



Public consultation on the Draft RSPG Opinion on 5G implementation challenges (RSPG 3rd opinion on 5G)

ETNO Contribution

ETNO welcomes RSPG third opinion on 5G implementation issues. European mobile operators are now heavily involved in 5G testing with 114 trials reported in EU-28 countries according to “5G Observatory Quarterly Report I”. In 2019, 5G deployments are expected in many cities across Europe as mobile operators are getting prepared for full commercial service in 2020. Therefore it is now that many 5G implementation challenges will appear and have to be phased effectively.

Defragmentation of the 3.4-3.8 GHz frequency band

ETNO agrees that design spectrum award mechanisms should facilitate the acquisition of sufficiently large contiguous spectrum blocks to facilitate high throughput multi-Gb/s 5G services and Member States should make all possible efforts.

Some enhanced mobile broadband (eMBB) applications require very high data rates and low latency i.e. Virtual Reality or Augmented Reality. 5G new radio interface (NR) has been designed so that it supports such requirements with maximum channel bandwidth up to 100MHz in specific bands below 6GHz. Large contiguous channel bandwidths of such size would facilitate single wide carrier processing and scheduling so **100 MHz of contiguous spectrum blocks** would really make a difference compared to 4G in terms of capacity and user experienced data speeds.

For an optimal assignment, however, whatever the nature of process, the actual amount per operator should be decided through the process itself whenever necessary. To that effect, lots in the process should be designed in such a way that operators can acquire the amount of spectrum they need in a flexible way rather than through a process that creates artificial scarcity. This means that when needed the band should be divided in a sufficient number of blocks and that these blocks should be small enough as to accommodate all needs.

The Ultra Reliable Low Latency Communications (URLLC) use cases are benefited by large contiguous spectrum blocks, as much smaller blocks than 100 MHz would make it harder to eventually multiplex heterogeneous service needs of different licensees like eMBB and URLLC. For TDD deployments, operators should aim at the synchronised mode of operation to minimize guardbands and increase the spectrum use efficiency. In case of TDD synchronization between 5G and LTE, the 5G performance will be impacted severely limiting URLLC uses in the band¹. For the support of low latency use cases, parameters affecting the TDD synchronization (like frame structure), may need to be changed compared to eMBB. Agreement between operators will be difficult to achieve, and lack of it would result in absence of URLLC uses.

Concerning the phase-out process of legacy ECS use in the band, ETNO believes that this should take into account the investments made by legacy operators. Furthermore, any license update of existing legacy systems to 5G should guarantee equivalence and non-discriminatory conditions to all operators (new and legacy), avoiding any market distortion and aligning obligation and rights conditions, e.g. in terms of coverage, access, trading, etc.

Vertical industries

¹ Reference synchronisation report ECC



Mobile communications networks are already able to serve various needs efficiently and with 5G and network slicing mobile networks will be able to serve even better the specific needs of various users. In addition, spectrum leasing is a tool which could be used for providing local needs of vertical players. Thus, ETNO believes that allocating spectrum for various use cases and/or niche players is not required as this would lead to spectrum fragmentation and will reduce the efficient use of spectrum.

ETNO would like to note that managing a mobile network is a complex process, and expected to become even more complex with large-scale introduction of MIMO and TDD. Adding more variables in form of local licenses and various niche/vertical players to coexist with, does not contribute in ensuring the needed quality to meet the 5G expectations in society. Thus, ETNO prefers nationwide exclusive licenses which help in reaching the necessary economies of scales required for assuring the equipment and devices availability.

Furthermore, in the case of allocating dedicated spectrum, especially in key 5G bands, the actual needs as well as the capabilities of the vertical connectivity providers to run the network in the long term should be ensured beforehand. If not there is the risk that the spectrum that is reserved for vertical use may remain underused and fragment the spectrum band for a long period of time. This fragmentation can be aggravated and locked in forever, when new technological generations are introduced that not all the vertical users will implement.

Dedicating spectrum for verticals might distort competition as spectrum resources, might be used by the vertical industry at much lower prices than mobile operators, whereas competing in the same business and for the same customers. Therefore, ETNO would not recommend the identification of a specific band for verticals, having in mind that there exists already room for experimentation in mmWave range.

Other 5G Implementation Challenges - 26GHz Defragmentation



Defragmentation efforts may also be needed in 26 GHz, and Member States should start efforts in order to allow sufficiently large contiguous blocks for 5G networks in 26 GHz band (preferably at least 800 MHz per network).

Concerning the phase-out process of legacy ECS use in the band, ETNO believes that this should take into account the investments made by legacy operators. Furthermore, any license update of existing legacy systems to 5G should guarantee equivalence and non-discriminatory conditions to all operators (new and legacy), avoiding any market distortion and aligning obligation and rights conditions, e.g. in terms of coverage, access, trading, etc..