



Response to BEREC Consultation

BoR (23) 111

Report on practices and challenges of the phasing out of 2G and 3G

15 August 2023

## I. Introduction

1. MVNO Europe welcomes the opportunity to provide its written input to the draft BEREC Report on practices and challenges of the phasing out of 2G and 3G – BoR (23) 111 (hereafter 'draft BEREC Report').
2. MVNO Europe is pleased to provide its comments (Section II below) and brief responses to the 'Consultation Issues' (Section III below) indicated in Section 3.3 of the draft BEREC Report.

## II. MVNO Europe Comments

3. MVNO Europe expresses its explicit support for the contents of the draft BEREC Report, given that it:
  - a) Captures well what is at stake.
  - b) Provides a useful stakeholder analysis.
  - c) Recognises Mobile Virtual Network Operators (MVNOs), and MVNO Europe specifically, as relevant stakeholders, and,
  - d) Reflects input provided by MVNO Europe in response to BEREC's Work Programme 2023 consultation in Section 3.2.2.2.

That being stated, please allow us to request that, in the final BEREC Report, MVNO Europe is added as a relevant stakeholders' association in Figure 4, at the bottom of column 2.

4. MVNO Europe is pleased to note that BEREC's draft report recognises the issues with 2G/3G phase-out that some MVNOs might face, not only in terms of supporting emergency calling, mobile international roaming, and M2M/IoT going forward, but also as regards the competitive distortions between large MNOs on the one hand, and MVNOs (and smaller MNOs) on the other hand.
5. MVNO Europe particularly welcomes the part of Section 2.1 of the draft BEREC Report entitled: 'Competition issues for small MNOs and MVNOs', and notably the sentences which read: "*As a result, BEREC is of the view that resellers and MVNOs (and smaller MNOs) should not be discriminated against in relation to setting and implementing profile alignments in standards for VoLTE, VoWiFi and VoNR. BEREC therefore, emphasises that device vendors and network*

*operators (and standards bodies) should ensure that such cooperations align with non-discriminatory competition principles” (page 18, paragraph 5 of the draft BEREC Report).*

It is important that the text in this section is maintained in the final BEREC Report. MVNO Europe therefore urges BEREC to resist any potential requests from other stakeholders to amend or delete it.

#### The mobile communications ecosystem

6. Indeed, some (Full) MVNOs encounter difficulties in obtaining adequate support from the mobile communications ecosystem (particularly, but not limited to, the case of MVNOs using their own IMSIs) with regard to the provision of Voice over LTE (VoLTE) and Voice over New Radio (VoNR). The same inadequacies and difficulties with regard to support for VoLTE/VoNR occur in some cases in roaming scenarios.
7. The situation regarding VoLTE/VoNR compatibility of mobile handsets is in some cases deeply problematic (devices without the required compatibility, devices with VoLTE not switched on by default, manual settings buried deep in complicated menus, and SOC vendors (System on a Chip), like ARM, Huawei, Qualcomm, Samsung and MediaTek blocking such services in the baseband software for unknown IMSIs).

#### Original Equipment Manufacturers (OEMs) / Smartphone Operating System providers

8. Section 3.2.4.3 of the draft BEREC Report recognises smartphone manufacturers as relevant stakeholders (*page 32, paragraphs 2, 3 and 4*) and analyses their role/responsibility. MVNO Europe welcomes BEREC’s attention to the role of Operating Systems (alongside chipsets and firmware), but considers that the description on the issues arising is too limited.
9. Given that the smartphone market is characterised by the existence of strong market leadership, both in terms of Operating Systems (iOS and Android) and hardware (Apple and Samsung), and gatekeeper positions in application of the Digital Markets Act have been recognised<sup>1</sup>, specific companies have an outsized effect on the market. The concern from the perspective of MVNO Europe is that some (Full) MVNOs are being discriminated based on the (limited) size of mobile service provider and/or the commercial relationship between the smartphone manufacturer and the mobile service provider. It is well known that the mobile operators which have concluded a so-called ‘carrier partner agreement’ with Apple (which

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<sup>1</sup> On 3 July 2023, the European Commission announced the companies that notified the European Commission that they meet the thresholds to qualify as gatekeepers under the Digital Markets Act. These include Alphabet (Google), Apple, and Samsung: [https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT\\_23\\_3674](https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_23_3674)

typically involves commercialising iOS devices) receive a 'carrier bundle' (some share this with the (light) MVNOs they host), whereas other mobile service providers are relegated to using the 'unknown carrier bundle', which results in certain iOS features and hardware/software capabilities not being enabled.

10. In practice, the situation is such that even 4G and 5G-capable handsets may not work properly in some cases where a (Full) MVNO is the mobile service provider. This is especially the case for Full MVNOs that operate under their own Mobile Network Code and IMSI range and operating their own IMS VoLTE core. MVNO Europe emphasizes that the problem is not only occurring with older handsets (so the solution is not simply "buy a new handset" or "governments could take measures to encourage swapping old handsets for new ones") but also with very recent and 5G capable devices that lack the proper carrier bundle/configuration for the applicable (Full) MVNO, or where the 'unknown carrier bundle' does not enable VoLTE by default.

11. Given the issues arising, it would be welcome if BEREC's final Report would contain a strong and explicit call on major smartphone manufacturers to take their responsibilities relating to the phasing out of 2G/3G. These responsibilities include the need to ensure the availability of VoLTE and VoWiFi without discrimination, on all capable devices, and for all use cases (not only in the context of emergency communications).

12. In addition, based on the above, in MVNO Europe's opinion, it is necessary for BEREC to include, in its final Report, an explicit call on the EU institutions to take measures to:

- a) Require the entities controlling Operating Systems (and chipsets and firmware) not to discriminate between providers of mobile services.
- b) Require the entities controlling Operating Systems (and chipsets and firmware) to push updates to all capable existing devices to support and enable VoLTE and SMSoIP by default for all IMSIs (all networks and all SIM cards, regardless of the MNC and IMSI used).
- c) Mandate that all new devices support and enable VoLTE 'out of the box' for all IMSIs of all M(V)NOs. This should be done in a way to ensure formal standardisation of all forms of usage of VoLTE (and VoNR) (not solely for emergency communications), avoiding the current wide variations in the way VoLTE is implemented.

## Standardisation bodies and GSMA

13. MVNO Europe was surprised to note that the role of standardisation bodies is relatively understated in the draft Report. There are clearly opportunities to leverage standardisation for better outcomes in the context of the phasing out of 2G and 3G, while enabling smooth and effective transition to newer generations of mobile technology, in the interests of all involved.
14. The GSMA Network Settings Exchange (NSX)<sup>2</sup> is not mentioned in Section 3.2.2.3 where BEREC recognises the GSMA as an important stakeholder. The GSMA NSX is a tool to streamline the implementation of settings relevant for (among others) enabling VoLTE and VoWiFi. As such, the NSX is a crucial potential solution for improving VoLTE and VoWiFi enablement. Unfortunately, it is not used to its full extent by smartphone and other device manufacturers. Participation in the GSMA's NSX Settings Exchange by Original Equipment Manufacturers (OEMs) is not universal and not mandatory, and is thus insufficient to ensure that all MNO/MVNO and OEM combinations function appropriately. Smaller MNOs and MVNOs can benefit from the NSX if they are not able to reach agreement with handset manufacturers on the implementation of appropriate settings on a bilateral basis, but it would provide a comprehensive solution if all ecosystem participants used it.
15. Based on the above, MVNO Europe asks BEREC to include key messages in its final Report, specifically addressed to standardisation organisations 3GPP and ETSI, urging them to work actively on the issue of phasing out of 2G and 3G, and declare mandatory the use of the GSMA NSX for all handsets and other devices.

### III. MVNO Europe Response to Consultation Issues

- Which other potential challenges/impacts would you identify?
16. From MVNO Europe's perspective, with reference to the comments provided in Section II above, it is key for BEREC, and all stakeholders involved, not to focus only on supporting emergency calling, mobile international roaming, and proper functioning of M2M/IoT, but also on competitive distortions which arise from the phasing out of 2G and 3G. Issues with emergency calling are only a symptom of a broader problem with VoLTE/VoNR/VoWiFi being withheld on some devices from some mobile service providers (in particular (Full) MVNOs), in some cases for outright commercial reasons.

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<sup>2</sup> <https://www.gsma.com/services/nsx/>

17. Advanced Mobile Location (AML) and SMS to 112, which has been deployed in a good number of EU Member States, currently relies on the SMSc (of MNOs, and of those MVNOs that run their own SMSc). As such (use of the SMSc). AML and SMS to 112 rely on legacy 2G/3G infrastructure or the availability of VoLTE and IMS. In a scenario where both 3G and 2G are unavailable, and VoLTE registration is not possible for any reason (e.g. handset capabilities, handset configuration restrictions imposed by Operating System, complexity of manual configuration on handset), both AML and SMS to 112 will fail.
- How urgently do you think the different challenges/impacts need to be addressed (time, priority)?
18. Ensuring VoLTE support by default, standard out of the box for all devices, and an update (OS/firmware) pushed by the OEM or OS provider to all existing VoLTE capable devices, without any user interaction, is critical and should be addressed as the highest priority.
19. The timeframe for this is NOW.
- What challenges / impacts have already been solved or can be considered minor?
20. No comment.
21. It is encouraging that, notably, the Netherlands Ministry of Economic Affairs, the RSPG<sup>3</sup>, and BEREC, have put issues (and solutions) for the phasing out of 2G and 3G on the agenda, and are working on the topic.
- What stakeholders should initiate (more) efforts to meet the challenges/impacts?
22. The European Commission should by now be aware that serious issues are arising (live issues with eCall, live issues with mobile international roaming, live issues for years with (Full) MVNOs being unduly discriminated). It seems inexplicable that proposed revisions to the eCall Regulation and a RED Directive Implementation Act (based on Art. 3.3 (b) and (g) of the Radio Equipment Directive) have not formally been put forward by the European Commission so far.
23. In addition, 3GPP/ETSI should do more to ensure that all devices are able to use VoLTE by default as a bare minimum (see paragraphs 13 and 15 above). The GSMA's NSX (see paragraph 14 above) should be made mandatory through the standardisation bodies.

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<sup>3</sup> RSPG21-033final – 15 February 2023 :  
[https://radio-spectrum-policy-group.ec.europa.eu/system/files/2023-03/RSPG23-010final-RSPG\\_Report\\_on\\_Mobile\\_technology\\_evolution\\_%28with%20annexes%29.pdf](https://radio-spectrum-policy-group.ec.europa.eu/system/files/2023-03/RSPG23-010final-RSPG_Report_on_Mobile_technology_evolution_%28with%20annexes%29.pdf)

24. Also, would be welcome if BEREC's final Report would contain a strong and explicit call on major smartphone manufacturers to take their responsibilities relating to the phasing out of 2G/3G (see paragraph 11 above).
25. In light of the points made in the previous paragraphs, MVNO Europe expresses its strong support for the following ways forward, and MVNO Europe ask BEREC to place stronger emphasis on them in its final Report:
- a) RED directive 2014/53/EU: It is imperative that a European Commission Delegated Act, in application of Art 3.3(b) and 3.3(g), mandates that all new devices support and enable VoLTE 'out of the box' for all IMSIs of all M(V)NOs on a formally standardised basis (avoiding the current wide variations in the way VoLTE is implemented). This should be done in a way to ensure formal standardisation of all forms of usage of VoLTE (and VoNR) (not solely for emergency communications).
  - b) Regulation 2018/858: It is urgent for this Regulation to be updated, to cover packet-switched eCall on a formally standardised basis (avoiding variations, and ensuring a long-term approach to avoid problems occurring again when future generations of mobile technology replace the anterior generations).
26. In addition, MVNO Europe considers that BEREC's final Report could usefully suggest that European Commission should take the opportunity of the RED Directive Delegated Act to promote (for instance in the accompanying Explanatory Memorandum) an important extension to Advanced Mobile Location (AML). The current AML standard (ETSI TS 103 625 V1.2.1) only enables transmission via SMS or HTTPS, thus requiring a functioning SMS Switching Centre (SMSc) or a working data connection with the end-users' device, also while the end-user is roaming. This is not always the case: an SMSc may fail, or fail to be reachable, and a data connection may not be available, e.g. if there is no working SIM card, if the user has turned off data while roaming, if prepaid credit has expired or if the user has been cut off for whatever reason, etc. If the AML standard were (mandatorily) extended by European mandate, e.g. to NG.112 TS 103 479<sup>4</sup>, to organize signalling via SIP/IMS, this would have major advantages (provided that modernized PSAPs are able to receive and process it), enabling AML to function even when no SIM card/active eSIM is in the handset, in case no data connection is available with the end-users' device, and removing a potential point of failure, which is the provider's SMSc or the roaming provider's SMSc. If AML relying on signalling via SIP/IMS would be

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<sup>4</sup> NG.112 TS 103 479 specifies the high-level architecture of all-IP PSAP infrastructure and specifically opens the option of the LIS receiving via AML-1 and AML-2 (SMS and HTTP) but also location requests/reports via SIP signalling.

(mandatorily) implemented, the information will always be relayed over the local SOS emergency APN of the VPLMN, which is able to deliver messages to the local PSAPs. In sum, introducing/mandating AML signalling via SIP/IMS would significantly boost the reliability of mobile caller location, removing failure scenarios that are widespread in the current AML implementations.

#### IV. About MVNO Europe

27. MVNO Europe represents various types of Mobile Virtual Network Operators (MVNOs), with different business models, addressing consumers, business users (including start-ups/scale-ups)/medium/large businesses, the public sector, ICT service/systems integrators, and Internet of Things (hereafter 'IoT') markets, etc. <http://www.mvnoeurope.eu/members>
28. MVNOs currently represent +/- 10% of SIM cards in the European Union.
29. The term "virtual" refers to the fact that MVNOs do not control radio frequencies and related mobile physical infrastructure (antennas, base stations etc.). However, MVNOs do control the necessary hardware/software/resources to provide wireless/mobile services and may own other telecom infrastructures depending on the extent of their business model.
30. Our members provide mobile-only offers, fixed-mobile convergent offers and offers incorporating audio-visual media content, financial services, machine-to-machine communications, embedded data SIMs for tablets, laptops and other devices, connected mobility for vehicles, IoT in a broad sense, etc. Some of our members are also active on wholesale markets as MVNE (E=Enabler) / MVNA (A=Aggregator) supporting other companies and brands that provide mobile/wireless services. MVNO Europe does not represent branded resellers.
31. MVNOs contribute strongly to innovation and competition and provide clear Business to Consumer (B2C) and Business to Business (B2B) end-user benefits.
32. MVNOs also contribute to financing mobile network infrastructure through payment of wholesale charges which assure revenues to Mobile Network Operators, whilst avoiding costly duplication of network assets. Enabling and promoting MVNOs is by far more environmentally responsible than promoting the build-out and operation of additional parallel physical mobile infrastructures, and is thus consistent with the twin green and digital transitions.



