

GSA response

The RSPG Third Opinion on 5G implementation issues

GSA thanks RSPG for the opportunity to provide comments to RSPG consultation on Third Opinion on 5G implementation issues.

GSA welcomes the RSPG work and timely decisions on the availability of 5G spectrum in Europe but has concerns on the fragmentation in the 5G pioneer bands 3.4-3.8GHz and 26GHz. Despite early auctions in some European countries (e.g. Finland, Spain, Ireland, UK, Italy), unfortunately only few European countries have made concrete steps related to the 5G spectrum awards for the pioneer bands 3.4-3.8GHz and 26GHz.

All possible actions should be taken to help making these bands available in a timely manner for 5G with sufficient bandwidths.

I. Concerning the Defragmentation of the 3.4-3.8 GHz frequency band:

1. The RSPG recommends that Member States (MS) design spectrum award mechanisms that provide the opportunity to obtain sufficiently large contiguous spectrum blocks to facilitate high throughput multi-Gb/s 5G services such as enhanced mobile broadband. The RSPG notes that national awards processes may result in various spectrum blocks sizes due to market players strategies and that trading/leasing of rights of use ("spectrum trading") could also be considered as part of the national defragmentation tools/policy.

GSA supports all efforts to facilitate large contiguous spectrum blocks, see for instance ECC Decision(18)146 and ECC Report 287, where 80 -100 MHz contiguous spectrum per MNO is suggested in the 3.4-3.8GHz range to fully enable 5G use cases and 5G user experience. Large contiguous spectrum blocks are crucial for meeting 5G requirements on bitrates, and for providing sufficient network capacity for such high bitrate services. Assignment decisions can be based on the granularity of 10 or 20 MHz auction blocks that can be arranged after the auctions to fulfill the requirement of such wide contiguous spectrum blocks. GSA further notes that defragmentation and large contiguous spectrum blocks are equally important (and for the same reasons to fully enable 5G use cases and 5G user experience) also in the 26 GHz band, where the MNO block size should be around 800-1000MHz.

2. The RSPG notes that, taking into account different national legacy situations and competitive landscape, Member States may need different approaches at national level in order to achieve the above defragmentation objectives. In this regard, the RSPG recommends that Member States consider the guidance on defragmenting the band that has been developed by the CEPT (ECC Report 287).

GSA agrees that ECC Report 287 on defragmentation report provides suitable guidance for Administrations. GSA notes that different approaches may be required in different Member States and urges also EC to encourage Member States' actions on this topic. In addition, it should be noted that different additional technical requirements (such as country specific base station filters resulting from the current fragment use) may considerably complicate design and possibly delay availability of equipment.

3. The RSPG recommends that, in order to facilitate 5G use in this primary band and subject to national situation, Member States phase out, as soon as possible, legacy ECS use in the band, which is not compatible with the 5G harmonised technical conditions.

GSA strongly supports this recommendation, which could greatly facilitate deployment of 5G networks in Europe. Retention of legacy ECS use may prevent large contiguous spectrum blocks, as discussed above, 5G deployment in certain areas and complicate synchronization of networks due to differences in technologies, and thus, reduce the flexibility for selection of frame structure.

II. In order to ensure connectivity for vertical industries:

4. The RSPG notes that 5G will play a significant role in providing a communications service that meets the specific requirements for verticals alongside others technologies.

GSA agrees fully with the statement above and notes further that 5G has been designed with flexibility in mind, and with capabilities that encompass the needs of verticals with critical requirements. 5G can be leveraged for vertical industries in different ways: through network slices in MNO networks or individual/private networks using leased spectrum (through “use-it-or-lease-it” mechanisms) or dedicated spectrum for such entities. 5G can offer economies of scale benefits for vertical industries. However, these benefits can only be achieved if the verticals can use the harmonized IMT spectrum for which 3GPP has specified band definitions. The spectrum intended for verticals also needs to be widely used in the commercial operator domain to ensure the availability of a rich ecosystem with affordable cost of the equipment. When setting aside harmonized spectrum for vertical industries, regulators should carefully assess that such provisions do not override the MNOs needs

5. The RSPG notes that connectivity for vertical industries could be provided by mobile operator’s solutions, third-party providers and directly by verticals themselves in EU harmonised ECS bands or in dedicated spectrum for verticals.

GSA agrees that all solutions mentioned in statement 5 above are possible (see also GSA response to statement 4). See also further comments on statement 6.

GSA sees a need to support a variety of business models in cooperation between specifically manufacturing industry verticals and MNOs. There are models where private enterprises want to invest into local 5G communication infrastructure for reasons of control over operations, QoS, reliability, availability, privacy, security etc. They can still grant MNOs to carry their services over that local private 5G infrastructure, e.g. in exchange for sub-licensed spectrum. In this way, MNOs can leverage private industry investment for their services into the private premises and focus their investment into the public network domain. Private enterprises can invest into 5G infrastructure to their need benefitting from additional MNO spectrum and seamless MNO services in their premises. Regardless of the exact spectrum usage rights ownership, design, build and operations of such 5G local infrastructure can be done by an MNO, by the local enterprise or by a trusted third party. Such cooperative models are well established for voice communications where enterprises have their local private exchanges (PBX) connected to the public networks allowing to share the local access infrastructure for internal and external communications.

It is particularly important for the manufacturing and process industry that the EU supports the deployment of these connectivity solutions by respective regulatory conditions to enable the applicability of the above-mentioned options in a flexible manner. Fostering such win-win models between the manufacturing industry and MNOs works towards best possible efficiency in spectrum use and economies.

6. The RSPG recommends that Member States consider other spectrum solutions including dedicated or shared spectrum for the business/sectoral needs (“verticals needs”) that may not be met by mobile operators. Such solutions could take advantage from economies of scale and ecosystem availability in spectrum bands with EU harmonised technical conditions.

GSA notes the importance of verticals' opportunities although it is expected that MNOs will drive the 5G eco-system, particularly during the initial phase of 5G development. The target must be to provide a sufficiently large amount of spectrum for 5G in order not to limit deployment of any of the key use cases, either for verticals or MNOs. GSA notes that the 2.3 GHz band and portion of 3.8-4.2 GHz could be suitable spectrum for verticals' use (while not excluding possibilities for MNOs), for local area deployments. 5G Sharing with satellite systems in 3.8-4.2 GHz in Europe should be possible with geographic exclusion zones to protect the satellite systems. Ecosystems for these frequency bands are or will be available due to 3GPP specifications and network deployments in other regions.

7. The RSPG notes that, in addition to the above, in order to respond to some targeted EU public policy objectives requiring, for example pan European services for specific verticals, there may be need for technology neutral dedicated EU harmonised spectrum. RSPG recommends assessing these needs on a case by case basis and is ready to give its view when/where appropriate.

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8. The RSPG recognizes that, in order to support implementation of EECC, the European Commission might consider additional recommendations on spectrum use for verticals and in this case, it should seek advice from the RSPG.

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GSA further suggests that the following elements should be considered in the 3rd RSPG opinion on 5G spectrum:

As mentioned above, availability of the 24.25 – 27.5 GHz frequency band is of crucial importance for 5G deployment in Europe, noting also that auctions and consultations have started. As for the C-band, it is of great importance to provide large contiguous bandwidths, in the order of 800-1000 MHz per network.

GSA would encourage RSPG to provide guidance on the frequency band 40.5 – 43.5 GHz. It is our understanding that this will should considered immediately after WRC-19, and thus a statement that promotes this band and clarifies the way forward would be valuable.