

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

In the Matter of)	
)	
LightSquared Subsidiary, LLC)	IB Docket No. 11-109
)	
Application for Modification of Its Authority)	
for an Ancillary Terrestrial Component)	
)	

REPLY COMMENTS OF SPRINT NEXTEL CORPORATION

I. INTRODUCTION AND SUMMARY

Sprint Nextel Corporation (“Sprint”) replies to initial comments regarding the LightSquared Technical Working Group’s report to the Federal Communications Commission (“Commission”). As an active participant in the technical working group process, Sprint had the privilege of directly observing the working group’s deliberations and contributing to the process that culminated in the working group’s report. Moreover, as a carrier that relies heavily on end-user geo-location chipsets and precision-timing mechanisms (instruments which depend on the continued functionality of Global Positioning System (GPS) satellite transmission) and at the same time a vendor of spectrum hosting and network services to LightSquared, Sprint is in a unique position to consider the facts and merits of all sides in this proceeding.

As Sprint emphasized in its initial comments, the optimal solution to assuring radiofrequency coexistence among LightSquared’s planned satellite/terrestrial broadband network and GPS users involves shared responsibility between transmitters and receivers, consistent with Commission precedent. This proceeding provides an opportunity for the

Commission to fashion a solution based on a balanced approach; in doing so, the Commission can achieve its priorities of increasing the utility of a valuable national resource, expanding the availability of wireless broadband services nationally, and safeguarding incumbent users from harmful interference. The Commission should work to achieve that result as rapidly as possible so business can proceed for all parties.

II. THE COMMISSION’S MISSION INCLUDES IDENTIFYING, ASSIGNING AND ENCOURAGING THE DEPLOYMENT OF ALL REASONABLY AVAILABLE SPECTRUM TO PROVIDE PUBLIC BENEFITS, WHILE MANAGING THE SPECTRUM TO PREVENT HARMFUL INTERFERENCE

Spectrum is a valuable national resource – so valuable, in fact, that the National Broadband Plan criticized past spectrum policy for failing to make incumbent licensees absorb the opportunity costs of their use of spectrum. “The result,” the Plan concluded, “can be inadequate consideration of alternative uses, artificial constraints on spectrum supply and a generally inefficient allocation of spectrum resources.”¹ Whether a dominant wireless company idles vast swaths of spectrum to foreclose competition, or the Commission walls off valuable spectrum resources by regulatory fiat, the result is the same: increasing pressure on prices, curtailed deployment, and reduced innovation. Avoiding this type of costly stasis requires the Commission to continually assess whether spectrum is truly being put to its highest and best use. As the former Senior Advisor for Technology and Innovation to the National Economic Council Director at the White House explained, the Commission “should focus on how to spur the greatest possible usage of spectrum” by “balanc[ing] the cost of potential future interference (as managed by interference mitigation strategies) with the benefits of more intensive use of spectrum.”²

¹ Federal Communications Commission, “Connecting America: The National Broadband Plan,” at 82 (rel. March 16, 2010), *available at*: <http://download.broadband.gov/plan/national-broadband-plan.pdf> (“National Broadband Plan”)

² Philip J. Weiser, “The Untapped Promise of Wireless Spectrum,” The Brookings Institution, July 2008 at 24. *Available at*:

While the Twin Bells AT&T and Verizon have secured the vast majority of ‘low-band’ (*i.e.*, 700 MHz and 800 MHz) spectrum in the U.S., Sprint and other wireless carriers have sought ways to increase capacity to meet demand through infrastructure upgrades, denser cell site deployments, and constructing new networks. Sprint’s “Network Vision” initiative, for instance, utilizes state-of-the-art spectrally agile and flexible radio access technology to more effectively utilize Sprint’s spectrum assets. Other carriers have adopted similar methods for identifying and developing new spectrum resources – a process that is both high-risk and capital intensive.

As a new entrant in the mobile broadband market, LightSquared proposes to help meet the wireless broadband needs of Americans by providing terrestrial wireless broadband capacity on a wholesale basis to ‘retail’ carriers. Not surprisingly, numerous commenters have specifically lauded LightSquared’s efforts as consistent with the National Broadband Plan’s goals for encouraging broadband deployment. In a joint submission, the New America Foundation, Free Press, Public Knowledge, and the Media Access Project note that, “[t]he L Band represents 40 MHz of the total non-federal spectrum that the Commission anticipated would be made available for advanced wireless services” in the Plan.³ Similarly, Leap Wireless notes the value of a “wholesale LTE provider” in enabling the transition to 4G broadband access for all Americans. As the Computer and Communications Industry Association aptly observed, LightSquared has already invested billions of dollars in developing its service.⁴ CCIA also noted that

http://www.brookings.edu/~media/Files/rc/papers/2008/07_wireless_weiser/07_wireless_weiser.pdf.

³ Comments of New America Foundation, Free Press, Public Knowledge and Media Access Project at 12.

⁴ Comments of Computer and Communications Industry Association at 4.

LightSquared's network will help in "realizing one of the goals of the *National Broadband Plan*," especially for unserved areas by allowing broadband providers to offer service "without incurring the high-costs of building out their own infrastructure."⁵

At the same time, commenters have raised concerns about the potential for interference to GPS devices from LightSquared's terrestrial network. The Commission's response – establishing the technical working group and requiring exhaustive testing of numerous devices – represents a thoughtful and transparent process to address concerns of harmful interference without unnecessarily compromising the objective of unleashing more spectrum for mobile broadband use. The Commission needs to bring this process to a rapid conclusion to provide all parties with the certainty they need to invest in this new innovative means of delivering broadband services to the public.

III. IN PROMPTLY CRAFTING A RESOLUTION, THE COMMISSION SHOULD CONTINUE TO FOLLOW THE IMPORTANT PRECEDENT OF ACKNOWLEDGING THAT BOTH TRANSMITTERS AND RECEIVERS CAN BE RESPONSIBLE FOR HARMFUL INTERFERENCE

As Sprint emphasized in its comments, the Commission and NTIA have noted the role of both transmitters and receivers in preventing and resolving interference disputes.⁶ Every dispute involves a unique set of circumstances and requires its own detailed analysis; nonetheless, since at least 2004 the Commission has repeatedly determined that incumbent operators' network designs and equipment performance must be considered in achieving an optimal resolution.

Most notably in the context of the 800 MHz band, the Commission emphasized that the relevant "interference problem has not been 'caused' by any single party...but

⁵ Comments of CCIA at ii, 7.

⁶ Comments of Sprint Nextel at 6.

rather has been caused collectively by the proximity of all of these parties to one another in the 800 MHz band, even though all parties are operating in compliance with the Commission's rules." As Sprint observed, this approach has characterized the Commission's resolution of myriad interference disputes, including between BAS incumbents and MSS entrants; EBS incumbents and MDS and ITFS entrants; and public safety incumbents and CMRS entrants.⁷ In each case, the Commission rejected giving a 'receiver's veto' to the incumbent licensee that would impede the deployment of valuable and innovative new services. Rather than taking a unilateral approach, the Commission has consistently sought to balance the interests of incumbents in continued operation with the public interest in the deployment of valuable new services. This approach, Sprint noted, is expressly embodied in the Commission's rules which state that, "All applicants and licensees shall cooperate in the selection and use of frequencies in order to reduce interference and make the most effective use of the authorized facilities. Licensees of stations suffering or causing interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements."⁸

The instant proceeding presents precisely this scenario. As the technical working group report suggests, certain GPS receivers may be susceptible to interference from LightSquared's prospective 1.6 GHz operations, especially if LightSquared is operating in the upper part of its spectrum. Sprint consequently supports the Commission in working to: (1) identify and deploy solutions that permit LightSquared to initiate commercial operations in the lower part of the L Band; and (2) facilitate the development of improved, more interference resistant GPS receivers. An approach that rests on

⁷ *Id.* at 8-9.

⁸ 47 C.F.R. § 90.173(b) (2010).

reasonable, mutually beneficial methods to resolving interference concerns not only will achieve the greatest benefit at the least cost, but also will be consistent with Commission precedent that resolving interference disputes involves addressing both sides of the interference equation.

Thus, Verizon is mistaken when it contends that the Commission's liberalization of the 2 GHz mobile-satellite service rules in 2003 somehow created a unilateral obligation on the MSS ATC operators to protect adjacent-channel licensees at all costs and in all circumstances. Verizon's view would elevate a passing reference noting the need to limit out-of-band emissions from LightSquared into the GPS frequency band into a unilateral mandate that LightSquared must prevent all types of interference to any adjacent operator without regard to either the reasonableness of the adjacent-channel deployment or whether the nominal "interference" causes an actual degradation in performance.⁹

⁹ Together with the other dominant vertically integrated wireless carrier, AT&T, and the trade association CTIA, Verizon has fought virtually every attempt to increase the utility of the MSS spectrum to serve as a competitive platform for wireless services. *See, e.g.,* Opposition to Petition for Reconsideration by AT&T Wireless Services, Inc., Cingular Wireless LCC and Verizon Wireless, *In the Matter of 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*, IB Docket No. 01-185 (March 3, 2004); Joint Opposition to Sprint and WCA Petitions for Reconsideration by AT&T Wireless and Verizon Wireless, *In the Matter of Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems*, ET Docket No. 00-258 (filed May 14, 2003) ("AT&T and Verizon Opposition"); *AT&T Wireless Services Inc., et al. v. FCC*, 2004 WL 769478 (C.A.D.C.)(dismissed); Letter from Kathryn A. Zachem, Esq. and L. Andrew Tollin, Esq., Wilkinson Barker Knauer, LLP to Marlene H. Dortch, Secretary, FCC, in IE Docket No. 01-185 *et al.* (June 7, 2002) ("Request to Suspend Action in MSS Flex Proceeding Pending Action in Related Dockets"); Petition for Reconsideration of the Cellular Telecommunications & Internet Association ("CTIA") in EY Docket Nos. 00-258, 95-18 and IB Docket No. 99-81 (filed Oct. 15, 2001); Application for Review of AT&T Wireless Services, Inc., Cellco Partnership d/b/a Verizon Wireless, and Cingular Wireless LLC, DA 01-1631, (filed Aug. 16, 2001) (*Licensing Application for Review*); Petition for Rulemaking of the Cellular Telecommunications

Verizon's argument proves too much. The type of intrusive, no-fault liability provision Verizon seeks has no precedent and no support in any of the Commission's rules or orders concerning MSS ATC. While the Commission recognized the importance of rigorous out-of-band emissions limits for terrestrial L-Band operations when it authorized MSS ATC operations eight years ago, the Commission pointedly did *not* impose a unilateral obligation on the L-Band MSS ATC operators to protect all adjacent operations regardless of the cost or circumstances. On the contrary, after a hard-fought notice-and-comment rulemaking proceeding, the Commission imposed certain out-of-band emissions limitations on all L-Band MSS ATC operations. These rules defined the obligations that L Band operators would eventually need to fulfill and – by extension – the rights that the GPS community would enjoy.

Thus, section 25.255 of the Commission's rules does not represent an unexplained and anomalous departure from the mutual obligations of licensees to resolve harmful interference, but rather an embodiment of it.¹⁰ As a threshold matter, the provision only concerns *harmful* interference, which by definition is not measured in a vacuum, but by assessing (a) whether the adjacent-channel licensees have deployed reasonably under the circumstances and (b) whether the proposed operations result in an actual and material degradation in end-user performance. Just as important, in adopting section 25.255 of its rules, the Commission referenced only *out-of-band* emissions from L-band MSS licensees into adjacent channel operations, such as GPS. In this case, of course, out-of-band emissions are not at issue; instead, the problem stems from overly sensitive GPS

and Internet Association (filed May 18, 2001) (questioning whether the original 70 MHz MSS allocation in the 2 GHz band continued to make sense).

¹⁰ See 47 C.F.R. § 25.255.

receivers improperly “listening to” radiofrequency energy that LightSquared lawfully generates within its own assigned spectrum. Even if section 25.255 were to create a no-fault liability standard for MSS *out-of-band* emissions, therefore, that standard would not extend to an MSS ATC’s operators lawful in-band operations that adjacent channel GPS receivers can nonetheless detect because these devices listen to signals within the MSS ATC spectrum.

The embedded base of GPS operations, whose manufacturers have long known that more intensive use of the L Band – both satellite and terrestrial – was contemplated by and consistent with the Commission’s rules, precedent and public interest mandate, should not forestall the economic growth, jobs and investment that LightSquared’s deployment promises. In light of the working group’s conclusion that operations in the lower portion of the L-band are much less likely to cause GPS interference than operations in the upper portion of the L-band, Sprint supports LightSquared’s proposal to: (1) operate at lower power than permitted by its existing FCC authorization; (2) agree to a “standstill” in the terrestrial use of the Upper 10 MHz frequencies immediately adjacent to the GPS band; and (3) commence terrestrial commercial operations only on the lower 10 MHz portion of its spectrum while workable solutions are pursued for legacy high precision receivers and other devices that may be at risk. The Commission has ample means to assure LightSquared’s continuing commitment to working with the GPS community to minimize the risk of harmful interference to high precision GPS receivers and to assure the GPS community’s cooperation in that process.

The Technical Working Group report indicates that much of the embedded base of GPS receivers will experience no material effect from the sharply curtailed operations

in the lower L-band that LightSquared has proposed to deploy. At the same time, the testing suggests that some portion of the embedded base of GPS receivers may experience an adverse effect from LightSquared's operations under certain conditions, even with LightSquared's modified, reduced-power deployment scenario. For the portion of the embedded base where test results indicate a potential degradation in performance, LightSquared has committed to a concrete mitigation plan. LightSquared has also committed to continue to work with the GPS community in good faith to limit any degradation in performance and to promote the deployment of more resilient and more efficient GPS receivers over time.

Protecting incumbent users and encouraging new entrants are not mutually exclusive. Assertions that LightSquared's deployment in the lower portion of its spectrum under this proposal fail to adequately protect one minority of receivers – high precision receivers – entirely ignore the bilateral approach the Commission has emphasized. Moreover, LightSquared has separately committed to fund development of resilient receivers and work cooperatively with GPS manufacturers to coordinate rollout – precisely the sort of “mutually satisfactory arrangements” to cooperate and resolve an interference dispute that the Commission's rules envision.

IV. CONCLUSION

The Commission can offer reasonable protection for legacy GPS applications, while encouraging the deployment of wholesale mobile broadband services. The Commission should permit LightSquared to construct its network as expeditiously as

possible, subject to good faith cooperation to reach mutually agreeable resolutions of any potential interference issues.

Respectfully submitted,

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