

August 13, 2021

Managing Director
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Re: DSA Comments to the Eastern Caribbean Telecommunication Authority on the Public Consultation on Regional Spectrum Management Plan No. 01/2021.

Dear Sir/Madam,

The Dynamic Spectrum Alliance (DSA¹) respectfully submits its comments in response to the Public Consultation on the Eastern Caribbean Telecommunication Authority (ECTEL) Regional Spectrum Management Plan (“the Plan”).² This regional plan divides the radio frequency spectrum of the ECTEL Member States into several frequency bands and designates the general purposes for which each radio frequency band may be utilized.

DSA respectfully recommends ECTEL Member States to make the 6 GHz band available for license-exempt WLAN use and suggests them consider: (1) dedicating the entire 1200 MHz (5925-7125 MHz) of the 6 GHz band for license-exempt use, taking advantage of the full potential of this band; and (2) authorizing the three categories of license-exempt devices: (i) Very Low Power (VLP) devices, (ii) Low Power Indoor (LPI) devices, and (iii) Standard Power (SP) devices that can operate both outdoors and indoors. The arguments in support of these recommendations will be explained below.

Wi-Fi accounts for over half of total traffic (fixed and mobile) transferred over the Internet³ and generates enormous economic value⁴. As the trend towards mobility continues to increase globally, Wi-Fi is present in our lives providing wireless connectivity inside our homes and offices, but also at public hotspots such as hotels, cafes and restaurants, airports, libraries, or hospitals. Wi-Fi is the local wireless extension of the indoor fixed broadband connection for mobile devices (e.g. smartphone, tablets, laptops, etc) or for (semi)

¹ The DSA is a global, cross-industry, not for profit organization advocating for laws, regulations, and economic best practices that will lead to more efficient utilization of spectrum, fostering innovation and affordable connectivity for all. Our membership spans multinationals, small-and medium-sized enterprises, as well as academic, research and other organizations from around the world all working to create innovative solutions that will benefit consumers and businesses alike by making spectrum abundant through dynamic spectrum sharing. A full list of DSA members is available on the DSA’s website at www.dynamicspectrumalliance.org/members

² Available online at <https://www.ectel.int/consultation-on-ectel-regional-spectrum-plan/>

³ Cisco Visual Networking Index: Forecast and Trends, 2017–2022, available online at <https://davidellis.ca/wp-content/uploads/2019/05/cisco-vni-feb2019.pdf>.

⁴ [Wi-Fi Alliance: Global Economic Value of Wi-Fi® \(2021-2025\)](#).

fixed terminals that are not/cannot be connected to the fixed-line network, for example because the fixed line does not reach all the in-building premises (e.g. smart TV, smart home devices, etc). Although less visible, Wi-Fi is also heavily used by industries to provide connectivity for IoT devices in e.g. smart factories.

Due to the widespread lockdowns, the Covid-19 health crisis has increased time spent on fixed broadband inside our homes. This has further underscored the importance and need for high-quality fixed connectivity (such as fibre) at home, including Wi-Fi, which is the primary way our devices connect to the fixed network. During the Covid-19 lockdowns, many of us have safely continued working, shopping, learning, entertaining, socializing and communicating with our doctors and administrations. This trend will continue once the epidemic is over. The unprecedented increase in data traffic during the pandemic has also exposed the limits of existing Wi-Fi networks, which had not seen any new licence-exempt spectrum released since 2004.

DSA believes that making the 6 GHz band available for license-exempt use opens the band for new technologies and applications while allowing incumbent services to continue to operate. Additionally, it is an important opportunity for ECTEL to support broadband connectivity in the Member States. ECTEL Regional Spectrum Management Plan should explicitly include the development of a framework to ensure that the entire 6 GHz band (5925-7125 MHz) is made available for license exempt technologies. DSA has recently published a whitepaper about the 6 GHz band that answers the question of Why 1200 MHz and why now?⁵. There are several reasons for why ECTEL should pursue this approach:

1. The entire 1200 MHz of spectrum in the 6 GHz band is required to meet the projected demand for mid-band WLANs and other uses. It would also support future Wi-Fi 7 devices feature 320 MHz wide channels. Only one 320 MHz channel is possible if only the lower 500 MHz is made available for a WLAN use. Alternatively, three non-overlapping 320 MHz channels will be supported if the entire 1200 MHz of the 6 GHz band is made available for WLAN. DSA believes that the highest and best use for this band is for Wireless Access Systems including Radio Local Area Networks (WAS/RLAN). WLAN/RLAN are expected to carry offload from cellular 5G technologies (total data offload to unlicensed going from 74% to 79% in 2022).⁶ This will lower the costs of network deployment for mobile operators and for edge investment by neutral host and third-party providers. Importantly, it will also lower costs for consumers.
2. By every measure, the demand for spectrum for RLAN use continues to grow unabated, driven largely by mobile video. RLANs have many unique uses in residential and enterprise settings but also support licensed use. In fact, “Wi-Fi” offloading has increased with each generation of mobile wireless service. According to the Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017–2022 White Paper, Wi-Fi offloading has increased from 30 percent of the traffic for 2G phones to 40 percent of the traffic on 3G phones, 59 percent of the traffic on 4G phones, and is expected to transport 71 percent of the traffic on 5G phones. Even an additional 500 MHz in the 6 GHz will not fully address this demand.

⁵ Dynamic Spectrum Alliance, “6 GHz License-Exempt: Why 1200 MHz and why now?”, August 2021. ([link](#)).

⁶ See Cisco Systems, Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017-2022. ([link](#))

3. As broadband speeds to a residence continue to increase, a bottleneck is starting to appear in the link from the home's Wi-Fi access point to the user's Wi-Fi enabled device, especially in households where there are multiple Wi-Fi enabled devices in operation at the same time. This has become more evident globally during the time of the COVID pandemic.
4. Meeting the increased demand for Internet access in light of the COVID-19 situation. As indicated before, the importance of WAS/RLAN use and substantial amount of Wi-Fi carried traffic has been exemplified during the COVID-19 lockdowns worldwide. The flexibility of Wi-Fi and the benefits it brings to digital economies have proven to be essential during the COVID-19 pandemic.⁷
5. More efficient use of the spectrum. WAS/RLAN can operate in the band while ensuring that existing incumbent services can continue to thrive in the band. The 6 GHz band is allocated to a range of services, including fixed satellite services, fixed services and mobile service with some applications in some countries, such as electronic news gathering. Permitting WLANs and other devices under a license exempt framework in the entire 6 GHz band will not only open the door to innovation by offering extra capacity but can be introduced while protecting and still allowing the incumbent services to grow. Introduction of license-exempt devices will not necessitate a spectrum clearance process which would likely be complex and expensive. License exempt devices will be able to share the band with the incumbents and this will significantly increase spectrum efficiency.
6. As RLANs can work with any backhaul – mobile network, cable, fibre, fixed wireless access, satellite, having all 1200 MHz available will support competition across platforms and providers. There have been important public programs and initiatives to increase Wi-Fi hotspots like it is the case of the WiFi4EU⁸ in Europe, the WiFi4EU initiative aims to provide high-quality Internet access to citizens and visitors across the EU via free of charge Wi-Fi hotspots in public spaces such as parks, squares, administrations, libraries, and health centres. It has revealed a strong and local demand for the expansion of Wi-Fi services in order to foster the local e-commerce economy, support tourism, and increase the availability of local public services to citizens. This type of initiatives occurs not only in Europe or in urban areas. If we refer to remote areas, connectivity and cost-efficiency is best achieved by benefiting from scale inherent in globally adopted Wi-Fi standards, which mean lower cost of coverage for low-population density areas and lower cost of terminals. In ECTEL Member States, additional license-exempt spectrum could help close the digital divide, help connect schools and local businesses and boost industries like tourism.
7. Allowing Wireless Internet Service Providers (WISPs) to deploy gigabit class networks. If all 1200 MHz is made available under a license exempt framework, WISPs can either provide additional bandwidth to each of its customers served by a single base station or cover mover residential customers with each base station.

⁷ See "Covid-19 and the economic value of Wi-Fi. Katz", Jung and Callorda, December 2020.

⁸ See <https://ec.europa.eu/digital-single-market/en/wifi4eu-free-wi-fi-europeans>

8. WRC-23 is considering an IMT identification for 6425-7025 MHz in ITU Region 1 only and 7025-7125 MHz globally. ECTEL Member States are in ITU Region 2. First, there is no way of knowing in advance whether WRC-23 will identify the 6425-7025 MHz band for IMT in Region 1 or 7025-7125 MHz globally. Previous studies conducted between IMT and the Fixed Satellite Service in the 6 GHz did not support coexistence. Whether Advanced Antenna Systems turns out to be the elixir that allows previous views to be significantly changed, is to be determined. Additionally, not all sub-regions and Administrations within ITU Region 1 were supportive of studying the 6425-7025 MHz band for potential IMT identification heading into WRC-19. The DSA expects some of these Administration to pursue making the entire 1200 MHz available for RLAN, 5G NR-U, and other license exempt uses, prior to WRC-23.
9. On the other hand, there is considerable global momentum to make the entire 6 GHz band available for license-exempt use. In the Americas, the United States, Brazil, Canada, Chile, Peru, Costa Rica, Honduras, and Guatemala have already permitted license-exempt use across the entire 6 GHz band. Mexico, and Colombia had consultations that proposed to make the entire 1200 MHz available for license-exempt use. Other Administrations that have permitted license-exempt use across the entire 6 GHz band include the Republic of Korea and Saudi Arabia.
10. Wi-Fi 6E chipsets and products are already available with more than 30 certified devices operating in the 1200 MHz of the 6 GHz band. Last December, the U.S. Federal Communications Commission (FCC) certified the first Wi-Fi 6E chipset⁹ and its first 6 GHz Wi-Fi device.¹⁰ In early January of 2021, the Wi-Fi Alliance began certifying Wi-Fi 6E devices, paving the way for new gadgets that can transmit across the entire 6 GHz band.¹¹ In light of this momentum, the research firm IDC has forecast that more than 316 million Wi-Fi 6E devices will enter the market in 2021 and shipments will rise rapidly over the next three years.¹² So clearly the Wi-Fi 6E ecosystem is ready and will continue to grow at an accelerated pace in the coming months. Enabling license-exempt access to the entire 6 GHz band, ECTEL Member States would benefit from economies of scale and a broad ecosystem of devices available in the region for the entire band.
11. Economic benefits even if there are no licensing fees. Wi-Fi is a highly cost-effective wireless access technology due to ease of installation and user control over the network. According to Intel, the cost of licensing the necessary intellectual property for cellular 5G alone is 3x that of a Wi-Fi chipset, and the entire 5G cellular modem cost is 50x the cost of a Wi-Fi chipset.¹³ Support for a cellular connection can add as much as U.S. \$130 to the retail price of a tablet device. Given that Wi-Fi service providers do not need to participate in auctions to license the spectrum, the technology is a very cost-effective

⁹ See FCC, “Grant of equipment authorization QDS-BRCM1095 ([link](#))”.

¹⁰ See “Chairman Pai Statement on FCC Authorization of First 6 GHz Wi-Fi Device” (December 7, 2020). [DOC-368593A1.pdf \(fcc.gov\)](#)

¹¹ See “Wi-Fi Alliance® delivers Wi-Fi 6E certification program” (January 7, 2021). [Wi-Fi Alliance® delivers Wi-Fi 6E certification program | Wi-Fi Alliance \(wi-fi.org\)](#)

¹² See <https://www.wi-fi.org/news-events/newsroom/wi-fi-alliance-delivers-more-value-from-wi-fi-in-6-ghz>

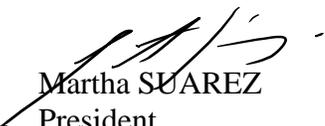
¹³ Source: Eric McLaughlin, General Manager Wireless Solutions Group, Intel during the WBA Congress in Frankfurt in September/October 2019.

form of connectivity. Thanks in part to spectrum harmonization, the global Wi-Fi ecosystem benefits from enormous economies of scale, enabling manufacturers to produce very cost-effective products.

12. The timing when spectrum is made available is critical in spectrum management and determines the success of public policies in the telecommunications sector. DSA carried out a study on the economic value of the license exempt use of spectrum in the 6 GHz band in Brazil¹⁴ and found that accumulated economic value between 2021 and 2030 associated with allowing license exempt access to 1200 MHz in the 6 GHz band amounts to 112.14 billion U.S. dollars in contribution to the GDP, 30.03 billion U.S. dollars in producer surplus (a benefit for Brazilian companies) and 21.19 billion U.S. dollars in consumer surplus (a benefit for Brazilian population). The most interesting aspect is not only this result, which is clearly very specific to the Brazilian case, but the fact that this study shows that not taking actions to open the band in the short term, but for example waiting to do so until 2024, in the case of Brazil, would lead to the loss of this economic contribution and would have an opportunity cost of 16.94 billion dollars.
13. Enabling wireless innovation and new use cases for people and companies (ex. AR/VR). Harnessing the 6 GHz band will improve indoor connectivity and enable the emergence of a new generation of advanced applications and services based on the Wi-Fi 6 standard. It would support demanding personal area network applications, such as transferring data between a smartphone and an AR or VR headset to the benefit of providers of entertainment (gaming, content), industrial applications, eHealth and other services.
14. Immediately realizable benefits. Making the entire 5925-7125 MHz band license-exempt will provide benefits for end users in ECTEL Member States immediately. Wi-Fi 6E deployments could start as soon as the regulations are approved.

DSA appreciates the opportunity to participate in the consultation and to present our views and comments on the Regional Spectrum Management Plan. We are available to discuss these comments and provide any additional information.

Respectfully submitted,



Martha SUAREZ
President
Dynamic Spectrum Alliance

¹⁴ See <http://dynamicspectrumalliance.org/wp-content/uploads/2020/11/1-DSA-Valor-Economico-Usa-Nao-Licenciado-6-GHz-Brasil-1.pdf>