

April 15, 2020

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Notice of Ex Parte Presentation

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

Re: Unlicensed Use of the 6GHz Band (ET Docket No. 18-295); Expanding Flexible Use in the Mid-Band Spectrum Between 3.7 and 24 GHz (GN Docket No. 17-183).

Dear Ms. Dortch,

On April 14, 2020, George Kizer, President & Board Member; Joseph Sandri, Vice President & Board Member, and James McPherson, Coordinator; from the National Spectrum Management Association (NSMA) met telephonically with FCC Chairman Ajit Pai. The discussion related to the over 100,000 microwave 6 GHz backbone and backhaul links deployed nationwide, the status of testing to insure their safe continued operation, propagation modeling, and resolving harmful interference scenarios.

NSMA reviewed its October 2, 2019, written *ex parte* comment which noted that its 6 GHz audit of the FCC Universal Licensing System (ULS) showed that the “vast majority of licensed systems are mission-critical.”¹ That NSMA filing provided a map showing that incumbent deployments covered all 50 states and Puerto Rico. NSMA recommends that, especially during this time when the nation is heavily reliant on these exact mission-critical networks (utility management, state police networks, national mobile networks, medical transport, medical facilities connectivity, wireless and wireline backbone and transport etc.), it is a requirement that well-known, actual-deployment, spectrum management tests be conducted well *prior* to confirming rules for comprehensively launching additional services or systems in those same channels and geographic locations. Experience shows that live tests often produce data that is useful in validating designs and also on multiple occasions reveals new-data or anomalies that were not anticipated by table-top exercises or by non-peer-reviewed tests.

Test Facilities:

The necessary testing facilities are readily available at locations like the federally-managed Idaho National Labs (INL) spectrum test bed, which is specifically designed to assess under real-world

¹ NSMA October 2, 2019 *ex parte* at pp 3-6. (Exhibit 1).

conditions whether mission-critical systems serving national infrastructure can safely collocate with other systems.²

Such tests should be conducted within the peer-review process and with transparency and the material input of all existing and proposed system services. The peer-review process provides the ability to validate proposed designs, gather empirical evidence, and avoid subjecting the nation's infrastructure to experimentation. A variety of (i) best-case and (ii) worst-case scenarios, as defined by the incumbent and the unlicensed parties, are recommended for the tests.

The availability of 6 GHz incumbent devices is confirmed. The ability to make available for testing the various iterations of proposed unlicensed 6 GHz devices is also necessary for conducting industry-standard live testing. That will bring more empirical data to the record. Facilities exist at INL in Idaho and Utah, and in the Washington, DC area. Numerous incumbent 6 GHz incumbent facilities in various locations across the country, especially those that are being temporarily off ramped for tower replacements, scheduled maintenance, facilities renovations, etc., could be potential, supplemental live test bed locations as well.

Federally-managed test beds and test protocols could make certain that operations records are continuously recorded, that difficult to replicate scenarios are transparently available to all parties for peer-reviewed analysis, that professional spectrum management and coordination protocols are verifiably observed, and that all parties can remove uncertainty from their operations plans. Validation of safe deployment and operations plans can occur which benefits all parties involved.

Precedents of large-scale introduction of new devices:

Precedents of large-scale introduction of new unlicensed or new service devices are instructive. In some instances, the 2400-2483.5 GHz band saw large-scale deployment of unlicensed devices while certain, low-unit volume licensed systems remained in operation in certain (typically rural areas). That scenario did not involve heavily occupied incumbent microwave networks. One scenario in which large-scale licensed, mission-critical transport, backbone and backhaul networks were set for exposure to ubiquitous deployments by a new service, such deployments took place over a decade-long timeline and allowed for very careful exclusion zones and ultimately replacement of the transport, backbone and backhaul services under closely negotiated terms. See for example, the Spectrum Refarming Proceeding (PR Docket 92-235) at 2 GHz.

It is also instructive that the 5 GHz Unlicensed National Information Infrastructure (U-NII) device deployments resulted in a string of Notices of Apparent Liability (NALs) and related enforcement actions due to interference with Federal Aviation Administration (FAA), Military and privately-owned TV weather radar systems. The policing of those interference events taxed FAA and FCC resources and also

² Idaho National Laboratory, Improving Wireless Communication, Reliability and Security, Wireless Testing, <https://inl.gov/research-programs/wireless-research/>

caused instability in mission-critical scenarios. In the 5 GHz case there were at least 53 separate FCC enforcement-related actions³.

Propagation Models; Duty Cycle Definitions; and Untested, Large-Scale Harmful Interference Scenarios:

We strongly recommend that propagation models not be specifically defined within the Commission's rules, but instead be defined in a Public Notice or Knowledge Database (KDB) issuance. The industry will certainly learn much about appropriate propagation models during testing and early deployments and updating the models will be much easier if they are not hard coded into the rules.

We discussed how there is no proven peer-reviewed testing that unlicensed devices are outfitted with contention-based protocol systems that are sensitive enough to "hear" incumbent microwave signals. We also discussed the need for defining duty cycle limitations. Additional details regarding harmful interference concerns that were noted as requiring testing were placed on the record in NSMA's *ex parte* filing of April 14, 2020 (Exhibit 2).

About NSMA:

NSMA is a voluntary international association of microwave radio/wireless and satellite frequency coordinators, licensees, manufacturers, and regulators. Established in 1984, the Association provides a forum to develop industry guidelines for efficient use and management of the frequency spectrum by the wireless telecommunications community. <https://nsma.org/>

NSMA provides a linkage between government regulations and industry practice by developing recommendations that streamline and standardize procedures used by the frequency coordination community. We strive to provide an open forum for stakeholders to mold responsible spectrum industry practice and resolve conflicts.

Sincerely,

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Enclosures

³ U-NII and TDWR Interference Enforcement, DA 12-459, September 27, 2012, Enforcement Advisory No. 2012-07, <https://www.fcc.gov/general/u-nii-and-tdwr-interference-enforcement>