

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of )  
)  
LightSquared Request to Modify its ) DA 12-1863, IB Docket No. 12-340,  
ATC Authorization ) RM-11683

**COMMENTS OF THOMAS M. LENARD, PH.D  
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These comments are in response to the September 28, 2012 request by LightSquared Subsidiary LLC (“LightSquared”) to modify its L-Band spectrum license. LightSquared’s proposal is intended to address concerns raised by the Global Positioning System (GPS) industry and others and permit LightSquared to proceed with the development of its proposed 4G LTE service using spectrum that currently is largely unused.

LightSquared is proposing to permanently vacate the 10 MHz closest to GPS receivers (1545-1555 MHz) and delay deployment on another nearby band (1526-1536 MHz) in order to allow for further assurance of interoperability with GPS. Thus, LightSquared’s initial investments in providing a nationwide wireless broadband network would use 25 MHz of currently licensed spectrum (1627.5-1637.5 MHz, 1646.7-1656.7 MHz, and 1670-1675 MHz) that does not present interference issues, combined with 5 MHz of spectrum it is requesting to share with federal users (1675-1680 MHz). The 5 MHz of shared spectrum would substitute for the spectrum currently the subject of the ongoing GPS disputes. LightSquared has the ability to share the 5 MHz of federal spectrum because it licenses the adjacent 5 MHz (1670-1675 MHz) and has knowledge and experience coordinating with the federal government.<sup>1</sup> LightSquared has committed to work cooperatively to “protect [federal] user’s essential government services.”<sup>2</sup>

The current situation cannot be properly understood without some reference to its history. In the 1990s, the L-Band spectrum licensed to LightSquared and its predecessors was allocated for Mobile Satellite Service (MSS)—i.e., for “satellite phone” networks. Although demand for satellite phones exists for use in isolated areas lacking standard cellular service, the overall demand for these devices is much smaller than expected. This largely failed business model led to high rates of bankruptcies by MSS license holders. In order to better use the spectrum, the FCC in 2001 adopted a rule to allow L-Band and other MSS licensees to introduce an “Ancillary Terrestrial Component” (ATC) to their satellite networks. In 2011, the FCC again modified the LightSquared license to permit stand-alone terrestrial service conditional on resolving interference issues raised by the GPS community.

GPS receivers were designed and implemented at a time when the adjacent L-Band spectrum was used sparingly and at low power. Hence, many receivers were not designed to properly filter out signals from adjacent spectrum. In effect, GPS receivers are using L-band spectrum

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<sup>1</sup> See LightSquared Application for Modification, IB Docket No. 12-340 (filed Sept 28, 2012) at 12.

<sup>2</sup> *Id.* at 12.

outside the GPS allocation. These “overload interference” problems proved difficult to resolve and the Commission revoked approval for LightSquared’s stand-alone terrestrial network architecture.

As Chairman Genachowski noted in an October speech, technology is not the only hurdle for developing increased broadband capacity, “it also requires massive amounts of private capital.”<sup>3</sup> LightSquared has already invested over \$4 billion in its network.<sup>4</sup> This investment demonstrates the potential value the spectrum is capable of producing if deployed for mobile broadband. Despite recent FCC approval for Dish Network’s AWS-4 spectrum or the potential upcoming television incentive auctions, LightSquared remains the most immediate prospect for becoming a viable competitor in the mobile broadband space, particularly for underserved areas.

Most importantly, if LightSquared is unable to deploy its network, major economic and consumer benefits will be lost. LightSquared’s proposed wireless broadband network will produce an estimated \$12 billion in value to the economy and potentially 10 times that amount—\$120 billion—in benefits to consumers.<sup>5</sup>

The continued rapid growth of mobile data—which has doubled each year from 2008-2011<sup>6</sup>—depends on the availability of spectrum operating in a flexibly licensed market-based regime that encourages the large investments needed for the buildout of nationwide networks. LightSquared has gone to great lengths to accommodate the GPS community and other users, while searching for an alternative that would finally allow the construction of a nationwide network. The Commission should approve the proposed license modification.

Respectfully submitted,

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<sup>3</sup> See Genachowski, J. *Winning the Global Bandwidth Race: Opportunities and Challenges for Mobile Broadband*, Speech presented at University of Pennsylvania, Wharton (October 2012).

<sup>4</sup> See Reuters *Falco allows ‘direct investments’ in LightSquared*, <http://www.reuters.com/article/2011/03/01/hedgefunds-falco-idUSN2825893720110301> (March 1, 2011).

<sup>5</sup> See Bazelon, C. *GPS Interference: Implicit Subsidy to the GPS Industry and Cost to LightSquared of Accommodation*, The Brattle Group, Inc. (June 22, 2011).

<sup>6</sup> See PCAST *Report to the President: Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth* (July 2012) at 1.