

RSPG17-034 public consultation on the “Strategic spectrum roadmap towards 5G for Europe – 2nd Draft RSPG Opinion on 5G networks”.

Qualcomm response

Qualcomm welcome the opportunity to provide its views on the **the RSPG17-034 public consultation on the “Strategic spectrum roadmap towards 5G for Europe – 2nd Draft RSPG Opinion on 5G networks”.**

Our response to the individual points of the RSPG opinion are provided below.

1. **The RSPG is of the opinion** that Member States will need flexibility in the way they authorise access to spectrum, for example: appropriate geographical areas (e.g. national, regional, city or hyper-local, e.g. for use in a factory), individual licencing or under a general authorisation framework.

Generally, Qualcomm prefers exclusive dedicated licenses to enable QoS and incentivise investments, and believe that this should be the focus for the three European 5G pioneer bands.

MNO investments are necessary to establish the market and to generate economies of scale and competition in the infrastructure and terminals market. Verticals with a need for access in more restricted areas, such as factories, stadiums, etc, can be served by MNO’s networks using network slicing, sub-leasing and use-it-or-lease-it conditions within this spectrum. This kind of approach could strike a reasonable balance between establishing the 5G market with MNO’s and providing a pragmatic solution for verticals.

Where exclusive dedicated licenses are not feasible, there may be some circumstances where complementary ways to access spectrum could be considered i.e. Licensed Shared Access where LSA could be an enabler for mobile operators to access spectrum.

2. **The RSPG is of the opinion** that the Commission, together with Member States, should take actions to fully support 5G related policy objectives in rural areas and wide coverage, taking into account the role of satellite in achieving ubiquitous connectivity.

Qualcomm agrees it is important to improve rural broadband coverage and we believe that 5G utilizing various frequency bands will significantly improve connectivity options and connection

speeds. It should be noted that already existing terrestrial networks using different frequency bands cover practically all populated areas on the earth.

The role (if any) of satellite in 5G must be a market-driven and complementary to those services already provided by terrestrial mobile networks.

3. **The RSPG recommends** that the Commission, in its research work-programs, study solutions for improving 5G connectivity and wide area coverage, especially in rural areas, thereby facilitating and progressing technology developments targeting the fulfilment of 5G related policy objectives.

Qualcomm considers that the EU role is more on political side e.g. to recommend a sufficient performance for 5G everywhere and, especially, in rural areas, where market based competition may not work. Another area for the EU side could be to encourage by regulation for network sharing, or similar type of solution, where operators could e.g. build one network jointly instead of each MNO building their own network. MFCN concept already gives a good flexibility to MNO to find suitable solutions for coverage also in rural areas.

4. **The RSPG is of the opinion** that service performance and availability requirements may be relevant for some 5G cross border services to fully function and would need to be defined by the industry in a timely manner. In some cases an EU coordinated approach could be helpful in this regard to support a common European solution.

As in the previous point, Qualcomm believes that EU role is more on regulating the requirements also in border areas and the technical solution should be left for MNOs.

5. **The RSPG is of the opinion** that coverage obligations can only be derived as a consequence of national policy objectives and characteristics (i.e. population distribution, geographical morphology, industrial and societal needs) and therefore cannot be harmonised on a EU-level.

Qualcomm believe that it would be inappropriate to specify onerous rollout and deployment conditions. An approach that encourages MNOs to provide an appropriate level of coverage suitable to their business needs is preferred. If Administrations / Governments desire greater geographical coverage, mutually beneficial deployment scenarios (e.g. network sharing, or similar type of solution, where operators could e.g. build one network jointly instead of each MNO building their own network) could be investigated but not mandated.

6. **The RSPG notes** that solving issues relating to facilitating the efficient deployment of ultra-dense networks is expected to be of high importance for the rollout of 5G in dense urban areas. **The RSPG is of the opinion** that Member States should assess the need for

national actions that will enable easier site authorisation and installation, in particular for small cells, in order to make timely 5G deployment possible.

[Qualcomm support this view.](#)

7. **The RSPG is of the opinion** that all commercial licences in frequency bands identified for 5G within the Member States should be subject to trading or leasing to enable new market opportunities.

[Qualcomm support this view.](#) Furthermore, use-it-or-lease-it clauses may be introduced in the licensing agreements to ensure an efficient use of spectrum and to partly support the needs of verticals.

8. **The RSPG is of the opinion** that Member States should consider appropriate measures to defragment the 3.6 GHz band, the primary 5G band, in time for authorising sufficiently large blocks of spectrum by 2020.

[Qualcomm support this view](#) and encourage Member States to consider appropriate measures to ensure that sufficiently large blocks of spectrum in the order of 100 MHz per operator are made available by 2020. Measures could include facilitating progressive migration from paired to unpaired assignments, including allowing and encouraging existing license holders to swap their licenses, defining appropriate auction rules, defining plans to relocate incumbents (FS/FSS) to other frequency bands– sharing solutions could also be considered in the short term to avoid delays in the auctioning process

9. **The RSPG is of the opinion that** in relation to the 26 GHz pioneer band (24.25 - 27.5 GHz):
 - the focus of 5G authorisations in the 26 GHz band should be on an individual licence regime. However, the possibility of a general authorisation regime under sharing conditions that protect the other users of spectrum in this band (e.g. EESS/SRS) is not excluded.

[Qualcomm support this view](#) with regards to authorizations provided on an individual licence regime - exclusive licenses should be provided to operators possibly ensuring a nationwide footprint. Although 5G will be using both licensed and unlicensed spectrum, Qualcomm strongly believe that the 26 GHz band would be to be awarded on a licensed basis. Licensing approach for 5G in the 26 GHz band should provide certainty in availability of spectrum for 5G, and enable a stable network investment environment aimed at providing predicable network performance for MBB and other ultra-reliable, low latency use cases.

- the Commission should include as part of any technical harmonisation for the 26 GHz band, in high level terms, the requirements to maintain the possibility for continued development of incumbent satellite services (FSS and EESS/SRS). Future earth stations should be authorised based on transparent, objective and proportionate criteria to safeguard their future operations and ensuring that they are unlikely to have a significant impact on 5G deployment and coverage. Member States will remain fully responsible for granting or rejecting authorisation to a new satellite earth station application.

Qualcomm proposes that future earth stations should use other frequency bands than 26 GHz whenever possible. Should this not be possible, it is recommended to limit deployment to areas where they can be protected without limiting 5G deployment.

However, too stringent emission limits to protect EESS(passive) below 24 GHz may severely complicate deployment of 5G in the 26 GHz band, possibly even prevent it.

- Member States should make by 2020 a sufficiently large portion of the band, e.g. 1 GHz, available for 5G in response to market demand, taking into account that 5G deployment in this frequency range is expected to be used for local coverage.

Qualcomm suggests that countries in Europe should do their utmost to make the whole 26 GHz band available for 5G use before ITU WRC-19. In countries where the lower part of the band 24.25 – 27.5 GHz is heavily used e.g. for extensive FS deployments, the upper part 26.5 – 27.5 GHz as a minimum should be licensed in a first phase during 2018. Selection of the uppermost 1 GHz will further provide harmonization and enable benefits from the economies of scale, also considering the 5G developments in the rest of the world.

- Regulatory flexibility for the progressive release of the 26 GHz band will facilitate an efficient introduction of 5G without having an unnecessary negative impact on the current users of the band. Member States should plan any migration of fixed links necessary for ensuring the availability of the band for 5G, taking into account the geographical dimension of the market demand for 5G.

Qualcomm supports this view, but would also like to stress that in case of a two-step approach it is crucial to provide a long-term plan at an early stage to avoid the risk of fragmentation of the 26 GHz band. One option for sharing with FS could be that MNOs, who are usually the users of FS as well, can choose by themselves, how to use the band for both 5G and FS.

10. The RSPG is of the opinion that general authorised frequency use can be an important breeding ground for innovation and contributes towards a dynamic market environment.



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The application of a general authorisation regime is foreseen in the 66-71 GHz band which could be an important band for 5G.

Qualcomm supports the view that 66 – 71 GHz may become an important band for 5G