

May 20, 2019

VIA ECFS

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

RE: Notice of Ex Parte Presentation, *Promoting Investment in the 3550-3700 MHz Band, GN Docket No. 17-258; 3.5 GHz SAS and ESC Applications, GN Docket No. 15-319; Unlicensed Use of the 6 GHz Band, ET Docket No. 18-295; Expanding Flexible Use of the 3.7 GHz to 4.2 GHz Band, GN Docket No. 18-122; Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz, GN Docket No. 17-183*

Dear Ms. Dortch:

On May 16, 2019, representatives of Federated Wireless, Inc. (“Federated Wireless”), including Kurt Schaubach, Chief Technology Officer, and Jennifer McCarthy, Vice President, Legal Advocacy, together with their counsel Jennifer Richter and Shea Boyd of Akin Gump Strauss Hauer & Feld LLP, met with Aaron Goldberger, Wireless Advisor to Chairman Pai, Umair Javed, Wireless Advisor to Commissioner Rosenworcel, and Will Adams, Wireless Advisor to Commissioner Carr.

Federated Wireless discussed the imminent commercial success of the Citizens Broadband Radio Service (“CBRS”) at 3550-3700 MHz. Excitement is building around the launch of CBRS and the efficiencies that spectrum sharing technologies are bringing to spectrum management, and with good reason. Initial Commercial Deployment (“ICD”) in the CBRS band, with thousands of sites, will immediately follow approval of the final Spectrum Access System (“SAS”) lab test report. Federated Wireless commends the Institute for Telecommunication Sciences (“ITS”) for its diligence in completing the SAS lab testing phase and looks forward to receiving the authorization to enter ICD in the coming weeks. Federated Wireless has already received approval for its environmental sensing capability (“ESC”) network, and stands ready to integrate and begin operations later this summer. Federated Wireless and its many industry partners eagerly await the opportunity to deploy CBRS spectrum and SAS technology, confirming the efficiency and effectiveness of spectrum sharing in the CBRS frequencies and beyond, as envisioned by the Commission.

Federated Wireless and Commission staff discussed the prospect for leveraging the coordination, development, and momentum of the CBRS band by expanding similar sharing frameworks and technologies to other frequency bands, tailored to the needs of each band. As the Commission is well aware, mid-band spectrum is, and will continue to be, essential to success in 5G. Expanding sharing frameworks to other bands will serve the Commission and industry well, whether as a transitional mechanism that can make unused spectrum available immediately while transition efforts proceed in parallel, or as a more permanent solution that

protects incumbent operations and maximizes intensive use of available spectrum resources. By leveraging the technology initially developed for the CBRS band, the Commission can *rapidly* make available hundreds of MHz of spectrum for more intensive commercial use in a matter of months, not years.

A similar sharing framework to CBRS makes particular sense for the 3.45-3.55 GHz band, which is immediately adjacent to the CBRS band. The 3.45-3.55 GHz band has similar federal incumbency issues and propagation characteristics that would enable easy expansion of the SAS from the CBRS band to 3.45-3.55 GHz. Additionally, many of the same incumbent parties that now have relationships with the CBRS community are present in the 3.45-3.55 GHz, further easing the understanding and adoption of sharing in this band and speeding time to market for important mid-band spectrum.

At 3.7-4.2 GHz (“C-band”), sharing could serve as a transitional mechanism to rapidly put valuable spectrum in the hands of commercial operators and jump-start the equipment and device ecosystem as the Commission and the market explores and implements a longer-term transition of the band. As Federated Wireless has previously explained, shared spectrum technologies, such as the SAS utilized in CBRS, can manage both disparate uses of the C-band in the near term, and transition of the band to flexible use over the longer term, all while minimizing interference and protecting important incumbent operations. The strength of dynamic spectrum sharing lies in its ability to adapt quickly: as spectrum is cleared, incumbent protection parameters can be changed easily to facilitate spectrum access. This capability, made possible through simple updates to software code, will allow new operations to commence during the transition, in real-time, avoiding delays associated with waiting for a “critical mass” of spectrum to be cleared before ramping up new flexible use operations.

Federated Wireless also noted that the Commission should begin to consider and proactively address the potential for bi-directional interference at the CBRS/C-band border. Without steps to reduce the potential for interference, higher power commercial wireless operations in the C-band may interfere with lower power General Authorized Access (“GAA”) CBRS devices at the top of the CBRS band. Similarly, C-band operations at the lower end of the band may experience aggregate interference from numerous low-power GAA devices. Federated Wireless is currently exploring the issue further but discussed a number of possible solutions, including a stepped out-of-band emission mask, a private database coordination mechanism, or relocating the Priority Access Licensees (“PALs”) to the top of the band to facilitate the natural incentives for licensees to coordinate their operations that is present at other band borders. Federated Wireless looks forward to submitting a more detailed analysis and proposal on this issue.

Over the past year, Federated Wireless has been investing in the development of an automated frequency coordination (“AFC”) prototype that meets both the present and future needs of incumbent licensed and newly authorized unlicensed users in the 6 GHz band. Federated Wireless is eager to demonstrate this fully functional prototype in the very near term. Federated Wireless is confident that an AFC based on a simplified version of the technology employed in CBRS is an ideal solution for the 6 GHz band, offering incumbents assurances that they will be fully protected while also ensuring that new unlicensed users are able to maximize access to critical new bands as quickly and as efficiently as possible. As discussed with Commission staff, it has become increasingly clear to Federated Wireless that all unlicensed

devices must be registered. Registration of devices need not be burdensome or time consuming and will provide a necessary failsafe to address those edge or corner cases that might result in interference to incumbent operations.

Extension of the tools developed in the CBRS band to adjacent bands as well as 6 GHz will enable swift access to critical 5G spectrum. Unlike the early days of CBRS, these tools have already been developed and can easily be modified or “slimmed down” as necessary to address the specific issues of each band. As the Commission well knows, the transition of bands to new users is time consuming, and spectrum sharing presents an opportunity to more intensively use spectrum without the transition delays that have plagued many bands in the past.

Should you require any additional information, please contact the undersigned.

Respectfully submitted,

/s/ Jennifer M. McCarthy

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