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**INFORMATION DOCUMENT
DSA POSITIONS WRC-23 AGENDA ITEMS**

(Item on the Agenda: 3.1)

(Document submitted by the Dynamic Spectrum Alliance, DSA)

Impact on the sector:

WRC-23 is an opportunity to help ensure that Wi-Fi can grow and meet the user requirements in terms of traffic, innovative applications, and lower costs through preserving economies of scale for the full band. With technology neutrality in mind, DSA encourages CITEL administrations to consider a no change for the 6425 – 7125 MHz band under Agenda Item 1.2, as this provides the most flexible use of the mobile allocation.

Executive Summary:

License-exempt Wi-Fi connected devices are an essential part of broadband delivery and an essential element in enabling businesses to get work done and people to get online in urban, suburban, and rural areas. New Wi-Fi standards such as Wi-Fi 6E and future Wi-Fi 7, need access to the full 1200 MHz of the 6 GHz band to support current and emerging innovative use cases, now and in the future.

The momentum for the deployment of license-exempt Wi-Fi 6E devices continue to grow. As of, July 2023 there were more than 2064 different device models spanning laptop and desktop PCs, mobile phones, tablets, routers, access points, gateways, smart TVs, etc. available commercially. The regulatory momentum is also a reality in the Americas region; just in the last three months, Argentina and El Salvador decided to open the entire 5925-7125 MHz band for unlicensed access.

Introduction

The Dynamic Spectrum Alliance (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. Its 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.

The DSA has long advocated for license-exempt devices, such as WAS/RLAN Wi-Fi devices, to share the entire 5925-7125 MHz with incumbent operations. Wi-Fi devices must protect incumbent operations from receiving harmful interference. Incumbent operations in the 6 GHz band can grow alongside growing Wi-Fi operations. Incumbents would not need to be relocated to other spectrum bands, which is likely the case if certain other technologies were authorized to operate in the upper portion of the 6 GHz band.

Three categories of license-exempt devices that have been authorized to date. They are very low power devices that can operate indoors and outdoors, low-power indoor devices and standard power devices that can operate indoors and outdoors under control of an Automated Frequency Coordination (AFC) system. Administrations that have adopted rules to authorize license-exempt devices to date, have authorized one or more categories of devices.

The technical conditions to protect incumbents from receiving harmful interference varies by category of device. For example, by establishing strict power spectral density requirements, very low power and low power indoor devices can coexist with incumbents. In contrast, high-power standard-power devices may not be able to operate in portions of the 6 GHz band in administrations where there are mobile incumbent operations. Additionally, and of great interest to DSA, standard power devices must be under the control of a cloud-based AFC system, to protect outdoor fixed link operations in the band.

Regulatory Update on License-Exempt Use in the 6 GHz Band

Figure 1 below indicates the global progress toward license-exempt access to the 6 GHz band.¹ It shows countries that have adopted rules for license-exempt use in all 1200 MHz of the 6 GHz band and those countries that have only authorized use in the lower 500 MHz of the band. As of July 2023, more than 60 countries have taken decisions to dedicate additional spectrum in the 6 GHz band for WAS/RLANs applications.

Countries representing more than 40% of the global gross domestic product (GDP) have opened, or have proposed opening, the full 6 GHz band for license-exempt use. This momentum is also a reality in the Americas region; just in the last three months, Argentina and El Salvador decided to open the entire 5925-7125 MHz band for unlicensed access.

¹ [Home - 6 GHz for Licence-Exempt Access](#) (visited on July, 2023).

GLOBAL PROGRESS TOWARDS LICENCE-EXEMPT ACCESS TO THE 6 GHZ BAND

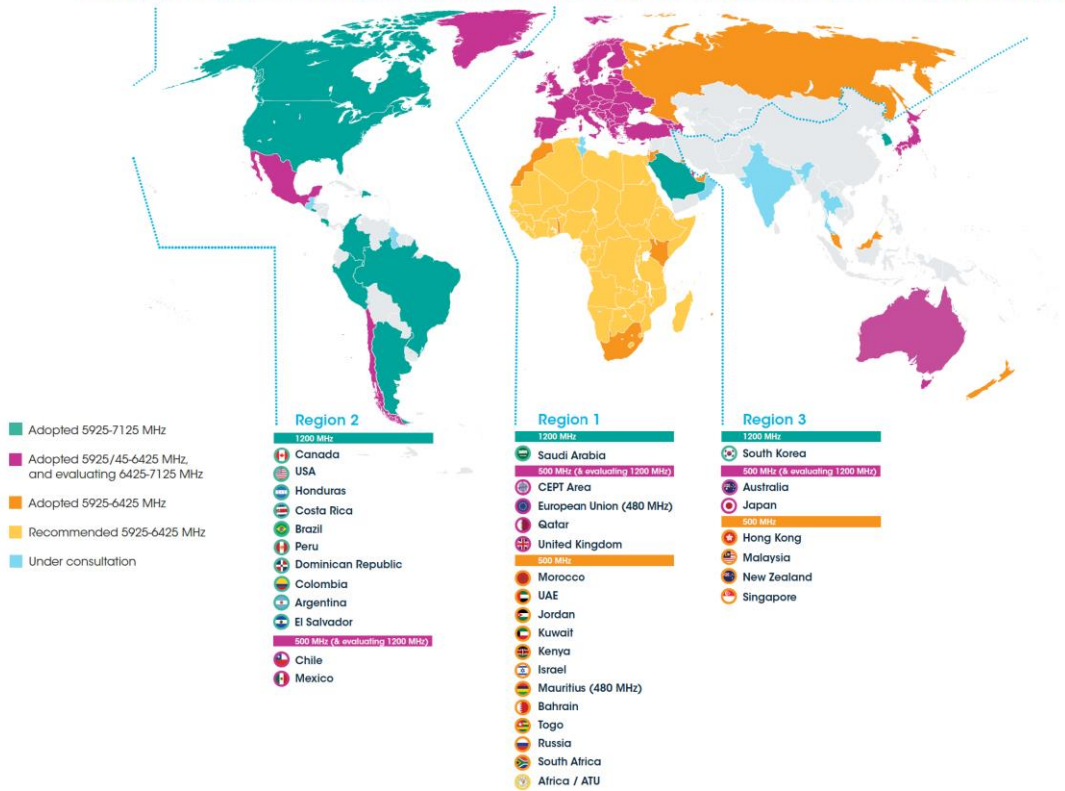


Figure 1: Global Progress Towards License-Exempt Access to the 6 GHz band (As of 23 July 2023)

Wi-Fi 6E Device Update

More than 18 billion Wi-Fi devices were in use in 2021 (360 times as many Wi-Fi devices as were in use when WRC-03 provided access to the 5 GHz band).² IDC forecasts shipments of 3.9 billion Wi-Fi products in 2023 while 2024 will see 6.4% growth to 4.1 billion products. Two thirds of shipments in 2023 will be Wi-Fi 6 or Wi-Fi 6E, and these will continue to expand into more IoT devices as more Wi-Fi 6 chipsets targeting IoT devices hit the market.³ Still according to IDC, eight Wi-Fi-enabled product types will ship over 100 million units in 2023. This number will increase to 11 in 2027 with several more product types getting close to 100 million. Primary client devices – smartphones, media tablets, and PCs – are still a key driver of shipments with around 40% of Wi-Fi shipments in 2023.

As of the July 2023, there were **2064 license-exempt devices** capable of operating across the entire 6 GHz band.⁴ These include PC device models, mobile phone models, routers / access points / gateways, and Wi-Fi enabled television receivers.

Figure 2 below provides a detailed breakdown by category and manufacturer and shows that the Wi-Fi Ecosystem in the 6 GHz band is diverse and is growing rapidly. It is important to highlight that a 2.6x year

² <https://www.wi-fi.org/news-events/newsroom/wi-fi-alliance-2022-wi-fi-trends>

³ IDC report, *Worldwide Wi-Fi Technology Forecast, 2023-2027* (Doc #US50019923)

⁴ Source: Intel. Wi-Fi 6E and 7 device tracking summary is public information compiled by Intel from vendor websites, press releases, and third-party device reviews. Intel provides this assessment for informational purposes only, does not guarantee its accuracy, and it is subject to change without notice.

to year growth was observed from 2022 to 2023. Once an administrator puts in place rules to authorize license-exempt use across the entire 6 GHz band and updates its homologation process accordingly, its residents and businesses can take advantage of the increasing economies of scale.

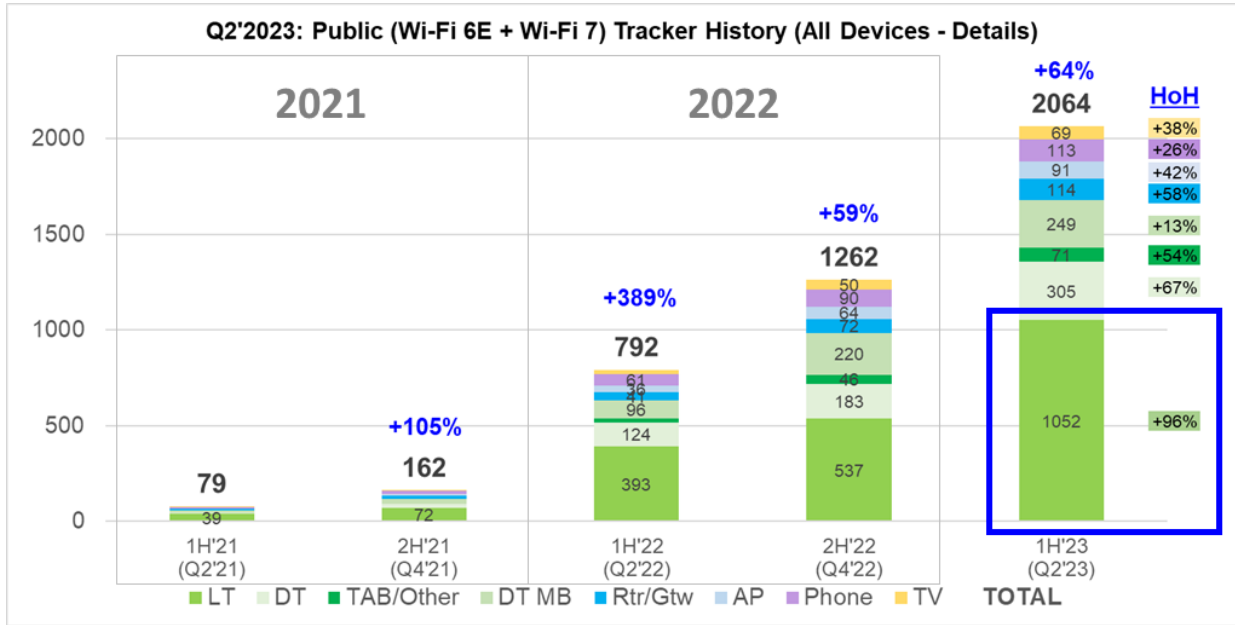


Figure 2: 2Q2023 Public Wi-Fi 6E Tracker History (All Devices)

WRC-23 is an opportunity for the American Administrations to help ensure that Wi-Fi can grow and meet the user requirements in terms of traffic, innovative applications, and lower costs through preserving economies of scale for the full band. With technology neutrality in mind, DSA encourages CITEL administrations to consider a no change for the 6 GHz band under Agenda Item 1.2, as this provides the most flexible use of the mobile allocation.