

14 August 2023

Public Consultation on the draft BEREC Report on practices and challenges of the phasing out of 2G and 3G

Dear sir/madam,

EENA, the European Emergency Number Association, is a non-governmental organisation with the mission to improve the safety and security of people. Today, the EENA community includes 1500+ emergency services representatives from over 80 countries world-wide, 100+ solution providers, 100+ researchers and 200+ Members of the European Parliament. We are proud to be a platform for collaboration and learning for everyone involved in the public safety community in pursuit of our mission.

EENA welcomes the opportunity to respond to this crucially important public consultation. In general terms, EENA would like to commend BEREC on the draft report which is thorough in its analysis of the technical, economic, social and environmental issues associated with the phasing out of 2G and 3G technologies. EENA notes, in particular, the analysis of the conclusions from the Radio Spectrum Policy Group (RSPG) report¹ and the summary analysis of key practices and initiatives developed at Member State level to identify and address the associated challenges and opportunities.

EENA's obvious area of concern is the potential impact on continuity of access to emergency services and the provision of emergency caller location information during and after any phasing out of 2G and 3G technologies. In this regard, EENA notes the RSPG view that the endangerment of access to emergency services for EU citizens and inbound roamers from other countries is the main barrier/obstacle to 2G and 3G phaseout. This would include access to emergency services using the eCall service which currently relies exclusively on 2G and 3G technologies.

Section 3.3 of the draft BEREC report sets out five questions aimed at identifying and addressing the main consultation issues. EENA's responses to those questions are set out below and are limited to those issues with an emergency communications/emergency services dimension.

Question 1: Which other potential challenges/impacts would you identify?

One of the key characteristics of circuit-switched mobile networks is the very high levels of geographic coverage achieved since 2G was rolled out in the early 1990s. EENA notes that the Ofcom report referenced² sets out an expectation that coverage impact should

¹ RSPG Document: [Mobile technology evolution – experiences and strategies](#), February 2023

² Ofcom Document: [3G and 2G switch-off - Our expectations of mobile providers](#), February 2023.

be minimised through the provision of equivalent levels of geographic coverage. Essentially, a level of coverage that end-users have enjoyed, and now expect, since 2G and 3G network rollout. This is crucial for emergency communications as often high-profile emergency incidents happen in remote areas such as on mountains and lakes, in forests and offshore. Further, the facility to connect to any available network (i.e. national roaming) to make an emergency call when service from the home network is not available has served to maximise coverage for citizens in distress to the greatest extent possible. This national roaming facility must be maintained during and after 2G/3G phase out which will require compatibility/interoperability issues to be resolved between 4G/5G networks and devices as further elaborated upon in our response to Question 2 below.

Question 2: How urgently do you think the different challenges/impacts need to be addressed (time, priority)?

EENA considers that the challenges/impacts with an emergency communications / emergency services dimension need to be addressed urgently. Emergency communications rely heavily on 2G and 3G technologies in the EU presently (using circuit-switched fallback) as noted in the draft report. As these technologies are phased out, robust alternatives must be available. There are a number of issues requiring urgent attention:

- The issue of VoLTE compatibility/interoperability is well-documented for EU citizens roaming outside of the EU. While some of these issues can be resolved through network and handset configuration, there is also a need to define new specifications. For example, GSMA is currently working on the development of an emergency VoLTE roaming specification in response to the VoLTE roaming issues experienced by end-users. There is a lead time between completion of the specification and testing/implementation of the specification in network equipment and handsets. Technical solutions must be implemented and tested before 2G/3G is completely phased out.
- eCall currently relies exclusively on 2G/3G technology. According to the results of a recent study³ on introducing Next Generation eCall (i.e. IMS-based eCall), there were 17 million vehicles equipped with eCall in 2021 representing an eCall market penetration rate of 27%. The results of the study also note that 100% of M1 and N1 vehicles⁴ would be equipped with eCall by 2034 meaning that the challenge of resolving the legacy continues to increase. A plan, including timeline, needs to be put in place that will address the introduction of Next Generation eCall and support for, or retrofitting of, legacy eCall devices. This will require changes to the regulatory framework for eCall before any technical work is carried out hence the need for urgent action.
- Chapter 2 of the draft report identifies certain impacts arising from 2G/3G phase out including the impact on SMS. The draft report notes that because interoperability is not guaranteed or adequately supported, there may be situations whereby SMS codes are not delivered for two-factor authentication purposes. The impact is not limited to two-factor authentication. EENA is aware that SMS-to-112 is a mainstream channel of access to emergency services in 23 European countries. In addition, the transmission of handset-derived location from

³ European Commission/Applus Idiada – Next Generation eCall – Phase 1 results. Presented 13 December 2022.

⁴ M1 – Passenger cars, N1 – Light goods vehicles.

smartphones (i.e. Advanced Mobile Location), relies heavily on SMS as does location provided using HTML5⁵. There is a strong expectation that SMS will continue to function correctly following 2G/3G phaseout. While EENA expects location information to be provided using the SIP protocol in the future (VoLTE, VoWiFi, and SMSoIP are all based on SIP), the transition to an end-to-end SIP environment will not happen overnight. The pace of deployment will vary between Member States, ECN/ECS providers, enterprise networks and PSAPs. Consequently, the existing solutions for the provision of handset-derived location will need to remain in place for the foreseeable future.

- EENA noted with interest the reference in the draft BEREC report to GSMA's efforts to reduce the number of VoLTE profiles to ease the testing logjam on OEMs and MNOs⁶. Based on vendor feedback, GSMA proposes that the recommended six VoLTE profiles can be further narrowed down to just two, namely Profile #4 (supporting VoLTE and SMSoIP) and Profile #6 (supporting VoLTE, VoWiFi and SMSoIP). GSMA considers that this will promote commonality, facilitate interoperability and reduce the overall testing burden in the industry. EENA and the wider emergency services community expects that, after 2G/3G phaseout, VoLTE, VoWiFi and SMSoIP will all be used to access emergency services (and convey caller location information) in a seamless way. EENA also notes the findings of the WIK study⁷ referenced with regard to the reliance on 2G and 3G for older IoT devices such as telecare alarms. Telecare alarms are effectively devices for seeking emergency assistance and need to continue to work or be replaced. EENA also notes the RSPG conclusion that 2G and 3G switch-off should not result in service unavailability so the issues raised here with regard to VoLTE compatibility, eCall, SMS and telecare alarms need to be urgently resolved.

Question 3: What challenges / impacts have already been solved or can be considered minor?

- From an emergency communications/emergency services perspective, EENA strongly believes that that none of the challenges/impacts identified have been adequately solved yet nor are any of these challenges/impacts considered minor.

Question 4: What stakeholders should initiate (more) efforts to meet the challenges/impacts?

- The European Commission should set out its plans for the transition to Next Generation eCall as soon as possible so that certainty can be provided to concerned stakeholders on the timeline for implementation, the duration of legacy support and/or plans for retrofitting of vehicles with legacy eCall in-vehicle systems.

⁵ The link required to transmit device-based location to the PSAP using HTML5 is sent to the end-user in a SMS message.

⁶ <https://www.gsma.com/services/blog/two-ims-profile-chosen-volte/>

⁷ WIK-Consult – Final Report – [Study for BEREC on wholesale mobile connectivity, trends and issues for emerging mobile technologies and deployments](#) - March 2023.

- MNOs need to engage closely with their customers and national regulatory authorities on their respective 2G and 3G phaseout plans. These plans should include cost-effective solutions aimed at encouraging end-users to upgrade end-user devices that rely on legacy technologies. EENA is encouraged by such initiatives already detailed in the draft report in several European Countries. EENA would also stress that continuity of access to emergency services should be a central theme in any such plans.
- MNOs should also support MVNOs relying on their respective networks in the transition to VoLTE and VoNR. BEREC already noted this in its draft report and there may be a need for National Regulatory Authorities to coordinate on this matter at the national level to ensure that there are no adverse effects experienced by any MVNOs with regard to continuity of access to emergency services.
- Network equipment providers, handset manufacturers and handset operating system providers need to continue to work together closely, and in conjunction with 3GPP, ETSI and GSMA, to resolve network-handset compatibility, interoperability and configuration issues in a 4G/5G environment.

Question 5: What stakeholders should be involved in efforts to meet the challenges/impacts? How should they contribute?

In the draft report, BEREC correctly does not assign the responsibility of addressing the challenges/impacts of 2G and 3G phaseout on any individual stakeholder or stakeholder group for solving all problems. Nevertheless, there are certain stakeholders who have a specific responsibility as EENA detailed in its response to Question 4 above. EENA considers the successful phasing out of 2G and 3G and the seamless transition to 4G/5G/nG requires close cooperation and collaboration. In this regard there is a coordinating role for the European Commission, BEREC and the national regulatory authorities. Further, there is also a role for industry and end-user representative bodies too in supporting this coordination. For example, ETNO, ECTA, GSMA, BEUC and indeed EENA. EENA is available to assist stakeholders on ensuring continuity of access to emergency services during and after the phasing out of 2G and 3G technologies.

Please contact me if you require any information or clarification on our submission and we are available for further collaboration with BEREC on the issues addressed herein.

Yours sincerely,



Freddie McBride
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