

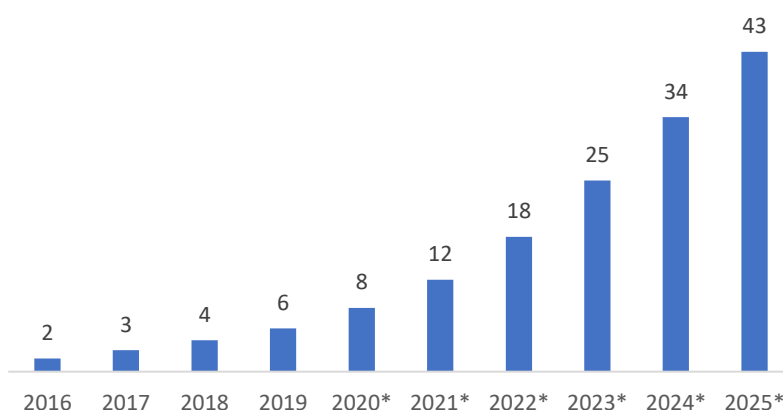
Comments to RSPG Opinion on additional spectrum needs and guidance on the fast rollout of future wireless broadband networks

March 26th, 2021

Spectrum demand for wireless broadband

Telefónica expects wireless broadband traffic to continue to grow, driven by strong demand for connectivity from both residential and business customers and by competition among wireless providers. As shown below, Analysys Mason estimates that cellular traffic per capita in Western Europe roughly duplicates every two years, and will continue to do so in the near future. Monthly data consumption per pop currently stands at 8 GB, and in only five years it is expected to go up to 43 GB.

Cellular traffic per capita (GB/month)



*Estimate

Source: Analysys Mason

Those expectations, however, are not sustainable if spectrum supply for terrestrial mobile networks is restricted. Incremental spectrum in all spectrum ranges, from the bands below 1 GHz that provide the basic coverage layer and a minimum amount of capacity, to mmwave bands that will be used to cover hot spots, is valuable and subject to excess demand, which is especially intense in four-player markets.

Telefónica agrees with RSPG that demand for additional spectrum for mobile broadband is particularly acute in mid-bands. A recent report by Coleago Consulting, endorsed by GSMA¹, describes the value that could be created with an additional 1,000 -2,000 MHz of upper mid-band spectrum for cellular services: in dense cities, it is the only feasible way to build networks that allow mobile users to experience in peak hour the data rates defined by ITU for IMT 2020 (100 Mbps downlink and 50 Mbps uplink); in suburban areas, it would reduce the need for cell-site densification providing substantial cost savings and environmental benefits; in rural areas,

¹ <https://www.gsma.com/gsmadeurope/resources/imt-spectrum-demand/>

it would make Fixed Wireless Access solutions a more economical solution than FTTH for connectivity needs of up to 300 Mbps per household, potentially saving the EU 12 billion in subsidies for network investments²; finally, they would be instrumental in providing 100 Mbps peak hour connectivity in motorways, where low bands do not provide sufficient bandwidth and high band deployments would be economically unsustainable even with Public support.

The interest in mid-band spectrum can be explained by the large amount of frequencies potentially available, but it should be noted that, for wireless broadband services, the incremental value per MHz of mid band spectrum is still well below the incremental value per MHz of low band spectrum. At the recent UK auction, for example, the price of the 700 MHz band was 0.27 €/MHz/pop, while the price of the 3600 MHz band was 0.08 €/MHz/pop. In our view those differences in price reflect also differences in value, and show that incremental spectrum allocated in low bands to wireless broadband would be beneficial for society, through lower deployment costs that feed into better and more affordable end user services, especially in rural and suburban areas. We understand that low band spectrum is also valuable in other uses, and in fact DTT penetration is still high in many parts of Europe. The UHF Decision, however, leaves scope for countries with low DTT usage to increase supply of low band spectrum for wireless broadband without waiting until 2030, as long as neighbouring countries can continue to meet their . We encourage RSPG members to explore that possibility.

Demand for spectrum in mmWaves is driven, in turn, by the need to add capacity in hot spots with potentially many simultaneous users, and to offer high-throughputs per user that can only be achieved with the very large bandwidths available in those frequency ranges.

We request RSPG to recognise demand for spectrum for wireless broadband, and in particular for mobile cellular networks, in all three frequency ranges highlighted above. We also suggest RSPG to state more clearly, for example in paragraph 5, that demand for wireless broadband can be met with technology and service neutral authorisations, in line with the provisions of article 45 of the European Electronic Communications Code. There is an indirect reference to this topic in Paragraph 4, when RSPG recognises that earmarked frequencies for Fixed Wireless Access are not needed, because operators have the possibility to provide them within their spectrum rights. We fully agree, but we would like to see neutrality also taken into account when distinctions are made between services consumed by verticals and services consumed by other end users, for example in paragraphs 2, 3, 6 and 7.

Addressing spectrum demand for verticals and local users

Ensuring that verticals meet their connectivity needs is vital, but can be done without undermining the principles of sound spectrum policy. A key concern for Telefónica is the use of set asides in valuable global 5G bands, responding to calls from verticals to benefit from the development of a mobile equipment ecosystem without having to compete for the spectrum rights. RSPG seems to point in that direction in paragraph 6, when recommending the possible use of the band 3.8-4.2 GHz for local vertical applications. Shared use of this band with incumbents would be in our opinion a positive development, but there is no justification to make reservations for specific end users.

When local licences are issued, to allow verticals to express localised demand for spectrum, they should be service and technology neutral and non-discriminatory, with no constraints on the

² Calculated as the savings in CAPEX in the provision of 100 Mbps FWA to rural homes if an additional 2 GH mid-band spectrum were available.

possibility to efficiently aggregate a set of local licences to build wide area networks. We see a clear possibility that, as wireless broadband technologies evolve and operators and verticals together explore the best path to digitisation, the majority of business users will find value in benefiting from the synergies of public networks, or in outsourcing a private network to a licensed operator that can manage, within its spectrum licence, coexistence with other local users. If that were the case, spectrum reserved for verticals risks being heavily underused.

Incentivising spectrum leasing is a valuable alternative to reservations or local licensing in order to support verticals who wish to build a dedicated radio access network. Where a market failure prevents efficient voluntary deals taking place, obligations could be imposed in licences to ensure that the connectivity requirements of verticals are met. In Finland, for example, licensees are obliged to participate in connectivity tenders in localised areas or else sub-licence the spectrum so verticals can build their own network.

We encourage RSPG to amend paragraph 6 of the draft opinion to consider the remarks made above, and refer to the GSMA Public Position “Mobile Networks for Industry Verticals: Spectrum Best Practice” for further valuable suggestions and reflections³.

³ [Mobile-Networks-for-Industry-Verticals.pdf \(gsma.com\)](#)