

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

In the Matter of)	
)	
Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands)	WT Docket No. 12-70
)	
Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz)	ET Docket No. 10-142
)	
Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands)	WT Docket No. 04-356
)	

COMMENTS OF LIGHTSQUARED INC.

LightSquared Inc. and its affiliates (collectively, “LightSquared”) hereby respond to the *Notice of Proposed Rulemaking and Notice of Inquiry* adopted on March 21, 2012 in the above-referenced proceeding (the “2 GHz NPRM and NOI”).¹ LightSquared believes that the concepts underlying the 2 GHz NPRM and NOI reflect a sound approach to spectrum management. In particular, LightSquared supports the Commission’s consideration of creative proposals, like the 2 GHz Extension Band Concept (“EBC”), that have the potential to increase significantly the aggregate amount of spectrum available for mobile broadband use. As described in the 2 GHz NPRM and NOI, the EBC would involve: (i) the redesignation of the 2 GHz Mobile Satellite Service (“MSS”) downlink band at 2180-2200 MHz as the “AWS Expansion” downlink band; (ii) the relocation of the 2 GHz MSS uplink band licensee at 2000-

¹ LightSquared provided some preliminary views on the 2 GHz NPRM and NOI in a letter filed in this proceeding on April 25, 2012, and indicated that it would provide more fulsome comments at a later date, as reflected in these comments.

2020 MHz to the 1695-1710 MHz band, and the redesignation of the 1695-1710 MHz band as the “AWS Expansion” uplink band; and (iii) the redesignation of the 2000-2020 MHz band (along with the adjacent AWS “H” and “J” blocks) as a “PCS Expansion” downlink band.²

The EBC, like other initial proposals, should be refined so as to best achieve the Commission’s policy objectives. In this case, such refinements would increase significantly the amount of paired spectrum that could be used to support mobile broadband networks in an efficient manner—consistent with the objectives of the *National Broadband Plan*. Accordingly, LightSquared urges the Commission to adopt and implement a modified EBC after considering all available spectrum resources—including those outside of the 2 GHz band—and all applicable spectrum pairing scenarios. The Commission should consider various spectrum management alternatives, including options that: (i) make some or all of the 1675-1695 MHz band available to LightSquared for terrestrial downlinks; (ii) make available to LightSquared for terrestrial downlinks a portion of other suitable spectrum that is currently allocated for federal use; or (iii) if the existing 2 GHz MSS licensee is relocated from 2000-2020 MHz to 1695-1710 MHz, make the 2000-2020 MHz band available to LightSquared for terrestrial downlinks. One or more of these alternatives, achieved through an exchange of terrestrial spectrum rights, would provide suitable spectrum that would allow LightSquared to deploy its network fully using spectrum that is comparable to LightSquared’s current terrestrial downlink spectrum in the L Band, a portion of which, it has been suggested, may not be useable due to GPS issues.³

² 2 GHz NPRM and NOI ¶ 140.

³ See *Public Notice, International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver*, IB Docket No. 11-109, DA 12-214 (rel. Feb. 15, 2012) (“*Public Notice*”). LightSquared has explained at length in IB Docket No. 11-109

I. THE APPROACH TO SPECTRUM MANAGEMENT REFLECTED IN THE 2 GHz NPRM AND NOI PROMOTES THE PUBLIC INTEREST

The *2 GHz NPRM and NOI* correctly recognizes the important role that terrestrial use of MSS spectrum can play in expanding access to competitive wireless broadband service in the United States. At the same time, the *2 GHz NPRM and NOI* illustrates that effective spectrum policy should: (i) be informed by a deliberative and comprehensive analysis of all relevant policy objectives and public interest considerations; and (ii) explore constructive solutions that reconcile “competing” policy objectives, and thereby maximize the amount of spectrum that can be used to support next-generation wireless services in the public interest. Thus, the proposals in the *2 GHz NPRM and NOI* represent an excellent starting point for ensuring the continued deployment of mobile broadband.

LightSquared especially appreciates the Commission’s recognition that the “gating criteria” applicable under the Commission’s ancillary terrestrial component (“ATC”) rules “may no longer be the best framework for development of terrestrial mobile broadband” in MSS bands.⁴ LightSquared agrees that revisiting the ATC framework, and evaluating critically whether it can be improved, could enhance the ability of MSS licensees to make more intensive use of spectrum terrestrially and thus enhance their ability “to offer high-quality, affordable terrestrial wireless broadband services.”⁵ In addition, LightSquared applauds the Commission’s recognition that effective spectrum management solutions may require a “reshuffling” of spectrum assignments within the existing Table of Frequency Assignments—as reflected in the EBC proposed in the *2 GHz NPRM and NOI*.

why the concerns raised regarding GPS are not a basis to halt the deployment of its network in the L Band. LightSquared will not repeat those points here.

⁴ *2 GHz NPRM and NOI* ¶ 136.

⁵ *Id.* at ¶ 78.

Indeed, this analysis of spectrum management solutions should be expanded to include the MSS/ATC portions of the L Band at 1525-1559 MHz and 1626.5-1660.5 MHz so as to maximize the use of limited spectrum resources for mobile broadband applications. It makes little sense to view the 2 GHz band in isolation, given that the interference concerns and other policy issues affecting the 2 GHz band exist in other spectrum bands as well, and “cross-band” solutions could allow the Commission to more efficiently serve the public interest (*e.g.*, by pairing more spectrum bands).

By conducting this type of comprehensive analysis, the Commission also would improve its ability to address related regulatory issues—including the situation in which the Commission finds itself with respect to LightSquared. As discussed below, modifying LightSquared’s licenses to enable it to access alternative spectrum to support its terrestrial operations would allow LightSquared to implement its network without implicating concerns that have been raised with respect to the compatibility of GPS receivers with LightSquared’s licensed L-Band operations, and thus to extend the benefits of mobile broadband service to hundreds of millions of Americans.

II. THE COMMISSION SHOULD REFINE THE 2 GHz EXTENSION BAND CONCEPT PROPOSED IN THE 2 GHz NPRM AND NOI

A. The 2 GHz Extension Band Concept Offers a Useful Starting Point for Freeing Additional Spectrum for Mobile Broadband Operations

LightSquared agrees that the Commission should facilitate the transition to efficient next-generation wireless networks through careful management of the 2 GHz and other spectrum bands. The pressing need for additional spectrum to support mobile broadband operations demands that the Commission adopt creative approaches in fulfilling its spectrum management obligations. In the instant proceeding, the Commission has properly elected to

confront this challenge, as reflected in its willingness to explore constructive solutions like the EBC.

A refined version of the EBC would have the potential to “release a greater quantity of usable spectrum into the marketplace, reduce the need for guard bands to protect against harmful interference, and extend the existing PCS and AWS bands”—all of which would benefit the public.⁶ That said, the EBC as proposed would lead to less-than-optimal results from a spectrum management perspective. In particular, the EBC would not ensure that terrestrial spectrum bands are paired so as to support both uplink and downlink operations. The Commission has acknowledged that such pairing is desirable; indeed, the *National Broadband Plan* expresses a clear preference for establishing paired spectrum bands where possible—including in the 2 GHz band.⁷ Moreover, an analysis of available economic data demonstrates that the market views paired spectrum as substantially more valuable than unpaired spectrum.⁸ This reflects, among other things, the significant technical limitations inherent in unpaired spectrum operations.⁹

Notably, under the EBC one or both of two mobile broadband downlink bands—the “AWS-3” band (and adjacent “J” block) at 2155-2180 MHz, and the “PCS Expansion” band

⁶ *Id.* at ¶ 137.

⁷ *See, e.g.,* CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN, at 87 (2010) (“If there is a strong possibility of reallocating federal spectrum to pair with the AWS-3 band, the FCC, in consultation with NTIA, should immediately commence reallocation proceedings for the combined band.”) (“*National Broadband Plan*”).

⁸ *See* Coleman Bazelon, *The Economic Basis of Spectrum Value: Pairing AWS-3 with the 1755 MHz Band is More Valuable than Pairing it with Frequencies from the 1690 MHz Band* (Apr. 11, 2011) (concluding that paired spectrum is valued at approximately 40-50 percent more than unpaired spectrum).

⁹ *See, e.g.,* *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, 18 FCC Rcd 25162, at ¶¶ 104-111 (2003).

at 1995-2025 MHz—would be “orphaned” (*i.e.*, not paired with any uplink spectrum).¹⁰ As a result, service providers would be hindered in their ability to use that spectrum in the most efficient manner possible, as the unpaired nature of this spectrum would limit significantly the network architectures that could make use of these bands. This would create particular challenges for new entrants; the most feasible use of unpaired spectrum is to *supplement* existing paired spectrum resources. Because many new entrants lack sufficient uplink capacity in other bands, the creation of unpaired spectrum bands would exacerbate the competitive advantages already enjoyed by mobile broadband incumbents. For these reasons, the Commission correctly questions “the utility of licensing the spectrum as an unpaired downlink block.”¹¹

In short, while the EBC correctly reflects that the Commission could realize greater spectral efficiencies by altering the current 2 GHz band plan, the EBC would not do so in an optimal manner. As described below, better solutions are suggested by a more comprehensive examination of available spectrum resources—including spectrum outside of the 2 GHz band, such as the MSS portions of the L Band.

B. The Commission Should Refine the 2 GHz Extension Band Concept

As discussed above, by refining the EBC, the Commission could increase significantly the amount of paired spectrum that could be used to support mobile broadband networks in an efficient manner. In pursuing the proposals in the *2 GHz NPRM and NOI*, the Commission should consider all available spectrum resources and pairing scenarios—including those involving spectrum outside of the 2 GHz band. For example, one way to create additional

¹⁰ Both bands would be orphaned unless the 1755-1780 MHz band, which is allocated for use by the federal government, can be repurposed for commercial operations. As has been widely reported, there are issues as to the feasibility and cost of repurposing the band.

¹¹ *2 GHz NPRM and NOI* ¶ 143.

paired spectrum bands would be to make some or all of the 1675-1695 MHz band available to LightSquared for terrestrial downlink operations. This approach would have several advantages:

- **First**, providing LightSquared with access to the 1675-1695 MHz band for terrestrial downlinks would allow a pairing with other spectrum that LightSquared currently has available for uplinks. LightSquared today is authorized to conduct terrestrial uplink operations in the 1626.6-1660.5 MHz band, pursuant to its ATC authority. By pairing this spectrum with some or all of the 1675-1695 MHz band, LightSquared could commence its network operations outside of the 1525-1559 MHz band. Because LightSquared already has invested billions of dollars in this network, LightSquared could implement it faster than any other network operator, even with a change in downlink frequencies.

- **Second**, providing LightSquared with access to spectrum in the 1675-1695 MHz band would allow LightSquared to form a contiguous block with leased spectrum rights that LightSquared holds at 1670-1675 MHz. As a result, providing LightSquared with access to contiguous spectrum at 1675-1695 MHz would allow it to implement its network quickly with one (or possibly two) 10 MHz channels.

- **Third**, this option would pave the way for a longer-term solution that would moot any concerns about the potential incompatibility of GPS receivers with LightSquared's operations. More specifically, the Commission could modify LightSquared's licenses, pursuant to Section 316 of the Communications Act, to grant it terrestrial rights in some or all of the 1675-1695 MHz band in lieu of LightSquared operating a terrestrial network in a portion of the 1525-1559 MHz band (e.g., 1545-1559 MHz).¹²

¹² 47 U.S.C. § 316. The Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96 (the "Jobs Act") would not preclude such a spectrum swap by MSS/ATC

Should the Commission determine that the 1675-1695 MHz band is not available for these purposes, the Commission still should broaden the scope of the *Notice of Inquiry* to consider *additional* actions that would increase the amount of spectrum available for mobile broadband operations. For example, the Commission should consider (among other options): (i) working with NTIA to make available to LightSquared other suitable spectrum that is currently allocated for federal use, in lieu of LightSquared providing terrestrial service in the portion of its licensed L-Band downlink spectrum that, it has been suggested, may not be usable due to GPS issues;¹³ or (ii) if the existing 2 GHz MSS licensee is relocated from 2000-2020 MHz to 1695-1710 MHz, allowing LightSquared to conduct terrestrial downlink operations in the 2000-2020 MHz band. Either of these approaches would provide additional paired spectrum that could be used to support next-generation mobile broadband services.

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While the spectrum management concepts that underlie the *2 GHz NPRM* and *NOI* are appropriate, those concepts and the broader public interest would best be furthered by conducting a more comprehensive analysis of available spectrum resources (including those outside of the 2 GHz band) and spectrum pairing scenarios. Among other alternatives, the Commission should consider: (i) making some or all of 1675-1695 MHz available to LightSquared for terrestrial downlinks; (ii) making a portion of the other suitable spectrum that is currently allocated for federal use available to LightSquared to support terrestrial downlink operations that could be paired with L-Band uplinks; or (iii) if the existing 2 GHz MSS licensee

licensees. Section 6401 of the Jobs Act requires only that the Commission auction 15 MHz of the 35 MHz available in the 1675-1710 MHz band. In other words, the Commission is free to assign a full 20 MHz of spectrum in that band outside the context of an auction.

¹³ See *Public Notice*.

is relocated from 2000-2020 MHz to 1695-1710 MHz, making the 2000-2020 MHz band available to LightSquared for terrestrial downlinks. To the extent the Commission pursues any of these alternatives, LightSquared would be willing to exchange a corresponding portion of its terrestrial spectrum rights (including in any portion of LightSquared's L-Band downlink spectrum that cannot be used for such purposes due to GPS issues) for terrestrial spectrum rights in another spectrum band. LightSquared proposes these alternatives simply as a way of shifting its long-authorized terrestrial operations to another band in order to resolve claims that have been made about GPS. In short, any of these alternatives would avoid creating "orphaned" spectrum bands, facilitate the deployment of LightSquared's competitive mobile broadband network, and help to resolve those claims about GPS.

Respectfully submitted,

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