Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
LightSquared Subsidiary LLC	)	DA 12-1863, IB Docket No. 12-340
	)	
Request to Modify Its ATC Authorization	)	IBFS File Nos. SAT-MOD-20120928-
	)	00160; SAT-MOD-20120928-00161; and
	)	SES-MOD-20121001-00872

REPLY COMMENTS OF LIGHTSQUARED

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TABLE OF CONTENTS

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REPLY COMMENTS OF LIGHTSQUARED

LightSquared Subsidiary LLC ("LightSquared") hereby responds to the comments submitted in the above-referenced proceeding, which involves a series of license modification applications filed by LightSquared on September 28, 2012 (the "Modification Applications").

In those applications, LightSquared seeks to modify its existing authority to conduct terrestrial downlink operations in the L-Band spectrum at 1525-1559 MHz by: (i) permanently relinquishing its authority to conduct terrestrial operations at 1545-1555 MHz (the "Upper 10 MHz")—the part of LightSquared's downlink band that is closest to the GPS band—thus providing GPS receivers an additional 10 MHz guardband from terrestrial services; and (ii) in lieu of any terrestrial use of the Upper 10 MHz, employing alternative (non-L-Band) spectrum, comprised of a contiguous 10 MHz band at 1670-1680 MHz, to provide the needed coverage for LightSquared's terrestrial network. The alternative 10 MHz of downlink spectrum to be used consists of 1670-1675 MHz, which LightSquared already has authority to use nationwide, and 1675-1680 MHz, which LightSquared proposes to share with certain existing users.

In addition, LightSquared has proposed to submit the issue of rules for LightSquared's eventual terrestrial use of the 1526-1536 MHz downlink band (the "Lower 10

MHz") to a separate rulemaking proceeding. During the pendency of this rulemaking, LightSquared voluntarily would not deploy its terrestrial network in the Lower 10 MHz.

As LightSquared has explained, grant of the Modification Applications would remove obstacles that have prevented LightSquared from constructing and operating the type of nationwide mobile broadband network that the Commission has found would yield significant public interest benefits.[1] Just last month, the Commission reaffirmed its belief that providing additional flexibility to mobile-satellite service ("MSS") operators—such as that sought in the Modification Applications—would serve the public interest by "creat[ing] a solid and lasting foundation for the provision of terrestrial services in [MSS] spectrum" and "mak[ing] this spectrum available efficiently and quickly for flexible, terrestrial use, such as mobile broadband . . . ."[2] The Commission also found that "the public interest in this case is better served" by giving due consideration to the Modification Applications to determine whether their grant would address concerns raised by the GPS industry—as opposed to simply terminating LightSquared's rights in the Upper 10 MHz, as suggested by certain parties.[3] Accordingly, LightSquared urges the Commission to grant the Modification Applications on an expedited basis.

I. INTRODUCTION AND SUMMARY

The record in this proceeding establishes compelling reasons to grant the Modification Applications, and thereby facilitate the implementation of LightSquared's 4G

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1 *See SkyTerra Communications, Inc. and Harbinger Capital Partners Funds*, 25 FCC Rcd 3059 (2010).

2 *See Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, FCC 12-151, WT Docket No. 12-70, at ¶ 2 (Dec. 11, 2012) ("*2 GHz Order*").

3 *See LightSquared Subsidiary LLC Request for Relief from Build-Out Conditions*, DA 12-2051, IB Docket No. 12-296, at ¶ 14 & n.42 (2012) (expressly referencing the Modification Applications) ("*Milestone Order*").

wireless network. Broad recognition exists that the proposed license modifications would facilitate the extension of additional mobile broadband capacity to hundreds of millions of Americans, at a time when such capacity is critically needed.[4] Moreover, widespread support exists for the specific approach proposed in the Modification Applications, which would realize these public interest benefits and avoid complicated issues involving users of frequency bands adjacent to the 1525-1559 MHz portion of the L Band.

Notably, *no* party has filed a petition to deny the Modification Applications, or otherwise attempted to demonstrate that grant of the Modification Applications would be *prima facie* inconsistent with the public interest—the relevant standard under Section 309(d) of the Communications Act, as amended, and the Commission's implementing rules. Indeed, only a handful of parties raise any concerns about the Modification Applications whatsoever. As discussed below, these concerns consist of: (i) claims that LightSquared's modified operations *could* result in interference to other spectrum users (despite substantial evidence to the contrary); (ii) mischaracterizations of the Commission's broad statutory authority to grant license modification applications; and (iii) suggestions that the Commission should now take the punitive actions proposed in the *February 2012 Public Notice*[5] instead of considering the comprehensive solution of which the Modification Applications are a part—contrary to the course of action that the Commission already has endorsed.

In short, the record establishes that the proposed license modifications would yield significant public interest benefits, including advancing the Commission's broadband

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4 *2 GHz Order* ¶ 177 (noting that "the availability and quality of wireless broadband services is likely to become constrained if additional spectrum is not made available to enable network expansion and technology upgrades").

5 *See* International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver, DA 12-214 (Feb. 15, 2012) ("*February 2012 Public Notice*").

policy objectives. Accordingly, the Commission should grant the Modification Applications on an expedited basis.

II. THE RECORD UNDERSCORES THE OVERWHELMING PUBLIC INTEREST CASE FOR GRANTING THE MODIFICATION APPLICATIONS

The initial comments in this proceeding reflect overwhelming support for LightSquared's proposal to relinquish its authority to conduct terrestrial downlink operations in the Upper 10 MHz, and, in lieu of any terrestrial use of the Upper 10 MHz, to conduct terrestrial downlink operations at 1670-1680 MHz using newly licensed spectrum rights at 1675-1680 MHz (together with existing leased spectrum rights at 1670-1675 MHz). As discussed below, the vast majority of the over 150 parties participating in this proceeding recognize the significant public interest benefits that would flow from grant of the Modification Applications, and the implementation of the broader comprehensive proposal of which they are an integral part.[6] While this alone establishes a clear public interest case for such grant, Commission action in other proceedings underscores the pressing need to explore constructive solutions to increase the feasibility of terrestrial mobile broadband operations by MSS operators, such as those proposed by LightSquared.

A. The Record Reflects Widespread Recognition of the Public Interest Benefits That Would Extend from Implementing LightSquared's Network

As noted above, the Modifications Applications themselves establish an overwhelming public interest case for grant of the requested license modifications. Those applications, and the broader comprehensive proposal of which they are key components, present

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6 *See* LightSquared Petition for Rulemaking, RM-11681 (filed Nov. 2, 2012) (seeking terrestrial allocation at 1675-1680 MHz); LightSquared Petition for Rulemaking, RM-11683 (filed Sept. 28, 2012) (requesting that the Commission initiate a proceeding to evaluate and implement new technical rules to govern eventual terrestrial operations in the 1526-1536 MHz downlink band).

the Commission with an alternative beyond the "zero sum" formula the Commission has faced to date with respect to its effort to introduce new L-Band and other spectral capacity into the wireless marketplace.

The submissions of the various parties to this proceeding reflect widespread recognition of the public interest benefits that would flow from facilitating the implementation of LightSquared's network by granting the Modification Applications. For example, Inmarsat supports the "constructive solution" proposed by LightSquared, observing that it would "advance the Commission's spectrum management objectives and its efforts to extend competitive broadband services to consumers, while also ameliorating concerns about terrestrial use of the downlink portion of the L Band at 1525-1559 MHz."[7] The Technology Policy Institute ("TPI") observes that LightSquared's proposal would "address concerns raised by the [GPS] industry and others and permit LightSquared to proceed with the development of its proposed 4G LTE service . . . ."[8] The Competitive Carriers Association ("CCA") observes that "LightSquared's license modification applications present a reasonable and viable path forward that would facilitate LightSquared's ability to deploy this network—and thus realize the benefits described above—while advancing the Commission's spectrum management policies more generally."[9] The Computer and Communications Industry Association ("CCIA") urges the Commission to grant the Modification Applications so as to preserve GPS services while ensuring that those services

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7 Comments of Inmarsat plc, at 1, 3 (Dec. 17, 2012). LightSquared's proposal would continue to permit LightSquared and others to conduct beneficial satellite downlink operations in the Upper 10 MHz. *See* Letter of Tim Farrar, President, Mobile Satellite Users Association (Dec. 17, 2012).

8 Comments of Thomas M. Lenard, Ph.D, President and Senior Fellow, Technology Policy Institute, at 1 (Dec. 17, 2012) ("TPI Comments").

9 Comments of the Competitive Carriers Association, at 3 (Dec. 17, 2012) ("CCA Comments").

do not place undue restrictions on the efficient use of adjacent spectrum for mobile broadband applications.[10] Likewise, the Ohio Hotel and Lodging Association urges the Commission to "turn over every stone and put forth every effort to ensure that all Americans have access to fast, high-capacity, ubiquitous, and affordable mobile broadband."[11] These sentiments are echoed by a diverse array of stakeholders—including industry groups,[12] think tanks,[13] public servants,[14] first responders,[15] small businesses,[16] and individual consumers.[17]

Moreover, the relief sought in the Modification Applications is consistent with prior suggestions by the GPS industry that LightSquared relocate its downlink operations from the 1525-1559 MHz band to alternative spectrum. For example, the Coalition to Save Our GPS ("Coalition") has maintained that in lieu of operating in the L Band, "LightSquared instead should be allowed to operate its satellite services in the L Band and operate its new dense high-

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10 *See* Letter of Catherine R. Sloan, VP, Government Relations, Computer & Communications Industry Association, at 2 (Dec. 17, 2012) ("CCIA Letter"); s*ee also* TPI Comments at 1-2 (noting that some GPS receivers were not appropriately designed to account for adjacent mobile broadband operations).

11 Letter of Matt MacLaren, Esq., Executive Director, Ohio Hotel & Lodging Association, at 2 (Dec. 17, 2012) ("Ohio Hotel & Lodging Association Letter").

12 *See, e.g.*, CCIA Letter at 1-2; CCA Comments at 2.

13 *See* TPI Comments.

14 *See, e.g.*, Letter of Representative Diane Russell, Maine House of Representatives, at 1 (Nov. 20, 2012); Letter of Representative Brad Mayo, Mississippi House of Representatives, at 1 (Dec. 6, 2012).

15 *See, e.g.*, Letter of Chief Herb Soule, Sugar Creek Police Department, at 1-2 (Dec. 17, 2012); Letter of Alexander Psitos, Richmond Ambulance Authority, at 1-2 (Nov. 26, 2012).

16 *See, e.g.*, Letter of Jude Poggilai, Insight Technical Services, at 1-2 (Dec. 17, 2012); Ohio Hotel & Lodging Association Letter at 1-2.

17 *See, e.g.*, Letter of Vickie Brown, at 1-2 (Dec. 6, 2012); Letter of Barbara Walker, at 1 (Dec. 6, 2012).

powered terrestrial component of its network in a different band."[18] Similarly, the U.S. GPS Industry Council ("USGIC") has supported relocating LightSquared's downlink operations "to a frequency band that is not adjacent to a frequency band used by GPS or other low-power radionavigation-satellite service systems."[19] Lockheed Martin has maintained that "[t]he most promising mitigation technique identified was for LightSquared to use spectrum outside of [the] L-band" in implementing its network.[20] And the National PNT Advisory Board has recommended that the Commission resolve outstanding issues regarding GPS compatibility by selecting an appropriate alternative to L-Band downlink spectrum.[21]

At bottom, the strong support for LightSquared's proposal to relocate its terrestrial base station operations to alternative spectrum reinforces the clear and compelling public interest case for the Commission to grant the Modification Applications.

B. Granting the Modification Applications Would Be Consistent with Commission Action in Other Proceedings

Commission action in other proceedings, including action taken subsequent to the filing of the Modification Applications, underscores the pressing need to free additional spectrum for mobile broadband applications, as well as the desirability of exploring ways to enable more efficient terrestrial use of MSS spectrum—including in the L Band. In particular, the *2 GHz Order*, adopted just last month, recognizes that the short-term prospects for freeing

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18 *See* Comments of the Coalition to Save Our GPS, IB Docket No. 11-109, at 49 (Aug. 1, 2011).

19 *See* Comments of the U.S. GPS Industry Council, IB Docket No. 11-109, at 61 (Aug. 1, 2011).

20 *See* Comments of Lockheed Martin Corporation, IB Docket No. 11-109, at 9 (Jul. 29, 2011).

21 *See* Letter from the National Space-based PNT Advisory Board to FCC, IB Docket No. 11-109, at 2 (Aug. 9, 2011).

additional spectrum for mobile broadband are quite limited. As the Commission observes in that decision, "the availability and quality of wireless broadband services is likely to become constrained if additional spectrum is not made available to enable network expansion and technology upgrades."[22] The Commission also acknowledges that failing to make additional spectrum available for wireless broadband could lead to "higher prices, poor service quality, an inability for the United States to compete effectively on an international basis, depressed demand and, ultimately, a drag on innovation."[23]

In response to these concerns, the Commission appropriately seized the opportunity to explore constructive solutions that would enable service providers to use 2 GHz MSS spectrum more effectively. As the Commission explains in the *2 GHz Order*, it initiated the 2 GHz rulemaking with the expectation that doing so would "yield certain public interest benefits, including the removal of regulatory barriers that impede the Commission's goal of terrestrial mobile broadband services in the 2 GHz band."[24] And, in ultimately modifying the framework applicable to terrestrial use of 2 GHz MSS spectrum, the Commission recognized the value in "[e]nabling this band to be used efficiently for flexible, commercial use . . . ."[25] Consistent with that finding, the Commission intends to use its authority under Section 316 to modify the existing authorizations of the 2 GHz MSS licensees to grant new terrestrial spectrum rights, which will be governed by more flexible service rules.[26]

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22 *See 2 GHz Order* ¶ 177.

23 *Id.*

24 *Id.* at ¶ 176.

25 *Id.* at ¶ 179.

26 *Id.* at ¶ 186.

The Commission's actions in the *2 GHz* proceeding follow from the Commission's earlier recognition, in the *MSS Flexibility NPRM and NOI*, that it should act to "increase[e] the provision of terrestrial broadband services in the MSS bands."[27] This acknowledgment itself flows directly from the *National Broadband Plan*, which recognizes the pressing need to identify additional spectrum for mobile broadband applications, directs the Commission to promote such use through "steps appropriate to the specific circumstances of individual bands," and more specifically concludes that the Commission should work closely with L-Band MSS licensees and other stakeholders to "accelerate efforts to rationalize" L-Band spectrum to make it usable for broadband service.[28] The Commission should follow suit by granting the Modification Applications and thereby facilitating the ability of American consumers to reap the benefits of additional sources of wireless broadband capacity.

III. DELAYING THE CONSIDERATION AND GRANT OF THE MODIFICATION APPLICATIONS WOULD NOT SERVE THE PUBLIC INTEREST

As noted above, the vast majority of the over 150 parties participating in this proceeding support the grant of the Modification Applications. In contrast, *no* party has filed a petition to deny those applications. At the same time, *no* party otherwise has attempted to demonstrate that grant of the Modification Applications would be *prima facie* inconsistent with the public interest—the relevant standard under Section 309(d) of the Communications Act, as amended, and the Commission's implementing rules.[29]

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27 *Fixed 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*, 25 FCC Rcd 9481, at ¶ 9 (2010) ("*MSS Flexibility NPRM and NOI*").

28 Omnibus Broadband Initiative, *Connecting America: The National Broadband Plan*, at 84-87 (2010) ("*National Broadband Plan*").

29 *See* 47 U.S.C. § 309(d); 47 C.F.R. §§ 1.939(d) and 25.154(a)(4).

Moreover, only a handful of parties raise any concerns about the Modification Applications whatsoever. However, the discrete concerns raised by these parties consist of: (i) claims that LightSquared's modified operations *could* result in interference to other spectrum users (despite substantial evidence to the contrary); (ii) mischaracterizations of the Commission's broad statutory authority to grant license modification applications; and (iii) suggestions that the Commission should now take the punitive actions proposed in the *February 2012 Public Notice* instead of considering the comprehensive solution of which the Modification Applications are a part—contrary to the course of action that the Commission already has endorsed.[30] Accordingly, there is no good reason for the Commission to delay consideration and, ultimately, its grant of those applications.

A. Deploying Terrestrial Base Stations at 1675-1680 MHz Is Feasible

LightSquared recognizes that the National Oceanic and Atmospheric Administration ("NOAA") is the primary stakeholder with respect to meteorological matters in the United States and that NOAA's meteorological mission is critical. LightSquared has been working diligently with NOAA and other federal agencies, and will continue to do so, to develop mutually beneficial solutions regarding the 1675-1680 MHz band. The underlying goal of LightSquared's proposal is to ensure the continued, uninterrupted nature of NOAA's mission while also enabling more efficient use of the 1675-1680 MHz band. LightSquared's proposal for shared use of this band thus would serve the public interest, by increasing the utility of the

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30 In addition, Aviation Spectrum Resources, Inc. filed comments in this proceeding that address LightSquared's parallel petition to commence a rulemaking regarding the possibility of eventual future terrestrial use of the Lower 10 MHz, but that do not address the Modification Applications. *See* Comments of Aviation Spectrum Resources, Inc. (Dec. 17, 2012). LightSquared addressed those comments in separate reply comments filed earlier this week. *See* Reply Comments of LightSquared, RM-11683, at 14-17 (Jan. 2, 2013).

limited spectrum resource and by providing important, additive benefits to both federal and non-federal spectrum users.

1. 1675-1680 MHz Remains Under Evaluation for Wireless Broadband Use

Despite what is suggested by the Florida Department of Transportation ("FDOT") and others,[31] the National Telecommunications and Information Administration ("NTIA") has not stopped considering the 1675-1680 MHz band as a candidate for wireless broadband operations. To the contrary, that band segment is one of the segments that remains under active consideration for that very purpose by both NTIA and the Commission.

In accordance with the President's June 2010 directive to open 500 MHz of spectrum for wireless broadband,[32] NTIA and the Commission have been examining spectrum that potentially could be repurposed for wireless broadband under a ten-year plan (*i.e.,* could be made available by 2020). In October 2010, NTIA (in consultation with the Commission) identified a number of bands, including 1675-1680 MHz, that could be made available for wireless broadband within ten years, and that warranted further evaluation.[33]

In addition, at the request of the Office of Management and Budget, the National Economic Council, and the Office of Science and Technology Policy, NTIA released a separate October 2010 "Fast Track Report," in which it tried to "jump-start" the process in certain

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31 *See* Comments of the Florida Department of Transportation, at 2 (Dec. 17, 2012) ("FDOT Comments"); Reply Comments of the Aerospace Industries Association, Docket RM-11681, at 3 (Dec. 21, 2012) (submitted for the record in IB Docket No. 12-340 on Jan. 2, 2013) ("AIA Allocation Reply Comments").

32 President Obama, Memorandum of June 28, 2010—Unleashing the Wireless Broadband Revolution, 75 Fed. Reg. 38387 (July 1, 2010).

33 U.S. Department of Commerce, *Plan and Timetable to Make Available 500 Megahertz of Spectrum for Wireless Broadband*, at 6-*7* (Oct. 2010) ("*NTIA Ten-Year Plan*").

candidate bands based on two additional criteria: (i) NTIA had to be able to completely evaluate and make a "concrete decision" about repurposing those bands by October 1, 2010 (that is, in a mere three months); and (ii) NTIA had to decide that those bands could be made available on an even faster, five-year-schedule (*i.e.*, by 2015).[34] Having considered the entire 1675-1710 MHz band under those two additional parameters, NTIA was able to recommend a jump start only in the 1695-1710 MHz portion of the band segment.[35] Significantly, NTIA emphasized that its Fast Track recommendation was not the end of the analysis, and that "[i]f a determination could not be made by October 1, 2010 on a specific band, *it would remain under consideration for the Ten-Year Plan*."[36]

Thus, LightSquared's request to be licensed at 1675-1680 MHz not only advances the President's 2010 directive on wireless broadband, but also is fully consistent with NTIA's actions to date, as well as the stated intention of NTIA and the Commission to continue to examine potential use of that band segment for wireless broadband applications and services.

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34 U.S. Department of Commerce, *An Assessment of the Near-Term Viability of Accommodating Wireless Broadband Systems in the 1675-1710 MHz, 1755-1780 MHz, 3500-3650 MHz, and 4200-4220 MHz, 4380-4400 MHz Bands*, at iv, 1-4 (Oct. 2010) ("*NTIA Fast Track Report*"); *NTIA Ten-Year Plan* at 6.

35 *NTIA Fast Track Report* at 1-5, 6 (within these parameters, NTIA was not able "to recommend the spectrum below 1695 MHz for sharing *as part of the fast track process.*") (emphasis added).

36 *Id.* at 1-6 (emphasis added); *see also NTIA Ten-Year Plan* at 6 ("The bands that did not meet the conditions for an early Fast Track decision, or in other words could not be completely evaluated before October 1, 2010 and determined to be able to be made available within five years, will be considered potential candidates as part of the longer-term plan set forth in this report.").

2. Radiosondes Must Be Modified to Accommodate the New GOES-R System

While the World Meteorological Organization ("WMO") discusses the importance of radiosondes (a form of meteorological aids or "MetAids") and the meteorological satellite service (a/k/a "MetSat"), the WMO does not relate its discussion to the evolving nature of radiosonde and MetSat operations *within the United States*.[37] As detailed in this section and the following section, LightSquared's proposed use of the 1675-1680 MHz band is in fact compatible with continued use of this band (as well as adjacent bands) for meteorological services, and takes into account the evolving use of 1675-1680 MHz for meteorological services within the United States.

In the United States, the 1675-1683 MHz band segment is used today by radiosondes that move through the atmosphere and transmit while in motion to radio receivers on the earth. Four radiosonde channels currently operate in this 8 MHz band segment. As NTIA has reported, however, existing radiosonde equipment operating in this spectrum range will need to be modified before the new geostationary GOES-R satellite network, which operates in the MetSat service, is launched in 2015.[38]

The GOES-R system is designed to transmit downlink signals to fixed earth stations using, in part, the 1679.7-1683 MHz band segment. However, the GOES-R system cannot use its intended new downlink band in the presence of continued radiosonde operations.

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37 Letter of J. Lengoasa, World Meteorological Organization, at 1-2 (Dec. 17, 2012) ("WMO Comments").

38 *NTIA Fast Track Report* at 1-6 ("NOAA will also need to begin redesign of radiosonde technology to use the spectrum more efficiently to make room for satellite downlinks that are currently above 1695 MHz."); GOES-R Home Page, *at* http://www.goes-r.gov/ (last visited Jan. 4, 2013) ("The first launch of the GOES-R series satellite is scheduled for 2015.").

Mobile radiosonde transmissions pose a risk of co-channel interference into the downlink signals that must be received by GOES-R earth stations. Stated another way, the continued operation of radiosonde transmitters at 1679.7-1683 MHz is not compatible with the expected operation of the new GOES-R system.[39]

Thus, the planned "downshift" of a portion of the GOES-R downlink channels to the 1679.7-1683 MHz band segment, as mandated by the *NTIA Fast Track Report*,[40] will require the modification of current radiosonde operations. One possibility is to move radiosondes from 1675-1683 MHz and into a different band that already has been internationally harmonized for radiosonde operations (such as 400.15-406 MHz). While NOAA has not yet announced any determination as to the most cost-effective and spectrally-efficient solution,[41] both NOAA and LightSquared hope to soon begin a technological feasibility study of such a move, recognizing that switching to commercially available 400 MHz radiosonde equipment appears to be a potentially promising solution to the radiosonde compatibility issue created by the deployment of GOES-R.

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39 *See* International Telecommunication Union and World Meteorological Organization, *Handbook Use of Radio Spectrum for Meteorology: Weather, Water and Climate Monitoring and Prediction*, at 30 (2008 ed.) ("Co-channel MetAids and MetSat operations are not compatible and significant band segmentation has already occurred. MetAids cause significant levels of interference to the MetSat ground stations.") ("*ITU/WMO Handbook*"). As noted above, radiosondes are a form of MetAids; GOES-R is a MetSat system.

40 *See supra* n.38 (quoting *NTIA Fast Track Report* at 1-6).

41 *See* Ivan Navarro, Engineering and Acquisition Branch, NWS Office of System Operations, Sharing the 1695-1710 MHz Band: Impact to National Weather Service Radiosonde Operations, at 10 (Apr. 7, 2011), *at* http://directreadout.noaa.gov/miami11/docs/7.10b_Navarro_Freqs.ppt (last visited Jan. 4, 2013) (discussing one radiosonde relocation option and explaining that "[a]dditional analysis and studies are required to finalize solutions").

As noted above, the 400 MHz band is internationally harmonized for radiosonde operations. Moreover, expert agencies recognize that signal propagation loss is lower at 400 MHz, which allows the use of simpler, smaller antennas for tracking the flight of radiosondes, and also provides greater radiosonde link reliability (and thus good signal reception and the provision of accurate weather data), particularly in high wind conditions and over great distances.[42] Qualified radiosonde transmitters in this band currently are available from multiple sources,[43] and the relocation of radiosonde operations to the 400 MHz band may provide economies of scale in the manufacture of radiosonde equipment, thus providing significant cost savings to the United States Government.[44] Radiosondes are essentially consumable devices—according to NOAA, fewer than 20 percent of the radiosondes that are launched are recovered and reused.[45]

In sum, the radiosondes used in the United Stated today must be modified in any event to protect GOES-R, and new technology must be developed to allow radiosondes to operate in a manner that fully protects the new GOES-R system. The costs of developing that technology, the impact of other costs on the GOES-R program, and certain cost-benefit tradeoffs

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42 *ITU/WMO Handbook* at 30-31.

43 *See, e.g.*, Viasala, *at* http://www.vaisala.com/en/defense/products/soundingequipment (last visited Jan. 4, 2013); Lockheed Martin Sippican, Inc., *at* http://www.sippican.com/stuff/contentmgr/files/3e8052902595d3629c7b01ca9f4201b0/sheet/mark2.pdf (last visited Jan. 4, 2013); Meisei Electric Co., Ltd., *at* http://www.meisei.co.jp/ (last visited Jan. 4, 2013).

44 Moreover, today's 1675-1683 MHz radiosondes require a mechanical stabilization system for the tracking antenna, a more expensive technology than the NAVAIDS/GPS-based tracking system used on 400 MHz radiosondes.

45 *See* NOAA National Weather Service, Radiosonde Observations, *at* http://www.ua.nws.noaa.gov/factsheet.htm (last visited Jan. 4, 2013).

will need to be considered as NOAA moves forward with deploying GOES-R in 2015, regardless of the resolution of the Modification Applications.

3. LightSquared's Operations Would Be Compatible with the GOES-R System

LightSquared is fully committed to addressing the concerns of the FDOT and others about the compatibility of LightSquared's operations with NOAA's meteorological mission—including in particular both the existing GOES-N satellites as well as the new GOES-R satellites—in the context of coordination with NOAA and other federal agencies. But LightSquared recommends a different approach to spectrum sharing than that which FDOT proposes.[46] The following discussion provides an overview of the spectrum management techniques that LightSquared proposes to utilize to ensure the compatibility of its network operations with the entire GOES system.

Use of the 1675-1680 MHz band (Space-to-Earth) by the GOES system is (and is expected to remain) for satellite downlink transmissions to earth station receivers at fixed locations on the ground. Thus, the compatibility of GOES downlink operations with LightSquared's proposed terrestrial base station operations readily could be ensured by a variety of techniques that successfully have been used in other contexts, including: (i) coordinating the location of the LightSquared base stations with NTIA-authorized GOES earth stations, using spatial separation, and possibly establishing exclusion zones where the base stations may not operate; (ii) establishing appropriate out-of-band emissions ("OOBE") limits for those

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[46] FDOT Comments at 1-3; *see also* Comments of The Boat Owners Association of the United States (Dec. 17, 2012) (expressing concerns about the potential impact of LightSquared's proposed terrestrial base stations on meteorological systems); Comments of the Coalition to Save Our GPS, at 13-14 (Dec. 17, 2012) ("Coalition Comments"); AIA Allocation Reply Comments at 3.

LightSquared base stations, consistent with the Commission's general approach to OOBE; and (iii) consistent with NTIA's general approach to managing receiver and antenna performance to ensure the reliable and efficient use of spectrum, establishing appropriate minimum performance criteria for earth stations that receive downlink signals from GOES satellites.[47] Indeed, ensuring that the satellite operator (here, the U.S. Government) sets an appropriate technical framework within which users of the GOES satellite system are expected to operate is consistent with Commission precedent as well.[48]

It also bears emphasis that because the 1675-1680 MHz band would be used by LightSquared's fixed base stations—and not by mobile transmitters—no uncertainty would exist about the nature or location of LightSquared's transmissions in this shared band. That said, LightSquared plans to work with NOAA and other federal agencies to identify approaches that provide the most efficient and effective solution for all stakeholders, and remains confident that the compatibility of LightSquared's base stations with NOAA's meteorological network can be ensured.

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47 *See, e.g.*, U.S. Department of Commerce, *Receiver Spectrum Standards, Phase 1 – Summary of Research into Existing Standards*, at iii (Nov. 2003) ("NTIA has taken the approach that, for Federal users, the performance of both the transmitter and the receiver should be regulated. This approach to management of the radio spectrum emphasizes prevention of interference and improved spectrum management. Federal agencies generally comply with the NTIA standards, with some agencies implementing even stricter standards.").

48 *See SkyTerra Subsidiary LLC*, 25 FCC Rcd 3043, at ¶ 29 (2010); *see also* Reply Comments of LightSquared Inc., IB Docket No. 11-109, at 36 & n.95 (and cases cited therein) (Mar. 13, 2012) ("PDR Reply Comments"). It appears that the Commission has not yet established any rules for use of the 1675-1680 MHz band by commercial earth stations, has not decided that they may operate on an unlicensed basis, and has not granted them interference protection if they do operate on an unlicensed basis. *See* PDR Reply Comments at 15-20. Thus, the FDOT's proposal that the Commission establish "receiver interference protection" for earth stations in the 1675-1680 MHz band, FDOT Comments at 2-3, would be more appropriately addressed, if at all, in a separate rulemaking proceeding on such earth station uses.

In addition, and as the *NTIA Fast Track Report* recognizes,[49] NOAA is required to provide one or more mechanisms for distributing certain data received by its GOES earth stations to members of the user community (*e.g.*, state agencies, educational institutions) that may wish to access those data. As that report recognizes: "Much of this data is currently broadcast or rebroadcast directly to the Federal and non-Federal user communities and the data would need to be accessed via other satellites, landline, or other methods to replace the direct satellite access."[50] Thus, the report recognizes the possibility of using other reliable communication channels (*i.e.*, different frequencies, different networks) for the broadcast of those NOAA data to users such as the FDOT, thus facilitating shared use of the 1675-1680 MHz band by a defined number of NOAA earth stations as well as by wireless broadband base stations that are coordinated with NOAA.

4. LightSquared's Operations Would Not Preclude International Meteorological Operations at 1675-1680 MHz

The WMO correctly notes that the 1675-1680 MHz band is allocated on a co-primary basis to MetSat operations and MetAids, including radiosondes,[51] and expresses concern about the international precedential effect if the United States were to decide to also allow wireless base stations to operate in this band. Specifically, the WMO claims that doing so would "weaken the ability of other, less influential nations to retain these frequencies for meteorological observing."[52]

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49 *NTIA Fast Track Report* at 1-6.

50 *Id.*

51 WMO Comments at 1-2.

52 *Id*. at 2.

It bears emphasis that the type of spectrum sharing LightSquared proposes would allow NOAA to continue to use the 1675-1680 MHz band segment (as well as adjacent spectrum) for meteorological operations. LightSquared proposes to share the 1675-1680 MHz band with NOAA's meteorological uses, and its sharing proposal is consistent with the innovative approach to spectrum that the world looks for the United States to provide. Moreover, nothing that LightSquared proposes would alter the use of 1675-1680 MHz outside of the United States, or alter the right of any nation to determine whether to allow terrestrial base stations to operate on a coordinated basis in this band segment within in its own borders.

Finally, achieving the President's goal of opening 500 MHz for wireless broadband by 2020 may require the United States to implement shared uses of spectrum bands that are not currently contemplated by the International Table of Frequency Allocations. As is common, international harmonization may need to follow from decisions that the United States makes about the most efficient use of spectrum within its own borders.

B. Longstanding Interference-Free Operations of *Hundreds of Millions* of Transmitters Demonstrate That LightSquared's Authorized Uplinks Present No Concerns

Hundreds of millions of MSS earth terminals ("METs") and terrestrial wireless devices long have operated throughout the United States in and around the uplink portion of the L Band (1626.5-1660.5 MHz) and under far less restrictive power limits than those with which LightSquared has agreed to comply. These METs and wireless devices operate successfully today without creating any issues for GPS receivers. Nevertheless, the Coalition suggests that the Modification Applications warrant "additional analysis and testing" regarding LightSquared's long-authorized terrestrial uplink operations in the 1626.5-1660.5 MHz portion

of the L Band,[53] suggesting that LightSquared's terrestrial mobile terminal uplinks "*could* create an additional interference concern."[54]

In fact, substantial evidence exists that LightSquared's authorized uplinks present no concerns, as demonstrated by: (i) evidence (discussed below) of decades of operating experience involving mobile terminals that operate ubiquitously in the L Band and in neighboring bands; and (ii) the Commission's own words, which recognize that "the interference addressed by the NTIA Letter is associated with LightSquared's planned terrestrial base stations rather than the mobile handsets at issue in the *Conditional Waiver Order*."[55]

Today, over one-million METs are authorized to operate in the United States[56] and already successfully transmit to satellites in the very same 1626.2-1660.5 MHz uplink band that LightSquared is authorized to use for terrestrial mobile uplinks. These L-Band METs,

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53 Coalition Comments at 12-13; *see also* Letter of Heidi J. Williams, Aircraft Owners and Pilots Association (Dec. 12, 2012).

54 Coalition Comments at 13 (emphasis added). LightSquared previously has explained that the various sources that the Coalition cites for this proposition are not "independent" and/or rely on flawed assumptions and unscientific processes. *See* Comments in Opposition of LightSquared Inc., IB Docket No. 11-109, at 37-39, 75-88 & Technical Appendix (Mar. 16, 2012) ("LightSquared March 2012 Comments"); Reply Comments of LightSquared Inc., IB Docket No. 11-109, at 39-56 & n.139 (Mar. 30, 2012).

55 *See February 2012 Public Notice* at 4.

56 *See, e.g.*, Licenses for Call Signs E980179 and E930367 (authorizing LightSquared to operate a total of 200,000 L-Band METs), E040249 (authorizing Inmarsat Solutions to operate 120,000 L-Band BGAN METs), E090032 (authorizing ISAT US Inc. to operate up to 520,000 L-Band METs of various types), E050276 (authorizing Astrium Services Government, Inc. to operate up to 40,000 L-Band BGAN METs), E020074 (authorizing LXE Inc. to operate up to 25,000 L-Band Inmarsat D+ METs), E100192 (authorizing SkyWave Mobile Communications, Corp. to operate up to 100,000 L-Band Inmarsat Half-Duplex METs), E030055 (authorizing SkyWave to operate up to 25,000 L-Band Inmarsat D+ METs), E030120 (authorizing AmTech Systems LLC to operate up to 100,000 L-Band Inmarsat Half-Duplex METs), E070006 (authorizing Horizon Mobile Communications, Inc. to operate up to 20,000 L-Band BGAN METs), and E990083 (authorizing National Systems & Research Co. to operate up to 40,000 L-Band Inmarsat Full-Duplex METs).

which typically operate at substantially higher transmit power levels than terrestrial mobile handsets, have been used successfully for decades in close proximity to GPS receivers without any known reports of interference. Significantly, these L-Band METs include *handheld devices*, vehicular-mounted devices, and notebook-sized portable units. In many cases, these terminals are built to incorporate both L-Band transmitters and GPS receivers within the same unit—as is the case with IsatPhone handsets.[57] Another example is the L-Band Inmarsat D+ MET, which the Commission has acknowledged utilizes a design that "enables very compact METs to be built with an integrated Global Positioning System (GPS) receiver antenna."[58]

Importantly, these METs operate under OOBE limits with respect to the GPS band that are significantly less restrictive than the limits by which LightSquared has agreed to abide for its terrestrial handsets.[59] Many of these L-Band METs are mounted in "safety of life" applications where their antennas are located in immediate proximity to GPS antennas. In other words, "mission critical" uses of GPS technology successfully operate right next to powerful L-Band METS that are allowed to emit *higher* levels of OOBE than LightSquared's terrestrial mobile handsets. Thus, it is evident that the operation of LightSquared's terrestrial handsets,

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57 *See, e.g.*, ISAT US, Inc., IBFS File No. SES-MOD-20111228-01505 (Call Sign E090032) (authorizing over 500,000 portable L-band land mobile terminals, including 100,000 handheld devices).

58 *Richtec Incorporated*, 18 FCC Rcd 3295, at ¶¶ 3, 12 (2003).

59 *See* Exhibit 1. For example, L-Band METs currently being manufactured—including LightSquared and Inmarsat METs— are required to suppress OOBE generally by -70 dBW/MHz in the 1559-1605 MHz band. *See* 47 C.F.R. § 25.216. In contrast, LightSquared has agreed to more stringently suppress OOBE from its terrestrial mobile terminals generally by: (i) -90 dBW/MHz in the 1559-1605 MHz band for such terminals placed into service within five years of terrestrial service launch; and (ii) -95 dBW/MHz in the 1559-1605 MHz band for such terminals placed into service thereafter. In addition, LightSquared has agreed to different limits for its femtocells and base stations. *See* Letter of USGIC and SkyTerra Subsidiary LLC to FCC, IBFS File Nos. SAT- MOD 20090429-00046 (Aug. 13, 2009).

which would operate at far lower power and with much stricter OOBE limits than hundreds of thousands of existing satellite terminals, does not require further analysis.

Just 50 MHz away from the 1626.2-1660.5 MHz uplink is the AWS-1 band, which wireless carriers are using (or are preparing to use) to serve the hundreds of millions of wireless devices that currently are deployed (or will be deployed) in the United States in close proximity to GPS receivers. The AWS-1 band (1710-1755 MHz) is subject to even less restrictive OOBE limits with respect to the GPS band than L-Band METs, and far less restrictive OOBE limits than LightSquared's terrestrial mobile terminals.[60] Even so, these AWS-1 band mobile transmitters, including mobile handsets that contain GPS capabilities for E911 compliance and other applications, work reliably and without creating any known GPS compatibility issue. As CTIA has noted, "Section 27.53(h), which limits the power of any emission outside the licensed frequency block to . . . 43 + 10 log10(P) dB," ensures that while "the AWS-1 band begins at 1710 MHz . . . there has not been a single complaint of interference from AWS operations into GPS receivers."[61]

The same analysis also applies to the PCS band, just another 100 MHz away at 1850-1910 MHz, which successfully is used even more intensively today than the AWS-1 band for wireless transmissions from countless wireless communications devices that also contain GPS functionality, and operate in close proximity to other GPS receivers.[62]

In sum, the longstanding and interference-free operations of hundreds of millions of transmitters in and around the L Band, under far less restrictive power limits than those with

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60 *See* Exhibit 1.

61 *See* Letter of Christopher Guttman-McCabe, CTIA—The Wireless Association, WT Docket No. 12-70, at 2 (Oct. 25, 2012) (footnotes omitted).

62 *See* Exhibit 1.

which LightSquared has agreed to comply, demonstrate that no basis exists for the Coalition's suggestion that LightSquared's already-authorized uplink operations in the 1626.5-1660.5 MHz portion of the L Band "could" create an interference concern.[63]

C. Nothing in the Communications Act or the Commission's Processing Rules Precludes Expeditious Consideration of the Modification Applications

1. The Commission Has Broad Discretion to Authorize Terrestrial Mobile Broadband Operations at 1675-1680 MHz By Granting the Modification Applications

USGIC does not oppose the Modification Applications on their merits. However, USGIC claims that the Commission cannot grant LightSquared "a new mobile service authorization for the 1675-1680 MHz band" in response to the Modification Applications, which seek to modify LightSquared's existing "Part 25" MSS/ATC licenses by: (i) permanently relinquishing its existing authority to conduct terrestrial operations in the Upper 10 MHz; and (ii) in lieu of that authority, obtaining authority to operate at 1675-1680 MHz on a shared basis with certain existing users (provided those modified rights can be combined with LightSquared's leased spectrum rights at 1670-1675 MHz and then paired with LightSquared's existing uplink spectrum rights).[64] USGIC's assertion is demonstrably incorrect. The Commission has broad authority under Section 316 of the Communications Act, as amended, to modify existing authorizations "if in the judgment of the Commission such action will promote the public

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63 Moreover, before being marketed and sold within the United States, LightSquared mobile terminals would have to undergo a rigorous testing and equipment authorization process under Part 2 of the Commission's rules, which would include testing of compliance with applicable OOBE limits.

64 Comments of the U.S. GPS Industry Council, at 3 (Dec. 17, 2012) ("USGIC Comments"); *see also* Comments of Lockheed Martin Corporation, at 6 n.10 (Dec. 17, 2012) ("Lockheed Martin Comments").

interest, convenience, and necessity."[65] Indeed, the Commission in fact has invoked this authority to grant terrestrial rights to parties in the context of other "Part 25" proceedings,[66] and should do so here.[67]

2. The Commission Need Not Complete the Parallel Allocation Proceeding Before Licensing the 1675-1680 MHz Band

Lockheed Martin also does not oppose the Modification Applications on their merits, but asserts that grant of the Modification Applications would be "premature" pending the resolution of LightSquared's proposal to allocate the 1675-1680 MHz band for terrestrial mobile broadband operations.[68] Lockheed Martin provides no valid basis for denying the benefits of LightSquared's network to hundreds of millions of Americans in this fashion. Moreover, Lockheed Martin ignores the Commission's broad authority to permit operations that do not conform to the existing Table of Frequency Allocations on a non-interference basis—which authority Lockheed Martin itself has sought to use for its own benefit on many occasions.[69] Notably, the Commission previously has used this authority to modify existing licenses to permit

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65 47 U.S.C. § 316(a)(1).

66 *See, e.g., 2 GHz Order*; *Conditional Waiver Order*.

67 Moreover, and contrary to the assertions of USGIC and Lockheed Martin, the Modification Applications do explicitly request such "adjustments and further authorizations with regard to the Commission's rules as may be needed" to facilitate grant of the Modification Applications. *See* Modification Applications, Response to Q. 43: Description of Proposed Modification, at 14 ("Modification Application Narrative"); *see also* Modification Applications, Response to Q. 35.

68 Lockheed Martin Comments at 6.

69 *See, e.g.*, Lockheed Martin Corporation applications in IBFS File Nos. SAT-LOA-19970925-00100, SAT-LOA-19970925-00101, SAT-LOA-19970925-00102, SAT-LOA-19970925-00103, SAT-LOA-19970925-00104, SAT-LOA-19970925-00105, SAT-LOA-19970925-00106, SAT-LOA-19970925-00107, SAT-LOA-19970925-00108 (seeking waiver of the U.S. Table of Frequency Allocations to facilitate Lockheed Martin's proposed Q/V-Band satellite system).

non-conforming operations pending the outcome of a parallel allocation rulemaking proceeding.[70] The Commission can and should follow suit here.[71]

3. The Commission Has Ample Authority to Grant "Replacement" Spectrum Rights without an Auction

The Coalition's suggestion that the Commission does not have "authority to award the 1675-1680 MHz band to LightSquared without an auction"[72] is belied by Commission precedent. It is well-settled that the Commission may forego the use of an auction where it seeks to assign "alternative" or "replacement" spectrum rights to an existing licensee—particularly where such action is taken to preserve other important spectrum uses. For example, in the *800 MHz Order*, the Commission assigned Nextel "replacement" rights in the 1.9 GHz band after Nextel agreed to forego the use of its rights in the 700 and 800 MHz band to facilitate public safety operations—and did so without holding an auction.[73] Similarly, the Commission assigned Digital Electronic Message Service ("DEMS") licensees "replacement" rights in the 24 GHz band after it became clear that DEMS operations in the 18 GHz band were incompatible with

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70 *See, e.g.*, *Service Rules and Procedures to Govern the Use of Aeronautical Mobile Satellite Service Earth Stations in Frequency Bands Allocated to the Fixed Satellite Service*, Notice of Proposed Rulemaking, 20 FCC Rcd 2906 (2005) (initiating proceeding to develop allocation and service rules for aeronautical mobile satellite service in the Ku Band); *ARINC, Inc.*, 20 FCC Rcd 7553 (2005) (granting ARINC's September 2003 application for an aeronautical mobile satellite service authorization in the Ku Band pending outcome of separate rulemaking proceeding).

71 *See* Modification Application Narrative, at 13-14.

72 Coalition Comments at 14.

73 *See Improving Public Safety Communications in the 800 MHz Band*, 19 FCC Rcd 14969, at ¶¶ 31, 67-74 (2004) ("*800 MHz Order*").

certain government spectrum uses—again without holding an auction.[74] Notably, the D.C. Circuit explicitly upheld the Commission's actions in the *800 MHz Order*, and made clear that the Commission has authority to forego auctions under circumstances analogous to those giving rise to the Modification Applications.[75]

These findings are consistent with the Commission's broad authority under Section 316 to modify licenses where doing so would serve the public interest[76]—as would grant of the Modification Applications. Importantly, it is Section 316—and not Section 309(j)—that governs the Commission's authority to grant those applications. In this respect, the Coalition's assertion that "Section 309(j)(1) of the Communications Act generally requires the auction of spectrum that will be used to provide terrestrial wireless services for a profit"[77] is wrong. The text of Section 309(j)(1) makes clear that an auction is required only where the Commission: (i) accepts *multiple,* mutually-exclusive applications for (ii) an *initial* license or construction permit and (iii) otherwise concludes that the public interest does not warrant dispensing with an

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74 *See Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service from the 18 GHz Band to the 24 GHz Band and to Allocate the 24 GHz Band for Fixed Service*, 13 FCC Rcd 15147, at ¶¶ 58-59 (1998).

75 *See, e.g.*, *Cal. Metro Mobile Communs., Inc. v. FCC*, 365 F.3d 38, 45 (D.C. Cir. 2004) (recognizing the Commission's "broad power to modify licenses" in furtherance of its spectrum priorities); *Community Television, Inc. v. FCC*, 216 F.3d 1133, 1141 (D.C. Cir. 2000); *2 GHz Order*, at ¶ 172; *800 MHz Order*, at ¶ 67 (citing *Rainbow Broad. v. FCC*, 949 F.2d 405, 410 (D.C. Cir. 1991)); *Mobile Relay Assocs. v. FCC*, 457 F.3d 1, 3 (D.C. Cir. 2006) (denying petitions for review challenging the *800 MHz Order*); s*ee also id.* at 8 (concluding that where the Commission is "'fostering innovative methods of exploiting the spectrum,' it 'functions as a policy maker' and 'is accorded the greatest deference by a reviewing court'" (quoting *Teledesic LLC v. FCC*, 275 F.3d 75, 84 (D.C. Cir. 2001)).

76 47 U.S.C. § 316(a)(1); *800 MHz Order* ¶ 65 ("The Commission has the authority to modify licenses pursuant to Section 316 to solve the interference problems in the 800 MHz band."); *see also 2 GHz Order* ¶¶ 175, 319-20.

77 Coalition Comments at 14 (emphasis added).

auction.[78] None of these conditions is implicated by the Modification Applications, as: (i) the "substantial change in circumstances"[79] giving rise to the Modification Applications is unique; (ii) LightSquared seeks license modifications, not initial licenses; and (iii) a strong public interest case justifies granting the modified authority that LightSquared seeks, and which over 150 commenters support.

IV. THIS PROCEEDING SHOULD REMAIN FOCUSED ON CONSTRUCTIVE SOLUTIONS TO FACILITATE THE IMPLEMENTATION OF LIGHTSQUARED'S MOBILE BROADBAND NETWORK

The Commission should grant the Modification Applications given the public interest benefits that would flow from such action, as recognized by over 150 commenters, and which are summarized in Section II.A. above. In so doing, the Commission should disregard the extraneous matters discussed in some of the comments, the consideration of which is not essential to review and grant of the Modification Applications.

With respect to the Coalition's discussion of the Commission's ATC rules generally as well as the L-Band/GPS situation more specifically,[80] LightSquared merely notes for the record: (i) that it already provided its views of those matters in another proceeding, and sees no reason to revisit them here; [81] and (ii) the existence of relevant testimony offered by Commission staff, and the reports of the President's Council of Advisors on Science and

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78 *See* 47 U.S.C. §§ 309(j)(1), 309(j)(6)(E).

79 *See Milestone Order* ¶ 1.

80 *See* Coalition Comments at 6-8.

81 *See* LightSquared March 2012 Comments at 2-45.

Technology ("PCAST") and other third-parties, that were released after LightSquared made its earlier submissions.[82]

Several commenters also suggest that the Commission revisit the issues presented by the *February 2012 Public Notice*. In particular, the Coalition, USGIC, and Lockheed Martin suggest that the Commission could summarily terminate LightSquared's terrestrial rights in the Upper 10 MHz—*i.e.*, regardless of whether alternative spectrum rights are assigned at 1675-1680 MHz.[83] As an initial matter, the Modification Applications propose to forego terrestrial authority in the Upper 10 MHz *in exchange for* "alternative" or "replacement" rights at 1675-1680 MHz—provided those modified rights can be combined with LightSquared's leased spectrum rights at 1670-1675 MHz and paired with LightSquared's existing uplink spectrum rights. LightSquared does not propose, nor would LightSquared accept, the unilateral termination of its rights in the Upper 10 MHz—a fact made abundantly clear in LightSquared's response to the *February 2012 Public Notice*.

Moreover, the Commission already has considered and rejected the suggestion that it ignore LightSquared's comprehensive proposal (of which the Modification Applications are integral elements), and instead simply terminate LightSquared's terrestrial rights as proposed

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82 *See* Joint Written Statement of Julius P. Knapp, Chief, OET, FCC, and Mindel De La Torre, Chief, International Bureau, FCC, Before the House Oversight and Investigations Subcommittee, at 5-11 (Sept. 21, 2012); Executive Office of the President, President's Council of Advisors on Science and Technology, Report to the President: Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth, Executive Office of the President (Jul. 2012), *at* http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_july_20_2012.pdf (last visited Jan. 4, 2013).

83 *See* Coalition Comments at 18-20; USGIC Comments at 2; Lockheed Martin Comments at 5-6.

in the *February 2012 Public Notice*.[84] Just last month, when the Commission tolled the build-out requirements that previously applied to LightSquared, the Commission expressly found that it *would not serve the public interest to address the* February 2012 Public Notice *at this time*:

> [W]e conclude that the public interest in this case is better served by maintaining the status quo by tolling the build-out requirements than by acting first on the *February 2012 Public Notice*, as proposed by commenters, without considering the proposals in LightSquared's *ATC Modification Application* and petitions for rulemaking. Moreover, because pursuant to the *Conditional Waiver Order* LightSquared currently is prohibited from operating terrestrial facilities, we find that there is no substantial prejudice to GPS operations from this approach.[85]

As the Commission has already found, a backward-looking consideration of proposals set forth in the *February 2012 Public Notice* more than ten months ago, and the testing underlying the now-superseded operating parameters assumed in that notice, no longer offers the most productive path forward for the Commission or the public. Instead, the Commission correctly has recognized the need to focus on forward-looking, constructive solutions such as those proposed by LightSquared.

* * * * *

The record in this proceeding establishes a compelling public interest basis for granting the Modification Applications. Broad recognition exists that the proposed license modifications would facilitate implementation of LightSquared's 4G wireless network, and thus the extension of additional mobile broadband capacity to hundreds of millions of Americans, at a

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84 *See February 2012 Public Notice.*

85 *See Milestone Order* ¶ 14 & n.42 (emphasis added) (expressly referencing the Modification Applications).

time when such capacity is critically needed.[86] Moreover, granting the requested authority would advance the Commission's broadband and spectrum policy objectives more generally. In contrast, *no* party has petitioned the Commission to deny the Modification Applications, or otherwise demonstrated that LightSquared's proposed operations would be inconsistent with the Commission's rules and policies. Accordingly, LightSquared respectfully requests that the Commission grant those applications on an expedited basis.

Respectfully submitted,

/s/ Jeffrey J. Carlisle

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[86] *2 GHz Order* ¶ 177 (noting that "the availability and quality of wireless broadband services is likely to become constrained if additional spectrum is not made available to enable network expansion and technology upgrades").

EXHIBIT 1

Less Restrictive OOBE Limits into the GPS Band for Other Services Adequately Protect GPS Receivers

Exhibit 1: Less Restrictive OOBE Limits into the GPS Band for Other Services Adequately Protect GPS Receivers

Transmit Band	Start Freq. (MHz)	Stop Freq. (MHz)	FCC OOBE Limit in GNSS Band (1559 - 1605 MHz) dBW/MHz	ITU OOBE in GNSS Band (1559 - 1605 MHz) dBW/MHz	Source
L-band (ATC)	1626.5	1660	-90 -95 (after 5 years)	-70	LightSquared/GPS agreement/ATC license/ITU-R M.1343-1
L-Band (MSS)	1626.5	1660	-70	-70	FCC Limit (47 CFR Section 25.216) for Inmarsat & LightSquared MSS terminals/ITU-R M.1343-1
Big Leo (MSS)	1610	1626	-70	-70	FCC Limit (47 CFR Section 25.216) for Globalstar and Iridium MSS terminals/ITU-R M.1343-1
Big Leo (ATC)	1610	1626	-95	-70	GlobalStar/GPS agreement/ATC license/ITU-R M.1343-1
AWS-1	1710	1755	-43	-60	FCC Limit (47 C.F.R. §27.53(h))/ITU-R M.1581-4
PCS	1850	1910	-43	-60	FCC Limit (47 C.F.R. §24.238(a))/ITU-R M.1581-4
PCS Block G	1910	1915	-43	-60	FCC Limit (47 C.F.R. §24.238(a))/3GPP 36.101 (Table 6.6.3.1-2)
AWS-2 (H-block)	1915	1920	-43		FCC Limit (47 C.F.R. §24.238(a))
PCS Unlicensed	1920	1930	-43		FCC Limit (47 C.F.R. §24.238(a))
AWS-4 (DISH)	2000	2020	-95	-70	DISH/GPS agreement/ITU-R M.1343-1

Note 1: Limits listed are the general mobile terminal/handset limits (i.e., not for base stations/femtocells/LightSquared PC data cards; not narrowband limits)

Note 2: ATC limits reflect those in commercial agreements, rather than the less stringent limits in FCC Rules (47 C.F.R. §§25.252-25.254)

Exhibit 1: Less Restrictive OOBE Limits into the GPS Band for Other Services Adequately Protect GPS Receivers

Transmit Band	Start Freq. (MHz)	Stop Freq. (MHz)	FCC OOBE Limit in GNSS Band (1605 - 1610 MHz) dBW/MHz	ITU OOBE in GNSS Band (1605 - 1610 MHz) dBW/MHz	Source
L-band (ATC)	1626.5	1660	-90 to -66 -95 to -71 (after 5 years) (see Note 2)	-70 to -10 (see Note 3)	LightSquared/GPS agreement/ATC license/ITU-R M.1343-1
L-Band (MSS)	1626.5	1660	-70	-70 to -10 (see Note 3)	FCC Limit (47 CFR Section 25.216) for Inmarsat & LightSquared MSS terminals/ITU-R M.1343-1
Big Leo (MSS)	1610	1626	-70	-70 to -10 (see Note 3)	FCC Limit (47 CFR Section 25.216) for Globalstar and Iridium MSS terminals/ITU-R M.1343-1
Big Leo (ATC)	1610	1626	-95	-70 to -10 (see Note 3)	GlobalStar/GPS agreement/ATC license/ITU-R M.1343-1
AWS-1	1710	1755	-43	-60	FCC Limit (47 C.F.R. §27.53(h))/ITU-R M.1581-4
PCS	1850	1910	-43	-60	FCC Limit (47 C.F.R. §24.238(a))/ITU-R M.1581-4
PCS Block G	1910	1915	-43	-60	FCC Limit (47 C.F.R. §24.238(a))/3GPP 36.101 (Table 6.6.3.1-2)
AWS-2 (H-block)	1915	1920	-43		FCC Limit (47 C.F.R. §24.238(a))
PCS Unlicensed	1920	1930	-43		FCC Limit (47 C.F.R. §24.238(a))
AWS-4 (DISH)	2000	2020	-95	-70 to -10 (see Note 3)	DISH/GPS agreement/ITU-R M.1343-1

Note 1: Limits listed are the general mobile terminal/handset limits (i.e., not for base stations/femtocells/LightSquared PC data cards; not narrowband limits)
Note 2: -90 (-95 after 5 years) dBW/MHz at 1605 MHz, linearly interpolated in dB/MHz, to -66 (-71 after 5 years) dBW/MHz at 1610 MHz
Note 3: -70 dBW/MHz at 1605 MHz, linearly interpolated in dB/MHz, to -10 dBW/MHz at 1610 MHz
Note 4: ATC limits reflect those in commercial agreements, rather than the less stringent limits in FCC Rules (47 C.F.R. §§25.252-25.254)

ENGINEERING INFORMATION CERTIFICATION

I hereby certify that I am the technically qualified person responsible for reviewing the engineering information contained in the foregoing submission, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this pleading, and that it is complete and accurate to the best of my knowledge and belief.

/s/ Maqbool Aliani

Maqbool Aliani
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Dated: January 4, 2013

CERTIFICATE OF SERVICE

I, Karen R. Sprung, hereby certify that on this 4th day of January, 2013, I caused a true and correct copy of the foregoing "Reply Comments of LightSquared" to be served upon the following, via first-class mail, postage prepaid:[1]

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[1] LightSquared is serving parties who included a mailing address in their submissions filed in IB Docket No. 12-340. Parties who did not include an address will have access to LightSquared's Reply Comments through the Commission's Electronic Comment Filing System.

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