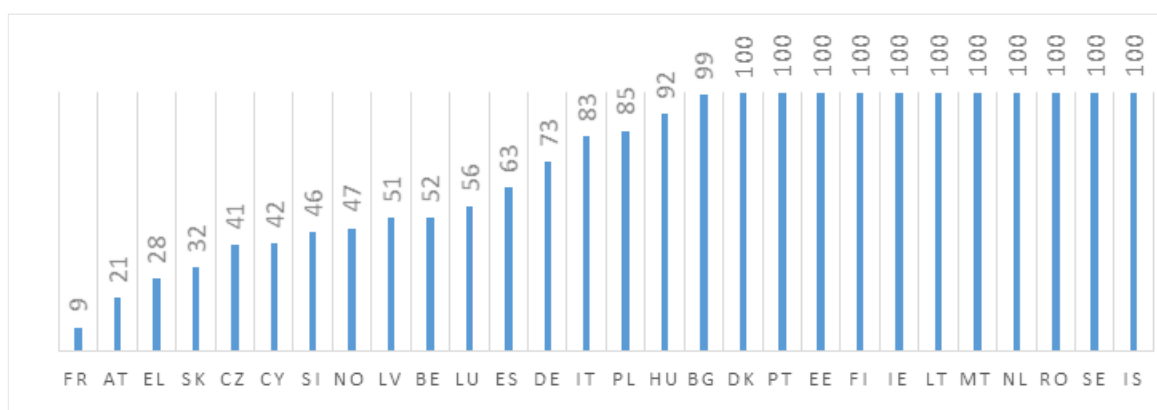[4] Calls placed in the UK were deducted from the reference year.

Figure 1. Percentage of calls to '112'

The number of calls to '112' depends on the level of end-users' awareness on the availability of the '112' number but also on the co-existence of national 'legacy' numbers. In Member States where national numbers still exist, the use of the '112' number is dependent on the effectiveness of the organisation of the PSAP system.

In countries where each emergency service has its own PSAP, it should be assured that '112' calls are effectively transferred and handled by the most appropriate emergency service. State of the art implementation of national PSAP systems ensure an interconnected and redundant handling of both '112' calls and calls to the national numbers while providing for access to all concerned emergency services. Such systems should implement a routing function adapted to current technological developments that ensures that all emergency communications – calls, text-based, video, including those originated from network independent electronic communication service providers – are handled by the most appropriate PSAP and the most appropriate emergency service.

Calls from mobile phones largely outweighed the number of calls from fixed phones. On average, 73% of the calls were placed from mobile phones. However, the use of mobile phones for emergency communication purposes varies significantly across Member States, from 55% in Croatia and Luxembourg to 97% in Czechia and 98% in Latvia.

The growing penetration of mobile phones, in particular smartphones, shows the importance of ensuring uninterrupted access to emergency services in mobile networks. It also indicates that the growing amount of data and features derived from both the network and the end-user's handset could make emergency communications more effective (e.g. caller location, text and video for end-users with disabilities, vertical location (z-axis) and other contextual data).

The ratio of false calls[5] to the total number of emergency calls still varies considerably among the Member States[6], reaching 78% in Greece. Some Member States do not allow calls

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[5] False calls are calls that are not followed up with intervention or assistance from the PSAP or the emergency services. Calls that report an emergency event that have already triggered intervention or assistance from the part of the PSAP, therefore not triggering separate intervention or assistance will not be considered false calls.

[6] 20 Member States and Iceland provided information on false calls.

from SIM-less phones in order to decrease the risk of false calls that may potentially burden the PSAP system. However, access to emergency services from SIM-less phones is mandated in the majority of Member States (19)[7] and Iceland.
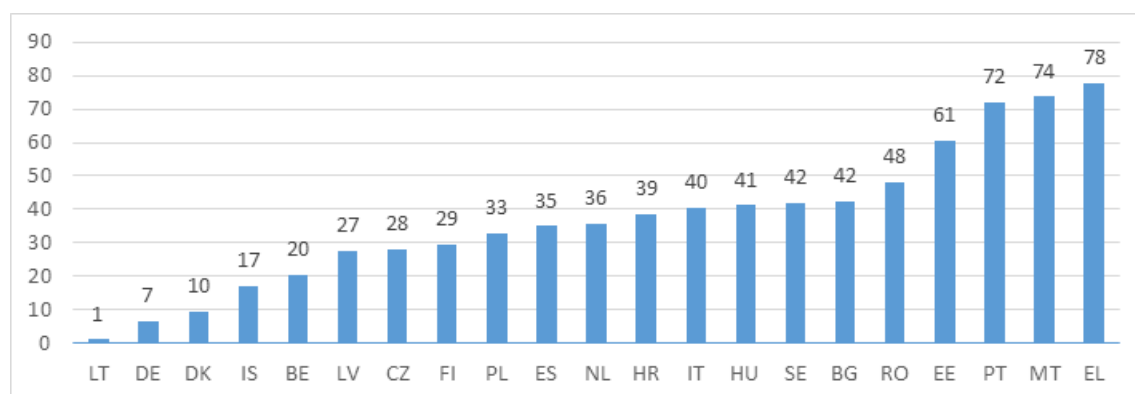

Figure 2. False calls to emergency numbers (%)

Under Article 109 EECC, Member States may mandate other means of emergency communications than calls to '112'. Currently Member States are deploying SMS and app-based communication as an alternative means of access available for all end-users.

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13 Member States and Iceland mandated SMS-based emergency communications for all end-users[8]. In 10 Member States[9] and Iceland the emergency SMS is sent to '112'. The number of emergency communications through SMS varies significantly depending on the level of promotion of this type of emergency communication, from a few to tens of thousands. 9 Member States and Iceland confirm that the provision of emergency SMS is ensured free of charge.

In addition to the possibility to access emergency services by calling '112', 14 Member States[10] and Iceland deployed national or regional applications available to all end-users[11], which enable emergency communications. These means of access, depending on their design, enable end-users to share additional information with the PSAP, potentially provide handset-derived location information or ensure a text-based communication with the PSAP. Belgium and Poland confirmed that the data traffic generated by the emergency application is zero-rated.

eCalls originated in cars capable of placing a '112' emergency call should be adequately routed to the most appropriate PSAP in case of an accident. Member States had to ensure that their PSAP system is ready to receive eCalls as of 1 October 2017[12]. As of 31 March 2018

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[7] AT, CY, CZ, DK, EE, EL, ES, FI, HU, IE, IT, LT, LV, MT, NL, PL, PT, SE, SK.

[8] SMS communication is deployed in some Member States exclusively for end-users with disabilities, as indicated in section 8.

[9] EE, EL, FI, HR, IE, IS, LT, LU, LV, SI, SK.

[10] AT (regional), BE, CY, CZ, DK, FI, IT, LU, LV, MT, PL, RO, SE, SK.

[11] Application based communication is deployed is some Member States exclusively for end-users with disabilities, as indicated in section 8.

[12] Decision No 585/2014/EU, adopted on 3 June 2014, provides for the mandatory deployment, no later than 1 October 2017, of the necessary public safety answering points (PSAPs) infrastructure necessary to receive and

car manufacturers[13] should fit the 112-based eCall in-vehicle system in all new types of M1 (passengers cars) and N1 (light commercial) vehicles.
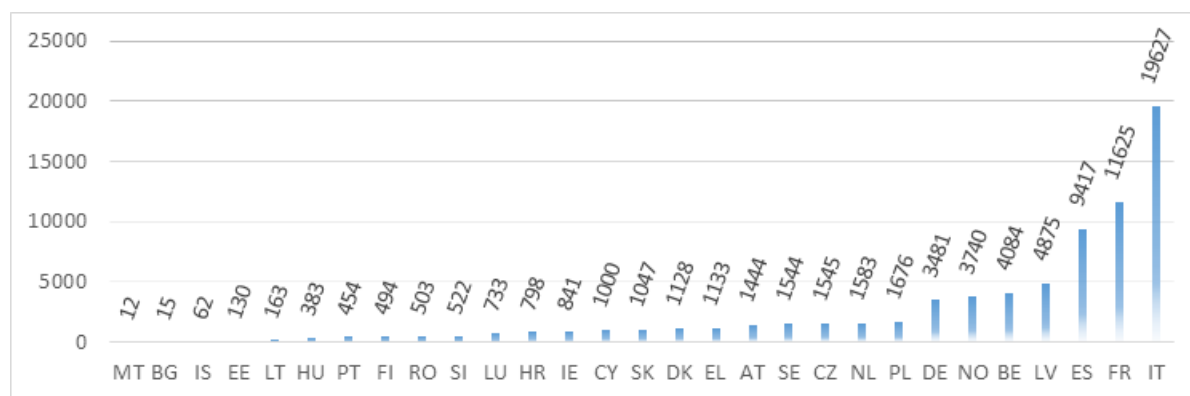

Figure 3. Number of eCalls placed in the EU

As the relevant regulation targets only new types of vehicles that need to go through a type-approval process – hence not all newly built vehicles – its effects should begin to be felt only as the number of new vehicles on the streets grows. The data reported by 27 Member States, Iceland and Norway indicates that the eCall system is effectively deployed.

3. ANSWERING TIME[14]

21 Member States, Iceland and Norway, reported less than 10 seconds for the average answering time needed to get in contact with the emergency services. At the same time, in 12 Member States and Iceland at least 90% of the calls are answered within 10 seconds.

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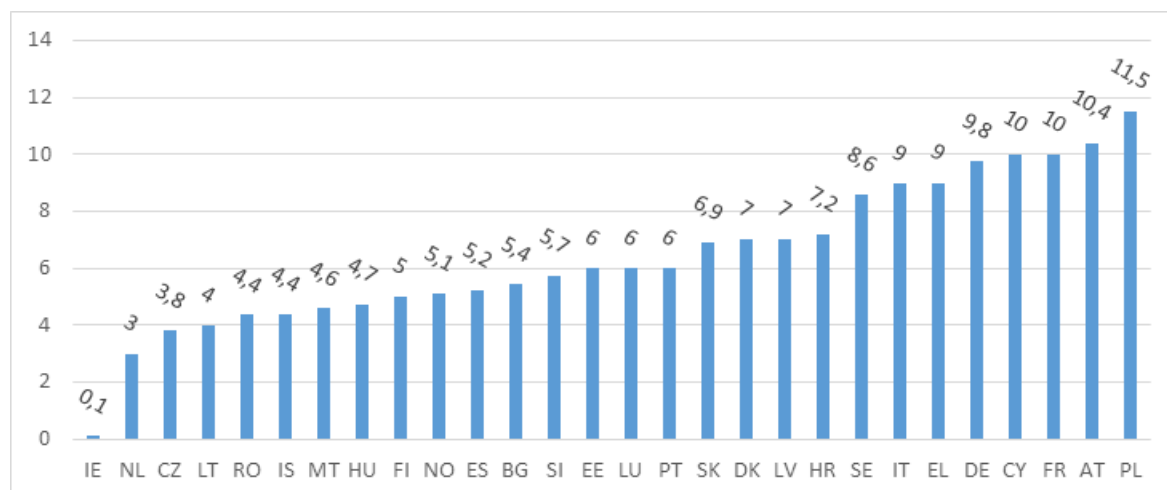
handle 112 eCalls in the EU, in accordance with the specifications laid down by Delegated Regulation (EU) No 305/2013.

[13] Regulation (EU) 2015/758 establishes the general requirements for the EC type-approval of vehicles in respect of the 112-based eCall in-vehicle systems, and of 112-based eCall in-vehicle systems, components and separate technical units.

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

Figure 4. Average answer times to emergency calls (seconds)

4. CALL ABANDON RATE

26 respondents reported[15] on the calls that are presented to the PSAP switches but terminate prior to an answer by a human operator. Call abandons may be caused by network problems, call congestion, technical faults, handling capacity, caller disconnect (possibly dialling by mistake), etc. While involuntary calls and caller disconnect are not under the control of the PSAP system operators, the lack of handling capacity is pointing towards the failure to adequately answer and handle calls to '112' in the national PSAP system.
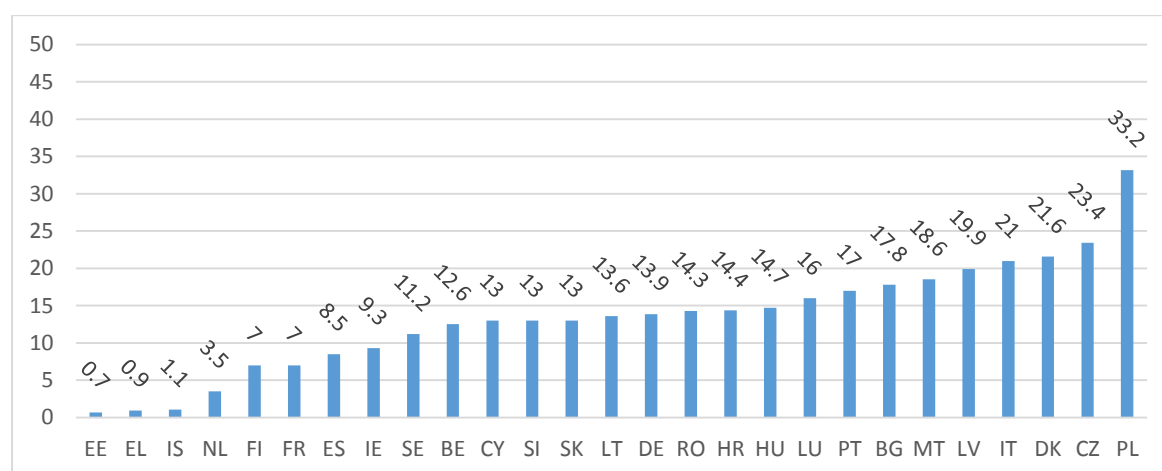

Figure 5. Percentage of abandoned calls to emergency numbers

> While end-user behaviour and network issues do influence both answer times and call abandon rates, the organisation and capabilities of the national PSAP system is decisive in the effectiveness of handling the emergency calls and emergency communications through alternative means of access. PSAP redundancy requirements would ultimately ensure the resilience of the PSAP system. Large-scale emergencies – natural disasters, terror attacks and, more recently, the outbreak of the COVID crisis – proved the importance of meeting redundancy requirements that ensure the possibility to offload emergency communications traffic to other interconnected PSAPs in the system. In order to leverage the technological developments, all-IP networks of interconnected PSAPs are being deployed in several EU Member States to ensure resource efficiency and, most importantly, that all emergency calls are effectively handled.

5. LACK OF AVAILABILITY OF CALLER LOCATION

Article 26(5) of the Universal Service Directive (USD)[16] provides for the obligation of electronic communications operators to make caller location information available as soon as the call reaches the authority handling the emergency call. As of 21 December 2020, Article

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[15] Austria and Norway did not report on this data

[16] Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services, OJ L 108, 24.4.2002, p. 51.

109 EECC makes mandatory the availability of not only network-based but also of the more accurate handset-derived[17] location information to the most appropriate PSAP.

In most of the reporting Member States[18], the lack of availability of network-based caller location information occurs in less than 5% of the calls. Higher rates of failure to provide caller location were reported for Hungary (9%), Italy (10%), Spain (12%), Poland (13.5%) and Latvia (21%).

The availability of handset-derived location depends on the scope of its deployment. In some Member States, the Advanced Mobile Location (AML) solution[19] is deployed on the two most popular mobile operating systems – Android and iOS – or only on one of them. Therefore, it may happen that although the national PSAP system is upgraded to receive AML, still up to 60-70% of the calls do not benefit from this very accurate location[20]. In addition to locating the end-user that places a call to '112', Member States could also enable AML on Android phones for the SMS type of emergency communications. This feature is not yet available on Apple's iOS.

Roaming end-users, visiting other Member States, might potentially be in a more vulnerable situation in case of emergency as they may not be able to describe their location precisely. While AML is deployed in 19 Member States, and in Iceland and Norway, only 6 Member States confirmed that handset-derived location is available for roaming end-users. All Member States indicate that they cannot ensure that the end-user is not charged by the home operator for the transmission of the handset-derived caller location information. This can be explained by the limits in jurisdiction and lack of monitoring capacity.

> The high penetration of smartphones carries the benefit of making emergency communications more effective through the availability of accurate caller location information. The HELP112 II project financed by the European Commissionfor the deployment of AML in 7 Member States estimates that in a 10-year perspective AML could potentially save between 8,620 and 10,530 lives in total in the EU. Meanwhile, AML could positively impact[21] between 88,360 and 104,640 lives in total in the EU. To attain these benefits, AML should be fully deployed across EU Member States, including free of charge accurate caller location information for roaming end-users, that account for approximately 1% of all emergency calls placed in the EU.

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[17] While the accuracy of network-based location may vary from 50 m to 40.000 m, handset-derived location provides a much more accurate location up to 5 m.

[18] 22 Member States have provided relevant data.

[19] https://ec.europa.eu/digital-single-market/en/news/112-112-day-locating-emergency-calls-aml-technology-rise

[20] Estonia (70%), Romania (60%), Sweden (45%), Ireland (43%), Malta (36%), Norway (30%), Lithuania (14%).

[21] Positive impact represents reduced injuries due to faster intervention of emergency relief that is made possible by the accurate location and finding of the victim.

6. CALLER LOCATION ACCURACY AND RELIABILITY

Article 26(5) USD requires Member States to lay down accuracy and reliability criteria for the caller location information. In addition to the network-based solutions deployed under the USD, the EECC lays down in Article 109(6) the obligation for Member States to ensure that both network-based and handset-derived location information is provided to the most appropriate PSAP. Member States will have to continue to set caller location accuracy and reliability criteria, if necessary after consulting BEREC. The Commission has adopted the Delegated Regulation 2019/320[22] aiming at supporting the policy objectives laid down in the EECC. The act mandates manufacturers of smartphones to ensure, as a market access condition, that data from Global Navigation Satellite Systems (GNSS), at least from EU's Galileo, and data from Wi-Fi, are made available in emergency communications. This allows to locate the smartphone, and hence the person carrying it, with an adequate and effective accuracy. It shall apply from 17 March 2022.

Network-based location

In all Member States, as well as in Iceland and Norway, the location of the caller from *fixed networks* is given by the installation address or street/mailing/billing address of the calling party.

All Member States reported that for calls from *mobile networks* the location is given by the Cell/sector ID providing a high reliability of the data transmitted to the PSAP operator. The reported accuracy ranges from 500 m to 40 km, depending on the density of the network, i.e. urban or rural area. More accurate mobile network-based location solutions used are Timing advance, Round trip time or Sector ID. These positioning methods substantially improve the accuracy of network-based location up to 50 meters in some cases.

Handset-derived location solutions

In terms of handset-derived location solutions, Member States reported two types of implementation described below.

a) Advanced Mobile Location (AML) solution

AML can improve accuracy levels by up to 4000 times, providing accuracy to under 100 m[23]. The solution does not ignore the Cell-Id location information provided by the network, but rather supplements it with either GNSS or WiFi location information derived from the handset. In order to bring GNSS data, in particular provided by EU's Galileo satellite navigation system, for the benefit of EU citizens, in November 2018 the European Commission signed and launched the deployment project of handset-derived AML known as the HELP112 II. The winning consortium included 7 Member States, namely Croatia,

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[22] Commission Delegated Regulation (EU) 2019/320 of 12 December 2018 supplementing of Directive 2014/53/EU of the European Parliament and of the Council with regard to the application of the essential requirements referred to in Article 3(3)(g) of that Directive in order to ensure caller location in emergency communications from mobile devices, OJ L 55, 25.2.2019, p. 1–3.

[23] https://ec.europa.eu/digital-single-market/en/news/112-112-day-locating-emergency-calls-aml-technology-rise

Denmark, France, Germany, Hungary, Portugal, and Sweden. In August 2020 the project was successfully concluded.

In 2020, in addition to the 7 Member States participating in the HELP112 II project, another 4 Member States deployed the solution: Czechia, Greece, Latvia and Romania. As of September 2020, 19 Member States, Iceland and Norway ensure that their PSAP system is AML enabled.
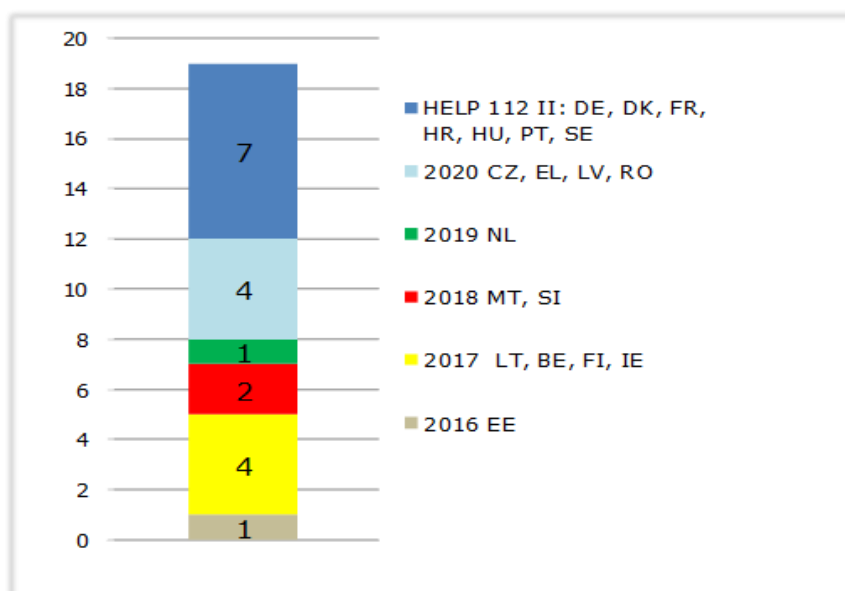

Figure 6. AML deployment in the Member States

b) Location information derived from the handset through an emergency application

Emergency applications deployed at a national or regional level enable the delivery of more accurate caller location information, based on GNSS or WiFi capability of the smartphone, than that provided through network-based solutions.

However, these applications require prior action by the citizen – as opposed to AML – as they need to be downloaded. The transmission of location data is possible only when data connection is active.

7. **AVERAGE TIME NEEDED FOR RECEIVING THE CALLER LOCATION BY THE 112 OPERATOR**

Article 26(5) USD requires instant provision of the caller location information to the authority handling emergency calls.

The Commission monitors regularly the compliance by Member States with these obligations. As a result of this monitoring, the Commission initiated infringement proceedings in July 2019 against Croatia and Greece due to the lack of timely provision of caller location. Since then, the concerns raised by the Commission were addressed by these Member States.

Due to the implementation of the "push" system or the automatic "pull" system all Member States reported near instant times (up to 10 seconds) for the provision on *network-based caller location*.

Due to its inherent architecture, *handset-derived location* technologies rely on the speed of the handsets to derive relevant location parameters from GNSS or Wi-Fi signals. On the basis of the reports from 15 Member States, it was confirmed that the provision of handset-derived location could range from near instant to up to 20 seconds.

Under Article 109(6) EECC Member States have the responsibility to ensure that caller location information, both network-based and handset-derived, is made available to the most appropriate PSAP without delay.

8. ACCESS TO EMERGENCY SERVICES WHILE EU ROAMING

All Member States reported the availability of access to '112' and network-based caller location information in case of roaming calls.

11 Member States[24] and Iceland provided information on the number of calls placed by roaming end-users to '112'. These Member States account for one third of emergency calls to '112'. On the basis of these data it may be extrapolated that 1,09% of all calls to '112' are placed by roaming end-users, approximately 1.5 million calls to '112' in the EU.

In Member States where national emergency numbers are still used, roamers may call these numbers as well. Although the data reported by 5 Member States is not fully conclusive[25] an estimated 800.000 calls are placed by roaming end-users to national emergency numbers. Therefore, a consolidated estimation indicates a total of 2.3 million emergency calls placed by roaming end-users in the reporting period.

Available data confirm that roaming end-users do not benefit from free of charge handset-derived location, as explained in section 4. Only 6 Member States confirmed that handset-derived location is available for roaming end-users. Due to limits in jurisdiction and lack of monitoring capacity, visited Member States cannot ensure that home operators do not charge end-users for the transmission of the handset-derived caller location information.

9. ACCESS TO EMERGENCY SERVICES FOR END-USERS WITH DISABILITIES

In accordance with Article 26(4) USD, Member States have the obligation to ensure that end-users with disabilities benefit from equivalent access to emergency services to that enjoyed by other end-users.

The principle of equivalence implies that end-users with disabilities should be able to access emergency services through electronic communications services in a way functionally

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[24] LU, HR, MT, SI, SE, CY, EE, CZ, RO, IT, BG.

[25] For example, in Italy the calls placed to national numbers by EU roamers (169.681) broadly outweigh the calls placed to '112' (93.699). Meanwhile, in Cyprus the calls to national numbers (251) represent a fraction of calls to '112' (26.520) placed by EU roamers. Similarly, in Luxembourg '112' is called four times more by EU roamers than national numbers (6.353 compared with 1.565).

equivalent to the access to emergency services ensured to other end-users by way of calling the '112' number.

Against this legal background, Member States have to implement accessibility solutions that replicate (are equivalent to) the two-way voice communication ensured in the case of a call to '112'. These solutions should enable two-way communications through text or video, including in roaming. By virtue of equivalence, Member States should ensure that caller location is available to the most appropriate PSAP to enable emergency services to intervene effectively. As a result of the regular monitoring of compliance with these rules, the Commission initiated infringement proceedings in July 2019 against Czechia, Germany and Spain for lack of equivalent access for end-users with disabilities[26]. Since then, the measures taken by Spain addressed the concern raised by the Commission, while Czechia and Germany are in the process of implementing measures that address those concerns.

Member States have deployed a broad range of accessibility solutions to enable the access of end-users with disabilities to emergency services: real time text, total conversation[27], SMS, emergency applications, web services, relay services, access from special devices, email or fax.

The technology that is most deployed is SMS, in 23 Member States[28], Iceland and Norway. SMS technology ensures a two-way, text-based interaction between the person alerting the emergency services and the PSAP. In some Member States, emergency SMS generates on Android smartphones an accurate handset-derived AML localisation that is sent to the PSAP. This feature is not yet available on iOS devices.

Emergency applications are deployed in 17 Member States and Iceland[29] and, depending on their design, may rely on initiating emergency calls or SMS communications, but may also serve as a platform to provide state of the art real time text and total conversation communications. In addition, applications may provide accurate handset-derived location based on GNSS/WiFi positioning data (5-100 m) through the data channel.

Relay services for end-users with disabilities may also relay a transfer to access emergency services. In such cases, user location is not yet implemented in Member States but this should be technically feasible.

Fax is deployed in a number of Member States. However, it does not ensure the swift two-way communication that is required in case of emergency, in contrast with the effectiveness of a '112' call. Similarly, an e-mail, which is also mentioned as an accessibility solution in some circumstances, does not allow the provision of automatic user location to the PSAP.

From 21 December 2020, the amended and reinforced legal framework laid down in Article 109(5) EECC should be implemented for end-users with disabilities. The EECC requires

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[26]   https://ec.europa.eu/commission/presscorner/detail/en/INF_19_4251

[27] As defined in Article 2 EECC: (35) 'total conversation service' means a multimedia real time conversation service that provides bidirectional symmetric real time transfer of motion video, real time text and voice between users in two or more locations.

[28] AT, BE, CY, CZ, DK, EE, EL, ES, FI, FR, HR, HU, IE, LT, LU, LV, MT, PL, PT, RO, SE, SI, SK.

[29] BE, BG, CY, CZ, DK, ES, FI, FR, HU, IT, LU, LV, MT, NL, PL, PT, SK.

measures for end-users with disabilities to be in accordance with Union law harmonising accessibility requirements for products and services[30], seek to ensure interoperability across Member States, and, where feasible, avoid pre-registration for accessing emergency services by alternative means of emergency communications. The European Accessibility Act (EAA) provides for the availability of emergency communications in addition to voice by real time text or, where video is available, synchronised as total conversation[31]. The national PSAP systems will have to comply with these requirements[32] by 28 June 2025. It also requires that emergency communications to the single European emergency number '112' shall be appropriately answered, using the same communication means as received, namely by using synchronised voice and text (including real time text), or, where video is provided, voice, text (including real time text) and video synchronised as total conversation. Member States also have the possibility to defer the relevant upgrade of their PSAP systems until 28 June 2027.

In addition, in line with Article 109(7) EECC, Member States shall ensure that end-users are adequately informed about the existence and the use of the single European emergency number '112', as well as its accessibility features, including through initiatives specifically targeting persons travelling between Member States and end-users with disabilities. That information shall be provided in accessible formats, addressing different types of disabilities. Article 14 of the Roaming Regulation[33] reinforces this provision only with regard to the possibility to access emergency services by "dialling the European emergency number '112' free of charge". In practice roaming end-users are only informed by their mobile operator of the possibility to place a voice call to '112'. Disabled end-users are not informed by their mobile operators on the means of accessing emergency communications in the visited EU country.

End-users with disabilities do not benefit from equivalent means of access, especially when roaming. While these end-users are not able to place a call to '112', they have to rely on nationally fragmented solutions often not equivalent to the two-way voice communication. This state of affairs is in contrast with the availability of the harmonised single European emergency number '112' for other end-users. Roaming end-users do not always have access to emergency services ensured in the visited Member States and they are not informed on the means of access available.

Only 9 Member States (BE, BG, ES, FR, IT, LV, MT, NL, PT) reported the deployment of a means of access ensuring basic functionalities of interactive communication and user location, which would be available to roaming end-users. All these visited Member States indicate that they cannot ensure that the end-user is not charged by the home operator for the use of the alternative means of access. This can be explained by the limits in jurisdiction and lack of monitoring capacity.

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[30] The European Accessibility Act (EAA), Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services (OJ L 151, 7.6.2019, p. 70).

[31] EAA Article 4(1) and Annex I, Section IV, point (a).

[32] EAA Article 4(8) and Annex I, Section V.

[33] Regulation (EU) No 531/2012 of the European Parliament and of the Council of 13 June 2012 on roaming on public mobile communications networks within the Union (OJ L 172, 30.6.2012, p. 10).

Article 109(5) of the EECC requires to ensure access to emergency services, where feasible without pre-registration. In case of national emergency applications serving end-users with disabilities, this would mean that the home application could be used in the visited EU Member State to access emergency services[34].

Legacy PSAP systems are not yet able to handle and process emergency communications that are truly accessible for end-users with disabilities. The deployment of state of the art real time text and total conversation necessitates the upgrade of the PSAP system to an all-IP network of interconnected PSAPs that could adequately route and process IP-based emergency communications.

An overview of the alternative means of access for end-users with disabilities currently deployed in the EU is presented in Annex II.

10. CONCLUSIONS

A Europe fit for the digital age should warrant effective access to emergency services fit for every citizen. Since the introduction of the single European emergency call number[35] in 1991, the goal of the EU legislators was to ensure that every citizen in need has access to emergency services as soon as possible. This report shows that handling of emergency communications, availability of accurate caller location information, availability of equivalent means of access for end-users with disabilities and access for roaming end-users play an important role in the effectiveness and speed of the relief action that is deployed by emergency services. The potential of the digital technologies could be fully realised only if both the emergency communication services and the national PSAP systems are able to leverage the technological developments. This objective requires a deployment of all-IP networks of interconnected PSAPs by all Member States to ensure the redundancy of the systems and, most importantly, that all emergency communications – calls, real time text, total conversation – are effectively handled.

Main findings:

- The share of emergency calls to the single European emergency number '112' represented 56% of all emergency calls: out of a total of 267 million calls placed in the EU, 150 million were '112' calls. It is estimated that 2.3 million emergency calls were placed by roaming end-users, out of which 1,5 million were '112' calls.

- The implementation of handset-derived caller location continued to improve in the EU. In 2020, in addition to the 7 Member States that deployed AML through the Commission financed HELP112 II project, other 4 Member States deployed the localisation solution: Czechia, Greece, Latvia and Romania. As of September 2020, 19 Member States, Iceland and Norway ensure that their PSAP system is AML enabled. However, only 6 Member States confirmed that handset-derived location is available for roaming end-users. Due to limits of jurisdiction and lack of monitoring

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[34] https://www.etsi.org/deliver/etsi_ts/103400_103499/103478/01.01.01_60/ts_103478v010101p.pdf

[35] 91/396/EEC: Council Decision of 29 July 1991 on the introduction of a single European emergency call number, OJ L 217, 6.8.1991.

capacity, the visited Member States cannot ensure that the transmission of caller location is free of charge for the end-user.

- According to the estimates, in a 10-year perspective AML could potentially save more than 10,000 lives in total in the EU. Meanwhile, AML could positively impact[36] over 100,000 lives in total in the EU.

- End-users with disabilities do not benefit from fully equivalent means of access to emergency services, especially when roaming. When these end-users are not able to place a call to '112', they have to rely on nationally fragmented solutions. This state of affairs is in contrast with the availability of the harmonised single European emergency number '112' for other end-users and represents a significant void in the accessibility of emergency services. Roaming end-users do not always have access to emergency services ensured in the visited Member States and they are not informed on the available means of access.

- The Commission monitors regularly the compliance by Member States with obligations related to the functioning of '112'. As a result of this monitoring, the Commission initiated infringement proceedings in July 2019 against several Member States and continues working towards full compliance, in order to ensure that EU citizens can fully benefit from it.

Future actions and milestones:

- Member States have to transpose and implement the necessary measures to comply with the requirements of the EECC and in particular Article 109 on emergency communications and the single European emergency number. All end-users, including end-users with disabilities, no matter where in the European Union, should be able to effectively request and receive help from emergency services.

- To make that possible, Member States will have to deploy accurate caller location for all end-users and equivalent means of access for end-users with disabilities, including those travelling to another EU Member State.

- Member States should upgrade their PSAP systems to ensure that these are fit for the digital age.

- The Commission has set up the Expert Group on emergency communications[37] to work together with Member States to support them in this process. In addition, the Commission intends to launch a study to identify technical and regulatory solutions that would improve the access to emergency services. The Commission will leverage on the recent experience, prompted by the COVID crisis, of setting-up a digital infrastructure to facilitate the interoperability of national contact tracing and warning

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[36] Positive impact represents reduced injuries due to faster intervention of emergency relief that is made possible by the accurate location and finding of the victim.

[37] Commission Decision C(2020)1133 of 3 March 2020 setting up the group of experts on Emergency Communications, see also in the Register of Commission Expert Groups and Other Similar Entities.

mobile applications. As it is the case with tracing applications, all end-users should be able to use their national emergency applications in another visited EU Member State.

- The Commission aims to ensure that all citizens, including those travelling within the European Union, benefit from effective access to emergency services including through harmonised technical solutions. For this purpose, the Commission is preparing an initiative through delegated act pursuant to the mandate given in Article 109(8) EECC.

Total number of calls to '112' in 2019 reached 149.928.021, while the total number of emergency calls was 266.853.441.

Figure 7. Number of calls to '112'
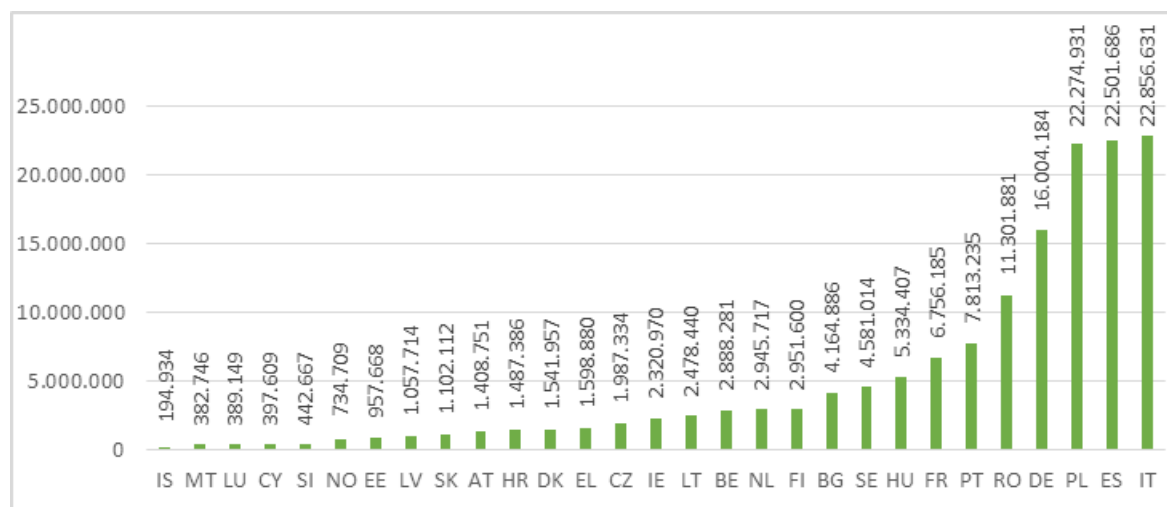
24 Member States[38] reported the number of emergency calls that originated in fixed and mobile networks in the reporting period.
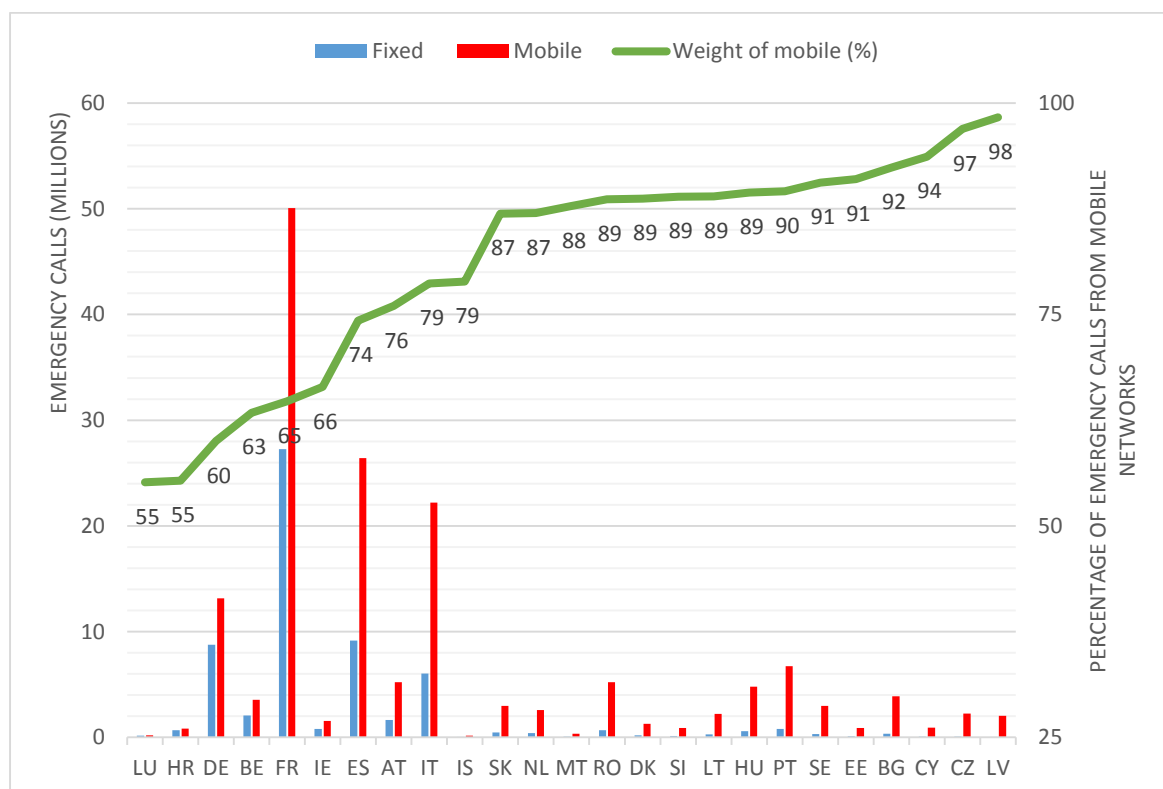

Figure 8. Number of emergency calls to '112' from fixed and mobile networks

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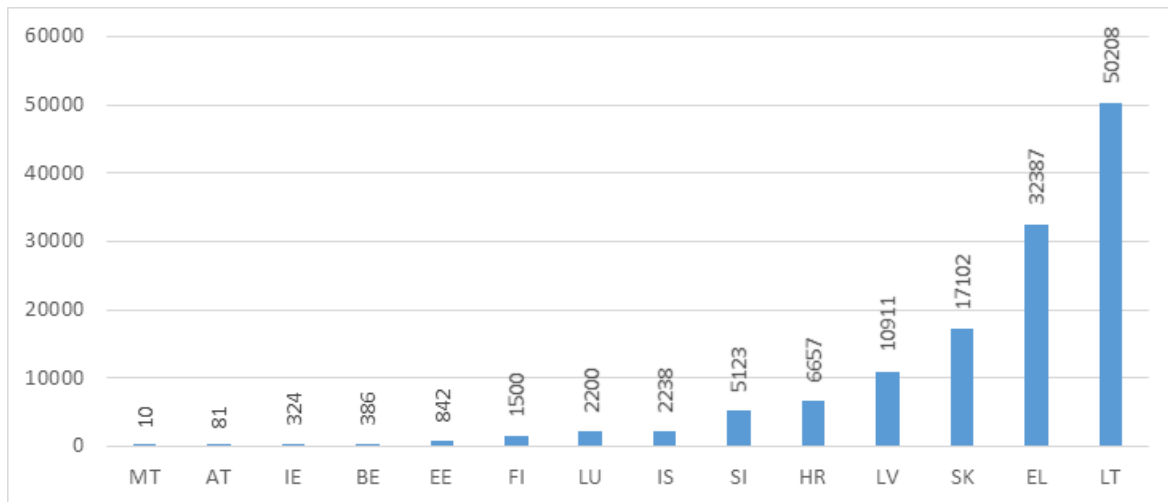[38] No data were reported by Finland, Greece and Poland.

Figure 9. SMS-based emergency communications
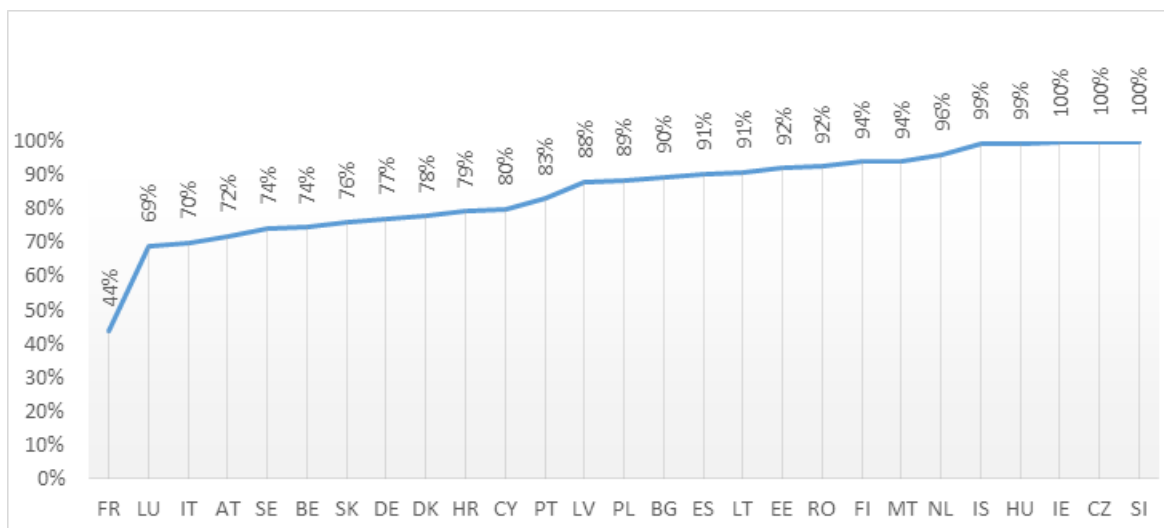
Figure 10. Percentage of emergency calls answered within 10 s

ANNEX II – ALTERNATIVE MEANS OF ACCESS TO EMERGENCY SERVICES IN EU MEMBER STATES AND EEA COUNTRIES

🟩	Feature available
🟥	Feature not available

	Means of access	Interactive	User location	No registration	Free	Roaming access	Free roaming	Number of access
AT	SMS to 0800-133133	🟩	🟩	🟩	🟩	🟥		81
	Fax to 0800-133133	🟩	🟩	🟩	🟩	🟥		0
	email	🟩	🟥	🟩	🟩	🟩		26
BE	SMS to short number	🟩	🟩	🟩	🟩	🟩	🟥	386
	112.be application	🟩	🟩	🟩	🟩	🟩	🟥	N/A
	Fax to 112 or 101	🟩	🟩	🟩	🟩			N/A
BG	112 Bulgaria application	🟩	🟩	🟥	🟩	🟩		424
	Web based service	🟩	🟩	🟥	🟩	🟩		
CY	Fax to 1408 or 1409	🟥	🟥		🟥	🟥		N/A
	SMS to 112 (only for Cyta)	🟩	🟥	🟩	🟩	🟥		N/A
	Application	🟥	🟩	🟥				N/A
	email to police	🟩	🟥	🟩				N/A
	General accessibility relay service	🟥	🟥	🟩	🟥	🟥		N/A
CZ	SMS to 112	🟩	🟩	🟥	🟩	🟥	🟥	N/A
	Application	🟩	🟩	🟩	🟩	🟩	🟥	N/A
	Web based emergency access	🟩	🟩	🟩	🟩	🟩	🟥	N/A
	General accessibility relay service	🟩	🟩	🟥	🟩	🟥	🟥	N/A
	Relay service - specialised devices (fixed)	🟩	🟩	🟩	🟩	🟥	🟥	N/A
	Email	🟩	🟥	🟥	🟩			N/A
	Fax	🟩	🟥	🟥	🟩			N/A
DE	Fax to 112 or 100	🟥		🟥	🟩	🟩	🟥	N/A
	Relay service	🟩	🟥	🟥	🟩	🟩	🟥	315
DK	SMS to long number	🟩	🟥	🟥	🟥	🟥		N/A
	General accessibility relay service	🟩	🟥	🟥	🟥	🟥		N/A
	Emergency application	🟩	🟩	🟩	🟥	🟥		N/A
EE	SMS to 112	🟩	🟩	🟥	🟩	🟥		15
EL	SMS to 112	🟩	🟩	🟩	🟩	🟥		N/A
	Email	🟩	🟥	🟩	🟩	🟩	🟥	N/A
	Fax to short number	🟩	🟥	🟩	🟥			N/A

	Means of access	Inter active	User location	No registration	Free	Roaming access	Free roaming	Number of access
ES	regional SMS to long numbers	Green	Red	Green	Red	Green	Red	220
	regional Emergency apps	Green	Green	Red	Red	Green	Red	1900
	Specialised emergency relay service (video call)	Green	Red	Green	Red	Green	Red	100
	regional specialised emergency relay services	Green	Green	Red	Red	Green	Red	2000
	Specialised emergency relay service	Green	Green	Green	Red	Green	Red	350
	Emergency application	Green	Green	Red	Red	Green	Red	50
FI	SMS to 112	Green	Green	Red	Green	Red		1500
	112 Suomi app	Red		Green				N/A
FR	SMS to 114	Green	Red	Green	Green	Red	Red	10,048
	Fax to 114	Green	Red	Green	Green	Red	Red	164
	Email	Green	Red	Green		Green	Red	N/A
	Emergency application	Green	Green	Green	Green	Green		5397
	Web based application	Green	Green	Green	Green	Green		
HR	SMS to 112	Green	Green	Green	Green	Red	Red	17
	Fax to 112	Red	Green	Green	Green	Red	Red	0
HU	SMS to 112	Green	Red	Green	Green	Red	Red	30,263
	112-SOS application	Green	Green	Green	Green	Red	Red	
IE	SMS to 112	Green	Red	Red	Green	Red		324
	Specialised emergency relay service	Green	Green	Green	Green	Red		N/A
	General accessibility relay service	Green	Red	Red	Green	Red		N/A
IT	Flag Mii app	Green	Green	Green	Red	Green	Red	N/A
	Where ARE U app	Green	Green	Green	Red	Green	Red	N/A
	Police emergency application	Green	Green	Red	Red	Green	Red	N/A
LT	SMS to 112	Green	Green	Green	Green	Red	Red	50,208
LU	SMS to 112 and 113	Green	Red	Green	Green	Red		N/A
	GouvAlert and Echo 112 apps				Red			N/A
	Specialised fixed devices	Green		Red	Green			N/A
	email	Green		Red	Green			N/A
	Fax to112	Green		Red	Red			N/A
LV	SMS to 112	Green	Red	Green	Green	Red		10911
	Emergency application	Green	Green	Green	Green	Green	Red	N/A
MT	112.mt application	Green	Green	Red	Green	Green	Red	145
	112.mt web service	Green	Green	Red	Green	Green	Red	

	Means of access	Interactive	User location	No registration	Free	Roaming access	Free roaming	Number of access
	SMS to long number							10
NL	Emergency application							N/A
	Web based emergency access							N/A
	SMS to 112							N/A
	Specialised emergency relay service							N/A
	General accessibility relay service							N/A
PL	Alarm 112 app							772
PT	SMS to long number							N/A
	Emergency application							N/A
RO	SMS to 113							51
SE	SMS to 112							138
	specialised fixed devices							0
	General relay service							video: 325, text: 328
SI	SMS to 112							5,123
SK	SMS to 112							17,102
	Application 155.sk							141
IS	SMS to 112							2238
	112 Döff and SOS Iceland							50
NO	SMS 112							N/A