

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

In the Matter of)	
)	
Use of the 5.850-5.925 GHz Band)	ET Docket No. 19-138
)	

COMMENTS OF DYNAMIC SPECTRUM ALLIANCE

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I. INTRODUCTION AND SUMMARY

The Dynamic Spectrum Alliance (“DSA”)¹ is pleased to submit these Comments in support of the Federal Communications Commission’s (“FCC” or “Commission”) Further Notice of Proposed Rulemaking on the 5.9 GHz band (“FNPRM”).² The DSA strongly supported the Commission’s *5.9 GHz Order* authorizing the indoor use of unlicensed devices in the lower 45 MHz of the 5.9 GHz band while preserving 30 MHz of spectrum for ITS operations. While low-power indoor use during a one-year transition period for DSRC incumbents is an important step forward, our members strongly support the rapid resolution of the remaining issues noticed in the *FNPRM* so that American consumers can fully benefit from this unique opportunity to enable gigabit-fast Wi-Fi using a contiguous 160 MHz channel that is not encumbered by Dynamic Frequency Selection, by geolocation database coordination, or by indoor-only, low-power limitations.³

Authorizing a 160 MHz channel for Wi-Fi 6 for portable devices at power levels consistent with the adjacent U-NII-3 band, both outdoors and indoors, will be a huge boost for home and enterprise connectivity, as well as for expanding the capacity and availability of fixed wireless services in rural and other underserved areas almost immediately. DSA comments here on four important issues consistent with that goal:

¹ The Dynamic Spectrum Alliance is a global, cross-industry alliance focused on increasing dynamic access to unused radio frequencies. The membership spans multinational companies, small- and medium-sized enterprises, academic, research, and other organizations from around the world, all working to create innovative solutions that will increase the utilization of available spectrum to the benefit of consumers and businesses alike. A full list of the DSA members is available on the DSA’s website at www.dynamicspectrumalliance.org/members/.

² See *Use of the 5.850-5.925 GHz Band*, Notice of Proposed Rulemaking, ET Docket No. 19-138, FCC 19-129 (released December 17, 2019) (“NPRM”). All citations herein to comments are to submissions in ET Docket No. 19-138.

³ Comments of the DSA, ET Docket No. 19-138, FCC 19-129 (March 9, 2020), at 2.

First, DSA urges the Commission to take this unique opportunity to authorize portable unlicensed devices to operate at any location in the band at up to 23 dBm EIRP unencumbered by Dynamic Frequency Selection, by geolocation database coordination, or by indoor-only limitations. Extending the U-NII-3 band to create a contiguous channel of 160 MHz available for use by portable devices in any location nationwide, indoors or outdoors, will promote a robust device ecosystem and generate enormous benefits for consumers, businesses, schools, and internet access nationwide.

Second, DSA supports the Commission's proposal to authorize outdoor operations at standard power (36 dBm EIRP) subject to a coordination mechanism to protect federal radar sites. However, DSA opposes any requirement for an automated database system at this time. A streamlined registration and attestation process for operators choosing to deploy outdoors at power levels greater than 23 dBm EIRP will put the band rapidly to use for fixed wireless service in underserved areas with the delay and additional costs of standing up the sort of Automated Frequency Control systems required for outdoor operations in 6 GHz.

Third, DSA strongly supports the Commission's proposal to permit indoor U-NII-4 devices, including devices used for client-to-client communications, to increase power to 23 dBm/MHz or 36 dBm radiated power for all bandwidths upon the conclusion of the one-year period for ITS operations to transition out of the 5.850-5.895 GHz band.

Finally, DSA agrees with the 2016 petitioners, and many other stakeholders in the record, that the Commission should clarify that ITS licensees in the 5.9 GHz band are limited to safety-of-life applications and other strictly non-commercial uses of the band.

II. AUTHORIZING PORTABLE DEVICES TO OPERATE AT A POWER LEVEL OF 23 dBm EIRP OR MORE IN ANY LOCATION, INDOORS OR OUTDOORS, IS ESSENTIAL TO ACHIEVING THE PUBLIC INTEREST BENEFITS OF NEXT GENERATION WI-FI

The Commission's decision last year to reallocate 45 MHz for unlicensed use immediately contiguous to the U-NII-3 band creates the unique opportunity to create new 80 MHz and 160 MHz channels to support 5G-quality, next generation Wi-Fi that is not encumbered by Dynamic Frequency Selection, by geolocation database coordination, or by indoor-only limitations.⁴ At a sufficient and consistent power level both indoors and outdoors, extending the U-NII-3 band to create a contiguous channel of 160 MHz available for use by portable devices in any location nationwide, indoors or outdoors, is of enormous consequence for consumers, businesses, schools, and internet access nationwide.⁵ DSA strongly believes that authorizing portable unlicensed devices to operate at any location at the same power level as permitted in the U-NII-3 (5.725-5.850 GHz) band is essential to achieving the greatest consumer and economic benefits of this proceeding, which will flow from access to a contiguous 160 MHz channel across the combined U-NII-3 and U-NII-4 bands.

Although Wi-Fi routers complying with indoor-only limitations will be far more useful to consumers at the higher proposed power level of 36 dBm EIRP, which DSA also supports, it is crucial that the rules enable the rapidly growing number of portable unlicensed devices to communicate and exchange data in any location at a sufficient power level. A thriving and innovative Wi-Fi device ecosystem depends on it. The development and success of high-throughput and low-latency applications

⁴ See Comments of the DSA at 2.

⁵ See, e.g., Comments of Open Technology Institute and Public Knowledge at 3 ("Critically for U.S. consumers and businesses, reallocating the lower 45 megahertz of the 5.9 GHz band for unlicensed use would create the first and only gigabit-capable Wi-Fi channel that is not subject to the detect-and-avoid requirements that have hobbled the U-NII-2 band").

for use by the typical consumer at home or on the go will depend on a simple, consistent and robust connection between not only Wi-Fi routers and primary devices, such as laptops and smartphones, but also between those devices and the potentially billions of peripheral devices (from wearables to appliances) that they control or engage in data exchange.

Critically, because portable device use cases are constrained in the U-NII bands that mandate Dynamic Frequency Selection, if the Commission permits operations in the 5.9 GHz band both indoors and outdoors at power levels of 23 dBm EIRP—the same power level as permitted in the U-NII-3 (5.725-5.850 GHz) band—unlicensed devices will be able to take advantage of the higher throughput and lower latency made possible by combining the U-NII-3 and U-NII-4 bands. This would create a widely usable, contiguous 160 MHz channel that could support gigabit speeds for the most intensive applications. Conversely, DSA believes that the absence of a single and sufficient power threshold for connectivity to and among portable devices – including smartphones, laptops, peripherals, wearables – will stymie the development of a robust and affordable Wi-Fi ecosystem across the U-NII-3 and U-NII-4 sub-bands, thereby denying consumers of the great benefits that originally inspired this proceeding and reallocation.

Authorizing a power level of 23 dBm in the 5.9 GHz band will also help to compensate for the lower proposed power levels (14 dBm) the Commission has proposed for very low power (“VLP”) devices in the 6 GHz band. VLP devices relying on 6 GHz spectrum, such as wearables used for emerging AR and VR applications, will be at substantial risk of signal attenuation due to body loss, which can significantly degrade a consumer’s experience.⁶ The availability of 160 MHz at 23 dBm in

⁶ See Comments of Facebook at 4-6, ET Docket No. 18-295, GN Docket No. 17-183 (June 29, 2020).

the upper 5 GHz band will be a backup that is likely as well to reduce the density of use in the 6 GHz band for VLP, particularly outdoors.

Following the one-year ITS transition off the lower portion of the 5.9 GHz band, there should be no reason not to authorize portable unlicensed devices to operate at any location at 23 dBm EIRP, including within federal radiolocation exclusion areas. The Commission’s rules currently allow DSRC on-board units (“OBU”) to operate at 23 dBm EIRP without frequency coordination.⁷ As the Commission emphasizes in the *FNPRM* with respect to removing the prohibition on client-to-client devices, “NTIA’s analysis for protecting these 30 radiolocation sites concludes that C-V2X on-board units can operate throughout the U.S. with no limitation . . . [at] power levels up to 17 dBm/20 MHz or 50 mW,” which is equivalent to 23 dBm/ 80 MHz (200 mW) and 26 dBm/160 MHz (400 mW).⁸ For client-to- client devices, the Commission proposes to adopt the same 23 dBm EIRP power limit that will apply to C-V2X on-board units, which must protect the same federal operations.⁹

DSA agrees with this approach, but we also suggest that it can be adopted and extended to *all* portable unlicensed devices in the U-NII-4 band. With respect to potentially harmful interference, there is no meaningful distinction between the transmissions of various portable devices, whether they are unlicensed devices performing a client-to-client data transfer, or devices classified as VLP wearables working in tandem with a smartphone or tablet, or whether they are the inherently portable on-board units that will (in theory) be deployed ubiquitously as C-V2X technology matures. Consumer welfare

⁷ See 47 CFR § 90.377; Letter from Alan Norman, Facebook, Inc. and Chris Szymanski, Broadcom, Inc., to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138, at 3 (Sept. 25, 2020).

⁸ *FNPRM* at ¶ 187, citing “Compatibility of Federal Systems Operating in the 5850-5925 MHz Band with Intelligent Systems and Unlicensed National Information Infrastructure Devices.” National Telecommunications and Information Administration, ITS Deployment and Technical Parameters at 11 (“NTIA Study”).

⁹ *Ibid.*

will be greatly enhanced if all portable devices and applications – including smartphones, VLP and true C2C applications – are all consistently available regardless of location. Moreover, consumer use of Wi-Fi on portable devices is overwhelmingly indoor (90 percent or more),¹⁰ and even outdoors Wi-Fi is frequently used within vehicles that similarly provide a great degree of signal attenuation (unlike OBUs, which are broadcasting outdoors from the vehicle).

Finally, we urge the Commission to adopt a policy that sets the power limit on this category of unlicensed portable devices to be no less than the power level ultimately adopted for C-V2X on-board units. Although the *FNPRM* suggests a tentative conclusion that the 23 dBm EIRP limit proposed in the *5.9 GHz NPRM* is appropriate, the Commission requests comment on 5GAA’s request that the Commission “eliminate the output power requirement and increase the OBU EIRP limit to 33 dBm.”¹¹ DSA believes that this higher limit is particularly appropriate for portable unlicensed devices, which have a duty cycle orders of magnitude less than the OBUs in vehicles. In operating vehicles, C-V2X OBUs are expected to operate continuously at a duty cycle of 1 to 6 percent,¹² whereas Wi-Fi devices operate intermittently and at duty cycles of less than 1 percent due to the protocol inherent in the IEEE 802.11 standard, as the Commission stated in its 6 GHz Report and Order.¹³ In addition, vehicles with OBUs are far more likely to be proximate to federal radiolocation receivers (which are presumably in restricted areas within the control of the entity housing those federal operations).

¹⁰ See, e.g., *Report on the Environment: Indoor Air Quality*, Environmental Protection Agency, <https://www.epa.gov/report-environment/indoor-air-quality#note1> (“Americans, on average, spend approximately 90 percent of their time indoors . . .”). As the Commission has acknowledged, building entry loss results in substantial signal attenuation. *In re Unlicensed Use of the 6 GHz Band*, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 3852, 3895 ¶ 118 (2020) (“6 GHz Report and Order”).

¹¹ *FNPRM* at ¶ 161.

¹² See Reply Comments of Broadcom and Facebook at 4-6, ET Docket No. 19-138 (April 27, 2020).

¹³ [?? – is this correct? Cite?] 6 GHz Report and Order at ¶ ____.

III. EXCLUSION ZONES SHOULD NOT BE NECESSARY TO PROTECT FEDERAL INCUMBENTS FROM OUTDOOR OPERATIONS AT STANDARD POWER AND, IF THEY ARE, AUTOMATED FREQUENCY COORDINATION IS NOT NECESSARY AND WOULD SLOW DEPLOYMENT

In addition to permitting portable unlicensed devices to operate anywhere at 23 dBm, DSA supports the Commission’s proposal to authorize outdoor operations at standard power (36 dBm EIRP) subject to a coordination mechanism to protect “both co-channel federal radiolocation operations (which will remain in the band) and adjacent-band ITS operations.”¹⁴ Although a coordination mechanism that can identify any source of harmful interference to federal incumbents is essential, DSA opposes any requirement for an automated database system at this time. As roughly 200 WISPs and other providers have successfully demonstrated over the past year, operating under Special Temporary Authority (“STAs”), a streamlined registration and attestation process for operators choosing to deploy outdoors at power levels greater than 23 dBm EIRP will put the band rapidly to use for fixed wireless service in underserved areas with the delay and additional costs of standing up the sort of Automated Frequency Control systems required for outdoor operations in 6 GHz.

Soon after last year’s pandemic office and school closures created a sharp increase in home broadband usage, the Commission moved quickly to grant STAs to wireless internet service providers (WISPs) that service 330 counties across 29 states to employ the 5850-5895 MHz band “to help them serve rural communities facing an increase in broadband needs during the COVID-19 pandemic.”¹⁵

Under the STAs, more than 100 WISPs were able to quickly coordinate use of the 5.850-5.925 band

¹⁴ *Id.* at ¶ 169.

¹⁵ FCC News Release, “FCC Grants Wireless ISPs Temporary Access to Spectrum in 5.9 GHz Band to Meet Increase in Rural Broadband Demand During Pandemic; Authority Granted to Dozens of Fixed Wireless Broadband Providers to Support Rural Telework, Remote Learning, and Telehealth” (rel. March 27, 2020)(“WISP STA”).

with DSRC and federal incumbents. WISPs combined the lower 5.9 GHz band with the adjacent U-NII-3 band to increase capacity as much as 75% thanks to manual and lightweight coordination requirements that ensured a greater than 2 kilometer separation from DSRC units and no operations in radar exclusion areas.¹⁶ More than 100 WISPs continue operating today under extended or revised STAs and DSA is not aware of any substantial reports of harmful interference to band incumbents.¹⁷ With ITS incumbents vacating the sub-band, any exclusion zones designated to protect federal radar operations in 30 fixed locations becomes a very static and straightforward challenge that operators seeking to operate outdoors – just like the WISPs receiving STAs – can meet through a streamlined registration and attestation process.

DSA believes there is no need for the extra delay, complications, or costs involved in developing and certifying automated frequency coordination (AFC) systems so long as a simplified and more permanent process for manual coordination meets the needs of what could be a relatively modest number of WISPs and other operators seeking to deploy APs at full power outdoors. The delay and likely higher costs associated with an AFC solution in this band would be particularly inappropriate for the majority of outdoor operators that are not seeking to operate in any of the 30 federal exclusion zones. DSA therefore recommends that the Commission adopt a lightweight and indefinite version of the STA authorization process that has worked so successfully in the lower 5.9 GHz band over the past year.

¹⁶ Joan Engebretson, “WISPs See Speed Bandwidth Boosts as High as 75% Using 5.9 GHz Spectrum,” Telecompetitor (May 5, 2020), <https://www.telecompetitor.com/wisps-see-speed-bandwidth-boosts-as-high-as-75-using-5-9-ghz-spectrum/>; 5.9 GHz Reply Comments of Public Interest Organizations at 23.

¹⁷ These are listed in the Commission’s Universal Licensing System, Radio Code QQ, Authorization Type STA. As of May 6, 2021, 220 STAs are listed, with 112 listed as Active.

The Commission also requests comment on “whether exclusion zones would be the best method for ensuring [the] protection” of federal radar operations.¹⁸ DSA urges the Commission to revisit the need for *any* exclusion zones for unlicensed APs operating at or below 36 dBm EIRP. DSA welcomes the *FNPRM*’s request for comment on 5GAA’s request that OBUs can operate at up to 33 dBm.¹⁹ We support 5GAA’s request and reiterate, as noted in the section above, that the Commission should set the power limit on unlicensed operations to be no less than the power level ultimately adopted for C-V2X on-board units. OBUs are effectively outdoor devices and employ omnidirectional antennas due to their need to broadcast to all vehicles and roadside units in every direction. Moreover, as noted in the previous section, OBUs have a far higher duty cycle than Wi-Fi devices. In operating vehicles, C-V2X OBUs are expected to operate continuously at a duty cycle of 1 to 6 percent,²⁰ whereas Wi-Fi devices operate intermittently and at duty cycles of less than 1 percent due to the protocol inherent in the IEEE 802.11 standard, as the Commission acknowledged in its 6 GHz Report and Order.²¹

IV. THE COMMISSION SHOULD INCREASE THE ALLOWED POWER LEVELS FOR ALL INDOOR U-NII-4 DEVICES TO 36 dBm RADIATED POWER FOR ALL BANDWIDTHS

The DSA strongly supports the Commission’s proposal to permit indoor U-NII-4 devices, including devices used for client to client communications, to increase power to 23 dBm/MHz or 36 dBm radiated power for all bandwidths upon the conclusion of the one-year period for ITS operations

¹⁸ *FNPRM* at ¶ 172.

¹⁹ *Id.* at ¶ 161.

²⁰ See Reply Comments of Broadcom and Facebook at 4-6, ET Docket No. 19-138 (April 27, 2020).

²¹ 6 GHz Report and Order at ¶ 31.

to transition out of the 5.850-5.895 GHz band.²² Authorizing indoor devices to operate at this modestly higher power level is necessary to ensure that the public interest benefits of next generation Wi-Fi—including higher throughput and lower latency—is fully available and affordable in every home, small business, school, and library in the country. A robust power level is particularly beneficial indoors where more than 80 percent of mobile device data is consumed and where consumers rely on Wi-Fi to affordably and reliably transmit the vast majority of that data.

As a number of DSA members stated in their comments supporting a higher power limit for indoor-only use in 6 GHz, “[u]nnecessarily limiting Wi-Fi coverage range means that users either cannot access Wi-Fi in certain parts of their home, small office, or school, or that they must purchase, install, and manage additional coverage extenders or access points.”²³ The current 20 dBm/MHz limit for indoor U-NII-4 access points in effect during the DSRC transition period limits the Wi-Fi coverage area, as well as the throughput in the covered area, resulting in adverse consequences for households and small businesses in particular. If a single router does not have sufficient range to cover an entire home, without the need for signal extenders or additional equipment, insufficient power will deprive consumers—and especially lower-income families—of the full benefits of next generation Wi-Fi.

Finally, following the transition of DSRC out of the U-NII-4 band, there will be no incumbent at risk of harmful interference from indoor-only operations at up to 23 dBm/MHz. As the *FNPRM*

²² *FNPRM* at ¶ 186.

²³ Comments of Apple Inc., Broadcom Inc., Cisco Systems, Inc., Facebook, Inc., Google LLC, Hewlett Packard Enterprise, Intel Corporation, Microsoft Corporation, NXP Semiconductors, Qualcomm Incorporated, and Ruckus Networks, a Business Segment of CommScope (“RLAN Group”), *FNPRM, Unlicensed Use of the 6 GHz Band; Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, ET Docket No. 18-295 and GN Docket No. 17-183, FCC 20-51 (June 29, 2020), at 57-58.

acknowledges, “the proposed limits are consistent with NTIA’s radiolocation protection analysis.”²⁴ In sum, the public interest points solely in the direction of allowing the increased power level of up to 36 dBm EIRP for all bandwidths for indoor-only use.

V. ITS OPERATIONS IN 5.895-5.925 GHz SHOULD BE STRICTLY LIMITED TO SAFETY-OF-LIFE APPLICATIONS AND NON-COMMERCIAL SERVICES

The *FNPRM* requests comment on whether the Commission “should limit use of the 5.895-5.925 GHz band to non-commercial services or safety-of-life applications.”²⁵ DSA agrees with the 2016 petitioners, and many other stakeholders in the record, that the Commission should clarify that ITS licensees in the 5.9 GHz band are limited to safety-of-life applications and other strictly non-commercial uses of the band. DSA strongly supports doing so for several reasons.

First, in light of the evolution of FCC spectrum policy principles during the two decades that the 5.9 GHz band remained parked in idle, there appears to be no justification for giving a particular industry an exclusive grant of free spectrum for commercial use. In 1999, shortly after its decision to allocate the 5.9 GHz band exclusively for ITS, the Commission issued a new statement of spectrum policy principles, stating that “[f]lexible allocations may result in more efficient spectrum markets.”²⁶ In that statement, the Commission conceded that exceptions could be made for public safety and certain other situations “where market forces would fail to provide for the operation of important services.”²⁷

²⁴ *FNPRM* at ¶ 186.

²⁵ *Id.* at ¶ 168; Public Notice, “Consumer & Government Affairs Bureau Reference Information Center Petition for Rulemaking Filed,” RM-11771 (July 25, 2016).

²⁶ Policy Statement, Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium, 14 FCC Rcd 19868, 19870 (rel. Nov. 22, 1999) (“1999 Reallocation Order”), at ¶¶ 9, 11, available at [https://transition.fcc.gov/Bureaus/Engineering Technology/Orders/1999/fcc99354.txt](https://transition.fcc.gov/Bureaus/Engineering%20Technology/Orders/1999/fcc99354.txt).

²⁷ *Id.* at ¶¶ 9, 11.

Later, in its 2002 *Spectrum Policy Task Force Report*, the Commission reiterated this principle and emphasized that exceptions made for public safety or other public interest allocations should be narrowly defined “*and the amount of spectrum . . . limited to that which ensures that those [compelling public interest] objectives are achieved.*”²⁸ In 2010 *National Broadband Plan*, the Commission again reiterated the rationale for its move away from special-purpose grants of spectrum to flexibility and general-purpose networks.²⁹

Second, if the auto industry intends to deploy commercial services that do not require quality of service guarantees (e.g., in-vehicle infotainment, display advertising, navigation assistance), it is now fortunate to have ready access to multiple and far higher-capacity channels of unlicensed spectrum at the same (or similar) power levels in the U-NII-3/4 bands. And if the auto industry intends to deploy commercial services that require exclusive-use spectrum, C-V2X is designed to operate in coordination with general purpose 5G mobile networks. Indeed, 5GAA acknowledges that the C-V2X protocol provides an evolutionary path to 5G (and future generations of mobile carrier technology), networks that can and should be used to carry the commercial applications and services that are not directly related to safety-of-life.³⁰

²⁸ *Report of the Spectrum Policy Task Force*, ET Docket No. 02-135, at 41 (Nov. 2002), available at http://sites.nationalacademies.org/cs/groups/bpaside/documents/webpage/bpa_048826.pdf; Report of the Spectrum Policy Task Force, ET Docket No. 02-135 (Nov. 2002), available at http://sites.nationalacademies.org/cs/groups/bpaside/documents/webpage/bpa_048826.pdf (“Task Force Report”).

²⁹ Federal Communications Commission, “Chapter 5: Spectrum,” *National Broadband Plan: Connecting America*, at 75 (2010), <http://download.broadband.gov/plan/nationalbroadband-plan.pdf> (“where there is no overriding public interest in maintaining a specific use, flexibility should be the norm” and that “the failure to revisit historical allocations can leave spectrum handcuffed to particular use cases and outmoded services, and less valuable and less transferable to innovators who seek to use it for new services.”)

³⁰ See 5G Automotive Association Petition for Waiver, GN Docket No. 18-357 (filed Nov. 21, 2018) at 12. (“5GAA Petition”) <https://ecfsapi.fcc.gov/file/11212224101742/5GAA%20Petition%20for%20Waiver%20-%20Final%2011.21.2018.pdf>.

Finally, there is a conspicuous disconnect between industry claims that 30 MHz is an insufficient amount of spectrum for vehicular safety applications and the industry's special pleading for the continued ability to use that same 30 MHz to support commercial, non-safety applications and services. The Commission should ask how much extra spectrum capacity will be available in 5.895-5.925 MHz band to support commercial services. Also, because it's unknown at this point whether the Department of Transportation will revisit its abandoned NPRM that proposed to mandate V2V radios in all new vehicles, the most prudent course would be to ensure that the Commission does not create incentives for the auto and mobile industries to preempt future safety mandates or needs by occupying ITS spectrum with commercial applications or services.

VI. CONCLUSION

DSA strongly supported the Commission's *5.9 GHz Order* and appreciates this opportunity to optimize use of this additional 45 MHz of unlicensed access for consumers, enterprise and the U.S. economy. While low-power indoor use during a one-year transition period for DSRC incumbents is an important step forward, our members strongly support the rapid resolution of the remaining issues noticed in the *FNPRM* so that American consumers can fully benefit from this unique opportunity to enable gigabit-fast Wi-Fi using a contiguous 160 MHz channel that is not encumbered by Dynamic Frequency Selection, by geolocation database coordination, or by indoor-only, low-power limitations.

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We look forward to working closely with the Commission to rapidly finalize outstanding issues and fully realize the potential public interest benefits of a contiguous 160 MHz across the U-NII-3 and U-NII-4 bands.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'MS', is written over a horizontal line. The signature is stylized and cursive.

Martha SUAREZ
President
Dynamic Spectrum Alliance