

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

In the Matter of:	)	
	)	
Federal Communications Commission Invites Comment on LightSquared Request to Modify its ATC Authorization	)	IB Docket No. 12-340
	)	
	)	
International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver	)	IB Docket No. 11-109
	)	
	)	

**COMMENTS OF  
THE NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL**

The National Public Safety Telecommunications Council (NPSTC) submits these comments in response to the Commission’s Public Notice inviting input on Ligado Networks LLC’s (previously LightSquared’s) applications to modify the ancillary terrestrial component of its L-Band mobile satellite service networks.<sup>1</sup> As addressed in these comments, NPSTC supports Ligado’s request to abandon its authority for ancillary terrestrial component operations in the 1545-1555 MHz portion of the MSS downlink band. NPSTC also urges the Commission to specify power levels for ATC operation that will provide ground level signals consistent with those shown in Ligado’s testing not to interfere with GPS.

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<sup>1</sup> Comment Sought on Ligado’s Modification Applications, IB Docket No. 11-109, IB Docket No. 12-340. Public Notice DA-16-442, released April 22, 2016.

## **The National Public Safety Telecommunications Council**

The National Public Safety Telecommunications Council is a federation of public safety organizations whose mission is to improve public safety communications and interoperability through collaborative leadership. NPSTC pursues the role of resource and advocate for public safety organizations in the United States on matters relating to public safety telecommunications. NPSTC has promoted implementation of the Public Safety Wireless Advisory Committee (PSWAC) and the 700 MHz Public Safety National Coordination Committee (NCC) recommendations. NPSTC explores technologies and public policy involving public safety telecommunications, analyzes the ramifications of particular issues and submits comments to governmental bodies with the objective of furthering public safety telecommunications worldwide. NPSTC serves as a standing forum for the exchange of ideas and information for effective public safety telecommunications.

The following 16 organizations serve on NPSTC's Governing Board:

- American Association of State Highway and Transportation Officials
- American Radio Relay League
- Association of Fish and Wildlife Agencies
- Association of Public-Safety Communications Officials-International
- Forestry Conservation Communications Association
- International Association of Chiefs of Police
- International Association of Emergency Managers
- International Association of Fire Chiefs
- International Municipal Signal Association
- National Association of State Chief Information Officers
- National Association of State Emergency Medical Services Officials
- National Association of State Foresters
- National Association of State Technology Directors
- National Council of Statewide Interoperability Coordinators
- National Emergency Number Association
- National Sheriffs' Association

Several federal agencies are liaison members of NPSTC. These include the Department of Homeland

Security (the Federal Emergency Management Agency, the Office of Emergency Communications, the Office for Interoperability and Compatibility, and the SAFECOM Program); Department of Commerce (National Telecommunications and Information Administration); Department of the Interior; and the Department of Justice (National Institute of Justice, Communications Technology Program). Also, Public Safety Europe is a liaison member. NPSTC has relationships with associate members: The Canadian Interoperability Technology Interest Group (CITIG) and the Utilities Technology Council (UTC), and affiliate members: The Alliance for Telecommunications Industry Solutions (ATIS), Open Mobile Alliance (OMA), Telecommunications Industry Association (TIA), TETRA Critical Communications Association (TCCA), and Project 25 Technology Interest Group (PTIG).

### **NPSTC Comments**

On December 31, 2015, New LightSquared submitted applications to modify the ancillary terrestrial component (ATC) of its L-Band mobile satellite service (MSS) networks.<sup>2</sup> In its Public Notice, the Commission summarizes the proposed modifications as follows:

Specifically, Ligado proposes in the Applications to abandon its authority for terrestrial operations in the 1545-1555 MHz portion of the MSS downlink band, and to operate in three other L-band segments – base stations in the 1526-1536 MHz portion of the MSS downlink band and user equipment in the 1627.5-1637.5 MHz and 1646.5-1656.5 MHz portions of the MSS uplink band – under a more restrictive set of operational parameters (a combined set of power limits and out-of-band emission (OOBE) limits, including newly proposed OOBE limits) than currently authorized... To protect certified aviation GPS devices, Ligado proposes that its license be conditioned on power limitation requirements for operation in the 1526-1536 MHz band as necessary to achieve compatibility with current and future Minimum Operational Performance

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<sup>2</sup> In its Public Notice, the Commission notes the transition of the LightSquared company name. Following LightSquared's emergence from bankruptcy in December 2015, many of its filings in these proceedings have been submitted under the name "New LightSquared." Subsequently, on February 10, 2016, New LightSquared was rebranded as Ligado Networks LLC. Accordingly, NPSTC will use the term Ligado in these comments.

Standards that are incorporated into an active Technical Standard Order from the Federal Aviation Administration.<sup>3</sup>

NPSTC supports Ligado's proposal to abandon authority for ATC operation on the 1545-1555 MHz band. Doing so is consistent with previous recommendations NPSTC made in commenting on the interference testing being conducted for Ligado Networks by Roberson and Associates.

Specifically, in its ex parte filing summarizing recommendations NPSTC had made to Roberson and Associates on the test plan, NPSTC stated the following:

The plan included a number of LightSquared bands for testing. These include 1526-1536 MHz, 1545-1555 MHz and 1670-1680 MHz for LTE downlink operation with 1627.5-1637.7 MHz and 1646.7-1656.7 MHz for LTE uplink operation. NPSTC advised that if the spectrum at 1545 to 1555 MHz is deployed, it would pose a significant risk of intermodulation interference in GPS receivers. Accordingly, NPSTC recommended not deploying that band of spectrum.<sup>4</sup>

In its Public Notice, the Commission also seeks comment on whether there remain any unresolved concerns of potential harmful interference to GPS receivers and devices should Ligado deploy ATC operation on the remaining bands in its application, i.e., 1526-1536 MHz, 1627.5-1637.5 MHz and 1646.5-1656.5 MHz. The Commission states:

Considering that the wideband GPS signal is transmitted within the 1560-1591 MHz range of the RNSS allocation, approximately 20 megahertz of frequency separation would exist between the GPS signals in the allocation and Ligado's proposed terrestrial operations below 1536 MHz, and a frequency separation of approximately 35 megahertz would exist between GPS receivers and mobile devices operating above 1627.5 MHz.

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<sup>3</sup> Public Notice DA 16-442, page 5 and 6.

<sup>4</sup> NPSTC Ex Parte filing submitted to the Commission September 9, 2015 in Docket IB No. 12-340.

The Commission also states in the Public Notice that “Ligado’s proposed modifications with respect to the power limits are the same levels (32 dBW equivalent isotropically radiated power (EIRP) in the downlink and -7 dBW in the uplinks) that were used in previous studies beginning in 2011.”<sup>5</sup>

Throughout the recent interference testing conducted by Roberson and Associates for Ligado, NPSTC has consistently advised that the signal levels tested be consistent with the ground level signals that would be experienced with the operational power levels planned for the network.<sup>6</sup> Accordingly, NPSTC recommends the power levels authorized for any Ligado ATC operation be chosen to provide ground level signals consistent with those used in testing that resulted in a lack of interference to GPS.

Also, as noted in a previously-filed NPSTC Ex Parte statement, GPS devices generally require a higher signal-to-noise level ratio to correlate initially than to maintain correlation. Once correlated, GPS devices can continue to track under reduced signal-to-noise ratio conditions. Therefore, in examining the interference testing already conducted to help determine the appropriate power level to be authorized for operation, the order of power up used during the testing is important. The simulated LTE signal should be initiated at maximum power level and then the GPS device should be started. Both “cold” and “warm” start situational testing would be important.

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<sup>5</sup> Public Notice DA 16-442, footnote 34.

<sup>6</sup> For example, see NPSTC Ex Parte submitted September 9, 2015 at pages 2 and 4.

## Conclusion

NPSTC supports Ligado's request to abandon its authority for ancillary terrestrial component operations in the 1545-1555 MHz portion of the MSS downlink band, which is consistent with previous NPSTC recommendations. NPSTC also urges the Commission to specify power levels for ATC operation that will provide ground level signals consistent with those shown in Ligado's testing not to interfere with GPS.

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