

PSCE Response to BEREC Work Programme 2020 and Medium-Term Strategy

The following feedback is made with regard to the BEREC Work Programme 2020 and input toward the medium-term strategy from 2021 and beyond. This paper considers two specific foci:

- A short recommendation regarding the guidelines prepared for the Implementation of EEC Article 110
- The consideration of regulatory requirements to support adoption of 5G for public safety mobile broadband applications as an initial consideration for other vertical applications

Article 110 Public Warning Systems

Strategic Priority 6: Exploring new ways to boost consumer empowerment

5.4 Carry-over work on Guidelines on how to assess the effectiveness of public warning systems transmitted by alternative means to mobile NB-ICS

As mentioned, “The guidelines should recommend which 110(1)-PWS systems, are considered to be the ‘benchmark’ against which 110(2)-PWS systems should be assessed. The guidelines will need to define a number of criteria against which ECS-PWS’ should be assessed in terms of coverage and capacity to reach end-users.” Some criteria like the security of the data, the cost of the service and the understandability of the message as well as the granularity of the geographical area to be concerned by the warning should be also duly taken into consideration.

The guidelines should also define how to assess the performance of 110(1)-PWS against these criteria, giving example as far as possible in order to create a benchmark.

Regulatory requirements to support adoption 5G for Public Safety Mobile Broadband as an initial consideration of other vertical applications

In the future medium-term strategy, a distinct focus should be made on the provision of vertical services over 5G taking into account an initial exploratory study of Public Safety Mobile Broadband communication during 2020. Public Safety requires a high level of security, availability and service continuity, so provides 1) A respectful starting point to consider verticals, 2) fulfils an immediate need for governments across Europe as they plan to roll out mobile broadband services for public safety.

Context

Our primary concern is with regard to use of 4G and 5G to provide pan-European Mobile Communications for Public Safety.

Public Safety Communication Europe Forum (PSCE) is Coordinator of BroadWay, a Pre-Commercial Procurement (PCP) of innovative solutions to enable pan-European mobile broadband for Public Safety. Our procuring team includes 11 buyers in 11 EU Member states at Government level (Ministry of Interior or their delegated Agency). Members of BroadWay represent a newly forming mobile communication marketplace in Europe. BroadWay procures TRL8 pilot systems by 2022 and aims toward live TRL9 procurement in the 2024/5 timeframe. Individual member states are individually planning their own new mobile broadband services. It can be clearly seen that this timeframe overlaps with the deployment time frames of 5G. On 7th October 2019, Astrid (BroadWay Lead Procurer) signed contracts (on behalf of the 11 procurers) with 4 consortia (34 innovative organisations) to develop these solutions to enable pan-European mobile broadband for Public Safety.

Spectrum for mobile broadband is not harmonised specifically for public safety. It is therefore expected that public safety will share mobile network resources with existing infrastructure in the majority of cases. No specific market model for this is well known and will likely be different in each country. This could lead to market fragmentation and high costs to the national budgets. However, Public Safety users, those responders who save lives and keep us safe, must receive the same high levels of security, service availability and service continuity regardless of when and where they need to use their mobile information services across Europe. They should no longer be bound to geopolitical borders as they are with current narrowband voice services (TETRA, TetraPol, etc). Those with malicious intent currently enjoy information superiority using commercial mobile technologies. BroadWay and its partners seeks to address that balance, aiming to bring more advanced mobile information services for use by Public Safety responders – Police, Fire, Emergency Medical, Border Guard, Prison Services, etc.

Recommendations below refer to the sections in the BEREC Work Programme

Strategic Priority 3: Enabling 5G and Promoting Innovation in Network Technologies

In this priority it is recommended to carry out an initial study regarding the regulatory needs to support the adoption of 5G based upon the specific vertical sector case for pan-European Public Safety Mobile Broadband. It is recommended that an initial study be carried out during 2020, with a more comprehensive study to create a distinct set of regulatory guidelines during 2021. This can then serve as a basis for study of provision of other vertical sector applications of 5G.

Active work is ongoing in member states to plan for public safety mobile broadband, and on a European level through the BroadWay¹ pan-European programme, (funded by EC DG Home). Such a study should yield potential market considerations and a path towards guidelines that are needed specifically to consider regulation needs to realise and maintain high levels of security, availability, and service continuity required for public safety mobile services within and across each European country.

Public Safety Mobile Broadband is one of the first vertical applications in Europe to consider use of 5G. The timeframe for adoption of Public Safety mobile broadband overlaps with the roll out of 5G. Early adopters are currently building on Rel13+ where commercial mobile networks already provide service. Public Safety programmes in the 2022+ timeframe could aim towards using 5G standards (Rel15+), especially considering the newly standardised Mission Critical service layer. Much of this will rely on the motivation of commercial mobile operators to deploy 5G. Deployment is likely to be different for different mobile operators in different countries, following different timeframes. Public Safety buyers, as early vertical customers of 4G/5G, already demand innovation in network technologies through the BroadWay PCP.

The prospects of 5G are attractive in terms of Mission Critical Service Layer, slicing, guaranteed QoS and edge computing (supporting analytics, etc). Proof of capability is required. Regulation is potentially required to ensure that these capabilities provide an equal market playing field for suppliers whilst retaining equivalence in those high levels of security, availability and service continuity across Europe.

Adoption of 5G by public safety will be cautious, seeking solid proof of the capability of 5G services before live use. Concerns are already raised that may limit innovative use:

- Different deployment models (SA, NSA) in different networks may limit the potential benefits of slicing and associated guaranteed End to End QoS and security.
- Service provision models from MNOs are not yet clear. A common approach will be required across Europe where a mixture of service provision will be inevitable underneath End to End Public Safety mobile communication paths.
- Virtualisation of network services limits trust. New techniques will be required within the dynamics of the supply chain to maintain trust and understand risk as the supply chain evolves more quickly. Common considerations will be needed:
 - Guidance to Public Safety procurers of mobile services
 - Guidance to mobile operators on procurement and maintenance
 - Common security and trust notification processes and indicators between different actors in the supply chain
 - And may more...

The proposed studies should work closely with ENISA, leveraging the EU Coordinated Risk assessment if Cyber Security for 5G².

¹ www.broadway-info.eu

² https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=62132

Security, availability and service continuity are key. Public Safety Mobile Broadband provides the perfect case study. Public Safety are moving from a trust based upon physically separated networks to a model which is shared and virtualised. This is considered both in terms spectrum and infrastructure.

Strategic Priority 3: Section 3.1 Carry over work

We understand for Mobile Coverage information is considered for consumers. Service coverage is more important for Public Safety and other critical users who then provide specific vertical services to their users. Service coverage should also be mapped as they become available. Service mapping should include factors of security, QoS and service continuity. Provision of Priority and Pre-emption capabilities and overall Mission Critical capabilities should be mapped, providing a competitive environment and knowledge of service gaps geographically. Service availability is considered to be more important than radio coverage considering the service base architecture of 5G. Vertical sectors will resell the provision of services for vertical sector actors. Service mapping is therefore crucial to in the B2B supply chain.

Other items considered in the BEREC Work programme 2020:

Section 1.6 Opinion on the review of the EC Recommendation on Relevant Markets

In BERECs review, it is requested that the Public Safety Communication mobile broadband and Public safety IoT market are considered. Public Safety is a new customer to mobile broadband and IoT markets, mostly concerning the sharing of commercial mobile infrastructure. Markets are also emerging for temporary coverage solutions, where coverage is required outside of the regular footprint of commercial mobile.

Section 1.8 Expert Workshop with OECD – QoS

QoS and QoE are crucially important in the Public Safety domain. Intelligibility of voice, for example, has been and will continue to be a crucial factor. QoE is important for the end user of the information services. QoS is a technical measure and should be considered to be an important measure in the B2B supply chain where a mobile operator provides services to a mission critical operator, who then provide services with a QoE, to the end user.

Communication in the supply chain of QoS. This should also link to Service Coverage mapping (see 3.1 above)

Section 6.21 Possible work for 2021 and beyond

Regulatory needs to support the adoption of 5G verticals based upon and initial vertical sector case for Public Safety Mobile Broadband

As explained above, an initial study should be carried out in 2020 to consider potential regulatory issues surrounding the provision of pan-European Mobile broadband for public safety.

Considering the BEREC Strategic Priorities - Medium Term strategy

Promoting competition and investment;

Pan-European vertical sector use of 5G will change the market structure. Competition will involve more actors in the provision of critical information services. An initial study on Public Safety mobile communication should be carried out, as a benchmark for consideration of other verticals.

Promoting the internal market;

Pan-European mobile broadband requires equivalence in security, availability and service continuity. Public safety responders, operating in other countries, should experience 'same as home' services and associated quality of experience for voice, video and data services. This priority should also include the critical need of national governments (working alone and together) to use telecommunication services for national and EU safety and security needs and provision of critical infrastructure services. The current text only considers cross border issues enabling services offered to EU Citizens and businesses.

Empowering and protecting end users

This priority should better consider professional end users and not just citizens and vulnerable end user groups. Public safety end users are there to protect those who are vulnerable and continue to keep them physically safe.

It is proposed to update this priority to include new vertical sector users of mobile telecommunications for the needs of critical infrastructures and services, such as public safety mobile communication.

Stakeholder engagement

Public Safety Communication Europe (PSCE) Forum are keen and willing to work with BEREC towards our common goals. Providing an effective regulatory environment for pan-European 5G Vertical services with an initial focus towards enabling Operational Mobility for Public Safety Responders – the ability for Public Safety First Responders to carry out their operations whenever and wherever they need to respond across Europe.

Conclusion

We propose two foci here:

- A short recommendation regarding the guidelines prepared for the Implementation of EEC Article 110
- The consideration of regulatory requirements to support adoption of 5G for public safety mobile broadband applications as an initial consideration for other vertical applications

About Public Safety Communications Europe

Public Safety Communication Europe is a permanent autonomous organisation, working to foster excellence in the development and use of public safety communication and information management systems by consensus building and bringing together public safety user organisations, industry and research institutes
