

BEFORE THE  
**Federal Communications Commission**  
WASHINGTON, D.C. 20554

In the Matter of )  
 )  
**LightSquared Subsidiary LLC** ) RM-11681  
 )  
Petition for Rulemaking to Allocate the 1675- )  
1680 MHz Band for Terrestrial Mobile Use )

To: The Commission

**OPPOSITION OF LOCKHEED MARTIN CORPORATION**

Lockheed Martin Corporation (“Lockheed Martin”) hereby provides its Comments in opposition to the above-captioned petition for rule making from LightSquared Subsidiary, LLC (“LightSquared”).<sup>1</sup> In its Petition, LightSquared requests that the Commission initiate a rulemaking proceeding to amend Section 2.106 of the Commission’s Rules – the U.S. Table of Frequency Allocations – “to add a primary allocation permitting non-Federal terrestrial mobile use of the 1675-1680 MHz band as an alternative to use of the 1545-1555 MHz portion of the L Band for terrestrial mobile purposes.”<sup>2</sup> Lockheed Martin opposes the LightSquared Petition for the reasons provided below.

Lockheed Martin is the only Commission licensee of space stations operating in the 1559-1610 MHz (or “L1”) RNSS band. Since 2005, Lockheed Martin has operated the Regional Positioning System (“RPS”) using two geostationary-orbit satellites.<sup>3</sup> The two Lockheed Martin RPS satellites and their associated earth stations provide a service integral to

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<sup>1</sup> See Public Notice, Report No. 2967 (released November 9, 2012), inviting statements opposing or supporting the above-captioned petition for rule making.

<sup>2</sup> LightSquared Subsidiary LLC Petition for Rulemaking to Allocate the 1675-1680 MHz Band for Terrestrial Mobile Use, RM-11681, filed November 2, 2012 (“LightSquared Petition”).

<sup>3</sup> The RPS satellites also operate in the “L5” RNSS band at 1164-1215 MHz.

the Federal Aviation Administration's ("FAA") overall Wide Area Augmentation System ("WAAS"). The WAAS provides augmentation of Global Positioning System ("GPS") signals throughout the entire National Airspace System ("NAS") to improve the accuracy, availability, and integrity of the GPS space-based positioning, navigation, and timing ("PNT") service.

Lockheed Martin emphasizes at the outset that at this time it neither supports nor opposes non-Federal terrestrial mobile use of the 1675-1680 MHz band. There are critical weather monitoring and prediction operations being conducted in this band by the National Oceanic and Atmospheric Administration ("NOAA"), and those operations must be able to continue without constraint and without the threat of harmful or even unacceptable interference. If LightSquared is able to demonstrate that terrestrial mobile service can be successfully offered while protecting operations by NOAA and any other extant government users, the 5 MHz band segment at 1675-1680 MHz may be able to be made available on a shared basis to help meet future mobile broadband spectrum requirements.

Lockheed Martin's opposition to the LightSquared Petition stems instead from the second part of LightSquared's request – i.e., that the Commission should make this allocation at 1675-1680 MHz "as an alternative to use of the 1545-1555 MHz portion of the L Band for terrestrial mobile purposes."<sup>4</sup> The Commission should *not* consider making an allocation for non-Federal mobile service in the 1675-1680 MHz band as a substitution for the technically-flawed proposal for high-powered terrestrial use of the 1545-1555 MHz band. In fact, Lockheed Martin observes that LightSquared's Petition does not include a technical showing regarding the threshold condition of compatibility with existing services/uses in the 1675-1680

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<sup>4</sup> LightSquared Petition, at 1.

MHz band.<sup>5</sup> Thus, Lockheed Martin is compelled to urge the Commission to only consider an allocation to the mobile service at 1675-1680 MHz if the Commission determines that such an allocation is compatible with existing users of the band; that sharing conditions can reliably be identified and imposed on the eventual non-Federal licensee(s); and that the allocation independently advances the public interest, convenience, and necessity.

In its Petition, LightSquared identifies a series of recent submissions that collectively represent LightSquared's latest attempt to convert some or all of its licensed MSS downlink band at 1525-1559 MHz to stand-alone terrestrial mobile broadband use.<sup>6</sup> These proposals, dating back more than two years, have been the subject of intensive debate and study before the Commission and beyond, and are the subject of multiple intertwined and pending proceedings. Earlier this year, in response to a letter from the National Telecommunications and Information Administration concluding that "... LightSquared's proposed mobile broadband network at 1525-1559 MHz will impact GPS services and that there is currently no practical way to mitigate the potential harmful interference from LightSquared's planned terrestrial operations in the 1525-1559 MHz band,"<sup>7</sup> the Commission's International Bureau proposed two actions: First, the Bureau proposed to vacate the 2011 decision conditionally granting LightSquared access to the 1525-1559 MHz band for terrestrial mobile service due to

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<sup>5</sup> Examples of prior successful instances of cooperation on unrelated spectrum matters between Federal and non-Federal users (*see* LightSquared Petition at 8-9) simply are not probative on the question whether the subject 5 MHz band can be used compatibly by terrestrial mobile broadband providers and, if so, under what sharing conditions.

<sup>6</sup> *Id.* at 2. Included on this list is a September 28, 2012 modification of license application to permit eventual use of the 1526-1536 MHz band for high-powered terrestrial mobile operations, and a separate petition for rule making to establish the eventual conditions for such use. *Id.* The Commission has invited public comment on both of these related proposals, and Lockheed Martin intends to submit responsive comments in due course.

<sup>7</sup> *See* FCC Public Notice, "International Bureau Invited Comment on NTIA Letter Regarding LightSquared Conditional Waiver," DA 12-214, IB Docket No. 11-109, released February 15, 2012 ("*February 15 Public Notice*"), at 3. GPS is the Global Positioning System, which operates in the radionavigation-satellite service band at 1559-1610 MHz – immediately adjacent to the MSS band licensed to LightSquared.

LightSquared's inability to resolve satisfactorily the interference caused by its planned terrestrial operations and the absence of any realistic prospect that such interference concerns could be resolved in a reasonable period of time.<sup>8</sup> Second, the Bureau proposed to modify LightSquared's license for MSS with an ancillary terrestrial component ("ATC") by suspending indefinitely LightSquared's underlying ATC authorization "to an extent consistent with the *NTIA Letter*."<sup>9</sup> These proposals generated an extensive record, and remain pending.<sup>10</sup>

To the extent that LightSquared's current Petition advances proposals for application and rulemaking actions relating to the 1525-1559 MHz band, including proposals to eventually operate terrestrial mobile service in a portion of that band, Lockheed Martin opposes the Petition. There is nothing in the LightSquared Petition, or in either of the other two LightSquared filings now separately out for public comment, that suggests that the conclusion that terrestrial mobile service in any portion of the 1525-1559 MHz band is untenable can now be reversed, or should even be revisited. Neither the stated need for additional broadband spectrum nor LightSquared's own commercial interests can be allowed to override administrative procedure or even muddle regulatory issues that must remain separate.

For Lockheed Martin, the analysis is straightforward: The results of the multiple, independent tests over the last two years have consistently confirmed that that operation of

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<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

<sup>10</sup> In comments Lockheed Martin filed in response to the *February 15 Public Notice*, Lockheed Martin supported both of the Commission's proposals. See Comments of Lockheed Martin Corporation, IB Docket No. 11-109, at 3 (filed March 16, 2012). It noted that the National Space-Based Positioning, Navigation, and Timing Systems Engineering Forum ("NPEF") had concluded in a 2011 study that "[i]mmediate use of the Mobile Satellite Spectrum (MSS) for terrestrial service is not viable due to significant systems engineering and integration challenges." It also noted that the FAA, in its own study concluding that terrestrial mobile service sharing of any kind is unlikely in the LightSquared MSS bands, had stated that "[w]hen using even the most optimistic propagation models, the safety of low-altitude operations (below 300' above ground level, or AGL) in the vicinity of LightSquared ATC transmitters cannot be assured." *Id.* at 3-4 (citing Federal Aviation Administration, *Status Report: Assessment of Compatibility of Planned LightSquared Ancillary Terrestrial Component Transmissions in the 1526-1536 MHz Band with Certified Aviation GPS Receivers*, at 70 (January 25, 2012) ("FAA Study").

terrestrial mobile broadband base station transmitters anywhere in the 1525-1559 MHz band will cause harmful interference to GPS and GPS-dependent applications such as the WAAS service to which Lockheed Martin's RPS system contributes. If there is no assertion that LightSquared (or anyone else) can use the 1675-1680 MHz band on a stand-alone basis for mobile service, without relying on the rejection of actions that the Commission has proposed in a separate pending proceeding, the Commission has no choice but to dismiss the Petition as premature and insufficiently concrete. LightSquared's Petition contains no such assertion.

For all of the reasons provided above, Lockheed Martin respectfully opposes the advancement of the LightSquared Petition, without a complete severance of such a rulemaking proceeding from LightSquared's associated proposals to conduct further application and rulemaking proceedings involving the 1525-1559 MSS band. Only if LightSquared can accept a stand-alone allocation to the mobile service in the 1675-1680 MHz band, should the Commission consider taking this action; if such a stand-alone allocation is acceptable, it could help alleviate the spectrum shortage of which LightSquared complains but would not require revisitation of technical determinations for which LightSquared offers nothing new.

Respectfully submitted,

LOCKHEED MARTIN CORPORATION

By: *s/ Jennifer Warren*

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December 10, 2012

**CERTIFICATE OF SERVICE**

I, Jennifer Warren, hereby certify that a copy of the foregoing Opposition of Lockheed Martin Corporation was provided by first-class mail, postage prepaid, to the following on this 10<sup>th</sup> day of December, 2012.

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*s/ Jennifer Warren*  
Jennifer Warren