

## **Draft RSPG Work Programme for 2018 and beyond**

### **Qualcomm's comments**

**January 2018**

Qualcomm welcomes the opportunity to provide comments on the Draft RSPG Work Programme for 2018 and beyond.

#### Harmonisation of spectrum access for verticals.

Harmonisation of spectrum access at European level is a pre-requisite for mass market services, not only due to economies of scale, but also due to considerations linked to free circulation of persons and goods within the European Union.

Harmonisation of spectrum for mobile broadband was achieved in Europe through the adoption of harmonized technical conditions to access spectrum, i.e. mostly harmonization of band plans and Least Restrictive Technical Conditions. Such technical harmonization of spectrum is sufficient to ensure harmonization of spectrum access in the mobile broadband context where:

- a unique service (mobile broadband) is used on the specific band throughout Europe,
- most mobile broadband devices support most/all common EU mobile broadband bands.

5G is expected to support not only enhanced mobile broadband services, but also so called vertical services. Technical harmonization of spectrum may not be sufficient to ensure harmonized access to spectrum.

Effective harmonization will require two additional elements.

*Harmonisation of the spectrum access mechanisms.* Vertical services cannot face a fragmented, country per country mechanisms to access spectrum. For example, private networks are expected to play a big role for example in the context of Industry 4.0. A company developing a 5G-connected robot needs to understand the set of functionalities (frequency band support, technology support) required to be able to operate under a private network Europe wide. National mechanisms for private networks to access spectrum are likely to lead to fragmented market for solutions relying on private networks.

*Harmonisation of connectivity conditions Europe wide.* Some vertical services are typically not deployed on a national basis but must be able to operate across border. While non-uniform deployment could lead to higher/lower mobile broadband performance when operating in roaming, for vertical services for which the QoS is expected to be more critical, it may lead to difficulty in deploying the service throughout Europe. For example, connected cars are widely expected to leverage connectivity to improve safety and fuel efficiency, among other benefits. Cars (and trucks) are typically crossing borders. The deployment of the telecommunication infrastructure along major roads is typically a national issue. This includes questions potentially linked to the national licencing process, such as the coverage requirements along the road. It may also include questions linked to the operation of the service, such as the technology required to receive the public information (unicast or broadcast, with or without SIM card, in which frequency band...). On the other hand, cars could be put on the European market with fully diverging sets of functionality support, since the harmonized standard only impose minimum requirements per frequency band. Having a clear strategy identified at European level to ensure that the service remains accessible when a vehicle crosses a border is an absolute must for Europe to truly benefit from connected cars. Other verticals such as PMSE, or even PPDR, correspond to use cases where teams operate internationally. All these verticals would benefit from a more uniform deployment of mobile networks throughout Europe, in terms of deployment schedule but also coverage, QoS and even sometimes functionality requirements.

The proposed work items:

- Peer review and Member State cooperation on authorisations and awards,
- 5G Implementation Challenges,

could host some of these considerations. However, neither are completely appropriate to ensure a consistent strategy for the harmonised access to spectrum for any given vertical. To achieve such task, it is necessary to consider technology, regulatory and business aspects, focusing on each vertical case. Such consideration may e.g. lead to development of minimum feature set to place equipment fit for such specific vertical on the market, including e.g. privacy and security requirements.

Qualcomm recommend RSPG to adopt a separate work item focusing on the harmonized access to spectrum for verticals. Qualcomm recommends adopting separate RSPG opinions for at least the following applications:

- private networks,
- intelligent transportation,
- PPDR,
- PMSE,
- m-health,
- m-government.