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# Industry joint position paper on the new Radio Spectrum Policy Programme:

## A call on Europe to promote spectrum policies in support of the next Wi-Fi revolution



## **Industry joint position paper on the new Radio Spectrum Policy Programme: A call on Europe to promote spectrum policies in support of the next Wi-Fi revolution**

The undersigned companies and organisations today state their support for a European spectrum policy that allows European citizens, SMEs and industry at large to benefit from the boost in innovation and step-change connectivity brought by the next generations of Wi-Fi. We stand together convinced of the power of Wi-Fi in conjunction with 5G, fibre, fixed wireless access, and satellite technology to support the EU's secure digital and green transformation.

Gigabit Wi-Fi will contribute to underpin the next generation of industrial and end-user applications that will allow the EU to deliver on its promise to become a digital leader. Although 5G will be a key wireless technology for the EU, future services such as AR/VR, haptic or holography will mainly rely on gigabit Wi-Fi<sup>1</sup>. A simple way of looking at it is thinking of gigabit Wi-Fi as an advanced and powerful technology making it possible for devices to connect wirelessly amongst them with gigabit throughput and low latency capabilities.

The European Commission has announced a review of the EU's Radio Spectrum Policy Programme. We believe this is an opportunity to take stock and address the challenges of the new decade. The EU spectrum policies require to be updated to reflect and fully support the current EU policy objectives with a spectrum dimension, in particular the Digital Decade targets and the Green Deal. The EU must fully consider all the wireless technologies able to contribute to the digital transformation in a secure, cost and energy efficient manner.

This includes Wi-Fi, a technology that has often been overlooked and relegated by European policymakers in their digital and connectivity plans, despite its huge impact in our society. Just try to imagine one day in our lives without the ability to connect your devices at home, in the office, or while travelling abroad - hard and expensive. Wi-Fi is also indispensable to complement and stimulate the take up of the recently deployed FTTH networks. Without appropriate Wi-Fi, these networks will not yield the societal and economic benefits they should.

We call on the European Commission to ensure that the spectrum policy strategy for the next decade properly addresses this shortcoming around Wi-Fi. This would require including indoor wireless connectivity and securing the 6 GHz spectrum band that gigabit Wi-Fi use cases are currently waiting for in order to be unlocked. Firm and swift action in this regard is essential for the EU's digital and global leadership.

### **Need to address spectrum requirements of indoor wireless connectivity**

Today, most traffic generated by Europeans goes through indoor Wi-Fi, with mobile networks only delivering traffic equivalent to 5% of total Internet traffic<sup>2</sup>. Furthermore, approximately 80% of mobile data traffic is generated indoors<sup>3</sup>. The majority of the digital use cases - education, work, entertainment, e-health, e-

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<sup>1</sup> Note that almost none of these devices are SIM or eSIM enabled – they can only use Wi-Fi.

<sup>2</sup> 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>

<sup>3</sup> <https://www.mobileworldlive.com/advancing-indoor-digitalization-towards-5g-advanced/>

government - occurs indoors (home, office, hospital, airports, etc). Outside on-the-go use cases are also critical but, accounting for just over 1% of total traffic<sup>4</sup>, are unquestionably less significant in quantitative terms. Despite these compelling facts, indoors connectivity has been systematically disregarded in the EU and national government's connectivity plans. What happens after the termination point up to the end-user device – for example, to what extent the Wi-Fi part of the router is either able or not to convey the fibre speeds subscribed by the end-user due to spectrum restrictions – is simply unknown by regulators and users. This would not only be a missed opportunity from the end user's perspective but also from the standpoint of the Fiber-to-the-Home operators and investors, as it will lead to lower uptake of those networks.

Against this background, failing to address indoors wireless connectivity is a risk to EU's digital targets. As the EU progresses towards being gigabit (indeed several operators are already offering several-gigabit fibre connections in most Member States<sup>5 6</sup>) and the number of connected devices continues to increase, a connectivity bottleneck is emerging inside the home and the office.

This is especially important as the EU is already missing out on the next wave of the Wi-Fi revolution powering new applications. Licence-exempt 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 upper 6 GHz band to licenced-exempt access. By contrast, the EU is still deciding on the future use of this band. The US and South Korean cases illustrate that 5G success and sufficient Wi-Fi spectrum go hand-in-hand.

### **Need to consider Personal Area Networks**

Innovative services and applications rely on local area communications networks between several personal devices, for example a smartphone communicating with a smartwatch, wireless headphones and smart glasses.

Due to its advanced features (including high bandwidth and low latency), gigabit Wi-Fi will enable a new generation of applications based on Personal Area Networks (PAN). AR glasses, for example, will offload computing operations on a smartphone device connected via a gigabit Wi-Fi link (in the 6 GHz band) - both devices will be part of the same PAN.

PANs have significant potential benefits for EU citizens in critical areas such as e-health, e-aging or next generation internet applications. Although they enable applications that will be key to the EU's digital transformation, governments' digital plans do not always link PANs (like Wi-Fi) to connectivity.

EU spectrum policies that aim at properly supporting the 2023 digital targets must reflect the growing importance of PANs. This means not focusing exclusively on wide area network connectivity but taking into account consumers' and citizens' spectrum requirements as a whole, including personal area connectivity.

### **Need to take a strategic and pro-innovation approach**

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<sup>4</sup> 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%.

<sup>5</sup> <https://www.mobileeurope.co.uk/kpn-to-launch-4gbps-symmetric-broadband-later-this-month/>

<sup>6</sup> <https://www.ftthcouncil.eu/knowledge-centre/all-publications-and-assets/1707/european-ftth-b-market-panorama-2023>

Wi-Fi's has a critical role as an engine of innovation for new services and applications, and the EU's ambition to position itself as a digital global leader necessitates the growth of this technology.

At stake is missing out on the next wave of the Wi-Fi revolution. A future EU with limited Wi-Fi capabilities is a future EU with poorer quality AR/VR, IoT, smart use cases, etc., and in general lower quality indoor connectivity. In particular, European SMEs will miss out on a key technology for their competitiveness if spectrum management constrains the growth of Wi-Fi technology. Wi-Fi gigabit connectivity will only increase in importance with the explosion of IoT applications<sup>7</sup>.

### **Need to make spectrum policies effectively technology neutral**

The new EU spectrum policies must find the right balance between 3GPP/mobile technologies and other wireless technologies such as Wi-Fi.

We truly believe in the importance of 5G/6G for the digital transformation of European society (most of the undersigned entities directly rely on this technology), but we would like to highlight that these technologies on their own cannot address all the connectivity requirements for a digital future. As an example, AR/VR and other applications are not going to run exclusively on mobile technologies, but on both 5G/6G and Wi-Fi. Both 5G/6G and Wi-Fi must be equally enabled.

**The guiding principle should be “whatever the customer and application needs”.** Consumer choice and use case requirements should determine the best technology, rather than regulators deciding the best technology for a certain use case. As an example, while applications that require mobility will rely on 5G/6G, Wi-Fi is better positioned than 5G/6G to provide indoors connectivity - it is not only more affordable (all the home devices relying on the same fibre subscription) but also more energy efficient.

### **Wi-Fi should have an adequate amount of spectrum available**

Gigabit Wi-Fi requires access to the full 6 GHz band on a licence-exempt basis.

It is not about securing spectrum to accommodate future traffic demand, but about adopting a futureproof vision, enabling the new services of the future, already in the pipeline, for European users.

We are fully aware of the current European debate on 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 won't 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 benefits of allocating the band to mobile use will be perceived, if at all, at least in 10 years.

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, literature confirms that 5G mobile networks are significantly less energy efficient for the same amount of data traffic than FTTH networks.<sup>8</sup> Wi-Fi in the 6 GHz band is

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<sup>7</sup> Even if these IoT applications will subsequently backhaul over 5G.

<sup>8</sup> Sustainability Benefits of 6 GHz Spectrum Policy, WIK Consult, 31 July 2023. <https://www.wi-fi.org/system/files/SustainabilityBenefitsof6GHzSpectrumPolicy202307.pdf>



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.

Whether the spectrum policies for the next decade fully recognize or not the role of Wi-Fi as a key wireless technology that requires the right enabling framework to unlock its potential will very much determine EU's ability to innovate and to deliver on its gigabit promise. We call on the European Commission to address this gap in the next review of the spectrum policy strategy.

## List of signatories (in alphabetical order)

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