MEETING OF THE CARIBBEAN SPECTRUM MANAGEMENT TASK FORCE

Industry Stakeholder Engagements

27th and 28th July 2023 (1000 to1400 UTC-4)

Virtual, via Zoom Videoconferencing

DSA

DYNAMIC • SPECTRUM ALLIANCE

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DYNAMIC SPECTRUM ALLIANCE

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.

Regional Process: Agenda Item 1.2 – 6 GHz Band

Agenda Item 1.2: *to consider identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution **245 (WRC-19)**;*

- The Americas at CITEL has been following the preparation cycle for WRC-23.
- United States Proposal for No Change in the 6425 – 7075 MHz band.
- The proposal was supported by Bahamas, Belize, Costa Rica, Colombia, Dominican Republic, [Jamaica], and El Salvador making it an IAP.
- Canada submitted a Preliminary Proposal for No Change in the 7025 – 7125MHz band.
- Other regions are still defining their positions and will have final meetings before WRC-23 in August/September.

Two new administrations opened the entire 6 GHz band for unlicensed access in the last 3 months

- Support for increased access to the 6 GHz band for unlicensed access has showed no signs of slowing. This is certainly true within Argentina and El Salvador, with the full 5925-7125 MHz frequency now available for unlicensed use (Low Power Indoor applications).
- These 2 countries join many others in the Americas region (such as Brazil, Canada, Colombia, Costa Rica, Dominican Republic, United States and others) that will provide more than 254 million households and 78% of the continents' population with reliable connectivity and the tools for further evolution in Wi-Fi technologies.

Assessing the Economic value of unlicensed use of the 6 GHz band in the Caribbean

The objective of this study was to provide an assessment of the economic value to be derived by opening the 6 GHz spectrum band to unlicensed use in the Caribbean. The analysis estimates the impact on service quality, coverage, affordability, and focuses on specific applications and use cases likely to be introduced in the enterprise and consumer markets through devices and favorable technical rules.

Total accumulated value is $ 79.84 billion USD.

Economic value for the 6 GHz band in the Caribbean countries (2022-2031) (in US$ billions)

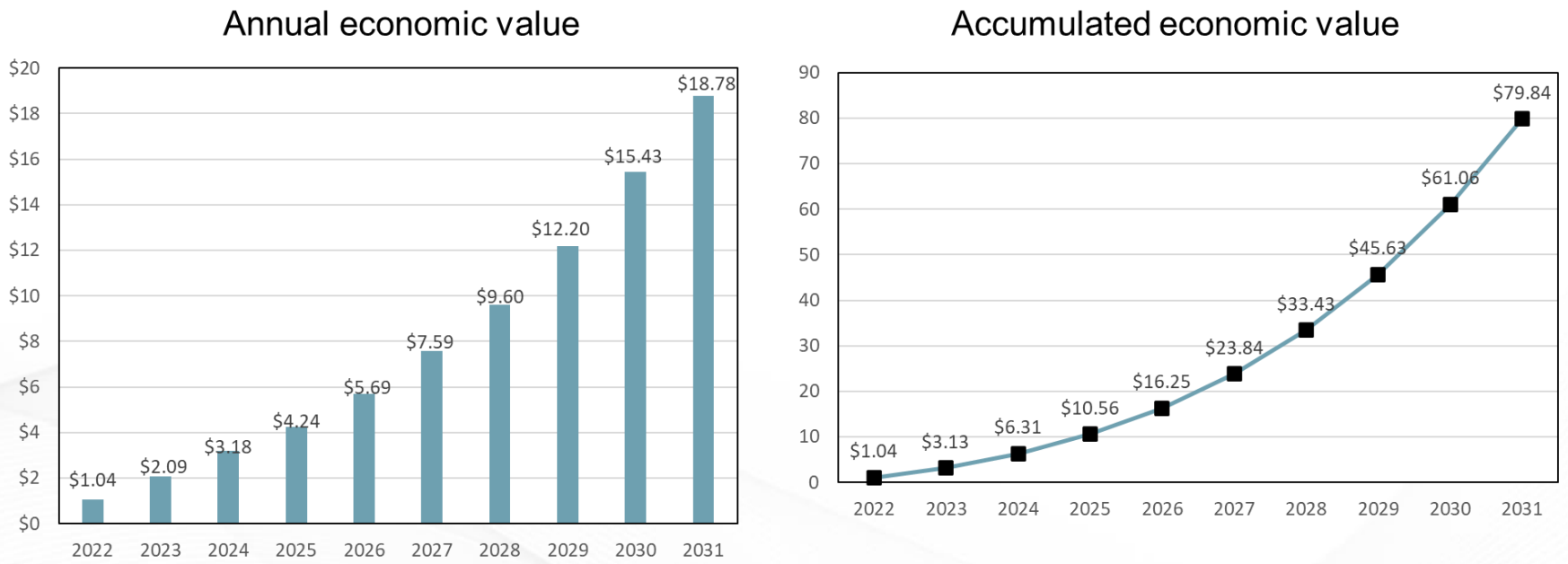
Fuente: Análisis Telecom Advisory Services

Country	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Barbados	$0.12	$0.23	$0.36	$0.48	$0.64	$0.85	$1.08	$1.37	$1.74	$2.11
Belize	$0.11	$0.22	$0.34	$0.45	$0.61	$0.81	$1.02	$1.30	$1.64	$2.00
Dominican Republic	$0.28	$0.57	$0.86	$1.15	$1.54	$2.06	$2.60	$3.31	$4.18	$5.09
Guyana	$0.12	$0.24	$0.36	$0.49	$0.65	$0.87	$1.10	$1.40	$1.77	$2.15
Jamaica	$0.14	$0.28	$0.42	$0.56	$0.75	$1.01	$1.27	$1.62	$2.04	$2.49
Trinidad and Tobago	$0.16	$0.31	$0.47	$0.63	$0.85	$1.13	$1.43	$1.82	$2.30	$2.80
ECTEL countries	$0.12	$0.24	$0.36	$0.48	$0.65	$0.86	$1.09	$1.39	$1.75	$2.13

Assessing the Economic value of unlicensed use of the 6 GHz band in the Caribbean

Caribbean: Economic value of allocating 1200 MHz in the 6 GHz band (2022-2031) (in US$ billions)

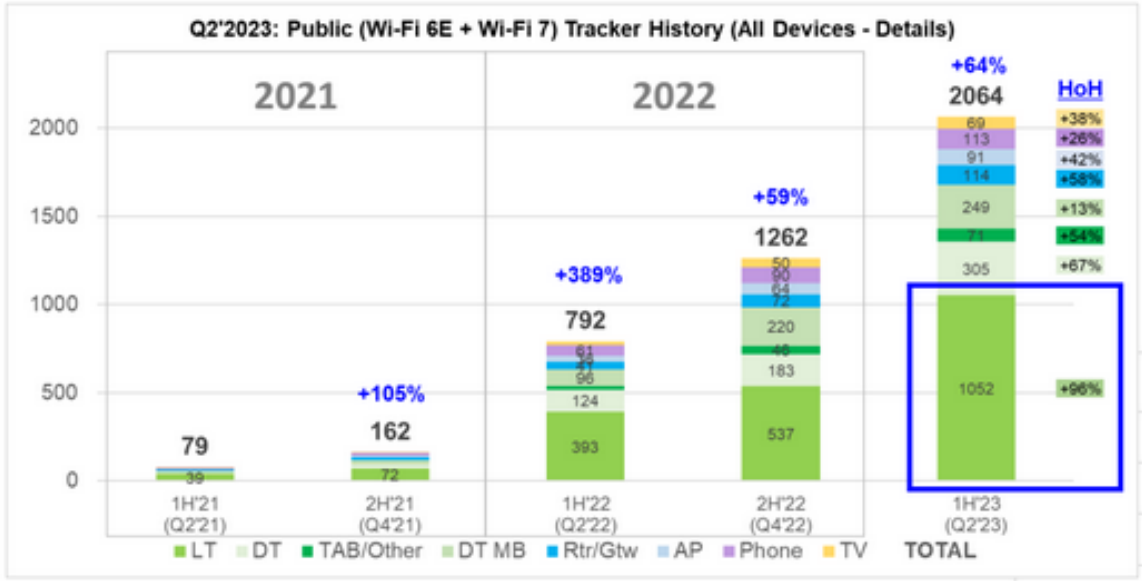
Fuente: Análisis Telecom Advisory Services



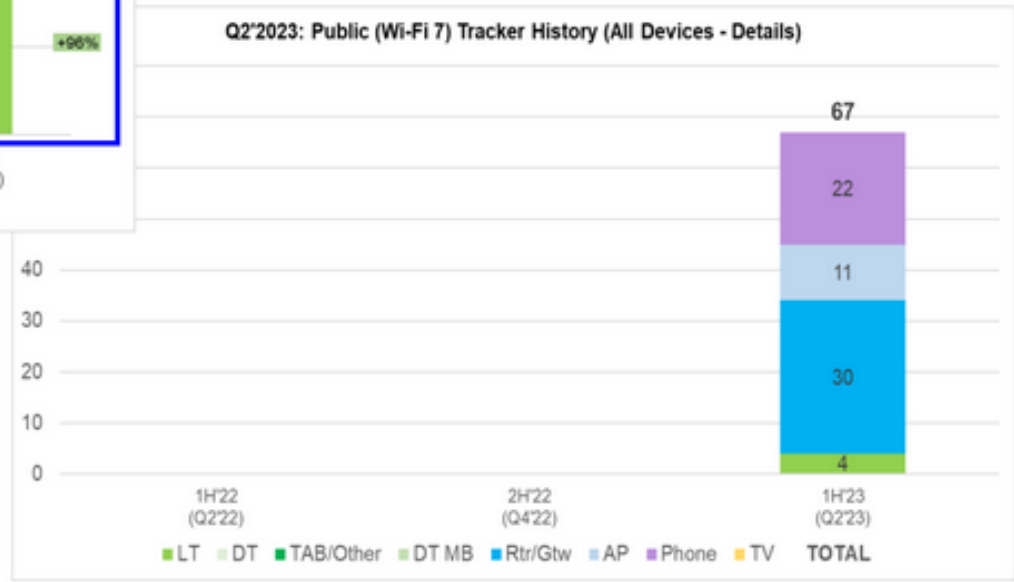
Enabling unlicensed access to the full 1200 MHz of the 6 GHz band in the Caribbean will result in total cumulative value of $ 79.84 billion, while addressing the region's digital divide.

DSA Study available at http://dynamicspectrumalliance.org/wp-content/uploads/2022/06/Assessing-the-economic-value-of-unlicensed-use-of-the-6GHz-Band-Caribbean.pdf

6 GHz-Enabled (Wi-Fi 6 and 7) Product Model Momentum



Wi-Fi Technology is ramping up on its second generation of 6 GHz products.



- **2.6x Year to Year growth from 2022 to 2023**
- **Laptops are the fastest growing Wi-Fi 6E device segment**

Courtesy of 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. Wi-Fi 7 support in devices includes some w/o 6 GHz support.

DSA and its members respectfully request Caribbean Administrations to support the existing IAP for the 6 GHz band and to consider enabling unlicensed access to the entire band

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OTHER RELEVANT MATERIAL

ADDITIONAL SLIDES

CURRENT SITUATION OF THE 6 GHz BAND

- The 6 425 – 7 125 MHz band is already allocated to the mobile service on a primary basis. As a broadly defined service allocation, it affords administrations the flexibility to allow the use of various mobile systems and applications of the mobile service (e.g. electronic news gathering and other video relay and auxiliary services, IMT, RLAN) based on their national priorities and requirements.

- The 6 425-7 125 MHz frequency range is allocated to the fixed satellite service (6 425-7 075MHz), fixed and mobile services and portions of the band are used for Aeronautical Mobile Telemetry (AMT) in Region 2 (No. **5.457C**).

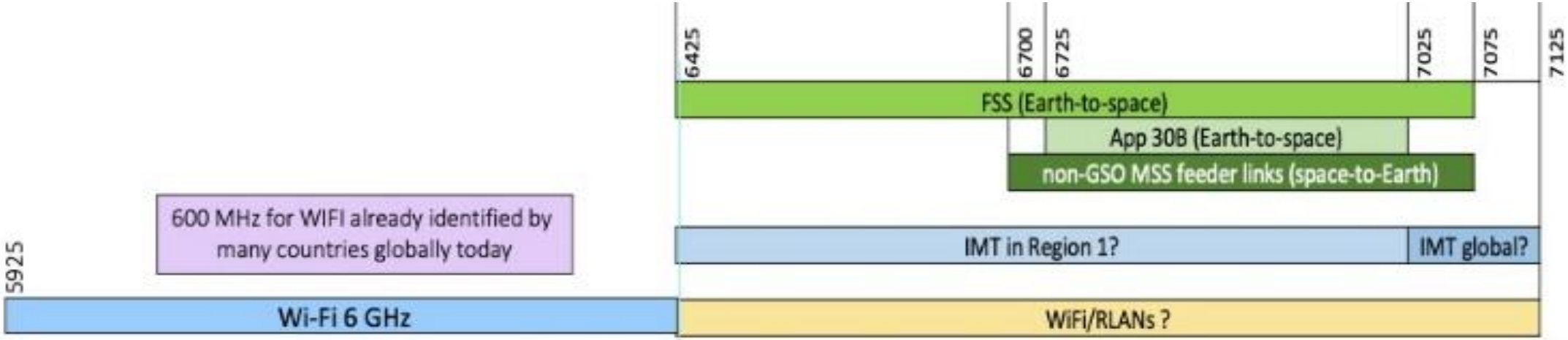
- Fixed services include microwave links of a critical nature deployed by public safety, utilities, rail and IMT backhaul for telecommunications operators. The 6425 – 7025 MHz band is occupied with several microwave links in many Caribbean countries.

- The space-to-Earth allocation to the fixed-satellite service in the band 6 700-7 075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service.

CURRENT SITUATION OF THE 6 GHz BAND

- Regarding the Fixed Satellite Service (FSS) use of the band:
  - 6 425-7 075 MHz: allocated globally to FSS.
    - 6 425-6 725 MHz: allocated to the FSS (Earth-to-space) in all Regions.
    - 6 725-7 025 MHz: allocated to the FSS (Earth-to-space) and subject to the provisions of Appendix **30B** (No. **5.441**). The FSS allotment in 6 725-7 025 MHz is particularly important to the developing countries.
    - 6 700-7 075 MHz: allocated to the FSS (space-to-Earth), limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under No. **9.11A** (No. **5.458B**).
  - 7 025-7 075 MHz: Satellite Digital Audio Radio Services (SDARS) for GEO feeder links in the Earth-space direction to provide audio programming to subscribers in the United States, Canada, and **the Caribbean**.

SATELLITE USE OF THE UPPER 6 GHz BAND



6425-7075 MHz – FSS E-S

- For geostationary uplinks used by large numbers of GSO FSS networks covering all regions, includes Inmarsat use
- *Studies required on*
  1. *Interference from IMT to satellite receivers*
  2. *Interference from FSS earth stations to IMT stations*

6725-7025 MHz - Appendix 30B

- Allocated to the FSS globally and used for FSS as per the provisions of Appendix 30B.
- Objective: to "...guarantee in practice, for all countries, equitable access to the geostationary-satellite orbit..."
- Provides administrations with a preserved orbital slot and frequency allotments.
- *Studies required on interference from IMT to planned national allotments*

6700-7075 MHz - NGSO MSS DL

- Gateway earth stations deployed around the world for NGSO MSS systems (e.g., GlobalStar, OmniSpace, EchoStar Helios)
- Providing voice, data, and Internet of Things globally
- *Studies required on Interference from IMT to receiving earth stations*

Source: Inmarsat

Why opening the full 6 GHz band for unlicensed use is good for the region

Opening the full 6 GHz band for Wi-Fi is good spectrum policy and protects satellite connectivity

- *Considering the importance of satellite connectivity in the Caribbean region, FSS deployments in the 6 GHz could be impacted by IMT deployments in different regions as they can be in the field of view of the satellite beam.*
- *For example, an MSS uplink in the 2.6 GHz band in Region 3 is interfered by IMT usage in Region 1, hence, there is a cross-regional interference that is still pending resolution.*

Wi-Fi in 6 GHz will better serve remote communities, combined with microwave, satellite and FWA backhaul; whereas the potential benefit of 5G in 6 GHz would be limited to marginal additional capacity for dense urban and not serve rural

- *For example, in Europe, 5G base stations represent 23.51% of the total number of 4G base stations, but most of those 5G base stations are using DSS in 4G bands and 5G base stations in the 3.4-3.8 GHz band (for which IMT wants 6 GHz as an extension) only represent 3.61% of the total number of 4G base stations. Whilst there is a sizable 5G deployment in Europe today (about 147,000 5G base stations), the share of 5G base stations deployed in the 3.5 GHz is very limited[1][2].*

The region stands to see economic benefits through low-cost enablement of advanced applications in the Caribbean and bridging the digital divide in remote / isolated geographies

- Enabling unlicensed access to the full 1200 MHz of the 6 GHz band in the Caribbean will result in total cumulative value of 79.84 billion dollars[2], countries making the full band available for Wi-Fi will see greater socioeconomic benefits.

(1) See European 5G Observatory available at https://5gobservatory.eu/observatory-overview/eu-scoreboard/
(2) Study available at http://dynamicspectrumalliance.org/wp-content/uploads/2022/06/Assessing-the-economic-value-of-unlicensed-use-of-the-6GHz-Band-Caribbean.pdf