

FTTH Council Europe Response to the Questionnaire on Long-Term Vision for the Upper 6 GHz Band

20 August 2024

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Introduction

The FTTH Council Europe welcomes the opportunity to submit comments on the “Long-term vision for the upper 6 GHz band”. The FTTH Council Europe believes that the upper 6 GHz band (6425-7125 MHz) can make a significant contribution to the achievement of digital connectivity targets for Europe if that spectrum range is managed in an appropriate way.

The FTTH Council Europe is an industry organisation with a mission to advance ubiquitous full fibre based connectivity to the whole of Europe. Our vision is that fibre connectivity will transform and enhance the way we live, do business and interact, connecting everyone and everything, everywhere. Fibre is the future-proof, climate-friendly infrastructure which is a crucial prerequisite for safeguarding Europe’s global competitiveness while playing a leading global role in sustainability. The FTTH Council Europe sees wireless solutions principally as complements of FTTH and enablers of connectivity solutions. The FTTH Council Europe consists of more than 160 member companies. Please visit our website for more information: www.ftthcouncil.eu

The FTTH Council Europe notes that FTTH deployment continues to expand rapidly across Europe. FTTH Council Europe data suggests that the deployment of VHCN is very well advanced in Europe and continues on a positive trajectory. In more mature FTTH markets, investments are now confronted with harder to reach, higher cost areas. However, the existing model in fixed networks that sees network competition driving investment has worked well for Europe, and many of the current difficulties in the sector relate to macroeconomic factors. The role of spectrum in ensuring fit for purpose connectivity, particularly in an in-home context, is critical to the end user experience that impacts demand for connectivity.

More than anything, investors need stability and certainty. A clear and certain regulatory environment includes the presence of a clear and forward looking spectrum policy.

Response

The need for spectrum for in-home connectivity

Page | 2 The FTTH Council Europe notes that the RSPG intends to build a long-term vision for the upper 6 GHz band by providing policy recommendations on how to best organise the future use of this band in Europe with the goal to maximise the contribution of this part of spectrum to the achievement of digital connectivity targets for Europe.

The Digital Decade Policy Programme 2030 sets a series of political targets for 2030, including for the deployment of networks with gigabit speeds. All end users at a fixed location should be covered by a gigabit network up to the network termination point and all populated areas should be covered by a next-generation wireless high-speed network with performance at least equivalent to that of 5G. An important point to note in the context of these goals is that the 5G targets are expected to be met this year already and so the objective must be to see how best the 6 GHz band can assist the fixed network targets¹.

There is considerable demand for WAS/RLAN in the upper 6 GHz band. Today, the bulk of data traffic generated by Europeans goes through indoor Wi-Fi, with mobile networks only delivering traffic equivalent to 5% of total network traffic². While extensive indoor fibre wiring is the optimum technical solution, for many households this is not a realistic choice. Thus, for the foreseeable future, the majority of the digital use cases - education, work, entertainment, e-health, e-government – will occur indoors (home, office, hospital, airports, etc) and will rely on Wi-Fi technologies. Outside on-the-go use cases are also critical but, accounting for just 1% of total traffic, are unquestionably less significant in quantitative terms³. That means, that also the bulk of data transmitted by mobile devices relies on Wi-Fi connectivity.

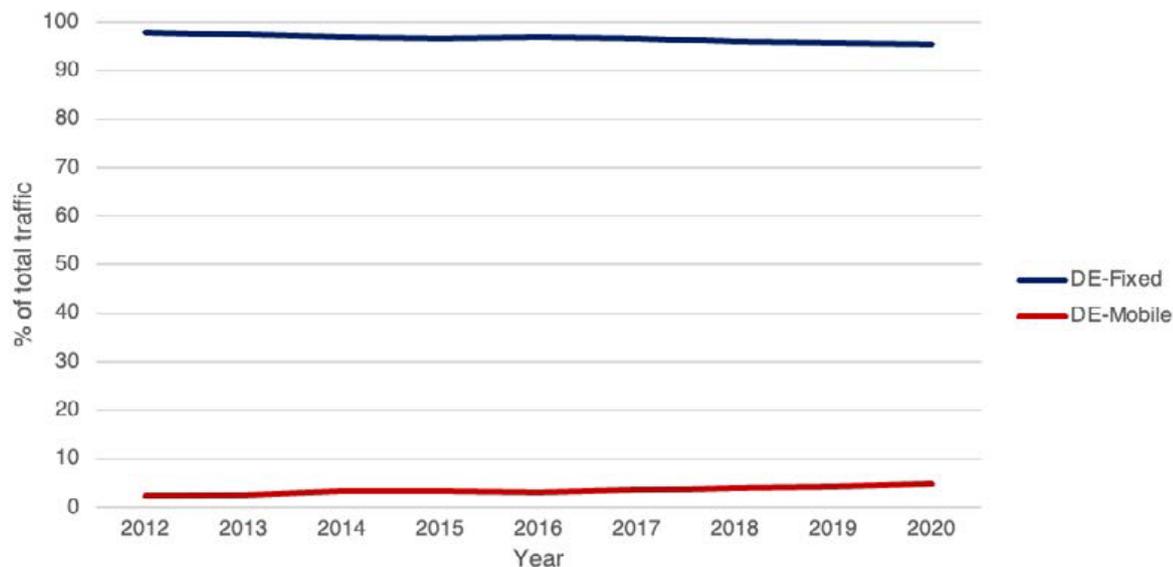
¹ COMMUNICATION FROM THE COMMISSION establishing Union-level projected trajectories for the digital targets (C(2023) 7500 final).

² How do Europeans connect to the internet?. Dynamic Spectrum Alliance, June 2021.

<https://dynamicspectrumalliance.org/wp-content/uploads/2022/06/DSA-WhitePaper-How-do-Europeans-connect-to-the-Internet.pdf>

³ Multiple reports indicate that the volume of mobile traffic is between 3-10%, of which 70-80% occurs indoors (<https://www.ericsson.com/en/blog/2021/11/delivering-consistent-high-performance-indoor-5g-experience>), this would return an average of around 1.48%.

Figure 1: Historical fixed and mobile traffic as % of total traffic. Data source: BNetzA.



What happens after the termination point up to the end-user device - for example, to what extent the Wi-Fi router is capping the fibre speeds subscribed by the end-user - is simply unknown by regulators and users. What we do know is that based on data⁴ from CISCO, Europe has slower Wi-Fi connectivity speeds than other world regions. Misallocation of the 6 GHz band towards mobile networks would not only be a missed opportunity from the end user's perspective but also from the standpoint of the FTTH operators and investors, as it could lead to lower uptake of FTTH networks and stranded private and public investment (especially if used for public institutions, such as universities, schools, dormitories, hospitals, free access in buildings of public authorities, etc.).

While even today WLAN networks may face disturbances resulting from a lack of spectrum particularly in densely populated areas, the EU is at risk of missing out on the next wave of the Wi-Fi revolution powering new applications that will increase data consumption. Unlicensed spectrum plays an important role in 5G networks through network offloading, as well as indoor service for fixed wireless customers. 5G country leaders like the US and South Korea have recognized this fact and firmly bet on the benefits of the next generation of Wi-Fi technologies to their societies by opening the full 6 GHz band to unlicensed use. The US and South Korean cases illustrate that 5G success and sufficient Wi-Fi spectrum go hand-in-hand.

⁴ CISCO Annual Internet Report: <https://www.cisco.com/c/en/us/solutions/executive-perspectives/annual-internet-report/index.html>

Europe needs to ensure that adequate spectrum is available for Wi-Fi.

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Gigabit Wi-Fi requires access to the full 6 GHz band on a licence-exempt basis. While this is about securing spectrum to accommodate future traffic demand it is also about adopting a futureproof vision, enabling the new services of the future, already in the pipeline, for European users. The current European debate is about whether to allocate this band to 5G/6G or to Wi-Fi. While the Wi-Fi ecosystem is ready to use the band as soon as the regulatory framework is in place, the 6 GHz spectrum would not be used at scale by mobile operators before 2030 at the earliest. The 6 GHz band will not help to achieve the 5G coverage 2030 targets - it will only be used to increase capacity in very dense urban areas. This means that Wi-Fi consumers will be deprived of economic opportunities and benefits, while the alleged benefits of allocating the band to mobile use will be perceived, if at all, at least in 10 years and only in limited geographies, thus leading also in a sub-optimal use of the upper 6 GHz band.

A choice to assign the upper part of the 6 GHz band for 5G as opposed to enabling its use for Wi-Fi could also have implications for the environment. Indeed, research confirms that 5G mobile networks are significantly less energy efficient for the same amount of data traffic than FTTH networks.⁵

Also, Wi-Fi in the 6 GHz band is implemented in many products that are already on the European market (e.g., flagship smartphones, laptops, access points, etc.), but these capabilities are impaired because Wi-Fi access to the upper 6 GHz band is precluded. European consumers pay a premium for the latest 6 GHz Wi-Fi enabled products with the expectation that they will experience optimal Wi-Fi performance and advanced features, but, without access to the upper 6 GHz frequency band, Wi-Fi cannot support increased data throughput rates, ultra-low and deterministic latencies, better mobility, and high densities of users/devices. Delaying Wi-Fi access to the upper 6 GHz band harms European consumers and impede technological development. But most importantly, the allocation of the upper 6 GHz band is not a mere question of technology.

Whether the spectrum policies for the next decade fully recognize or not the role of Wi-Fi as a key technology will very much determine EU's ability to innovate and to deliver on its gigabit promise. RSPG members have to be fully aware that deciding on the right enabling framework to unlock full potential of Wi-Fi technology means deciding on the prerequisite for economic, social, cultural and other aspects of life in Europe for the next decades. Most of the around 500 million inhabitants of Europe rely to a large extent and on an everyday basis on data transmission via Wi-Fi technology.

⁵ Sustainability Benefits of 6 GHz Spectrum Policy, WIK Consult, 31 July 2023. <https://www.wi-fi.org/system/files/SustainabilityBenefitsof6GHzSpectrumPolicy202307.pdf>



Full fibre for a digital and sustainable Europe

Their actual and future need for undisturbed, stable and secure connectivity, based on fixed fibre- and Wi-Fi networks must be considered when making this important policy decision.