



August 8, 2019

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, D.C., 20554

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

Dear Ms. Dortch,

On August 7, 2019, representatives of iPosi, Inc. ("Company"), President Richard Lee and Senior VP Engineering Christopher Kurby, met at the FCC with officials from OET in person and by telephone (listed below) as an *ex parte* briefing. The purpose was to update OET and the Commission regarding the Company's solution for building RF entry/exit loss measurement and intelligent profiling technology to enable dense shared spectrum services. Part of the Company's embedded A-GNSS technology provides accurate, comprehensive, site-specific measurements of building loss to intelligently manage co-channel sharing and avoiding harmful interference. For indoor operations, building entry/exit loss measurements for interference management – at the point of transmission -- is also a subject of ET Docket 18-295 NPRM, paragraph 71.

Building loss is often the largest factor determining path loss. It is often the largest factor determining if enough isolation exists between or among entities to safely share spectrum. Building loss is also often the least certain, least known factor in mid-band sharing scenarios. The Company's building loss measurement and intelligence reduce dependence on statistical or rule-based propagation models. Models lack site-specific characterization of direct and indirect propagation paths and loss factors heretofore used mainly as a tool for network coverage and planning in exclusive use spectrum.

The Company noted in this and other shared spectrum proceedings that incumbents seek standards to protect their system's up-time availability. The company notes this can only assured by using industry standard interference thresholds and deterministic, site-specific measurements and sites that have trusted geolocation references, continuously surveyed to produce accurate isolation information among shared entities. With that thesis, Commission members were briefed on the Company's tests of GNSS signals to obtain entry/exit loss measurements with major focus on protection of FS at 6 GHz. One way this is accomplished is using the Company's technology to produce high sensitivity embedded chip-scale receivers that recover indoor signals attenuated 50-60 dB from outdoor. In-situ measurements eliminate what is otherwise guesswork regarding each building's unique loss profile based on interior placement, construction and other factors. The company pointed out over 30 dB loss variation exists just in the type of architectural glass installed. In-situ measurements closely and conservatively align to entry and exit losses across the mid-frequency planned or proposed shared bands between 1 and 9 GHz.

The Company pointed out the same A-GNSS technology also geolocates and synchronizes LTE or 5G host access points or cells. This provides a low-cost way the Commission prefers in shared spectrum coordination – determine transmitter position independent of human log entry to verify transmitter positions heretofore subject to error and the subject of the recent TV White Space proceeding and rulemaking.



The Company briefed Commission members on realization, incorporating its technology into indoor 5G access or networks, which also applies to outdoor points or cells. The company also pointed out it's single standalone and multi-node configurations as widely deployed in enterprise wireless networks. This multi-node configuration significantly raises satellite signal observability systematically increasing yield, loss measurement and position accuracy in less time.

The Company also presented its view of this solution's applicability to other shared operations. It is applicable to CBRs SAS and AFC dynamic sharing and automated systems including closed loop coordination systems that the Commission NPRM contemplates. At the meeting the Company urged the Commission consider this solution for upcoming mid-frequency shared band candidates for sharing to meet ubiquitous 5G demand while assiduously protecting legacy services to increase next generation access and spectrum efficiencies.

Regards,

A handwritten signature in black ink that reads "Richard Lee". The signature is fluid and cursive, with the first name "Richard" and last name "Lee" clearly distinguishable.

Richard Lee  
CEO & President  
iPosi, Inc.

FCC OET members in attendance:

Michael Ha  
Bahman Badipour  
Navid Golshahi  
Barbara Pavon  
Aole Wilkinse  
Gulmira Mustapaeva

Ira Keltz (by phone)

cc: Presentation enclosed, "iPosi Loss Measurements applied to 6 GHz Fixed Microwave (and more) protection from LTE/5G"