

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

In re: the Matters of)	
)	WT Docket No. 11-186
Sixteenth Annual Report on the State of)	
Competition in Mobile Wireless, including)	IB Docket No. 11-109
Commercial Mobile Radio Services)	

**REPLY COMMENTS OF THE U.S. GPS INDUSTRY COUNCIL
TO COMMENTS OF LIGHTSQUARED SUBSIDIARY, LLC**

The U.S. GPS Industry Council (the “Council”), by its attorneys and pursuant to Sections 1.415 and 1.419 of the Commission’s Rules (47 C.F.R. §§ 1.415 & 1.419) as well as the *Public Notice* released November 3, 2011,¹ hereby responds to initial comments in the above-captioned proceedings filed by LightSquared Subsidiary LLC (“LightSquared”).² LightSquared addresses issues that are beyond the scope of the *Public Notice* in an effort to use this proceeding, as it has others, to distort the historical record and the FCC’s Rules and policies governing use of the Mobile-Satellite Service (“MSS”) L-Band spectrum.

In the *Public Notice*, the Wireless Telecommunications Bureau specifically seeks comment on such issues as wireless industry structure, service provider conduct, market performance, consumer behavior, and downstream market segments. In short, the Bureau asked interested parties to provide a snapshot of the current status of the wireless industry.

¹ See FCC Public Notice, “Wireless Telecommunications Bureau Seeks Comment on the State of Mobile Wireless Competition,” DA 11-1856, WT Docket No. 11-186, released November 3, 2011 (setting Comment deadline of December 5, 2011 and a Reply Comment deadline of December 20, 2011) (“*Public Notice*”).

² See Comments of LightSquared Subsidiary LLC, WT Dkt. No. 11-186 and IB Dkt. No. 11-109, filed December 5, 2011 (“LightSquared Comments”).

Rather than submitting comments responsive to that request for factual data, LightSquared has instead offered a skewed portrait intended only to promote the alleged benefits – without responsible discussion of the significant potential adverse impacts on military, aviation, agricultural, construction, scientific, consumer and other important GPS uses – of a stand-alone terrestrial wireless service it seeks to offer in L-band spectrum frequencies that are uniquely suited for space-based uses, and which are licensed to LightSquared for provision of MSS. The Council has refuted these claims on many prior occasions in various FCC proceedings and in other contexts, and therefore limits its reply here to a brief accounting of LightSquared’s most persistent distortions, which are detailed below. Many of these same issues were addressed in a previous letter from Trimble Navigation Limited to the FCC’s Chief Engineer, a complete copy of which is attached hereto.³

• **LightSquared asserts that the GPS community had a “decade of awareness of LightSquared’s plans,”**⁴ yet such a lengthy period of prior “awareness” was not even possible, let alone factual. LightSquared’s plans for terrestrial-only use of L-band MSS spectrum were first disclosed in November 2010.⁵ While LightSquared seeks to portray its new, terrestrial-only service concept as a mere extension of the proposal pursued by its predecessor licensees, the system originally authorized by the FCC, and modified incrementally over the ensuing years, mandated that any terrestrial service provided in the MSS bands be both integrated with and ancillary to satellite-delivered service – the reason for the designation “Ancillary Terrestrial Component” (“ATC”). These fundamental requirements

³ See Attachment, Letter from Trimble Navigation Limited to Julius P. Knapp, Chief Engineer, Office of Engineering and Technology, FCC, dated June 14, 2011 (“Trimble Letter”).

⁴ LightSquared Comments at 11.

⁵ See FCC File No. SAT-MOD-20111118-00239.

precluded the L-band MSS licensee from offering terrestrial handsets that did not also have satellite capability, and necessarily required that the MSS/ATC operator protect its own satellites from harmful interference. *See* Attachment, Trimble Letter at 3-8 & 10-11.⁶

• **LightSquared contends that “the GPS industry’s only concern was ... out-of-band emissions,”**⁷ but such emissions were merely the most significant issue raised by the *integrated* MSS/ATC service as previously proposed. The Council has consistently been concerned with any operations in adjacent spectrum bands that could cause harmful interference to GPS. Each new proposal from the L-band MSS/ATC licensee has been reviewed by the GPS community according to the potential issues it might raise. The fundamental MSS/ATC dual-mode handset requirement and the need for the integrated service provider to maximize the ability to provide satellite coverage and avoid self interference profoundly limited the potential scope of terrestrial transmission to areas requiring ATC to fill gaps in satellite service. *See* Attachment, Trimble Letter at 6-10.⁸ These are the very protections that LightSquared now seeks to eliminate.

⁶ Notably, as late as two months prior to filing its November 2010 modification application, LightSquared made plain in the 2 GHz MSS proceeding that it understood the inherent limitations on the scope of its MSS/ATC authority, stating in Comments in that docket, “At present, ATC in the L-band, because it lacks a primary allocation in the United States, may have to protect other services and to accept interference from other services.” Comments of LightSquared Subsidiary LLC, ET Dkt. No. 10-142, at 12 (filed September 15, 2011).

⁷ LightSquared Comments at 12.

⁸ *See also Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band, Notice of Proposed Rulemaking*, 16 FCC Rcd 15532, 15541 (¶ 15) (2001) (In the initial MSS/ATC rulemaking, the Commission explicitly noted that the “satellite path would be the preferred communications link, but if the user’s satellite path is blocked, the communications link would be sustained via the fill-in base stations”).

- **Allegations by LightSquared of “poor design of ... GPS receivers”**⁹ simply ignore the fact that the well-settled allocation plan for the L-band neighborhood where MSS and GPS and other space-based services co-exist encouraged compatible and complementary service offerings. For many years, GPS receivers have sensibly been designed to maximize spectrum use and efficiency in frequency bands where low-intensity satellite spectrum use was predominant and terrestrial use was strictly limited. For example, high precision receivers that make use of MSS-augmented GPS are *required* to receive in the entire 1525-1610 MHz band for the augmented signal to be effective. LightSquared’s problem is not the design of GPS receivers, but the fact that the dramatic changes in spectrum use it proposes are not well-suited to the L-band operating environment, a circumstance of which it should have been aware before it proposed terrestrial-only operation.¹⁰

- **LightSquared’s assertion of an obstructionist “public relations campaign”**¹¹ by the GPS community is groundless. The main concern of the broad array of government GPS users, equipment manufacturers and the installed user base has simply been ensuring the continued integrity and future use of the critically important GPS service. There has never been a desire to “obstruct” LightSquared’s use of licensed spectrum in accordance with FCC rules.¹² The Council’s only objective has been to ensure that any *changes* in LightSquared’s method of

⁹ LightSquared Comments at 13.

¹⁰ *See also* Comments of the U.S. GPS Industry Council, IB Dkt. 11-109, at 51-52 (filed August 1, 2011) (“USGIC Comments on Technical Working Group Report”).

¹¹ LightSquared Comments at i & 13 (alleging an “obstructionistic [sic] public relations campaign”).

¹² Indeed, it was the FCC that conditioned LightSquared’s commencement of commercial service under its current authorization “upon the completion of the process [established thereby] for addressing interference concerns relating to GPS.” *LightSquared Subsidiary LLC*, 26 FCC Rcd 566, 588 (¶ 48) (IB 2011). *See also* USGIC Comments on Technical Working Group Report at 52-53.

operation do not interfere with existing and well-established GPS performance in public safety, aviation, defense, navigation, monitoring, agricultural and other critical and important uses of GPS. The users and makers of GPS equipment have been consistently focused on the physics and technical merits of LightSquared's proposed use and on ensuring that adequate testing is completed before any modified operations are authorized. It is LightSquared, on the other hand – as its many billboards, online ad placements, radio spots and press releases make plain – that has been intently focused on waging a public relations battle to obscure or deny the impact its proposed high-power, high capacity terrestrial mobile system would have on adjacent-band GPS operations.¹³

- **LightSquared's claimed "responsiveness to issues raised by the GPS industry"**¹⁴ is not of the nature that actually resolves difficult technical issues. Rather than responding constructively to legitimate GPS community interference concerns, LightSquared has too often responded by trying to minimize these concerns in its effort to move forward rapidly with deployment. This approach is exemplified in its Comments here by the unsubstantiated claims, based on incomplete test results, that its various "solutions" *resolve* the interference problems for "more than 99.5% of the GPS devices," and that only high precision devices remain

¹³ As just one example, in the LightSquared Comments no fewer than nine different LightSquared Press Releases are cited in support of points asserted in the pleading. *See* LightSquared Comments at 3 nn.10-12, 4 nn.14 & 16, 14 n.54 and 15 n.57.

¹⁴ LightSquared Comments at ii.

vulnerable to LightSquared interference.¹⁵ These claims have also been touted in LightSquared various press releases,¹⁶ but are not supported by actual, impartially-interpreted test data.

In fact, a statement from the National Executive Committee for Space-Based Positioning, Timing and Navigation with respect to the just-completed second round of government testing of LightSquared interference to GPS devices included the following language:

Preliminary analysis of the test findings found no significant interference with cellular phones. However, the testing did show that LightSquared signals caused harmful interference to the majority of other tested general purpose GPS receivers. Separate analysis by the Federal Aviation Administration also found interference with a flight safety system designed to warn pilots of approaching terrain.¹⁷

The Council has consistently maintained that conclusions regarding the ongoing testing can only be drawn once all testing and analysis is completed, and there is a complete picture of the impacts of LightSquared's proposals on GPS. Attempting to pre-judge this data, and to influence public opinion in the absence of full analysis, is not a constructive response.

* * * * *

LightSquared is determinedly attempting to control the public narrative, seizing upon this proceeding not to provide the information that the Bureau has sought, but simply to exploit

¹⁵ LightSquared Comments at 14.

¹⁶ *See, e.g.*, Press Release, LightSquared, "Testing by World-Renowned Independent Laboratory Shows LightSquared is Compatible with High Precision GPS Devices" (December 7, 2011).

¹⁷ Statement by the National Executive Committee for Space-Based Positioning, Navigation, and Timing (dated December 14, 2011) (available at <http://www.gps.gov/news/2011/12/lightsquared/>).

it as an additional forum for its campaign of proof by assertion. The Council once again requests that the Commission reject LightSquared's assertions in their latest iteration.

Respectfully submitted,

U.S. GPS INDUSTRY COUNCIL

By: *s/ Raul R. Rodriguez*

Raul R. Rodriguez
Stephen D. Baruch
David S. Keir

Lerman Senter PLLC
2000 K Street, NW, Suite 600
Washington, DC 20006-1809
(202) 429-8970

December 20, 2011

Its Attorneys

ATTACHMENT

Letter from James A. Kirkland, Vice President & General Counsel,
Trimble Navigation Limited to Julius P. Knapp, Chief Engineer,
Office of Engineering and Technology, FCC, dated June 14, 2011



Trimble Navigation Limited
935 Stewart Drive
Sunnyvale, CA 94085

June 14, 2011

Julius P. Knapp
Chief Engineer
Office of Engineering and Technology
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

WRITTEN EX PARTE COMMUNICATION – SUBMITTED VIA IBFS

Re: LightSquared Subsidiary, LLC; Request for Modification of its Authority for an Ancillary Terrestrial Component; **IBFS File No. SAT-MOD-20101118-00239**

Dear Mr. Knapp:

During our recent meeting, you and other staff members questioned whether manufacturers of GPS equipment should have been aware of the potential harm that would be caused to reception of GPS receivers by the terrestrial services now contemplated by LightSquared Subsidiary, LLC (“LightSquared”). You noted that LightSquared and its predecessors in interest had been provided various forms of relief by the FCC related to the rules governing the provision of the ancillary terrestrial component (“ATC”) of LightSquared’s mobile satellite service (“MSS”). I explained that none of the previous decisions of either the Commission or its International Bureau changed the ancillary nature of the permitted terrestrial service and that GPS manufacturers expected that they would be protected from harmful interference as a consequence of LightSquared’s protection of its own MSS operations.

While LightSquared has continued to assert that its proposed operation of a stand-alone, nationwide, high-powered terrestrial network “is not a new development,”^{1/} I thought it would be useful to provide you with a summary of Commission actions which make it clear that LightSquared’s recent plans are not an outgrowth of the type of ATC authority the FCC contemplated.

As an initial matter, though, it is useful to remember when considering the “history” of the GPS interference issue and the role of the “GPS industry” that the GPS satellite constellation was launched as a *Federal government initiative* and represents a national asset paid for by American taxpayers. The Federal government has a very large investment in the GPS constellation and is the authorized user of the spectrum allocated for radio transmissions by GPS satellites. One

^{1/} See, e.g. Letter from Jeffrey Carlisle, Executive Vice President, Regulatory Affairs & Public Policy, LightSquared, to The Honorable Anna Eshoo, United States House of Representatives (Apr. 15, 2011).

official recently estimated that investment to be \$35 billion dollars in the constellation alone, with an additional required investment of \$1 billion each year.^{2/} Precise numbers of the Federal government's investment in GPS-related systems and equipment are not available, but are estimated to amount to many additional billions.

The many public statements to date about what the GPS industry knew or should have known would happen in the future simply miss the point – *the FCC itself has an affirmative duty to proactively protect critical government spectrum uses and investments.* In fact, in its 2005 ATC Decision, the FCC explicitly undertook to do exactly that. In discussing a proposal to codify certain emission limits in the FCC rules, the FCC stated:

While we agree with the GPS Industry Council, NTIA, and other government agencies that it is essential to ensure that GPS does not suffer harmful interference, it is also important to ensure that new technologies are not unnecessarily constrained. In this regard, we recognize that the President's new national policy for space-based positioning, navigation, and timing (PNT) directs the Secretary of Commerce to protect the radio frequency spectrum used by GPS and its augmentations through appropriate domestic and international spectrum management regulatory practices Furthermore, the President's PNT policy calls for the establishment of an inter-agency Executive Committee, on which the Chairman of the FCC will be invited to participate as a liaison, and a National Space-Based PNT Coordination Office. It is our intention to establish discussions with other agencies, through the PNT Executive Committee and Coordination Office as appropriate, to better understand what protection levels for GPS are warranted. The results of those discussions may lead to future rulemaking proposals in order to ensure that all FCC services provide adequate protection to GPS, and produce a more complete record upon which to establish final GPS protection limits for MSS ATC licensees.^{3/}

The Presidential policy that the Commission committed to implement in 2005 has been followed and amplified by the present Administration. The June 28, 2010 *National Space Policy of the United States* provides that the United States “must maintain its leadership in the service, provision, and use of global navigation satellite systems” and lists as a critical objective “invest[ing] in domestic capabilities and support[ing] international activities to detect, mitigate, and increase resiliency to harmful interference to GPS.”^{4/} Similarly, this Administration's policy statements on spectrum policy make clear that advancing broadband deployment and competition should not come at the expense of critical government assets such as GPS. The June 2010 Presidential Memorandum directing the Department of Commerce to work with the FCC to develop a plan to make available additional spectrum for broadband services states that any such

^{2/} Peter B. de Selding, *LightSquared Plans Hinge on Outcome of GPS Interference Debate*, SPACE NEWS, March 4, 2011 (reporting U.S. Air Force estimates of the U.S. government's GPS investments).

^{3/} *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, Memorandum Opinion and Order and Second Order on Reconsideration, 20 FCC Rcd 4616, ¶ 70 (2005) (“2005 ATC Decision”).

^{4/} *National Space Policy of the United States of America*, at 5, June 28, 2010, available at http://www.whitehouse.gov/sites/default/files/national_space_policy_6-28-10.pdf.

plan “must take into account the need to ensure no loss of critical existing and planned Federal, State, local, and tribal government capabilities.”^{5/}

Among other assurances (in Commission decisions) described below, the GPS industry (and the interested government users) reasonably relied on the FCC’s express commitment to diligently and proactively protect GPS from encroachments, whether by private parties such as LightSquared or otherwise.

As set forth in more detail below, instead of diligently and proactively protecting GPS in regulating use of the MSS band, it appears that the FCC simply ignored GPS interference considerations in the *March 2010 Order* that first sanctioned LightSquared’s plans to build extensive terrestrial facilities and approved the transfer of control to Harbinger. From the standpoint of private and government GPS users, the decision did not purport to change the Commission’s prior policies requiring that any terrestrial service in the MSS band be *ancillary to and integrated with* primary satellite operations, the policies that provided fundamental protections to private and government users of GPS. To the extent that the Commission contemplated, in March 2010, or at any time prior to that, different types of operations that presented “significant interference concerns” or which created a “new and more challenging interference environment,” as NTIA described LightSquared’s November 2010 proposal,^{6/} it was clearly incumbent upon the FCC itself to proactively evaluate interference issues in accordance with, among others, its 2005 commitment. The Commission should not now attempt to revise history and shift its own obligation to protect GPS to the private sector.

In any case, the Commission’s January 2011 waiver decision represented a fundamental change in Commission policy regarding ancillary terrestrial operations in the MSS band, and so could not have reasonably been foreseen by either the GPS industry or knowledgeable GPS experts in the U.S. government.

The GPS Industry Reasonably Expected ATC That Was “Ancillary”

Since 2003, the FCC has contemplated terrestrial operations as an ancillary supplement to a primarily satellite-based service. LightSquared’s November 18, 2010 letter^{7/} describes a new service that is completely inconsistent with this expectation. There, LightSquared said that it plans to build a “nationwide network of 40,000 terrestrial base stations,” and states that “the capacity of its fully deployed terrestrial network across all base stations will be *tens of thousands of times* the capacity of either of [its] satellites.”^{8/} Similarly, under the only combined

^{5/} White House Office of the Press Secretary, *Presidential Memorandum: Unleashing the Wireless Broadband Revolution*, § 1, June 28, 2010, available at <http://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution>.

^{6/} Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, U.S. Department of Commerce, to Julius Genachowski, Chairman, FCC, at 1-2 (filed January 12, 2011).

^{7/} Letter from Jeffrey J. Carlisle, Executive Vice President, Regulatory Affairs & Public Policy, LightSquared, to Marlene H. Dortch, Secretary, FCC, SAT-MOD-20101118-00239, at 2 (Nov. 18, 2010) (the “November 18, 2010 Letter”).

^{8/} *Id.* at 7 n.7.

satellite/terrestrial service plan described in the letter, an end user would be provided with basic usage (*i.e.*, usage before additional charges apply) of one *gigabyte* of terrestrial wireless broadband usage but only *500 kilobytes* of satellite data usage, less than what is needed to send a single email in many cases.^{9/} In fact, a LightSquared executive was recently quoted as expressing “LightSquared’s hope that people would use its satellite coverage as a last resort saying, ‘We’ve likened satellite coverage to gym membership. We want everyone to have it, be we don’t want people to go!’”^{10/}

LightSquared itself principally promotes its provision of terrestrial wireless broadband capacity, not of satellite capacity.^{11/} It has announced that it has entered into transactions with various companies in which LightSquared will make its terrestrial network available, so that its customers can compete with current wireless providers like mobile phone companies (and in some cases, LightSquared will provide those current wireless carriers with additional capacity to supplement existing spectrum).^{12/}

This is precisely the opposite of what the FCC anticipated when it authorized ATC. Then, the FCC said that it did *not* expect ATC services to be comparable to and therefore competitive with the services of established consumer terrestrial services like cellular.^{13/} In fact, the FCC used the

^{9/} *Id.* at 6.

^{10/} Benny Har-Even, *LTE World Summit 2011*, TELECOMS.COM, May 20, 2011, <http://www.telecoms.com/27960/lte-world-summit-2011-tweets-from-the-floor/>.

^{11/} *See, e.g.*, Press Release, LightSquared, *LightSquared and SI Wireless Announce They Have Entered Into a Bilateral Roaming Agreement* (Apr. 21, 2011) (“LightSquared’s mission is to revolutionize the U.S. wireless industry. . . . Through its wholesale-only business model, those without their own wireless network or who have limited geographic coverage or spectrum can develop and sell their own devices, applications, and services using LightSquared’s open 4G network – at a competitive cost and without retail competition from LightSquared.”).

^{12/} *See, e.g., id.*; *LightSquared Plans to Offer 4G Nationwide*, CNBC.COM, March 23, 2011 (reporting LightSquared’s plan to offer wholesale nationwide 4G networks to wireless phone service providers and quoting CEO Sanjiv Ahuja stating, “We are here to provide enough capacity to the wireless guys so that they can take it and in turn provide it to their customers”); Dan Jones, *LightSquared Leaps into Best Buy Deal*, LIGHT READING MOBILE, March 23, 2011 (reporting that LightSquared announced a deal with Best Buy where “the retailer will offer own-brand 4G service and devices with LightSquared running the network in the background”); Peter Svensson, *LightSquared Gets First Deal with a Phone Company*, ABCNEWS.COM, March 22, 2011 (“LightSquared, a company building a new wireless broadband network to compete with those of AT&T Inc., Verizon Wireless and Clearwire Corp., announced Tuesday its first phone-company customer, Leap Wireless International Inc.”).

^{13/} *See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962, ¶¶ 39, 41 (2003) (“2003 ATC Decision”) (“As a preliminary matter, terrestrial [Commercial Mobile Radio Service (“CMRS”)] and MSS ATC are expected to have different prices, coverage, product acceptance and distribution; therefore, the two services appear, at best, to be imperfect substitutes for one another that would be operating in predominately different market segments. . . . MSS ATC is unlikely to compete directly with terrestrial CMRS for the same customer base . . .”).

distinction between ATC and cellular-like services to justify the fact that the ATC spectrum should not be auctioned, as is most terrestrial wireless spectrum.^{14/}

Instead, both the FCC and LightSquared's predecessors expected ATC to be a means by which MSS operators could provide service in urban areas where satellite coverage would be difficult to achieve.^{15/} As the FCC noted in its original *Notice of Proposed Rulemaking* considering ATC authority in the MSS band:

Motient [LightSquared's predecessor] seeks authority to operate terrestrial base stations, as part of Motient's next-generation mobile satellite system in both the upper and lower L-band. The terrestrial base stations would be integrated with the satellite network and would enable co-channel reuse of the satellite service link frequencies in adjacent satellite antenna beams to provide coverage to areas where the satellite signal is attenuated by foliage or terrain and to provide in-building coverage. The satellite path would be the preferred communications link, but if the user's satellite path is blocked, the communications link would be sustained via the fill-in base stations.^{16/}

LightSquared's planned network turns this original vision on its head. In September 2010, LightSquared, after stating that its "ancillary" terrestrial network would have "the capability to serve hundreds of millions of users," also noted that:

LightSquared will achieve these results while at the same time maintaining service to its existing MSS customer base of over 300,000 terminals used in rural and remote areas and by emergency service providers that need a reliable replacement service in the event terrestrial infrastructure is destroyed.^{17/}

^{14/} *Id.* ¶¶ 220, 225.

^{15/} *See, e.g., id.* ¶ 24 (noting that "improved coverage in urban areas should significantly expand the consumer market that MSS is capable of serving"); *2005 ATC Decision* ¶ 27 ("On the contrary, the MSS/ATC operators' interest in avoiding unnecessary capital expenditures would deter them from installing ATC base stations in non-urban areas where traffic is light enough to be handled by MSS alone. Thus, we believe that MSS/ATC operators will only install ATC base stations in areas where the satellite signal is substantially affected by blocking or where consumers demand more communications paths than the satellite can provide. These are the precise situations for which we authorized ATC."); Comments of Motient Services Inc., TMI Communications and Company, Limited Partnership, and Mobile Satellite Ventures Subsidiary LLC, IB Docket 01-185, ET Docket No. 95-18, at 23 (filed Oct. 22, 2001) ("MSV 2001 Comments") ("MSV [LightSquared's predecessor] will not operate a terrestrial-only system; rather, terrestrial operations will only supplement the satellite service in urban and indoor environments with terrestrial extensions.").

^{16/} *See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band*, Notice of Proposed Rulemaking, 16 FCC Rcd 15532, ¶ 15 (2001).

^{17/} Comments of LightSquared Subsidiary LLC, ET Docket No. 10-142, at 6-7 (filed Sept. 15, 2010) ("LightSquared 2010 Comments").

Now, under LightSquared’s plan, the purpose of the satellite service would be to provide ancillary service in remote areas not covered by the ubiquitous primary terrestrial network, or in the event that the terrestrial network is destroyed – exactly the opposite of what the FCC authorized and the GPS industry could have reasonably anticipated.

The GPS Industry Reasonably Expected ATC That Was “Integrated”

When the FCC adopted its ATC rules, it required that the terrestrial service be *integrated* with the satellite service.^{18/} GPS providers relied on this requirement and were satisfied that with an ATC that was integrated with MSS, ATC would continue to be ancillary to MSS and would not be configured in a way that would harm GPS reception.^{19/} LightSquared’s own filings with the FCC, as late as September 2010, indicate that it understood that ATC operations must be integrated with, and not independent of, the underlying MSS service.^{20/}

One long-established means of fulfilling the integrated service requirement was to offer dual-mode handsets – *i.e.*, handsets that were capable of receiving both satellite and terrestrial services.^{21/} LightSquared’s November 18, 2010 Letter acknowledged this requirement when it stated:

^{18/} See, e.g., *2003 ATC Decision* ¶¶ 87-88 (“MSS licensees must make an affirmative showing to the Commission that demonstrates that their ATC service offering is truly integrated with their MSS offering . . . This integrated service requirement and the other rules adopted today will help ensure that MSS remains first and foremost a satellite service and that the terrestrial component remains ancillary to the primary purpose of the MSS system.”); *2005 ATC Decision* ¶ 19 (reiterating that to “ensure that ATC will be ancillary to provision of MSS . . . [w]e require[] the offer of MSS and ATC services to be integrated” and that MSS/ATC operators have to make a showing to that effect). In addition, the Commission further clarified the integrated nature of the service by prohibiting ATC-only subscriptions. See, e.g., *id.* ¶ 33 (“We reiterate our intention not to allow ATC to become a stand-alone system. The purpose of ATC is to enhance MSS coverage, enabling MSS operators to extend service into areas that they were previously unable to serve, such as the interiors of buildings and high-traffic density urban areas. We will not permit MSS/ATC operators to offer ATC-only subscriptions, because ATC systems would then be terrestrial mobile systems separate from their MSS systems. We therefore clarify that ‘integrated service’ as used in this proceeding and required by 47 C.F.R. § 25.147(b)(4) forbids MSS/ATC operators from offering ATC-only subscriptions.”).

^{19/} See, e.g., *2003 ATC Decision* ¶ 3 n.5 (“While it is impossible to anticipate or imagine every possible way in which it might be possible to ‘game’ our rules by providing ATC without also simultaneously providing MSS and while we do not expect our licensees to make such attempts, we do not intend to allow such ‘gaming.’”).

^{20/} LightSquared 2010 Comments at 12 (stating that at present, “ATC in the L-band, because it lacks a primary allocation in the United States, may have to protect other services and to accept interference from other services . . . The Commission could, however, make it substantially easier to implement ATC domestically in the future by expanding the definition of MSS in its rules to include ATC and thus rendering ATC a primary service.”).

^{21/} In furtherance of the integrated service requirement, the FCC adopted a safe harbor for MSS/ATC applicants to demonstrate that ATC would be integrated with the underlying MSS system where such applicants would have to show that they use a dual-mode handset to provide the proposed ATC service. See, e.g., *2003 ATC Decision* ¶ 87. LightSquared’s authorization was premised on its ability to meet this safe harbor. See *Mobile Satellite Ventures Subsidiary LLC Application for Minor Modification of Space*

At the time LightSquared's predecessor applied for ATC authority, the company, in order to demonstrate compliance with the Commission's integrated service requirements, planned to use dual-mode handsets *exclusively*.^{22/}

The November 18, 2010 Letter abandoned the concept entirely. Under LightSquared's proposal, its wholesale carrier customers are not required to offer satellite service to end customers, nor are they required to provide handsets that are capable of receiving satellite service. In other words, at that customer level, there is absolutely no integration of terrestrial and satellite service.^{23/}

Under these circumstances, there can be no doubt, as LightSquared's public statements described above make clear, that terrestrial-only data usage will greatly predominate over time, rendering satellite service a distant second in LightSquared's business plans and priorities.

LightSquared's current "integration" plans are thus the polar opposite of what the FCC and the GPS industry "anticipated" when the ATC rules were adopted and thereafter. In 2003, the Commission stated:

We will authorize MSS ATC subject to conditions that ensure that the added terrestrial component remains ancillary to the principal MSS offering. We do not intend, *nor will we permit*, the terrestrial component to become a stand-alone service.^{24/}

In 2004, the International Bureau reaffirmed the "integration" requirement, making clear that it was an essential part of ensuring that terrestrial operations remain truly "ancillary":

The Commission's decision to permit implementation of MSS ATC was based on the premise that ATC must be "ancillary" to MSS operation. To that end, the Commission established "gating" requirements for ATC authorization and operation *to ensure that ATC will augment, rather than supplant, MSS*. In order to satisfy the gating requirements, which are set forth in Section 25.149 of the Commission's rules, an MSS-ATC licensee must, among other things, . . . integrate its offering of ATC services with its offering of MSS.^{25/}

Station License for AMSC-1, et al., Order and Authorization, 19 FCC Rcd 22144, ¶¶ 19-21 (2004) ("2004 ATC Decision") ("MSV asserts that the handsets that will be used to access its ATC network will be dual-mode devices that can also be used for MSS communication . . . The ATC authorization granted by this order is conditioned accordingly.").

^{22/} November 18, 2010 Letter at 1.

^{23/} LightSquared's November 18, 2010 Letter attempts to claim that terrestrial and satellite services were "integrated" because the rate card it presented to its wholesale customers (who in turn resell the service to end customers) would only list combined satellite/terrestrial services. November 18, 2010 Letter at 6-7. These assertions cannot overcome the fact that these wholesale customers were not required to buy specialized dual-purpose handsets or sell them to their customers, or even tell their customers that satellite services were available.

^{24/} 2003 ATC Decision ¶ 1 (emphasis added).

^{25/} 2004 ATC Decision ¶ 18 (footnotes omitted) (emphasis added).

Under these circumstances, it is not surprising that the FCC concluded in the *January 2011 Order* that “LightSquared fails to satisfy the integrated service rule.”^{26/} The Commission nonetheless decided to waive the rule, despite repeated prior assurances that terrestrial service would not be allowed to supplant satellite service in the MSS band. On the other hand, there is simply *no language in prior Commission orders* that might have put the GPS community on notice that the integrated nature of an MSS’s provider’s terrestrial service could be changed in such a fundamental way.

The Incremental Changes the FCC Made to Its Rules Were No Signal That LightSquared Would Abandon the Need to Protect Its Own MSS

The Commission’s established policies requiring that terrestrial uses be strictly ancillary to primary satellite uses were a critical part of the spectrum plan for the L-Band, where GPS has historically operated. The spectrum plan grouped satellite operations with other satellite operations intentionally, to avoid the kinds of interference issues presented by inconsistent spectrum uses in adjacent frequency bands – in this case, to avoid the interference that would result when ubiquitous, high-powered terrestrial transmitters operate in spectrum directly adjacent to spectrum where highly sensitive GPS receivers attempt to detect faint satellite signals. The ancillary usage the FCC permitted in prior decisions was a limited accommodation designed to enhance a *satellite service*. The limited accommodation of ATC did not represent a considered decision to allow ubiquitous high-powered use of the band.^{27/}

Notwithstanding the longstanding rationale for limiting ancillary operations, and clear Commission policy against free-standing terrestrial services, LightSquared points to a series of incremental modifications of the Commission’s technical rules that it claims opened the door to its current business plans. Whether the modifications which came before it were incremental, the change which resulted from LightSquared’s November 2010 filing – its plans to indirectly sell entirely free-standing terrestrial broadband services – was not. That required, as the International Bureau recognized, a reversal of longstanding Commission policy, which the Bureau elected to adopt by “merely” waiving its rules.^{28/}

^{26/} *LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component*, Order and Authorization, 26 FCC Rcd 566 ¶ 24 (2011) (“*January 2011 Order*”) (finding that LightSquared failed to satisfy the integrated service rule).

^{27/} Trimble is not suggesting, nor is it the case, that terrestrial uses cannot ever coexist in or adjacent to satellite bands, and that policy makers are stuck with decisions made long ago. However, the FCC must engage in detailed consideration of the affected existing uses and the proposed new uses, and carefully craft rules to support coexistence. In this case, it is clear that an intensive, ubiquitous terrestrial use (LightSquared’s new terrestrial business plan) cannot be authorized adjacent to a satellite band that is intensively used on an even more ubiquitous basis (GPS). There are very few satellite uses comparable to GPS in ubiquity and importance, so the repurposing of alternative underutilized satellite bands may be less problematic.

^{28/} See Letter from Julius Genachowski, Chairman, FCC, to The Honorable Charles E. Grassley, United States Senate, at 1 (May 31, 2011) (“*Genachowski Letter*”).

Put another way, the earlier changes cited by LightSquared all occurred against the backdrop of the fundamental requirements that the terrestrial operations would be *ancillary to and fully integrated with*, a primary satellite service. The GPS community evaluated changes in the technical rules in this context and did its best to cooperate in technical modifications that would apply to terrestrial operations which were subject to these fundamental constraints.

Chairman Genachowski's recent effort to downplay the importance of the integrated service requirement misses the point.^{29/} The *January 2011 Order* did not "merely" waive the integrated service requirement. It eliminated a critical basis on which GPS protection rested. Similarly, the Chairman overstates the case when he says that the GPS industry sent a letter to the FCC in August 2009 "agreeing that the GPS interference issues *had been resolved*."^{30/} The GPS industry's concerns at the time were limited to out-of-band emission limits associated with femtocells and data cards.^{31/} It certainly had no reason to consider those, or any other issues, in the context of the potential elimination of the integrated service obligation.

From an interference standpoint, so long as LightSquared and its predecessors were obligated to provide ATC that was truly ancillary to and integrated with its primary MSS, they were necessarily compelled to protect their own primary satellite operations from interference. The same protection that the ATC operator's own satellite operations required was also sufficient to protect GPS receivers.

The Commission and LightSquared's predecessors specifically recognized that ATC would be limited by the need to ensure that ATC operations did not cause harmful interference to LightSquared and its predecessors' own MSS operations.^{32/} Because of LightSquared's self-interest in protecting its own satellite signals in-band, the GPS industry focused its efforts on limiting out-of-band emissions from the anticipated ATC operations to GPS reception in the adjacent spectrum band, as evidenced by the agreements reached between the GPS industry and LightSquared. Now that LightSquared is no longer required to provide an integrated service, it is free to view mobile satellite service as important only in "remote" areas and when terrestrial facilities have been "destroyed." Therefore, it has no incentive to protect its own MSS operations from interference from its core terrestrial operations, removing its fundamental motivation to engineer its own system in a manner that protected GPS reception as well.

^{29/} *Id.*

^{30/} *Id.* at 2 (emphasis in original).

^{31/} See Letter from Bruce D. Jacobs, Counsel for SkyTerra Subsidiary LLC and Raul R. Rodriguez, Counsel for The U.S. GPS Industry Council, to Marlene H. Dortch, Secretary, FCC, at 1 (Aug. 13, 2009) ("We are pleased to inform you that . . . the U.S. GPS Industry Council ('Council') and SkyTerra have agreed on out-of-band emissions ('OOBE') limits for the operation of low-power base stations with a maximum EIRP of -4 dBW/MHz that are intended to be deployed indoors ('femtocells') and personal computer ('PC') data cards communicating with such base stations.").

^{32/} See, e.g., MSV 2001 Comments at 17 ("Because MSV's own satellite system will be the most affected by signals generated by ancillary terrestrial operations, it will have every incentive to monitor and minimize these signal levels in order to ensure that the quality of its satellite service is not compromised."); *2003 ATC Decision* ¶¶ 130-188 (discussing, among other things, MSV's incentive and efforts to eliminate self-interference to its satellite operations caused by ATC).

This is not a mere theoretical possibility. LightSquared's proposed services will not only interfere with GPS, they will also create massive interference to other users of satellite services in the MSS band, exactly the outcome the FCC sought to avoid through its repeated statements that terrestrial uses must remain ancillary and integrated with satellite services. This is highlighted by LightSquared's agreements with Inmarsat, which shares the MSS band with LightSquared. When LightSquared negotiated with Inmarsat to obtain favorable concessions on spectrum use, LightSquared both acknowledged the substantial interference problems in the MSS band and provided Inmarsat with compensation as a result. LightSquared agreed to pay Inmarsat hundreds of millions of dollars, and Inmarsat has publicly estimated that its costs to mitigate interference to its own operations, with approximately 50,000 affected users, at approximately \$250 million dollars.^{33/}

It is unclear what, if any, provision LightSquared intends to make for its own MSS customers or the many thousands of other users of the MSS band who rely indirectly on MSS services provided by LightSquared or Inmarsat. Under LightSquared's new business plan, in which its main revenue opportunity is with terrestrial services, this interference appears to be merely a cost of doing business or acceptable collateral damage. Private and government GPS users, who also relied upon and benefited from prior requirements and the resulting imperative to avoid MSS in-band interference, will be similarly affected. Worse, according to LightSquared, they are to be blamed for failing to foresee the eventual rollback by the FCC of rules protecting the integrity of what for decades was a satellite band.

LightSquared's Plans Are New and Not an Outgrowth of Historic FCC Authority

Chairman Genachowski recently stated that it "should be no surprise to anyone involved in the LightSquared matter" that the terrestrial component of the network Harbinger planned would cover 90 percent of the United States.^{34/} To set the record straight, LightSquared's first, limited description of its new business model was included in the public record for the first time days before, and as a condition of, the release of the Commission's *March 2010 Order*.^{35/} Prior to March 2010, LightSquared's intentions were hardly longstanding or transparent. In response to Harbinger's application for transfer of control, the FCC's International Bureau asked Harbinger in 2009 about how it planned to provide ATC. Much of Harbinger's response was provided in redacted format, hiding from the public how it intended to offer ATC.^{36/} Since Harbinger's

^{33/} See, e.g., Peter B. de Selding, *Inmarsat Awaits Harbinger Payment for Interference Mitigation*, SPACE NEWS, May 13, 2010.

^{34/} *Genachowski Letter* at 2.

^{35/} Letter from Henry Goldberg and Joseph A. Godles, Counsel for the Harbinger Capital Partners Funds, to Marlene H. Dortch, Secretary, FCC, IB Docket No. 08-184 (Feb. 26, 2010) (*see* Attachment). Harbinger's business plan was also appended to the *March 2010 Order*. *SkyTerra Communications, Inc., Transferor, and Harbinger Capital Partners Funds, Transferee, Applications for Consent to Transfer of Control of SkyTerra Subsidiary, LLC*, Memorandum Opinion and Order and Declaratory Ruling, 25 FCC Rcd 3059 (2010) ("*March 2010 Order*") (Appendix B – Harbinger Business Plan Letter of March 26, 2010 at Attachment 1).

^{36/} See Response of Harbinger, IB Docket No. 08-184 (filed Dec. 11, 2009).

commitment to cover 90 percent of the country was only made public days before the *March 2010 Order*, interested parties did not, as the Chairman asserts, have “ample time to comment in advance of [the March 2010] orders.”^{37/}

Not only did the FCC fail to provide third parties with ample time to consider Harbinger’s plan to build a nationwide terrestrial network prior to the *March 2010 Order*, it declined to consider possible interference issues on its own motion either – neglecting its obligation to ensure that GPS remained protected from the new terrestrial network Harbinger envisioned, not to mention its 2005 commitment to proactively protect GPS from harmful interference by consulting with affected government users. Nor did the *March 2010 Order* purport to modify, or even suggest modification of, the Commission’s policies requiring that terrestrial services be ancillary to and integrated with a primary satellite service, the fundamental requirements that the Commission decided to waive in January 2011.

After the *March 2010 Order*, in the next significant proceeding related to MSS, FCC Docket No. 10-142, The U.S. GPS Industry Council, in comments filed in September 2010, extensively discussed its concerns with “overload” of GPS receivers by the sort of dense, high-powered terrestrial network contemplated by LightSquared’s business plan and the Commission’s July 2010 *Notice of Proposed Rulemaking*.^{38/} The U.S. GPS Industry Council has consistently raised the overload issue since, as have the NTIA and other government users, especially following the November 18, 2010 Letter.

In short, if the FCC intended in its *March 2010 Order* to make a change in policy that substantially increased the risk of interference to GPS, it did so in a cryptic fashion, with no record to support it. For LightSquared or the FCC to suggest that these decisions, and the industry response to them, justify imposing harmful interference, or mitigation costs, on government and private GPS users defies sound public policy and proper administrative procedure. Given the substantial government and private investment in GPS, the FCC owes much more to these parties than an admonition, much less more serious consequences, for supposedly failing to “read the tea leaves.”

Under Longstanding Commission Policy, LightSquared Is Obligated to Eliminate, or Bear All Costs of Eliminating, Harmful Interference to GPS

Whatever the history, or debatable assertions about it, the responsibility for eliminating interference to GPS, or bearing the costs of eliminating it, rests squarely with LightSquared. When the FCC authorized ATC, it made it clear that in the event that services in bands adjacent to ATC operations, like GPS, suffered harmful interference, it would be *the responsibility of the*

^{37/} *Id.* Even if there was “ample time” to comment on the Harbinger plan to cover 90 percent of the United States, the *March 2010 Order* left in place the integrated service requirement, meaning that regardless of the scope of LightSquared’s terrestrial coverage, it could not practically provide terrestrial service without harming its own satellite operations. Once the obligation to provide integrated service was eliminated, it was no longer so constrained.

^{38/} See Comments of The U.S. GPS Industry Council in Response to Notice of Proposed Rulemaking and Notice of Inquiry, ET Docket No. 10-142 (filed Sept. 15, 2010).

ATC operator, not the GPS provider, to cure that interference.^{39/} The FCC's rules are crystal clear on this point – Section 25.255 of the Commission's rules states:

If harmful interference is caused to other services by ancillary MSS ATC operations, either from ATC base stations or mobile terminals, the MSS ATC operator must resolve any such interference.^{40/}

No Commission decision, in March 2010, January 2011, or otherwise, has modified this rule. LightSquared has already acknowledged this by agreeing to pay Inmarsat for the costs of protecting Inmarsat's customers from interference within the MSS band. The same obligation applies to government and private industry users of GPS, who have invested many billions of dollars in GPS long before Harbinger arrived on the scene in March 2010. The Commission has provided no sound basis for deviating from that approach – that burden remains squarely with LightSquared.

Consistent with the FCC's *ex parte* rules, a copy of this letter has been filed in the above-referenced application file via IBFS. If you have any questions, please let me know.

Sincerely,



James A. Kirkland
Vice President and General Counsel

cc: (each via e-mail)

Julius Knapp
Jamie Barnett
Paul deSa
Sankar Persaud
Tom Peters

Michael Ha
Mark Settle
John Kennedy
Robert Nelson
Edward Lazarus

Walter Johnson
Brian Butler
Paul Murray
Pat Amodio
Rick Kaplan

^{39/} 2003 ATC Decision ¶ 183 (requiring L-band ATC base stations and mobile terminals to meet certain out-of-band emission levels and requiring MSV to operate its ATC base stations with a maximum transmit power of 23.9 dBW EIRP, per sector, and incorporate a 1.2 MHz guard band “in order to demonstrate that its base stations will be capable of meeting the -70 dBW/MHz and -80 dBW for discrete spurious emissions measured in a 700 Hz bandwidth to protect GPS”); *id.* ¶ 188 (requiring L-band ATC operators to maintain records and submit reports to the Commission in order to resolve interference complaints received from other operators and to ensure compliance with interference rules).

^{40/} 47 C.F.R. § 25.255.