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By ECFS

August 22, 2019

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Notice of *Ex Parte* Presentation, IB Docket No. 11-109; IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and SAT-MOD-20151231-00091, SAT-AMD-20180531-00044, SAT-AMD-20180531-00045, SES-AMD-20180531-00856

Dear Ms. Dortch:

On August 20, 2019, Valerie Green and the undersigned met via telephone with Ron Repasi and Paul Murray with the Office of Engineering and Technology; Charles Mathias, Lloyd Coward, Jessica Greffenius, Sean Spivey, and Susannah Larson with the Wireless Telecommunications Bureau; Jim Schlichting with the International Bureau; Aaron Goldberger with Chairman Pai's office; and Deborah Broderson, Bill Richardson, and Susannah Larson with Office of the General Counsel. The parties discussed Ligado's pending license modification applications ("Modification Applications"), how Ligado's proposed operations can coexist with GPS devices, and the commitments the company has made to co-exist with the GPS device manufacturers. The undersigned on August 21 also subsequently discussed with Mr. Mathias GPS component manufacturers' assertions that their *unfiltered* devices may be affected by Ligado's operations.¹ We pointed out first that all receiver manufacturers are expected to

¹ See Comments of u-blox, IB Docket No. 11-109 (May 20, 2016), at 1, *available at* <https://ecfsapi.fcc.gov/file/60001995505.pdf> (suggesting that ublox 5, 6, and 7 components are used in "applications where a passive antenna without any kind of SAW filtering is used").

implement filtering technologies.² Indeed, it appears that one component manufacturer does in fact implement filtering technology and tells its potential customers that “virtually every GPS receiver places one or two SAW (surface-acoustic wave) filters into the signal path to attenuate out-of-band signals.”³ In fact, this component manufacturer further tells its customers that its use of “advanced, proprietary adaptive digital filtering technology” renders its components the “most sensitive and reliable GPS receiver technology available.”⁴ This evidence from the material made available to customers thus calls into question the unsupported claims made in this proceeding.

Please direct any questions to the undersigned.

Sincerely,

/s/ Gerard J. Waldron
Gerard J. Waldron
Counsel to Ligado Networks LLC

cc: Meeting Attendees

² See, e.g., Spectrum and Receiver Performance Working Group - FCC Technological Advisory Council, *Basic Principles for Assessing Compatibility of New Spectrum Allocations: A White Paper*, Release 1.1, 15 (Dec. 11, 2015) (“Principle 5: Systems are expected to use techniques at all layers of the stack to mitigate degradation from interference.”).

³ A. Thiel and M. Ammann, u-blox *Anti-Jamming techniques in u-blox GPS receivers*, 5 (Oct. 2009), available at https://www.u-blox.com/sites/default/files/products/documents/u-blox-AntiJamming_WhitePaper_%28GPS-X-09008%29.pdf.

⁴ *Id.* at 3 (“The use of an advanced, proprietary adaptive digital filtering technology allows the u-blox 5 and u-blox 6 GPS positioning engines to overcome jamming signals up to 25 dB stronger than conventional GPS receivers can withstand. The result is the most sensitive and reliable GPS receiver technology available.”).