



TECHNOLOGY
POLICY
INSTITUTE

March 2, 2017

Honorable Ajit Pai
Chairman
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Ligado's License Modification Applications IB Docket No. 12-340, IB Docket No. 11-109

Dear Chairman Pai:

Making more spectrum available for high-value uses like mobile broadband has been an important objective of many FCC chairmen, including you. Unlike previous chairmen, however, you and your FCC team have a unique opportunity to make 124 MHz of spectrum available in short order. In addition to the 84 MHz from the incentive auction, which includes 70 MHz of licensed spectrum, the Commission could immediately make an additional 40 MHz of licensed spectrum available for mobile broadband use by approving Ligado's application to modify the ancillary terrestrial component (ATC) of its L-band mobile satellite service (MSS) networks.¹

This L-band spectrum has been in limbo and unusable by its license-holder for many years due to concerns about interference with Global Positioning System (GPS) devices in an adjacent band. I have written on this issue² and filed comments with the Commission stressing the need to move rapidly since every day the spectrum lies fallow represents lost benefits.³

¹ 1526-1536 MHz, 1627.5-1637.5 MHz, and 1646.5-1656.5 MHz of the MSS band. A favorable action by the Commission in a parallel proceeding—to allocate the 1675-1680 MHz band for terrestrial mobile use on a shared basis with federal users—would allow an additional 10 MHz (1670-1680 MHz) to be productively used.

² Thomas M. Lenard and Lawrence J. White, The Spectrum Crunch, MSS Spectrum and LightSquared, April 2013, available at <https://techpolicyinstitute.org/wp-content/uploads/2013/04/the-spectrum-crunch-mss-spectr-2007656.pdf>.

³ https://techpolicyinstitute.org/testimony_filing/comments-filed-with-the-federal-communications-commission-in-the-matter-of-ligados-modification-applications/; https://techpolicyinstitute.org/testimony_filing/comments-filed-with-the-federal-communications-commission-on-lightsquared-request-to-modify-its-atc-authorization-and-comments-deadlines-established-regarding-the-lightsquared-tech/; https://techpolicyinstitute.org/testimony_filing/comments-filed-with-the-federal-communications-commission-on-ex-parte-filing-by-lightsquared-subsiidiary-llc/; <https://techpolicyinstitute.org/wp-content/uploads/2012/12/comments-filed-with-the-federa-2007658.pdf>.

Interference disputes between users of adjacent spectrum are not uncommon. In this case, to solve the interference problem and alleviate the concerns of adjacent users, Ligado has proposed to lower power levels and out-of-band emissions limits and create guard bands.⁴ It has underwritten technical tests, including the rigorous and comprehensive tests discussed in the February 15, 2017 National Advanced Spectrum and Communications Test Network (NASCTN) report on the impact of LTE Signals on GPS receivers.⁵

NASCTN is a joint effort of the National Institute of Standards and Technology (NIST), the National Telecommunications and Information Administration (NTIA), and the Department of Defense (DoD). Its “mission is to provide robust test processes and validated measurement data necessary to develop, evaluate and deploy spectrum sharing technologies that can increase access to the spectrum by both Federal agencies and non-federal spectrum users.”⁶

The report was done at the request of Ligado, which submitted a proposal in 2016. Ligado asked NASCTN to develop a test method to investigate the impact of adjacent-band long-term evolution (LTE) signals on GPS devices and perform the necessary measurements.⁷ NASCTN tested a wide variety of different GPS devices with varying specifications. When tested within the parameters of the proposed license modifications, the devices performed according to their specifications. The test results are consistent with the conditions in the agreements Ligado has reached with the major GPS manufacturers.⁸

The inability of the Commission in 2012 and thereafter to resolve the Ligado-GPS interference problem reflects a regulatory failure stemming from the lack of clearly defined priority rights and a market mechanism for buying and selling those rights. Neither the L-band nor the GPS band had well-defined rights that would have provided the appropriate mechanism and incentives for the occupants of the adjacent bands to strike a mutually beneficial deal that would have enhanced the value of the spectrum and benefited consumers. Ligado and its GPS neighbors have overcome these deficiencies and reached a solution that meets their needs and clearly serves the public interest by converting this fallow spectrum to productive use.

The spectrum at stake in this proceeding is almost half the amount, and more than half the amount of licensed spectrum, expected from the current incentive auction of broadcast spectrum. While it will take several years for the broadcast spectrum to be repurposed and made available for mobile broadband use, the Ligado spectrum could be used almost immediately.

⁴ Ligado proposed relinquishing authority to operate in the 1545-1555 MHz portion of the MSS band.

⁵ <https://www.nist.gov/news-events/news/2017/02/nasctn-releases-report-lte-impact-gps-receivers>

⁶ <https://www.nist.gov/communications-technology-laboratory-ctl/nasctn>

⁷ <http://nvlpubs.nist.gov/nistpubs/TechnicalNotes/NIST.TN.1952.pdf>, p. vii.

⁸ See Ligado press release, <http://ligado.com/press/ligado-networks-reaches-agreement-spectrum-use-high-precision-gps-manufacturer-topcon/>

The Commission has enough information now to approve the license modifications without harming adjacent GPS users. It should do so without delay.

Respectfully Submitted,

A handwritten signature in black ink that reads "Thomas M. Lenard". The signature is written in a cursive style with a large initial 'T'.

Thomas M. Lenard
Senior Fellow and President Emeritus

Cc: Ms. Marlene H. Dortch, Secretary