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VIA ELECTRONIC FILING

CNECT-RSPG@ec.europa.eu

Re: Radio Spectrum Policy Group Draft Work Program for 2022 and Beyond - Public Consultation

Dear RSPG Secretariat,

Wi-Fi Alliance commends the Radio Spectrum Policy Group ("RSPG") on its ongoing work in the area of European spectrum planning. The Consultation on the Work Program for 2022 and Beyond ("Consultation") is an important mechanism for soliciting feedback that will provide the RSPG with the information necessary to proceed. Wi-Fi Alliance welcome the opportunity to provide the RSPG with information concerning Wireless Access Systems including Radio Local Area Networks (WAS/RLANs) spectrum requirements for future broadband wireless connectivity services.

Wi-Fi Alliance is a global, non-profit industry association of over 850 leading companies from dozens of countries devoted to seamless interoperability. With technology development, market building, and regulatory programs, Wi-Fi Alliance has enabled widespread adoption of Wi-Fi worldwide, certifying thousands of Wi-Fi products each year. WAS/RLANs using Wi-Fi standards have become increasingly important in connecting people and devices. Hundreds of millions of people rely on Wi-Fi to connect billions of devices every day, and studies show this is increasing rapidly.^{1/} Devices using spectrum that supports Wi-Fi are now the primary means by which France connects to the Internet.^{2/} This central role will only increase in the future, because Wi-Fi technology will be an essential complement to Fifth Generation wireless ("5G") networks, as highlighted by the recently released Cisco VNI Mobile Report showing that traffic offloaded to Wi-Fi will increase with each successive technology generation.^{3/} From 2G to 3G, from 3G to 4G and now moving to 5G, the dependence of cellular networks on Wi-Fi offload continues to increase. It is projected that over 70% of 5G traffic will be offloaded to Wi-Fi by 2022.^{4/} All this data delivered by Wi-Fi-enabled

^{1/} See *Wi-Fi Celebrates 20 Years with More Than 20 Billion Anticipated Device Shipments over the Next Six Years*, ABI Research (Jun. 13, 2019) available at: <https://www.abiresearch.com/press/wi-fi-celebrates-20-years-more-20-billion-anticipated-device-shipments-over-next-six-years/>

^{2/} See CISCO, *Annual Internet Report Highlights Tool*, http://www.cisco.com/c/m/en_us/solutions/service-provider/vni-forecast-highlights.html (select "Rest of Western Europe" from the "Western Europe" drop-down menu and select "Devices/Connections and Applications" ("CISCO VNI") and check "Devices/Connection and Applications"). According to VNI, in Western Europe, there will be 2.8 billion wired/Wi-Fi connected devices by 2023, up from 1.6 billion in 2018 (11.1% CAGR).

^{3/} See Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017–2022, White Paper at 18, <https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-738429.pdf>

^{4/} See Broadcom, *Wi-Fi in the 5G Era*, at slide 24 (2019), https://newamericadotorg.s3.amazonaws.com/documents/Wi-Fi_in_the_5G_Era_-_Broadcom_presentation.pdf.

devices requires spectrum capacity. Wi-Fi Alliance's previously released *Spectrum Needs Study*^{5/} demonstrated that significantly more spectrum access is required to meet immediate connectivity needs in Europe. Wi-Fi-enabled connectivity delivers billions of euros in economic value to the European consumers and enterprises. Indeed, a recent study by Telecom Advisory Services found that Wi-Fi generates over €406 billion a year to the EU economy in 2021, a number expected to grow to €565 billion by 2025.^{6/}

Growing Demand for Wi-Fi Drives the Need for Additional Spectrum Access

The work of the RSPG over the next two years will profoundly affect Europe's ability to achieve its 2030 connectivity objectives, as outlined in the [2030 Digital Compass: the European way for the Digital Decade](#) communication from the European Commission. This communication underscores the central role of gigabit networks in the European digital transition. The European Commission and its member states actively promote this vision through support of gigabit access technology deployment.

The Consultation comes at a pivotal time in the development Wi-Fi ecosystem. Earlier this year, Wi-Fi Alliance introduced new Wi-Fi 6E terminology to distinguish the latest generation Wi-Fi 6 devices that are capable of 6 GHz operation.^{7/} Wi-Fi 6E brings a common industry name for Wi-Fi users to identify devices that offer the features and capabilities of Wi-Fi 6 – including higher performance, lower latency, and faster data rates – extended into the 5925–7125 MHz band. Wi-Fi 6E devices are quickly becoming available, following regulatory approvals in several countries.^{8/} As the 6 GHz regulatory landscape evolves, Wi-Fi Alliance member companies will expand the Wi-Fi ecosystem even further.^{9/} In 2021, over 300 million Wi-Fi 6E devices are expected to enter the market.^{10/} As RSPG is aware, spectrum harmonization creates economies of scope and scale and produce a robust equipment market, benefitting businesses, consumers, and the economy.

Optimal performance of the current (Wi-Fi 6E) and future generations of Wi-Fi depends on access to necessary spectrum. Nothing that the spectrum currently designated for WAS/RLANs use in Europe does not offer sufficient bandwidth to support future Wi-Fi connectivity, Wi-Fi Alliance respectfully asks the RSPG to consider the urgent need for additional Wi-Fi spectrum access. As the RSPG is aware, self-coordinating, multi-channel Wi-Fi networks relying on dynamic random spectrum access and contention-based protocols require access to multiple channels to maintain acceptable performance. Current WAS/RLAN designations cannot support multiple wide-band channels. In this regard, it is important to emphasize that the current Wi-Fi standard (Wi-Fi 6/6E) specifies channel bandwidths of up to 160 MHz, while the next amendment

^{5/} Wi-Fi Alliance, *Spectrum Needs Study* at 23 (Feb. 2017) https://www.wi-fi.org/downloads-registered-guest/Wi-Fi%2BSpectrum%2BNeeds%2BStudy_0.pdf/33364.

^{6/} *Discover Wi-Fi: Value of Wi-Fi*, WI-FI ALLIANCE, <https://www.wi-fi.org/discover-wi-fi/value-of-wi-fi> (last visited Feb. 22, 2021).

^{7/} See Wi-Fi Alliance® brings Wi-Fi 6 into 6 GHz, WI-FI ALLIANCE (Jan. 3, 2020) <https://www.wi-fi.org/news-events/newsroom/wi-fi-alliance-brings-wi-fi-6-into-6-ghz>.

^{8/} See Countries Enabling Wi-Fi 6E at <https://www.wi-fi.org/countries-enabling-wi-fi-6e>

^{9/} See Product Finder, WI-FI ALLIANCE (last visited on Feb. 22, 2021) https://www.wi-fi.org/product-finder-results?sort_by=certified&sort_order=desc&certifications=1335.

^{10/} See Wi-Fi 6E: The Market Opportunity for Wi-Fi 6 in the 6GHz Spectrum Band, IDC Market Presentation (Apr. 2020) <https://www.idc.com/getdoc.jsp?containerId=US46220720>.

under consideration ([Wi-Fi 7](#), Extremely High Throughput) will specify channel bandwidths of up to 320 MHz. These higher bandwidth channels cannot be fully accommodated in the existing 5 GHz and 6 GHz designations.

Conclusion

Policymakers worldwide recognize that wireless connectivity is increasingly dependent on Wi-Fi and that Wi-Fi delivers significant socioeconomic benefits. Regulatory harmonization is essential to ensuring necessary economies of scope and scale to enable commercially viable Wi-Fi ecosystem in Europe. As other countries (e.g., Brazil, Canada, South Korea, Saudi Arabia, US) move forward with WAS/RLAN deployments, timely RSPG action facilitating similar regulatory framework is imperative to enabling wireless connectivity in Europe. Conversely, lack of spectrum access may limit commercial viability of Wi-Fi ecosystem and its socioeconomic benefits. The advantages of a globally harmonized spectrum include commonality of equipment, economies of scale, larger market, increased competition, lower product prices, and a wider choice of products, to name just a few. With a view towards international harmonization, Wi-Fi Alliance respectfully requests the RSPG to add an item dedicated to WAS/RLAN spectrum requirements to its 2022 work program. Europe should formulate the appropriate spectrum policy to support its gigabit connectivity objectives, starting with recommendations for meeting the growing demand for Wi-Fi connectivity.

Respectfully submitted,
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