



10900-B Stonelake Boulevard, Suite 126 • Austin, Texas 78759 U.S.A.
Phone: +1-512-498-9434 (WIFI) • Fax: +1-512-498-9435
www.wi-fi.org

December 27, 2024

VIA ELECTRONIC FILING

CNECT-RSPG@ec.europa.eu

Re: Public Consultation on the Draft RSPG Report on 6G Strategic Vision, RSPG24-030 FINAL

Dear Radio Spectrum Policy Group,

Wi-Fi Alliance is a global industry association representing over 900 leading technology companies involved in the wireless connectivity ecosystem. Wi-Fi Alliance enthusiastically supports the Radio Spectrum Policy Group (RSPG) in its mission to develop effective radio spectrum policies within the European Union and commends the RSPG for its forward-thinking approach to spectrum policy development. Wi-Fi Alliance appreciates the opportunity to comment on the [Draft RSPG Report on 6G Strategic Vision](#) ("*Draft Report*") and is pleased to provide the following recommendations.

Wi-Fi functionality is central to the 6G implementation and policy planning. The *Draft Report* does not fully consider the critical interdependence between 6G and Wi-Fi technologies. 6G is not an end but a component of a larger connectivity ecosystem that includes technologies such as Wi-Fi. To realize its potential, 6G must work in harmony with Wi-Fi, each fulfilling distinct roles that together create a seamless, efficient, and robust connectivity experience. In this regard, Wi-Fi Alliance respectfully asks the RSPG to consider that success of the 6G rollout in Europe depends on:

- *Complementarity*: Wi-Fi and 6G will coalesce to deliver seamless, high-performance connectivity in diverse environments— Wi-Fi provides reliable, cost-effective, and high-capacity connectivity in indoor settings where cellular coverage might be less effective while 6G focuses on outdoor, wide-area coverage.
- *Shared Use Cases*: Emerging use cases like AI, cloud computing, AR/VR, IoT, and industrial automation rely on both local connectivity (i.e., Wi-Fi) and wide-area (i.e., 6G) connectivity for scalability and flexibility. Importantly, many of these use cases require ultra-low latency that wide-area networks alone often cannot achieve. A local network like Wi-Fi is essential for supporting these latencies, enabling real-time interactions and immediate responsiveness.
- *Offloading and Congestion Management*: Wi-Fi alleviates congestion on cellular networks (6G) by offloading data traffic, particularly in high-density areas like cities and venues.

- *Private Networks and Enterprise Applications:* Wi-Fi is often the backbone for private networks in enterprises, education, and healthcare sectors, enabling seamless integration with 6G infrastructure.

Recommendation: The relationship between 6G and Wi-Fi is a critical step in shaping Europe’s connectivity strategy. In developing the 6G Strategic Vision, the RSPG should undertake an in-depth investigation into the relationship between 6G and Wi-Fi to form a holistic understanding of how these technologies complement each other in Europe’s connectivity landscape.

Balanced spectrum policy is key to Europe’s leadership and success in implementation of 6G. With the 6G Strategic Vision, RSPG has a unique opportunity to advance a balanced spectrum policy approach. Europe has traditionally been a leader in telecommunications, but in recent years, there have been concerns about a growing gap between the EU and the US particularly in technological innovation and digital economy.¹ At the core of this issue is a persistent overemphasis on cellular (5G/6G) at the expense of license exempt technologies. Wi-Fi Alliance respectfully calls on the RSPG to correct this imbalance by recognizing the critical role of Wi-Fi in the future 6G networks, particularly regarding the 6.425–7.125 GHz (Upper 6 GHz) band. Wi-Fi access to the Upper 6 GHz band is essential for enabling affordable, high-speed connectivity that will drive the adoption and success of 6G in Europe.

Recommendation: The RSPG should take into account that advanced Wi-Fi performance depends on access to the Upper 6 GHz spectrum (6.425–7.125 GHz) and that there is no alternative spectrum to support the latest (i.e., [Wi-Fi 7](#)) and future generations of Wi-Fi connectivity.

Wi-Fi Alliance supports the RSPG in recognizing sustainability as a guiding principle for 6G implementation.² In this regard, Wi-Fi Alliance calls on the RSPG to recognize inherent environmental advantages of low power 6 GHz Wi-Fi networks. The recent [Sustainability Benefits of 6 GHz Spectrum Policy](#) study offers a methodical analysis of this aspect for the Upper-6 GHz band.^{3/} The study provides clear evidence that empowering Wi-Fi with access to the Upper-6 GHz band spectrum capacity results in a sizeable reduction in energy consumption and corresponding reduction in the CO₂ emissions. In this study, WIK-Consult analyzed two distinct connectivity scenarios. The first scenario assessed the impact of making the Upper-6 GHz band available for Wi-Fi access in Europe. Under this scenario, fiber-to-the-home capacity was not constrained by a lack of spectrum for Wi-Fi, which in turn allowed for sufficient bandwidth to meet advanced indoor

¹ See Questions and Answers by the Commissioner-Designate Henna Virkkunen available at https://hearings.elections.europa.eu/documents/virkkunen/virkkunen_writtenquestionsandanswers_en.pdf; also see Mario Draghi, *The Future of European Competitiveness — Part A: Foreword*, European Commission, 2024, available at: https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en.

² Draft RSPG Report on 6G Strategic Vision, Section 4.3

^{3/} See Sustainability Benefits of 6 GHz Spectrum Policy, by WIK-CONSULT, 31 July 2023 available at [SustainabilityBenefitsOf6GHzSpectrumPolicy202307.pdf \(wi-fi.org\)](https://www.wi-fi.org/publications/sustainability-benefits-of-6ghz-spectrum-policy-202307)

connectivity needs. In the second scenario, WIK-Consult modeled assigning the upper-6 GHz to Mobile networks, which restricted the amount of spectrum available to Wi-Fi. The analysis confirmed that lack of spectrum access reduced Wi-Fi performance and increased data traffic congestion, which in turn drove frustrated consumers from the fiber/Wi-Fi onto cellular networks. The forced transfer in the second scenario resulted in a 15% increased shift in data traffic from fiber/Wi-Fi to Mobile (cellular), resulting in an estimated 16% higher energy consumption. The cellular networks' higher energy consumption resulted in an additional 3.2 megatons of CO₂ emissions per year in Europe alone. Moreover, the 6G networks' higher performance capabilities and deployment densities risk exacerbating energy consumption and its environmental impact.

Recommendation: Integrating low-power, localized solutions into the 6G Strategic Vision is critical for addressing both sustainability and performance imperatives. In this regard, the RSPG should consider Wi-Fi performance which, in turn, depends on the Upper 6 GHz spectrum access.

Respectfully submitted,
/s/ Alex Roytlat
WI-FI ALLIANCE
Alex Roytlat
Vice President of Regulatory Affairs
aroytlat@wi-fi.org