

**Before the  
Federal Communications Commission  
Washington, DC. 20554**

In the Matter of ) IB Docket No. 11-109  
Ligado's Modification Applications ) IB Docket No. 12-340

**COMMENTS OF THOMAS M. LENARD, PH.D  
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“Spectrum is the lifeblood of mobile broadband,” as Federal Communications Chairman Tom Wheeler has noted.<sup>1</sup> Indeed, much of the FCC’s recent focus has been on the broadcast incentive auction, which has the potential to free up 126 MHz for mobile broadband use. But it will take time for this spectrum to become available. An additional 30 MHz, however, is available immediately if the FCC takes quick action.

The Mobile Satellite Service (MSS) spectrum licensed by Ligado (formerly LightSquared) has been in limbo and unable to be deployed for mobile broadband for many years.<sup>2</sup> Because the benefits of deployment are large, delay generates significant costs for consumers, as well as uncertainty for Ligado and other spectrum holders.

In order to resolve concerns about potential harmful interference to Global Positioning System (GPS) receivers and devices in adjacent spectrum, Ligado is proposing a number of operational restrictions and modifications to its licenses. Specifically, Ligado is proposing to relinquish

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<sup>1</sup> [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-335877A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-335877A1.pdf)

<sup>2</sup> See, for example, Thomas M. Lenard, Lawrence J. White and James L. Riso, “Increasing Spectrum for Broadband: What are the Options,” February 12, 2010, available at <https://techpolicyinstitute.org/commentary/increasing-spectrum-for-broadband-what-are-the-options/>

authority to operate in the 1545-1555 MHz portion of the MSS downlink band and to add operational restrictions to the licenses for 1526-1536 MHz, 1627.5-1637.5 MHz and 1646.5-1656.5 MHz portions of the MSS uplink band. The FCC is seeking comment on whether the proposed operational restrictions and license modifications resolve the interference concerns. This proceeding should be the last hurdle in making the Ligado spectrum available for mobile broadband use.

The need for additional flexibly licensed spectrum for mobile broadband and other uses is well established and was central to the Commission's 2010 National Broadband Plan. In the short run, the most available spectrum—indeed, the only significant block of spectrum that is already licensed by not deployed—is the MSS spectrum licensed to Ligado. By approving the proposed license modifications, and thereby resolving the dispute with the GPS industry, an additional 30 MHz of flexibly licensed prime spectrum will quickly become available for mobile broadband uses. This will produce significant benefits for millions of users of mobile broadband services and for the U.S. economy more generally.

A favorable action by the Commission in a parallel proceeding<sup>3</sup>—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. In total, this would add 40 MHz of flexibly licensed spectrum—more than half the AWS 3 spectrum, which yielded \$45 billion in auction revenues just last year. The Ligado spectrum is likely to yield multiples of that amount in consumer benefits.<sup>4</sup>

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<sup>3</sup> RM-11681, April 22, 2016.

<sup>4</sup> Coleman Bazelon, "GPS Interference: Implicit Subsidy to the GPS Industry and Cost to LightSquared of Accommodation," The Brattle Group.  
[http://www.brattle.com/system/publications/pdfs/000/004/690/original/GPS\\_Inference\\_Bazelon\\_Jun\\_22\\_2011.pdf?1378772120](http://www.brattle.com/system/publications/pdfs/000/004/690/original/GPS_Inference_Bazelon_Jun_22_2011.pdf?1378772120)

The proposed modifications reflect agreements Ligado has reached with the three major GPS device firms, Garmin, Deere and Trimble. In addition, Ligado has submitted test results from Roberson and Associates showing that the GPS devices will work appropriately if the spectrum is used consistent with the conditions negotiated with the manufacturers. The agreements supplemented by the data from the test results should assure the Commission that the proposed license modifications will address the interference concerns raised by the GPS as well as the aviation sector's use of GPS.

The Commission has correctly placed the burden of proof on any commenter who might argue that the proposed conditions still do not satisfactorily address interference concerns by requesting “that such commenters supply specific relevant technical information about affected GPS receivers...and their performance or functioning...that support their assertion that additional measures would be necessary to resolve remaining concerns of potential harmful interference should Ligado operate a terrestrial mobile network in accordance with the specified set of technical parameters proposed.” This is appropriate.

The Obama Administration and the FCC have been attempting to move spectrum into the commercial sector, particularly by freeing up government spectrum. Failure to approve the current proposed license modifications would effectively achieve the opposite result by

transferring a large block of spectrum from the commercial sector back to the government. The Commission should avoid this possibility by approving the Ligado proposal expeditiously.

Respectfully Submitted,

May 19, 2016

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