

Wi-Fi Alliance Response to the RSPG Opinion on Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband

April 25, 2013

I. Introduction

Wi-Fi Alliance hereby provides its comments on the Radio Spectrum Policy Group's draft opinion, "Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband."¹ Wi-Fi Alliance comprises more than 500 manufacturers, service providers, and other companies engaged in both standards development and certification to enable the market for wireless LANs. Wi-Fi Alliance is the entity responsible for interoperability testing of Wi-Fi devices, including those based on the IEEE 802.11 standard. Devices that successfully pass Wi-Fi Alliance interoperability testing earn the right to represent themselves in the market as "Wi-Fi CERTIFIED™," one of the technology sector's most recognized brands in the world. Wi-Fi plays a key role in delivering wireless broadband in residential, enterprise, and public locations throughout Europe and the world. Wi-Fi systems are also deployed by many service providers to deliver wireless broadband services to users. In this comment, Wi-Fi Alliance supports the RSPG's proposal to consider additional bands including 5 GHz unlicensed spectrum in the list of wireless broadband spectrum bands to be further evaluated by the European Commission.

II. Background

On February 20, 2013, the Radio Spectrum Policy Group (RSPG) approved for public consultation a draft opinion identifying candidate spectrum bands for wireless broadband. The consultation is in response to a request from the European Commission. In its request to RSPG, the European Commission noted that the European Council and Parliament have already set an objective of a minimum of 1200 MHz of new spectrum to be made available for wireless broadband to address burgeoning demand.² The European

¹ Radio Spectrum Policy Group, "Draft RSPG Opinion on Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband", RSPG13-511 Rev. 1, dated February 20, 2013. The RSPG advises the European Commission's Directorate-General for Communications Networks, Content, and Technology.

² RSPG Draft Opinion at 3.

Commission asked RSPG to evaluate bands that might be made available in the 2012-2015 timeframe, for which the 1200 MHz target has been established, as well as the longer 2015-2020 period coinciding with Digital Agenda targets for Europe. The RSPG evaluated spectrum from 400 MHz to 6 GHz.

The draft RSPG opinion notes that the European Commission specifically asked for the RSPG's views on shared spectrum, and in particular, extending the allocation of unlicensed spectrum for wireless access systems, known as Radio Local Area Networks (RLANs).³ With respect to unlicensed wireless broadband, the RSPG quotes from a recent European Commission communication -

“[M]ore than half of all smartphone traffic appears to be routed over Wi-Fi networks, and this nomadic traffic is growing 4-6 times faster than mobile traffic. Global sales of Wi-Fi-enabled equipment should have reached 3.5 billion units by 2014. Mobile network operators are also relying on the same licence-exempt RLAN frequencies for data off-loading to increase network capacity, improve coverage in buildings and save costs”, which can be considered as an advantage. According to Analysys-Mason 2012, the proportion of data traffic attributable to Wi-Fi on handsets will rise from 55% to 61%, and on connected mid-screen devices will remain constant at around 82%.⁴

In addition, the RSPG noted that more than half of smartphone data traffic is routed over Wi-Fi networks and this nomadic traffic is growing faster than mobile data traffic. The RSPG draft opinion then recommends that the European Commission construct a strategic plan for spectrum to be utilized for wireless broadband based on the RSPG candidate bands contained in Annex 1 to its draft opinion.⁵ Annex 1 includes several candidate bands adjacent to current license-exempt RLAN bands: 5350-5470 MHz, 5725-5875 MHz and 5875-5925 MHz. The RSPG identifies these bands as potentially available for wireless broadband use in the “medium term”, defined by RSPG as 2015.

III. Views of Wi-Fi Alliance

Wi-Fi Alliance agrees with the RSPG's draft opinion with respect to the 5 GHz candidate bands identified in Annex 1, and recommends that the RSPG include these bands in its final recommendations to the European Commission. In our view, the candidate bands identified in Annex 1 for 5 GHz should be considered as potential bands for license-exempt RLAN use. As RSPG's draft opinion recognizes, license-exempt RLANs are playing an increasingly important role in the delivery of wireless broadband to users. While these are low power technologies that enable a high degree of spectral re-use, existing spectral allocations for license-exempt RLANs do not begin to meet the

³ RSPG Draft Opinion at 4.

⁴ RSPG Draft Opinion at 9 (emphasis in the original).

⁵ RSPG Draft Opinion at 23.

requirements that Wi-Fi Alliance believes are being placed on this technology. For example, the latest iteration of radio technology, standardized as IEEE 802.11ac, uses channels that are 80 MHz or 160 MHz wide, enabling the delivery of multi-gigabit per second throughput.⁶ Among other things, this advanced technology enables the delivery of multiple video data streams. While IEEE 802.11ac technology will take advantage of existing 5 GHz allocations, a contiguous block of available spectrum would greatly improve channelization and efficiency of these state-of-the-art radio systems.

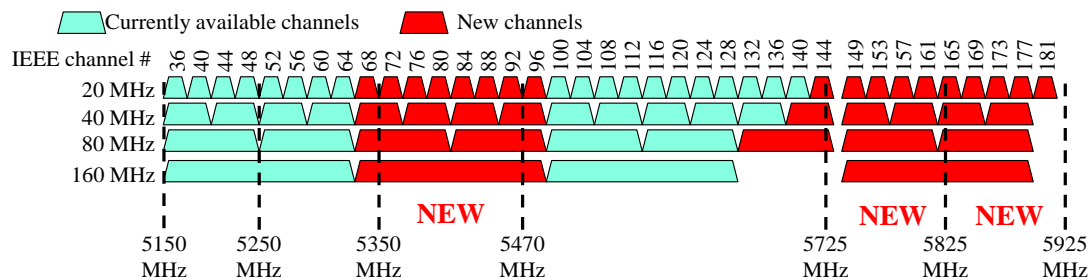


Figure 1: 5 GHz Channels

As the above diagram shows, a contiguous block of spectrum would enable nine 80-MHz channels and four 160-MHz channels. It would also have the effect of adding more channels than what additional spectrum allocation would normally allow. Wi-Fi Alliance believes the availability of contiguous blocks of spectrum would help address an ever increasing user demand for higher bandwidth services and at the same time support the goals for Europe's Digital Agenda with respect to coexistence of multiple license-exempt RLAN systems.

Wi-Fi Alliance is mindful that existing users in the candidate bands must be protected from harmful interference. Wi-Fi Alliance believes the benefits to society of enabling a robust environment for next generation license-exempt RLANs requires regulators to launch an evaluation of these bands for use by RLANs, including an investigation of appropriate coexistence techniques.

Wi-Fi Alliance notes that the draft RSPG opinion discusses the importance of harmonization with respect to reaching economies of scale for wireless broadband spectrum. Wi-Fi Alliance also notes that the United States Federal Communications Commission has opened a proceeding that, among other things, evaluates whether a contiguous block of shared spectrum from 5150 MHz to 5925 MHz can be made available for RLAN use.

In addition to 5 GHz bands, Wi-Fi Alliance recommends that sharing studies of the band 3800-4200 MHz consider broadband wireless access including RLANs.

⁶ IEEE 802.11ac includes many advances in technology, including 256 QAM modulation, up to 8 spatial streams, beamforming, Multi-User MIMO, improved RTS/CTS mechanisms and better CCA energy detection in secondary channels.

In light of the spectrum regulatory changes in other regions for frequency bands below 1 GHz, specifically in Singapore and Japan, Wi-Fi Alliance recommends that the RSPG consider adding license-exempt devices (both short range devices and RLANS) to the allocation in the 921-925 MHz band presently reserved for defense systems and GSM-R.

Respectfully submitted

THE WI-FI ALLIANCE

A handwritten signature in black ink, appearing to read 'Edgar Figueroa', written over a horizontal line.

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