Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

WIRELESS TELECOMMUNICATIONS BUREAU	)	GN Docket No. 14-177
AND OFFICE OF ENGINEERING AND TECHNOLOGY	)	GN Docket No. 15-319
SEEK COMMENT PURSUANT TO THE	)	GN Docket No. 17-183
SPECTRUM PIPELINE ACT OF 2015	)	GN Docket No. 17-258

Comments of the Dynamic Spectrum Alliance

September 11, 2018

The Dynamic Spectrum Alliance (DSA) is a global organization advocating for laws and regulations that will lead to more efficient and effective spectrum utilization. Our membership spans multinationals; small- and medium sized enterprises; and 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 for through dynamic spectrum sharing. Our primary goals are to: connect the next 4 billion people with broadband access and 100 billion devices; stimulate wireless innovation for next generation broadband; and, accelerate an inclusive digital economy.[1]

On August 10, 2018 the Commission issued a Public Notice seeking comment pursuant to the Spectrum Pipeline Act of 2015. The Act required the Commission to give notice and provide an opportunity for public comment before submitting to Congress no later than November 2, 2018 a report containing:

(1) An analysis of the results of the 2015 rule changes relating to the frequencies between 3550 – 3650 MHz; and
(2) An analysis of proposals to promote and identify additional spectrum bands that can be shared between incumbent uses and new licensed and unlicensed services under such rules and identification of at least 1 GHz between 6 GHz and 57 GHz for such use.[2]

The DSA provides below brief comments on both the 3550 – 3650 MHz band as well as efforts to identify spectrum that can be shared with incumbent and unlicensed services in the 5925 – 7125 GHz (6 GHz) band.

3550 – 3650 GHz:

The Commission's efforts in the Citizens Band Radio Spectrum (CBRS) proceeding has been welcomed by a broad community of entities from across the telecommunications industry as well as other sectors of the economy that recognize the importance of connectivity for their own competitiveness in the 21st Century. The long, diverse and continually growing list of CBRS Alliance members, currently standing at 99 entities, demonstrates the strong support to the FCC's current rules and the broad interest from entities far beyond the large mobile carriers that have historically participated in spectrum auctions in the past.

Despite the strong, multi-sector interest in CBRS, the FCC in 2017 launched a Notice of Proposed Rulemaking (NPRM) to investigate whether rule changes were necessary to stimulate interest and participation in the CBRS band.[3] Pursuant to that NPRM, significant numbers of comments were filed with the Commission, many of them reiterating the broad interest in the band by many parties and the current investment that has already taken place in reliance upon the current FCC rules. The proceeding has made it abundantly clear that there is strong interest in participation in the CBRS band generally, and in future Priority Access Licenses (PALs) from a diverse group of entities, including the mobile carriers, cable, rural ISPs, industrial entities, and the enterprise segment. Although the DSA continues to

[1] For more on the DSA please visit: www.dynamicspectrumalliance.org. A list of the DSA members can be found at http://dynamicspectrumalliance.org/members/.
[2] The Spectrum Pipeline Act of 2015 became public law on November 2, 2015, and was later amended by the Ray Baum's Act of 2018. See Spectrum Pipeline Act of 2015, Pub. L. No. 114-74, § 1008, 129 Stat. 621, 625 (2015) (2015), as amended by the Ray Baum's Act of 2018, Pub. L. 115–141, § 614, 132 Stat. 1080, 1109 (2018).
[3] In the Matter of Promoting Investment in the 3550-3700 MHz Band, Notice of Proposed Rulemaking and Order Terminating Petitions, FCC-CIRC1710-04 ("CBRS NPRM").

believe that proposed changes to the current rules are unnecessary, counterproductive and have created regulatory uncertainty for commercial deployers, the comments that have been filed in the proceeding make clear that PALs must be sized to enable participation from all of these different market segments. In particular, the PAL tier must include some number of small license areas (i.e., census tracts) sufficient to allow opportunities for innovative applications and business models that need such smaller geographic coverage. Failure to do so would undermine CBRS's promise as an innovation band, strand millions of dollars of investment already made in CBRS, and "rig the system" in such a way that only those business models that prefer large license areas could acquire PALs. The Commission has before it a number of different proposals for changes to the PAL rules and we encourage Congress to oversee and ensure a quick resolution of the NPRM such that all entities have an opportunity to participate in the CBRS band, as well as for PAL licenses, not just a favored subset of large national carriers.

Unlicensed Services in the 6 GHz band:

In the FCC's Mid-Band Notice of Inquiry (NOI) proceeding, two of the Commission's goals are to (1) identify additional unlicensed spectrum to address the growing demand, and (2) protect incumbent services from harmful interference. The record in this proceeding has demonstrated a strong demand for unlicensed services in mid-band spectrum and that technical solutions exist to provide incumbent services protection from harmful interference in the 5925 – 7125 MHz (6 GHz) band.[4] The DSA encourages the FCC to move forward rapidly with an NPRM to open this band to unlicensed services and Congress, through its oversight responsibilities, to ensure the critical identification of mid-band spectrum in the 6 GHz band for unlicensed services.

Wi-Fi carries more data today than any other wireless technology, and estimates call for continued rapid expansion in the years ahead.[5] Wi-Fi and other unlicensed technologies also contribute significantly to the Gross Domestic Product of the U.S[6] and were recently estimated to have $834 billion of economic impact in 2020. Despite the clear value and critical importance of unlicensed spectrum, identification of new spectrum bands, particularly in the critical mid-band, have been slow. Indeed, the loss of the proposed "U-NII-2c" band at 5350 – 5470 MHz and continued uncertainty regarding 5850 – 5925 MHz are arguably steps backwards that require bold alternatives such as the 6 GHz band represents. With this backdrop, policy and industry leaders are raising concerns regarding a large shortfall of unlicensed spectrum of between 540 and 1,588 MHz by 2025.[7]

Fortunately, the Commission has raised the opportunity to identify the 6 GHz band for unlicensed services through its mid-band NOI proceeding. The comments filed have shown strong interest from

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[4] RKF Engineering Services, Frequency Sharing for Radio Local Area Networks in the 6 GHz Band (Jan. 2018), as attached to Letter from Paul Margie, Counsel, Apple Inc., Broadcom Corporation, Facebook, Inc., Hewlett Packard Enterprise, and Microsoft Corporation, to Marlene H. Dortch, Secretary, Federal Communication Commission, GN Docket No. - (filed Jan. 26, 2018)(*RKF Study*).

[5] Cisco, Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2016– 2021, 21–22 & fig. 23 (2017), https://www.cisco.com/c/en/us/solutions/collateral/serviceprovider/visual-networking-index-vni/mobile-white-paper-c11-520862.pdf.

[6] Raul Katz, A 2017 Assessment of the Current & Future Economic Value of Unlicensed Spectrum in the United States 4, 28 (Apr. 2018).

[7] Steve Methley & William Webb, Quotient Assocs. Ltd., Wi-Fi Spectrum Needs Study 29 (Feb. 2017) ("[B]etween 500 MHz and 1 GHz of new spectrum will be needed in 2025 to satisfy the anticipated busy hour."), *supra* note 6 at 26.

industry for the 1.2 GHz of spectrum that could be made available, subject to suitable incumbent protections. Mid-band spectrum, due to its propagation characteristics, is uniquely valuable for meeting many of the unlicensed spectrum use cases that are driving additional demand, notably as an expansion of the 5 GHz unlicensed use cases, including WiFi, that already are broadly deployed.[8] Also, with the next generation WiFi standard of 802.11ax, the importance of large carrier bandwidths that would be enabled in 6 GHz becomes even more important to support the broadband services of tomorrow.

Further, a technical study has been filed with the Commission supporting the ability of enabling unlicensed operations in the band while still protecting the current incumbent services.[9] While there has been robust debate in the record on the relatively narrow corner-case of RLAN device transmissions occurring in the main beam of a Fixed Service receiver, there is otherwise broad agreement and a general lack of controversy that marks several other current proceedings. To respond to incumbent concerns, the RLAN industry has recently proposed further ex ante mitigation measures to enable even greater certainty.[10]

The DSA strongly encourages the Commission, and Congress through its oversight role, to move with all urgency to release a Notice of Proposed Rulemaking on the 6 GHz issue.

Respectfully submitted,

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[8] The Commission has made the 57 – 71 GHz band available for unlicensed use but the propagation characteristics of this spectrum does not enable its use for similar use cases (e.g., local area coverage) as does mid-band spectrum. Further, in consultation with the National Telecommunications and Information Administration (NTIA), the Commission announced that they would not pursue efforts to open the U-NII-2B band to unlicensed technologies, resulting in the loss of a potential 160 MHz of spectrum for unlicensed use. *See The Commission Seeks to Update and Refresh the Record in the "Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band" Proceeding*, Public Notice, FCC No. 16-68, 31 FCC Rcd. 6130, 6131–32 (2016)

[9] *See RKF Study*.

[10] Ex Parte from Apple Inc., Broadcom Corporation, Cisco Systems, Inc., Facebook, Inc., Google LLC, Hewlett Packard Enterprise, Intel Corporation, Microsoft Corporation, Qualcomm Incorporated, and Ruckus Networks to Marlene H. Dortch, Secretary, Federal Communication Commission, GN Docket No. 17-183 (filed Jun. 12, 2018).