

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver)	IB Docket No. 11-109
)	
LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component)	File No. SAT-MOD-20101118-00239
)	
Fixed and Mobile Services in the Mobile Satellite Service Bands)	ET Docket No. 10-142
)	

COMMENTS OF THE COALITION TO SAVE OUR GPS

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SUMMARY

The Coalition to Save Our GPS (the “Coalition”), through its members, has participated in all facets of this proceeding, designed to determine whether the stand-alone nationwide terrestrial broadband network proposed by LightSquared Subsidiary LLC (“LightSquared”) using its L-Band Mobile Satellite Service (“MSS”) spectrum is compatible with existing adjacent-band Global Positioning System (“GPS”) operations. All parties except LightSquared have reached the conclusion that it is not. Therefore, the FCC’s International Bureau should act quickly in adopting its proposal to affirm the findings of the National Telecommunications and Information Administration (“NTIA”) that LightSquared’s proposed operations would cause harmful interference to GPS and that no feasible mitigation measures exist at this time, revoke the conditional authority that the International Bureau provided to LightSquared, and suspend indefinitely LightSquared’s underlying Ancillary Terrestrial Component (“ATC”) authorization.

NTIA and nearly all parties that have evaluated LightSquared’s original and modified plans have found that LightSquared’s proposed operations will cause devastating interference to GPS. In particular, test results have demonstrated that LightSquared’s proposed terrestrial network will cause harmful interference to personal/general navigation, aviation, and high precision GPS receivers and have shown a potential for interference to space-based GPS receivers as well. While NTIA believes that GPS receivers in cellular devices may not be affected by LightSquared’s modified proposal, the test data confirms that such devices could also experience harmful interference. Test results also show that no viable mitigation options currently exist.

Given the consensus that LightSquared’s proposal will cause harmful interference to GPS, LightSquared has failed to meet the International Bureau’s condition requiring LightSquared to show that any potential interference to GPS has been resolved. Consequently,

the waiver which was subject to this condition must be revoked. Such revocation would be consistent with the original intent of the use of the MSS L-Band, despite LightSquared's inaccurate view of history. Any decision should also avoid repetition of LightSquared's mischaracterization of its prior authorizations, which the International Bureau's Public Notice reiterates in part.

While the GPS industry previously attempted in good faith to accommodate LightSquared's exercise of its limited ATC authority under the parameters initially established by the FCC, based on later-conducted tests, it now appears that *any* significant terrestrial use of the L-Band spectrum may cause harmful interference to GPS receivers. Notwithstanding LightSquared's suggestions to the contrary, this is not simply a matter of what the "GPS industry" did or did not do in terms of equipment design over the last several years. There is overwhelming evidence of interference to critical government GPS-based systems, including those used in defense and aviation applications, which were designed to meet long-standing and demanding standards specified through rigorous government procurement and standards efforts. The FCC must act to prevent any potential interference with those systems, and to carefully plan to address any such interference proactively in connection with the consideration of future changes to the use of the L-Band.

It is therefore appropriate for the International Bureau to suspend LightSquared's ATC authority until these newly developed concerns are addressed. The FCC has the authority and obligation to revisit its prior determinations in light of new evidence, such as the finding of widespread harmful interference caused by high-powered terrestrial operations in the band adjacent to GPS.

The FCC, NTIA, and other federal entities have recently undertaken efforts to study GPS

and other receiver performance criteria and to explore whether such criteria could promote spectrum efficiency, and the introduction of new services, without stifling innovation. As long as these efforts are exercised pursuant to validly existing authority, the Coalition fully supports these inquiries and will provide its full cooperation. Because any future consideration of terrestrial operations in the MSS band will be tied to the results developed as part of these processes, LightSquared's ATC authority should be suspended until the anticipated inquiries are completed.

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COMMENTS OF THE COALITION TO SAVE OUR GPS

The Coalition to Save Our GPS (the “Coalition”), hereby submits this response to the *Public Notice* released by the International Bureau (the “Bureau”) of the Federal Communications Commission (“FCC” or “Commission”) on February 15, 2012, which seeks comment on the letter from the National Telecommunications and Information Administration (“NTIA”) to the FCC concluding that the terrestrial operations proposed by LightSquared Subsidiary LLC (“LightSquared”) will cause harmful interference to Global Positioning System (“GPS”) receivers and that “there is no practical way to mitigate the potential interference at this time.”^{1/} In light of NTIA’s findings, the *Public Notice* further requests comment on the Bureau’s proposal to (1) vacate its *Conditional Waiver Order* “due to LightSquared’s inability to address satisfactorily the legitimate interference concerns surrounding its planned terrestrial operations”

^{1/} *International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver*, Public Notice, Docket No. 11-109, DA 12-214, at 3 (rel. Feb. 15, 2012) (“*Public Notice*”); Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, U.S. Dep’t of Commerce, to the Honorable Julius Genachowski, Chairman, FCC, at 1 (Feb. 14, 2012) (“*NTIA Letter*”). Except where otherwise indicated, LightSquared Subsidiary LLC and its predecessors and affiliates are referred to herein individually and collectively as “LightSquared.”

and (2) modify LightSquared's satellite license "to suspend indefinitely LightSquared's underlying ATC authorization."^{2/} While, as further discussed below, the Coalition disagrees with certain characterizations of prior Commission decisions contained in the *Public Notice*, the Coalition fully concurs with NTIA's conclusions and the Bureau's proposed actions and requests prompt action on those findings in order to restore regulatory certainty for the continued successful operation of the vast array of GPS technologies upon which virtually every consumer, business, and governmental entity in this country relies.

I. INTRODUCTION

The Coalition was formed in March 2011 to safeguard the reliability and viability of GPS. The Coalition consists of representatives from a broad range of industries, including aviation, agriculture, transportation, construction, engineering, and surveying, as well as GPS-based equipment manufacturers and service providers. It has over 70 major members and 130 associate members representing more than 100,000 companies and millions of employees.^{3/} Given the significant GPS interests at stake, the Coalition and its members have actively engaged in every step of this proceeding designed to evaluate whether LightSquared should be permitted to proceed with its planned nationwide terrestrial network using L-Band spectrum reserved for the Mobile Satellite Service ("MSS"), which is directly adjacent to the spectrum used by GPS.

This proceeding began in November 2010, with LightSquared providing the Commission with what it characterized as an "update" to its business plans, requesting that the Commission allow it to use its MSS frequencies to provide terrestrial-only services untethered from the

^{2/} *Public Notice* at 4.

^{3/} A full list of members and associate members can be found on the Coalition's website at <http://www.saveourgps.org/coalition-members.aspx>, and a description of certain of the Coalition's most active members can be found in the Coalition's comments responding to the report of the FCC-mandated technical working group. Comments of the Coalition to Save Our GPS, Docket No. 11-109, IBFS File No. SAT-MOD-20101118-00239, at 3-7 (filed Aug. 1, 2011) ("Coalition Comments").

primary satellite services authorized in the band.^{4/} The Bureau responded to LightSquared's request in January 2011 with the *Conditional Waiver Order*, which found that LightSquared's existing authority did not allow it to provide terrestrial-only services, and that therefore a waiver of the Commission's rules would be required for LightSquared to proceed with its plans.^{5/} The *Conditional Waiver Order* granted LightSquared this relief, but – in response to the concerns raised by NTIA and others “that LightSquared's services could adversely impact GPS” – conditioned it on LightSquared's ability to show that its proposed operations would not cause harmful interference to GPS.^{6/}

Specifically, the Bureau stated that it would work “with NTIA, LightSquared, and the GPS community, including appropriate federal agencies, to establish a [technical working group (“TWG”)] to fully study the potential for overload interference to GPS devices and to identify any measures necessary to prevent harmful interference to GPS.”^{7/} The *Conditional Waiver Order* provided that NTIA would play a critical role in this evaluation. For example, the

^{4/} See *LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component*, Order and Authorization, 26 FCC Rcd 566 (2011) (“*Conditional Waiver Order*”).

^{5/} *Id.* ¶ 24 (“[W]e find that the Commission was clear that application of the rule was intended to prevent [terrestrial]-only subscriptions. . . . LightSquared may not convey to its customers operational rights that LightSquared itself does not possess. As such, we . . . find that LightSquared's wholesale customers cannot offer terrestrial-only service to their subscribers without violating LightSquared's obligations under the rules.”).

^{6/} *Id.* ¶¶ 39-43. On January 12, 2011, NTIA submitted a letter to the FCC stating that it had reviewed LightSquared's request and in NTIA's view, LightSquared's “proposal raises significant interference concerns that warrant full evaluation as part of the FCC's consideration of LightSquared's application to ensure that LightSquared services do not adversely impact Global Positioning System (GPS) and Global Navigation Satellite System (GNSS) receivers, maritime and aeronautical emergency communication systems, and Inmarsat receivers used by the Federal agencies.” Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, NTIA, U.S. Dep't of Commerce, to Julius Genachowski, Chairman, FCC, IBFS File No. SAT-MOD-20101118-00239, at 1 (filed Jan. 12, 2011). NTIA explained that “[s]everal Federal agencies with vital concerns about this spectrum band, including the Departments of Defense, Transportation and Homeland Security, have informed NTIA that they believe the FCC should defer action on the LightSquared waiver until these interference concerns are satisfactorily addressed.” *Id.*

^{7/} *Conditional Waiver Order* ¶ 41.

International Bureau contemplated that LightSquared would submit to the FCC and NTIA initial work plans, periodic progress reports, and a final report with the TWG’s analysis, and that the interference resolution process would be complete “once the Commission, after consultation with NTIA, concludes that the interference concerns have been resolved” and notifies LightSquared that the process is complete.^{8/}

For over three months, 120 participants – including representatives from LightSquared, Coalition members, federal government agencies, and other involved parties – “tested more than 130 representative devices in seven different receiver categories, in a number of different test environments” as part of the TWG process and generally found that LightSquared’s proposed terrestrial operations could cause harmful interference to GPS.^{9/} Late in the testing period, presumably in anticipation of the test results finding that LightSquared’s proposal would harmfully interfere with GPS, LightSquared announced a “solution” to the interference problem – namely, that it would begin its terrestrial operations using its lower 10 MHz channel only.^{10/}

Even though its lower 10 MHz proposal was not included in the plans LightSquared initially submitted to the TWG, many of the working group sub-teams were able to test it, finding that even this modified proposal would create significant interference concerns. Concurrent with the release of the TWG’s report on June 30, 2011, LightSquared submitted its own findings in the form of “Recommendations,” reinterpreting the TWG test results and characterizing its lower 10 MHz proposal as an effective “solution” to the GPS interference

^{8/} *Id.* ¶ 43.

^{9/} *Comment Deadlines Established Regarding the LightSquared Technical Working Group Report*, Public Notice, 26 FCC Rcd 9284 (rel. June 30, 2011); *Status of Testing in Connection with LightSquared’s Request for ATC Commercial Operating Authority*, Public Notice, 26 FCC Rcd 12913 (rel. Sept. 13, 2011) (“*Sept. 2011 PN*”).

^{10/} Press Release, *LightSquared Solution to GPS Issue Will Clear Way for Nationwide 4G Network*, June 20, 2011.

problem.^{11/} Shortly after the TWG released its findings, NTIA transmitted to the FCC a report of the National Space-Based Positioning, Navigation, and Timing Systems Engineering Forum (“NPEF”) demonstrating that “LightSquared’s then-planned deployment of terrestrial operations posed a significant potential for harmful interference to GPS services” and noting that additional testing of the lower 10 MHz proposal would be necessary before the FCC could determine whether the GPS interference issues had been resolved.^{12/}

Following “extensive comments received and as a result of the technical working group process . . . , the [FCC] in consultation with NTIA, . . . determined that additional targeted testing [was] needed . . .”^{13/} As explained in the *NTIA Letter*, the NPEF, on behalf of the Executive Steering Group of the Interagency National Executive Committee for Space-Based Positioning, Navigation, and Timing (“EXCOM”), tested general/personal navigation GPS receivers, NTIA oversaw the testing of cellular GPS receivers to validate the results found by the TWG, and the Federal Aviation Administration (“FAA”) worked directly with LightSquared to evaluate the

^{11/} See Recommendation of LightSquared Subsidiary LLC, IBFS File No. SAT-MOD-20101118-000239 (filed June 30, 2011). Throughout this proceeding, LightSquared has blamed the GPS industry for the situation in which it currently finds itself, it has shifted its proposal when others have found its extant proposal inadequate, and it has claimed repeatedly and incorrectly that all GPS interference concerns have been resolved. Most recently, LightSquared attempted to shift the Commission’s attention away from resolving the fundamental issue of whether LightSquared’s proposal will harmfully interfere with GPS by filing a Petition for Declaratory Ruling requesting that the Commission “resolve the regulatory status” of commercial GPS. *International Bureau Establishes Pleading Cycle for LightSquared Petition for Declaratory Ruling*, Public Notice, Docket Nos. 11-109 & 10-142, DA 12-103 (rel. Jan. 27, 2012). As the Coalition explained in its February 27, 2012 opposition to LightSquared’s Petition, LightSquared’s Petition should be rejected because its arguments either have already been fully presented to the Commission and evaluated by all interested parties or are wholly irrelevant to the central issue of whether the FCC should terminate LightSquared’s conditional authority to operate a high-powered, ubiquitous terrestrial network. See Coalition to Save Our GPS Opposition to LightSquared Petition for Declaratory Ruling, Docket Nos. 11-109 & 10-142 (filed Feb. 27, 2012) (“Coalition Opposition”); see also Reply Comments of the Coalition to Save Our GPS, Docket Nos. 11-109 & 10-142 (filed March 13, 2012).

^{12/} *NTIA Letter* at 1-2 (citing Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, U.S. Dep’t of Commerce, to the Honorable Julius Genachowski, Chairman, FCC (July 6, 2011)).

^{13/} *Sept. 2011 PN* at 1.

potential impact of LightSquared's proposed operations on certified aviation GPS receivers.^{14/}

In addition to the extensive testing conducted both as part of and separate from the technical working group process and the vast number of comments and other information submitted to the Commission evaluating such test results, these proceedings also have been the subject of several congressional hearings as well as recent legislation prohibiting the Commission from using funds made available by the 2012 Financial Services and General Government Appropriations Act "to remove the conditions imposed on commercial terrestrial operations in the [*Conditional Waiver Order*], or otherwise permit such operations, until the Commission has resolved concerns of potential widespread harmful interference by such commercial terrestrial operations to commercially available [GPS] devices."^{15/}

Congress's concerns and those expressed by government and commercial interests alike regarding LightSquared's operations have proved to be valid. On January 13, 2012, EXCOM reported, "It is the unanimous conclusion of the test findings by the National Space-Based PNT EXCOM Agencies that both LightSquared's original and modified plans for its proposed mobile network would cause harmful interference to many GPS receivers."^{16/} EXCOM further found that "an analysis by the [FAA] has concluded that the LightSquared proposals are not compatible with several GPS-dependent aircraft safety-of-flight systems."^{17/} Based on this testing and

^{14/} See *NTIA Letter* at 1-2.

^{15/} Consolidated Appropriations Act, 2012, Pub. L. No. 112-74, at Division C – Financial Services and Financial Services General Government Appropriations Act, 2012 (enacted Dec. 23, 2011); see also *Public Notice* at 3; National Defense Authorization Act for Fiscal Year 2012, H.R. 1540, 112th Cong., § 911(a) (enacted Dec. 31, 2011) (forbidding the FCC from approving LightSquared's proposed terrestrial operations until the FCC has resolved concerns of widespread interference to military GPS devices).

^{16/} Letter from Ashton B. Carter, EXCOM Co-Chair, Deputy Secretary of Defense, and John D. Porcari, EXCOM Co-Chair, Deputy Secretary of Transportation, to Lawrence E. Strickling, Assistant Secretary for Communications and Information, U.S. Dep't of Commerce (Jan. 13, 2012) ("*EXCOM Letter*"); see also *NTIA Letter* at 2-3.

^{17/} See *EXCOM Letter* at 1.

analysis, EXCOM determined that “there appear to be no practical solutions or mitigations that would permit the LightSquared broadband service, as proposed, to operate in the next few months or years without significantly interfering with GPS. As a result, no additional testing is warranted at this time.”^{18/}

On February 14, 2012, NTIA submitted to the Commission these EXCOM findings resulting from the testing of general/personal navigation GPS receivers, NTIA’s validation of the TWG’s testing of cellular GPS receivers, and the FAA’s analysis of certified aviation receivers,^{19/} finding that “[b]ased on the testing and analyses conducted to date, as well as numerous discussions with LightSquared, it is clear that LightSquared’s proposed implementation plans, including operations in the lower 10 MHz only, would impact both general/personal navigation and certified aviation GPS receivers.”^{20/} NTIA therefore “conclude[d] at this time that there are no mitigation strategies that both solve the interference issues and provide LightSquared with an adequate commercial network deployment.”^{21/}

As a result of the findings reported in the *NTIA Letter*, the Bureau issued the instant *Public Notice* seeking comment on the *NTIA Letter* and the Bureau’s proposal to (1) vacate the *Conditional Waiver Order* due to LightSquared’s failure to show that its operations will not cause harmful interference to GPS and (2) modify LightSquared’s satellite license to suspend indefinitely LightSquared’s underlying Ancillary Terrestrial Component (“ATC”) authorization

^{18/} *Id.*

^{19/} See *NTIA Letter* at 2 (citing National Space-Based Positioning, Navigation, and Timing Systems Engineering Forum, *Follow-on Assessment of LightSquared Ancillary Terrestrial Component Effects on GPS Receivers* (Jan. 6, 2012) (“*NPEF Report*”); November 2011 Cellular Device Test Report (with Addendum) (“*Cellular Report*”); and U.S. Dep’t of Transportation, FAA, *Status Report: Assessment of Compatibility of Planned LightSquared Ancillary Terrestrial Component Transmissions in the 1526-1536 MHz Band with Certified Aviation GPS Receivers* (Jan. 25, 2012) (“*FAA Report*”).

^{20/} *NTIA Letter* at 8.

^{21/} *Id.*

consistent with the *NTIA Letter*.^{22/} As further discussed below, the FCC-mandated process envisioned by the *Conditional Waiver Order*, as well as the supplemental testing and analysis can only lead to one conclusion: that LightSquared’s proposed terrestrial network will cause devastating interference to millions of GPS devices. Consequently, the Coalition urges the Commission to vacate the *Conditional Waiver Order* and suspend indefinitely LightSquared’s ATC authority as proposed.

II. THE *NTIA LETTER* AND SUPPORTING DOCUMENTS SHOW UNEQUIVOCALLY THAT LIGHTSQUARED WILL CAUSE HARMFUL INTERFERENCE TO GPS, AND THAT THERE IS NO IMMEDIATE WAY FORWARD.

The *NTIA Letter* reports that “[b]ased on NTIA’s independent evaluation of the testing and analysis performed over the last several months, we conclude that LightSquared’s proposed mobile broadband network will impact GPS services and that there is no practical way to mitigate the potential interference at this time.”^{23/} NTIA also found that “while GPS equipment developers may be able to mitigate these [interference] issues via new technology in the future, the time and money required for federal, commercial, and private sector users to replace technology in the field and the marketplace, on aircraft, and in integrated national security systems cannot support the scheduled deployment of terrestrial services proposed by LightSquared.”^{24/} These results are corroborated by the TWG’s findings as well as other reports submitted in these proceedings.

A. Cellular GPS Receivers

NTIA worked with LightSquared to develop a plan to validate the TWG measurements of GPS receivers used in cellular devices, which involved testing four devices previously tested by

^{22/} See *Public Notice* at 4.

^{23/} *NTIA Letter* at 1.

^{24/} *Id.*

the TWG, as well as three new devices.^{25/} NTIA states that its findings confirm TWG’s conclusion that the lower 10 MHz base station signal does not significantly impact GPS receivers used in cellular devices.^{26/}

As the Coalition previously explained, however, the TWG’s Cellular sub-team observed that “operations in the lower bands (1526 to 1536 MHz) *may* be possible without harmful interference to existing cellular GPS devices” using filtering technologies.^{27/} The TWG’s Cellular sub-team could not conclude that “100% of cell phones” would be free from harmful interference even in the lower 10 MHz scenario. To the contrary, significant test data in the TWG Report demonstrated harmful interference to cell phones from LightSquared’s signal in the lower 10 MHz channel.^{28/} The *Cellular Report* relies on LightSquared’s proposal to limit its

^{25/} See *id.* at 3; *Cellular Report* at 2.

^{26/} See *NTIA Letter* at 3; see also *Cellular Report* at 4 (“These latest tests show no material change and reinforce the results obtained in the TWG testing performed earlier this year. Consistent with the TWG Report findings, the impact of LTE transmit power at the lower 10 MHz band, 1526-1536 MHz, on GPS operation in cellular devices is minimal or nonexistent if LTE power by site design and EIRP is managed not to exceed -30dBm on the ground. . . . Overall, the test results are largely unchanged for the UMTS devices . . . For CDMA devices that were 100% conducted tests, finer granularity was obtained simply by decreasing the step size of the interference signal to obtain finer test results than using the original and somewhat coarse 5 dB step size between pass and fail consecutive test trial sets. Based on the finer measurement granularity the average improvement was just over 3 dB in reported susceptibility for the selected CDMA devices using the finer 1 dB step size.”).

^{27/} See Coalition Comments at 16 (citing the Technical Working Group Report, Final Report, IBFS File No. SAT-MOD-20101118-00239, at 15, 55 (filed June 30, 2011) (“TWG Report”)) (emphasis added).

^{28/} The Cellular sub-team found that at least 6 and potentially up to 10 out of 41 GPS receivers inside cell phones failed the sub-team’s defined test at power levels that were observed on the ground inside the LightSquared network, in the lower 10 MHz configuration. See TWG Report at 78, Figure 3.2.2. (showing that 6 devices failed at -25 dBm or lower, which are power levels that would be seen inside the network, even after removing 5 dB for antenna gain, an assumption adopted by the group which may or may not apply in practice; a further 4 devices failed at high-power levels between -15 and -20 dBm, which could be experienced in practice depending on antenna gain, proximity to tower, and other parameters). As the Coalition previously argued, applying the sub-team’s test results to the U.S. cell phone base would mean that 25 percent of LightSquared’s estimate of 300 million U.S. GPS-enabled cell phones, or 75 million users, would suffer interference, impacting such critical functions as E911 calls. See Coalition Comments at 16 (citing Recommendation of LightSquared Subsidiary LLC, IBFS File No. SAT-MOD-20101118-00239, at Technical Appendix at 2 (filed June 30, 2011)).

ground power levels, which has yet to be proven feasible,^{29/} and therefore reaches a result which is not fully supported by the test data. Therefore, while the NTIA findings correlate with the TWG results, neither provides convincing evidence that cellular devices will be unaffected by LightSquared's operations.

B. Personal/General Navigation GPS Receivers

The NPEF, on EXCOM's behalf, worked with LightSquared to develop a plan for the validation measurements of personal/general navigation GPS receivers, which involved the testing of a greater number of receivers than the TWG process.^{30/} As an initial matter, LightSquared's assertion that it was excluded from the NPEF test planning – and therefore the NPEF test results are invalid – is simply false.^{31/} Indeed, both LightSquared and NTIA were involved in the early stages of drafting the test plan and conducting the NPEF tests.^{32/} In addition, NPEF's testing methodology and results were separately validated by two independent parties – Idaho National Labs, which provided “an independent assessment of the test plan, setup and execution,” and the Massachusetts Institute of Technology (“MIT”) Lincoln Laboratory,

^{29/} See Letter from M. Anne Swanson, Dow Lohnes PLLC, Counsel for Garmin International, Inc., to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109, IBFS File No. SAT-MOD-20101118-00239, at Attachment, at 1 (filed Sept. 15, 2011) (asserting that LightSquared's “power-on-the-ground” proposal does nothing to address interference issues, particularly for aviation receivers); see also Letter from M. Anne Swanson, Dow Lohnes PLLC, Counsel for Garmin International, Inc., to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109, IBFS File No. SAT-MOD-20101118-00239, at Attachment, at 1 (filed Oct. 28, 2011) (reaffirming that LightSquared's proposal to limit power on the ground is not designed to address potential interference to aviation receivers in flight, and standing by its claim that “limiting power on the ground could make the aviation case worse”).

^{30/} *NTIA Letter* at 3-4.

^{31/} See Press Release, *Former FCC Chief Engineer and LightSquared Question Validity of Test Results Rigged by GPS Industry Insiders* (Jan. 18, 2012), available at <http://www.lightsquared.com/press-room/press-releases/former-fcc-chief-engineer-and-lightsquared-question-validity-of-test-results-rigged-by-gps-industry-insiders/>.

^{32/} See Letter from Teri M. Takai, Dep't of Defense, and Joel M. Szabat, Dep't of Transportation, Co-Chairs of the Executive Steering Group of EXCOM, to Administrator, NTIA, at 1 (Jan. 18, 2012) (“*NPEF Cover Memo*”); *NPEF Report* at ii.

which performed “an independent peer-review and engineering assessment of the NPEF testing methods and findings.”^{33/} NPEF’s independently validated findings, as discussed below, were even found to be more favorable to LightSquared than they could have been. Nonetheless, the MIT lab concluded that LightSquared’s signal “results in harmful interference to the majority of GPS devices tested.”^{34/}

NPEF concluded that 69 out of the 92 devices tested were impacted by the lower 10 MHz base station signal at an EIRP of 62 dBm, a representative base station antenna pattern, an antenna height of 15 meters, and an antenna down-tilt angle of six degrees.^{35/} Further refining this data and using the maximum EIRP and deployment parameters for LightSquared’s network, NTIA concluded “that the lower 10 MHz base station signal would impact currently deployed personal/general navigation GPS receivers.”^{36/}

This finding is consistent with the test results of the TWG’s General Location and Navigation sub-team, which found that LightSquared’s operations would cause harmful interference to GPS receivers used in public safety, automotive, personal navigation, marine, portable aviation, and other applications in the U.S., and that there is no viable mitigation strategy.^{37/} In particular, the General Location and Navigation sub-team observed that 20 out of 29 receivers tested experienced harmful interference from the lower 10 MHz channel, which

^{33/} *NPEF Report* at 3.

^{34/} *Id.*

^{35/} *See NTIA Letter* at 4; *NPEF Report*, at ii (“A significant percentage of general navigation devices (75%) experienced degradation in receiver carrier to noise density ratio (C/N) of 1 dB (i.e. 25% reduction of C/N) or greater at an equivalent distance of greater than 100 meters from the LightSquared simulated tower.”); *see also NPEF Cover Memo* at 1.

^{36/} *NTIA Letter* at 4.

^{37/} *See, e.g., Coalition Comments* at 16-17.

would adversely affect many GPS receivers used for safety-of-life and critical economic and government activities.^{38/}

NTIA also undertook additional efforts to determine if there might be alternative technical parameters LightSquared could use to reduce the impacts on these GPS receivers to an acceptable level. However, LightSquared concluded that adopting NTIA's proposed technical requirements "would render its network unable to deliver the necessary level of service absent a multi-billion dollar investment in additional base stations, which was financially impractical as well as an action that itself would add to the impacts on GPS receivers."^{39/} As a result, NTIA concluded "that there is no practical way at this time to mitigate the interference that LightSquared's proposed network would cause to personal/general navigation GPS receivers."^{40/}

Unhappy with the outcome of these tests, LightSquared has attempted to argue that inappropriate devices were included in the NPEF testing.^{41/} However, the omission of certain devices from NPEF's testing actually worked to benefit LightSquared. For example, the NPEF

^{38/} See *id.* at 17 (citing TWG Report at 19, 123). Similarly, an independent study submitted by Deere & Company ("Deere"), one of the largest manufacturers of high precision GPS technologies, stated that LightSquared's network "would cause substantial harmful interference to the high-precision systems upon which Deere and others in the agriculture, construction and surveying sectors rely." Letter from Barry Schaffter, Senior Vice President, Intelligent Solutions Group and Chief Information Officer, Deere & Company, to Marlene H. Dortch, Secretary, FCC, IBFS File No. SAT-MOD-20101118-00239, at 2 (filed July 5, 2011). Deere also concluded that LightSquared's use of the lower 10 MHz would not effectively eliminate the interference to high precision GPS users. See *id.* at 2.

^{39/} NTIA Letter at 4-5.

^{40/} *Id.* at 5; see also NPEF Report at ii (noting that no proposed mitigation filters or devices were available for testing).

^{41/} See Letter from Jeffrey Carlisle, Executive Vice President, Regulatory Affairs & Public Policy, LightSquared Subsidiary LLC, to the Honorable Lawrence E. Strickling, Assistant Secretary for Communications and Information, NTIA, U.S. Dep't of Commerce, Docket No. 11-109, at 1 (filed Jan. 13, 2012) (accusing NPEF of testing "many of the worst performing devices" that were manufactured years ago; modules that, in some cases, are not sold to the general public; and "niche devices that would rarely, if ever, come close enough to a LightSquared base station to suffer any kind of impact").

testing excluded portable aviation and other devices from the test results.^{42/} These are important devices and yet were not counted in the NPEF test results. In addition, as discussed below, these devices were not considered in the FAA analysis either.

The Coalition expects that LightSquared will argue, as it has before, that the 1 decibel (dB) threshold used in the NPEF testing is inappropriate. The *NTIA Letter* specifically addresses this issue, stating that “[b]ecause there are no industry-specified performance metrics for personal/general navigation GPS receivers,” it “directed the NPEF to use a 1 dB reduction in the carrier-to-noise density to measure the base station power level that caused GPS receiver degradation.”^{43/} NTIA further noted that the 1 dB threshold “is the protection criteria used by NTIA and the international community in managing the potential interference to terrestrial GPS receivers.”^{44/} As the Coalition and other parties have previously demonstrated, NTIA correctly found that the appropriate threshold to measure harmful interference is a 1 dB loss in the Carrier-to-Noise ratio of the GPS signal.^{45/} This measurement was utilized by the TWG’s sub-teams and is a well-established standard.^{46/} While LightSquared previously attempted to argue for a

^{42/} See *NTIA Letter* at 4.

^{43/} *Id.*

^{44/} *Id.*

^{45/} See Coalition Comments at 26-27; Comments of Trimble Navigation Limited, Docket No. 11-109, IBFS File No. SAT-MOD-20101118-00239, at 47 (filed Aug. 1, 2011); Reply Comments of Trimble Navigation Limited, Docket No. 11-109, IBFS File No. SAT-MOD-20101118-00239, at 11-13 (filed Aug. 15, 2011).

^{46/} See, e.g., *NTIA Letter* at 4, n.20 (stating that “[t]he interference protection criteria for terrestrial GPS receivers specified by the United States in international spectrum sharing standards is based on limiting the increase in system noise due to interference to 1 dB, which is consistent with a 1 dB degradation in the carrier-to-noise density”); Recommendation ITU-R M.1903, *Characteristics and Protection Criteria for Receiving Earth Stations in the RNSS (Space-to-Earth) and Receivers in the ARNS Operating in the Band 1559-1610 MHz* (adopted Jan. 2012) (detailing interference protection criteria for various types of terrestrial GPS and other RNSS receivers using a threshold of 1 dB); see also TWG Report at 129, 187-188 (stating that the use of a 1 dB threshold “as a quantification of harmful interference to GPS has a well-recognized basis in the products of seven years of technical work on protection of radionavigation-satellite service receivers”); *Revision of Part 15 of the Commission’s Rules*

broader 6 dB degradation standard,^{47/} interested parties have consistently agreed that such a standard is unacceptably large for GPS users.^{48/}

C. Aviation GPS Receivers

Over the course of approximately the last six months, the FAA worked with LightSquared to analyze data related to LightSquared's proposed network's impacts on certified aviation receivers, focusing on the protection of FAA-certified aviation receivers operating in accordance with international aviation standards at various altitudes and during different phases of flight.^{49/} This testing found that "GPS receivers used for low-altitude aviation operations such as terrain awareness navigation and surveillance would not be compatible with a LightSquared base station operating at its maximum proposed EIRP taking into account transmitter and GPS receiver antenna patterns" and that "[i]nterference would occur when the GPS receiver is in the vicinity of a base station, or at lower altitudes in the presence of multiple base stations."^{50/}

Regarding Ultra-Wideband Transmission Systems, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 3857, ¶ 12 (2003) (analyzing harmful interference from ultra wideband transmissions "based on a 1 dB increase in the noise floor of the GPS receiver").

^{47/} See, e.g., Comments of LightSquared Subsidiary LLC, Docket No. 11-109, IBFS File No. SAT-MOD-20101118-00239, at 7 (filed Aug. 1, 2011).

^{48/} See, e.g., Comments of Deere & Company, Docket No. 11-109, IBFS File No. SAT-MOD-20101118-00239, at 19 (filed Aug. 1, 2011) (arguing that a 6 dB degradation in Carrier-to-Noise ratio would, in many situations, make GPS satellite signal acquisition impossible); Comments of Stansell Consulting, Docket No. 11-109, IBFS File No. SAT-MOD-20101118-00239, at 3 (filed Aug. 1, 2011) (asserting that allowing LightSquared to degrade the Carrier-to-Noise ratio by up to 6 dB "would be devastating to high precision devices used for agriculture"); Comments of Garmin International, Inc., Docket No. 11-109, IBFS File No. SAT-MOD-20101118-00239, at 42 (filed Aug. 1, 2011) (recognizing that "[t]he use of 1 dB reduction in effective [Carrier-to-Noise] as a quantification of harmful interference to GPS has a well recognized basis" and is an internationally accepted standard).

^{49/} See *NTIA Letter* at 5.

^{50/} *Id.*; see also Letter from Michael P. Huerta, Acting Administrator, U.S. Dep't of Transportation, FAA, to the Honorable Lawrence E. Strickling, Administrator, NTIA (Jan. 27, 2012), (stating that "it has become apparent that LightSquared's planned operation would not be compatible with low-altitude aviation operations, including use of GPS for terrain awareness and warning systems (TAWS), some navigation operations, and potentially automatic dependent surveillance-broadcast").

The *NTIA Letter* reported that although “the FAA and LightSquared worked cooperatively to evaluate compatibility between the lower 10 MHz base station signal and GPS aviation receivers, they could not reach agreement on certain technical issues.”^{51/} LightSquared proposed several mitigation measures in an attempt to address these compatibility issues, but the FAA determined that LightSquared’s proposals to address the excessive interference by site-by-site tailoring of its network would not ensure current levels of safety.^{52/} Maintaining the in-air power limit over time would also require ongoing FAA oversight due to changes in the surrounding environment, LightSquared’s network, and aviation operations, and the FAA resources needed to accomplish this do not exist.^{53/} Further, as reported by NTIA:

The FAA concluded that these [mitigation] proposals would result in the FAA’s accepting operational impacts, or replacing the avionics of all GPS equipped aircraft operating in compliance with approved and internationally harmonized aviation standards. Specifically, absent replacement receivers, LightSquared’s proposals would require constant, individualized monitoring and adjustment to over 40,000 sites nationwide to ensure consistency with air safety requirements.^{54/}

NTIA agreed with the FAA’s conclusion “that this is not a practical solution, particularly where safety of life is involved,” and therefore concluded that it did not believe “that base stations can operate in the lower 10 MHz, as proposed, in the next few years, without impacting to some degree safety-critical GPS functionality.”^{55/}

^{51/} *NTIA Letter* at 5.

^{52/} *See FAA Report* at ii-iii (observing that there are no practical mitigation solutions because LightSquared’s proposed solution “will not ensure the current safety levels” and the FAA would have to “maintain oversight and surveillance of critical national airspace equipment and operations”).

^{53/} *See id.* at ii-iii, 67.

^{54/} *NTIA Letter* at 5-6.

^{55/} *Id.* at 6.

The *FAA Report* includes as an attachment material regarding LightSquared's perspective.^{56/} In this document, LightSquared includes information provided by a terrain-avoidance warning systems ("TAWS") expert, John Howard Glover.^{57/} However, several assertions in Mr. Glover's statements are not relevant to the concerns outlined by the FAA. Mr. Glover, for example, states that Class A TAWS systems are sometimes integrated with inertial sensors that can coast through GPS interference, and that these systems can provide terrain proximity alerts based on radio altimeters that are independent from GPS.^{58/} These assertions ignore the fact that inertial sensors are not required for Class A TAWS and, due to their expense, are not customary equipment in the general aviation fleet or in much of the airline fleet used exclusively within the continental U.S. Finally, the terrain proximity alerts provided by radio altimeters do not provide any advance warning of rapidly rising terrain; GPS is required for that. Mr. Glover also makes the point that fixed wing TAWS equipment will provide alerts before the aircraft descends below the terrain clearance floor, implying that this means that the flight crew will already have been alerted before a loss of GPS occurs.^{59/} However, his point is based on the operation of a specific Class A TAWS implementation, rather than the FAA minimums. There is no discussion of helicopter TAWS ("HTAWS") equipment which has different operating requirements and a lower alerting floor. As the *FAA Report* considers the protections needed in the HTAWS case to be more stringent than the fixed wing TAWS case, LightSquared's arguments fail to address the FAA's concerns.

^{56/} See *FAA Report* at Appendix C.

^{57/} See generally *id.* at Appendix C, at C-41-44.

^{58/} See *id.*

^{59/} See *id.*

Finally, the FAA’s analysis of LightSquared’s network was based on aviation receiver interference rejection requirements that were first published in 1996, adopted by the FAA in 1998, and accepted by the International Civil Aviation Organization in 2001.^{60/} These standards predate the FCC’s authorization of ATC. The FAA concluded that LightSquared’s proposed terrestrial network is not compatible with low altitude operations dependent on GPS receivers built to these standards.^{61/} This conclusion supports the Bureau’s recommendation that LightSquared’s ATC authorization be revoked entirely, as it is not compatible with pre-existing uses of the neighboring GPS spectrum.

The TWG’s Aviation sub-team similarly reported that it could not conclude that operations in the lower 10 MHz channel would be permissible and noted that safe flight operations would be at risk.^{62/} While the sub-team found a small positive margin for GPS positioning under the lower 10 MHz proposal, it determined that such a margin was insufficient for an initial acquisition of GPS satellite signals in the event of, for example, a restart of the GPS receiver or after loss of satellite tracking in a steep turn.^{63/} Accordingly, the Aviation sub-team asserted that “[c]ompatibility of aviation GPS operations with a single lower 10 MHz channel could not be determined definitively without additional study.”^{64/}

^{60/} See *id.* at 11.

^{61/} See *id.* at ii.

^{62/} See Coalition Comments at 14 (*citing* TWG Report at 15, 28).

^{63/} See TWG Report at 50 (“The lower 10 MHz channel shows compatibility with a small margin for tracking functions, but not necessarily for initial acquisition.”).

^{64/} See *id.* at 15. A report prepared by RTCA, Inc., a non-profit organization formed to develop consensus-based recommendations regarding communications, navigation, surveillance, and air traffic management systems, also found that while there would be a “small positive margin” for GPS tracking in the event that LightSquared operated at the lower 10 MHz channel, the margin would not necessarily be safe enough to allow an aircraft GPS receiver to perform an initial acquisition. See *Assessment of the LightSquared Ancillary Terrestrial Component Radio Frequency Interference Impact on GNSS L Band Airborne Receiver Operations*, IBFS File No. SAT-MOD-20101118-00239, at Executive Summary (filed June 7, 2011).

D. High-Precision and Precision Timing GPS Receivers

The *NTIA Letter* acknowledged the TWG’s conclusion that “base station signals in the lower 10 MHz will cause unacceptable interference to GPS receivers used for high-precision and precision timing applications.”^{65/} The *NTIA Letter* also explained that over the past several months LightSquared had met with NTIA staff to discuss progress toward the development of filter solutions that LightSquared believes could effectively mitigate any interference to high precision GPS receivers.^{66/} While NTIA noted its prior statement that the federal agencies at some point would need to develop and execute a plan to test and analyze this proposed interference mitigation solution, NTIA ultimately found that “since LightSquared and the federal agencies have been unable to resolve the interference issues associated with personal/general navigation and aviation GPS receivers, there is no reason for federal agencies to undertake the expense and resource commitment to test high-precision and precision timing GPS receivers at this time.”^{67/}

As the Coalition previously noted, the High-Precision, Networks, and Timing sub-teams, which joined together to issue a single report, all agreed that significant harmful interference would result from LightSquared’s operations in the lower 10 MHz channel and that there is no viable mitigation strategy.^{68/} The sub-teams’ testing showed that harmful interference could be encountered at 1.2 km (0.75 miles) or more from each tower, with complete loss of high accuracy positioning within one-half mile of any tower. Given typical cell tower spacing,

^{65/} *NTIA Letter* at 6.

^{66/} *See id.*

^{67/} *Id.*

^{68/} *See Coalition Comments* at 17.

blanket interference to high precision GPS receivers could be expected in large areas of the United States.^{69/}

Moreover, there is simply no evidence presently available that a filter solution would sufficiently address GPS interference issues. Filter technologies proposed by LightSquared's vendor, Javad GNSS, Inc. ("Javad"),^{70/} have not been tested across the full range of commercial, performance, and operating parameters, and serious concerns remain about the compatibility of those devices with tens, perhaps even hundreds, of millions of existing GPS receivers including costly precision receivers, and the manner by which the proposed filters can be retrofitted to existing devices. Although LightSquared submitted a series of results to the FCC regarding the testing of high precision GPS equipment by Alcatel Lucent Bell Labs ("ALU"), which purported to test "commercially-available" devices including a modified Javad external antenna and demonstrate "the ability of high precision GPS devices to be appropriately filtered so as to be able to fully reject LightSquared authorized transmissions in the adjacent spectrum band,"^{71/} other parties have confirmed that the equipment tested by ALU did not include production units that are available in the commercial market.^{72/}

^{69/} See *id.* at 18 (reporting that "a GPS user is never likely to be more than one-fourth to one-half mile from a tower in urban settings, a mile in suburban settings, and 1.5 to 2.5 miles in rural settings").

^{70/} See Letter from Jeffrey Carlisle, Executive Vice President, Regulatory Affairs & Public Policy, LightSquared Subsidiary, LLC, to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109 (filed Sept. 21, 2011); Letter from Jeffrey Carlisle, Executive Vice President, Regulatory Affairs & Public Policy, LightSquared Subsidiary, LLC, to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109 (filed Oct. 6, 2011).

^{71/} Letter from Jeffrey Carlisle, Executive Vice President, Regulatory Affairs & Public Policy, LightSquared Subsidiary, LLC, to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109 (filed Dec. 23, 2011); Letter from Jeffrey Carlisle, Executive Vice President, Regulatory Affairs & Public Policy, LightSquared Subsidiary, LLC, to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109 (filed Jan. 20, 2012) ("LightSquared January 2012 Letter").

^{72/} See Letter from F. Michael Swiek, Executive Director, U.S. GPS Industry Council, to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109 (filed Jan. 12, 2012) ("USGIC January 2012 Letter"); Letter from Catherine Wang and Tim Bransford, Bingham McCutchen LLP, Outside Counsel to Deere &

Even if these technologies were made available for commercial testing, a number of questions would remain with respect to whether they would be compatible with existing GPS devices and whether they would degrade the performance of such devices. Many different manufacturers design and develop a multitude of different GPS devices. It is highly unlikely that a single filtering technology could be created to resolve the interference issues across the wide range of all GPS devices. Further, as acknowledged by the manufacturers cited in the ALU test results, the experimental filters proposed by LightSquared would adversely impact the GPS signal, even where LightSquared's transmissions are not present.^{73/} They also recognize that it may take several months to a year for these devices to be introduced and qualified for high precision use.^{74/} Any proposed filtering "solution" such as devices modified by Javad antennas must undergo thorough testing to evaluate how they would function when faced with various operational conditions like shock and vibration, to ensure that GPS devices would still be able to perform their critical duties under a range of environmental conditions.

E. Space-Based GPS Receivers

NTIA also noted its previous statements regarding a potential interference problem with current and future space-based GPS receivers operated by the National Aeronautics and Space Administration.^{75/} NTIA acknowledged the TWG's finding that "current space-based GPS receivers are not impacted by the lower 10 MHz signal," but then cautioned that "the next

Company, to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109 (filed Nov. 11, 2011) ("[W]e discussed the need for rigorous and comprehensive testing, including consideration of various performance characteristics, of high precision receivers under test that have been retrofitted with filters developed by LightSquared vendors . . . Such filters have not yet been made available to Deere.").

^{73/} See LightSquared January 2012 Letter, Attachment 3, at 17; see also USGIC January 2012 Letter at 1-2.

^{74/} See LightSquared January 2012 Letter, Attachment 3, at 17.

^{75/} See NTIA Letter at 6.

generation of space-based GPS receivers will have wider front-end filter bandwidths and will be impacted by a signal in the lower 10 MHz.”^{76/} Although the TWG’s sub-team noted that limiting the LightSquared signal to only the lower 10 MHz channel would result in improved GPS receiver performance, such receivers would “not benefit substantively from this mitigation technique.”^{77/}

III. THE INTERNATIONAL BUREAU SHOULD REVOKE THE *CONDITIONAL WAIVER ORDER*.

The Bureau’s requirement that LightSquared must show that its proposed terrestrial network will not interfere with GPS before commencing commercial operations has not been met. LightSquared did not object to this condition at the time it was proposed, so its arguments that the Commission should use an alternate rule of decision (such as its suggestion in its Petition for Declaratory Ruling that the FCC should ignore interference because it is the GPS industry’s “fault”^{78/}) are untimely and meritless. The Bureau should provide regulatory certainty to GPS users by revoking the *Conditional Waiver Order* as proposed. Revocation is consistent with the manner in which the Commission always intended MSS spectrum to be used.

A. LightSquared Has Failed To Meet the Bureau’s Condition That Its Proposed Terrestrial Operations Must Not Interfere with GPS.

The Bureau imposed a number of conditions upon its waiver grant that LightSquared was required to meet prior to proceeding with its proposed terrestrial operations.^{79/} Among these conditions, LightSquared was directed to help organize and fully participate in the working

^{76/} *Id.*

^{77/} Coalition Comments at 18-19 (*citing* TWG Report at 315).

^{78/} *See, e.g.*, LightSquared Inc. Petition for Declaratory Ruling, IB Docket No. 11-109, at 1-3 (filed Dec. 20, 2011) (characterizing the situation faced by LightSquared as the fault of the GPS industry and requesting that the FCC issue certain requests in a declaratory ruling in order to allow LightSquared to proceed with its proposed terrestrial operations).

^{79/} *Conditional Waiver Order* ¶¶ 36-43.

group process set forth in the *Conditional Waiver Order* designed to address interference concerns regarding GPS. The Bureau stated that this process “must be completed to the Commission’s satisfaction before LightSquared commences offering commercial service pursuant to [the] waiver on its L-Band MSS frequencies.”^{80/} The Bureau directed the working group to “focus on analyzing a variety of types of GPS devices for their susceptibility to overload interference from LightSquared’s terrestrial network of base stations, identifying near-term technical and operational measures that can be implemented to reduce the risk of overload interference to GPS devices, and providing recommendations on steps that can be taken going forward to permit broadband wireless services to be provided in the L-Band MSS frequencies and coexist with GPS devices.”^{81/} The Bureau further stated that this interference resolution process “will be complete once the Commission, after consultation with NTIA, concludes that the harmful interference concerns have been resolved and sends a letter to LightSquared stating that the process is complete.”^{82/}

Each of the interference resolution steps specified in the *Conditional Waiver Order* have been taken. The TWG has completed its work, additional testing and analysis not contemplated by the *Conditional Waiver Order* has occurred, and NTIA has provided the FCC with its unequivocal feedback. Contrary to LightSquared’s “profess[ed] confidence that the [GPS interference] issues can be resolved without delaying deployment of its network,”^{83/} all parties except LightSquared have reached the same conclusion, as further discussed above, that LightSquared’s proposed operations will harmfully interfere with GPS.

^{80/} *Id.* ¶¶ 41-42.

^{81/} *Id.* ¶ 42.

^{82/} *Id.* ¶ 43.

^{83/} *Id.* ¶ 40.

The Bureau itself notes that the interference condition it imposed in the *Conditional Waiver Order* has not been met. Rather, as the Bureau states, the interference resolution process “has not been successfully completed and harmful interference concerns have not been resolved,” and therefore “it is highly unlikely that LightSquared will, in any reasonable period of time, be able to satisfy the requirements of the *Conditional Waiver Order* for providing commercial ATC service in the 1525-1559 MHz band.”^{84/} Now, consistent with the *Conditional Waiver Order*, it is time for the Bureau to act. Consequently, the Coalition urges the Bureau to provide much-needed certainty to the nation’s millions of GPS users by taking immediate action to adopt its proposal to vacate the *Conditional Waiver Order* “due to LightSquared’s inability to address satisfactorily the legitimate interference concerns surrounding its planned terrestrial operations, and the appearance that the Interference Resolution Process has no realistic prospect of being successfully completed by LightSquared in a reasonable period of time.”^{85/}

B. Revocation of the *Conditional Waiver Order* Is Consistent with the Intended Use of the MSS Band.

Revocation of LightSquared’s conditional authorization would return the MSS L-Band spectrum to its intended use – of a satellite service compatible with adjacent band GPS operations. Unfortunately, the *Public Notice* fails to recognize the historical use of the MSS L-Band and seems to accept LightSquared’s erroneous interpretation of prior Commission decisions regarding ATC. LightSquared has repeatedly claimed that it always had the authority

^{84/} *Public Notice* at 3-4.

^{85/} *Id.* at 4. While LightSquared clearly has not met the Bureau’s condition of demonstrating that its proposed operations will not interfere with GPS, LightSquared also has fallen short of the Bureau’s requirements with respect to other conditions imposed upon it by the *Conditional Waiver Order*. For example, given that LightSquared’s proposed terrestrial operations have been shown to interfere not only with GPS but with LightSquared’s own satellite operations, it is difficult to see how LightSquared could meet the condition imposed upon it by the Bureau that it must provide substantial satellite service. *See, e.g., Conditional Waiver Order* ¶ 36; Coalition Comments at 34 n.94 (discussing the TWG’s findings that “LightSquared’s proposed terrestrial network would in fact cause harmful interference to its satellite services”).

to use its L-Band MSS spectrum to construct a nationwide, high-powered terrestrial broadband network and offer the terrestrial-only services it now proposes. As already demonstrated in extensive detail in prior filings in this proceeding, LightSquared could not have had any expectation that it would be permitted to use its MSS spectrum in this manner. It is time for the International Bureau to engage in a reasoned analysis of its prior decisions and, by revoking LightSquared's conditional authorization, correct the record in this proceeding.^{86/} These decisions clearly indicate that LightSquared and its predecessors never had any authority to do anything other than construct a limited terrestrial "fill in" network to supplement the coverage of its authorized mobile *satellite* service, and in fact LightSquared was expressly prohibited from pursuing its current business plan. LightSquared's continued suggestions that changes in certain technical rules (relating to permitted power levels and the number of permitted base stations) somehow superseded the Commission's explicit limitations on permitted terrestrial uses must be clearly rejected. Any attempt to introduce a major policy change with respect to intended use of spectrum by such cryptic and indirect means would not withstand judicial scrutiny. Given this, the International Bureau's and the Commission's off-hand suggestions that LightSquared's current business plan should have somehow been anticipated by private and government GPS parties simply finds no support in the Commission's prior decisions in this area.

^{86/} See, e.g., Coalition Opposition at 4-12. The GPS industry also has filed a petition for reconsideration in a separate proceeding to request that the Commission correct these historical misstatements in the record. See *Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, Report and Order, 26 FCC Rcd 5710, ¶ 28 (2011), *recon. pending*; *Petitions for Reconsideration of Action in Rulemaking Proceeding*, Public Notice, Docket No. 10-142, Report No. 2932 (rel. July 29, 2011); *Petition for Reconsideration of the U.S. GPS Industry Council*, Docket No. 10-142 (filed June 30, 2011).

The Commission evaluated and approved the transfer of control of LightSquared's predecessor's MSS/ATC license to its current owner in March 2010.^{87/} At almost the same time, the *National Broadband Plan* was released, which expressly recognized the limited nature of the MSS/ATC license.^{88/} The *National Broadband Plan* stated that while the FCC had authorized the use of ATC by MSS licensees in 2003, that authority was limited to "areas where the satellite signal is attenuated or unavailable."^{89/} In considering how to expand upon this limited ATC authority to allow more intensive use of the MSS spectrum for terrestrial operations, the *National Broadband Plan* contemplated that the FCC would have to take additional actions to "ensure that . . . introduc[ing] greater flexibility in the MSS spectrum [would] not interfere with non-ATC MSS operations" and acknowledged that the Commission would have to coordinate with L-Band licensees and foreign governments in these efforts.^{90/} It would have been wholly unnecessary for the Commission to discuss expanding the use of the MSS spectrum to allow additional terrestrial operations if such operations were already permitted. In addition, the *Transfer of Control Order* released the same month as the *National Broadband Plan* refers to LightSquared's predecessor's authority throughout as enabling it to operate an integrated satellite/terrestrial network.^{91/}

^{87/} *Public Notice at 2 (citing 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) ("Transfer of Control Order")*).

^{88/} *Connecting America: The National Broadband Plan*, at 87, available at <http://www.broadband.gov/download-plan/>.

^{89/} *Id.*

^{90/} *Id.*

^{91/} *See, e.g., Transfer of Control Order* ¶ 55 ("Harbinger plans to construct an integrated satellite/terrestrial [4G] mobile broadband network that primarily uses SkyTerra's ATC authority and SkyTerra's new next generation satellites – SkyTerra-1 and SkyTerra-2 – the first of which is expected to be launched between August and October 2010."); *id.* ¶ 57 ("If deployed as planned, Harbinger's integrated satellite/terrestrial 4G mobile wholesale broadband network will form another platform for innovation and growth of the U.S. economy.").

The *Conditional Waiver Order* similarly referred to LightSquared as having the authority to operate an integrated satellite/terrestrial network and made it clear that LightSquared did not – until then – have the requisite authority to provide a stand-alone terrestrial service.^{92/} Indeed, the Bureau determined that LightSquared’s “updated” plans were not covered by its existing authority, and therefore LightSquared would need a waiver of the Commission’s rules in order to proceed.^{93/} Even though the Bureau granted LightSquared’s request, it conditioned that relief on LightSquared’s continued commitment to provide satellite services and on LightSquared’s demonstration that its newly proposed operations would not harm GPS. If the Bureau only “granted LightSquared a limited waiver . . . that narrowly addressed LightSquared’s obligations with respect to the mobile devices (such as handsets) that wholesale customers of LightSquared would make available to their retail customers for use on LightSquared’s MSS/ATC network,” such broad conditions and protections would not have been necessary.^{94/}

The Bureau’s findings that LightSquared did not have authority to provide a nationwide terrestrial service is strongly supported by prior Bureau and FCC decisions. While the *Public Notice* states that “[t]he authorizations at issue here were granted nearly a decade ago,” as the Bureau recognizes, these authorizations permitted MSS licensees to integrate only “a *limited* Ancillary Terrestrial Component (ATC) into their satellite networks,” and not to use the MSS frequencies to operate a ubiquitous terrestrial network providing terrestrial-only services as proposed by LightSquared today.^{95/} The *Public Notice*, and virtually all of LightSquared’s public statements and filings, simply ignore the fundamental, qualitative difference between a

^{92/} See, e.g., *Conditional Waiver Order* ¶ 6 (noting LightSquared’s “plans to construct an integrated satellite/terrestrial” network).

^{93/} *Id.* ¶ 24.

^{94/} See *Public Notice* at 2-3.

^{95/} *Id.* at 1 (emphasis added).

limited “fill in” terrestrial network and what LightSquared proposed to deploy in November 2010. To suggest that the latter is merely an incremental, foreseeable extension of the former defies logic and common sense.

It could not be clearer from the Commission’s prior decisions that the purpose behind allowing MSS licensees to integrate ATC into their MSS networks was to enable them to provide terrestrial services in locations where the satellite could not reliably deliver a sufficiently strong signal.^{96/} ATC was therefore seen merely as a “gap filler” to *enhance* primary mobile satellite services, not to displace them.^{97/}

While in 2005 the Commission removed a limit on the number of permitted terrestrial base stations an MSS/ATC provider could deploy as stated in the *Public Notice*, this same 2005 decision also stated unequivocally that MSS/ATC providers could not use an MSS/ATC authorization to provide a stand-alone terrestrial service.^{98/} The *2005 ATC Order* in fact included strong protections for GPS that are inconsistent with the type of stand-alone service that LightSquared claims it was authorized to provide. For example, in that decision, the Commission expressly committed to proactively protect GPS from harmful interference by consulting with affected government users and by adopting whatever rules might be necessary in

^{96/} 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*, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962, ¶ 23 (2003) (finding that by “filling gaps in the MSS coverage area . . . , MSS ATC should [] permit customers in underserved or unserved terrestrial markets to use ATC-enabled MSS handsets when in urban areas or inside buildings”).

^{97/} See *id.* ¶ 68 (“[B]y using the term ‘ancillary,’ we intended to exclude ‘services that differ materially in nature or character from the principal services offered by MSS providers.’”) (citation omitted).

^{98/} 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*, Memorandum Opinion and Order and Second Order on Reconsideration, 20 FCC Rcd 4616, ¶ 33 (2005) (“We reiterate our intention not to allow ATC to become a stand-alone system . . . 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.”).

the future.^{99/} In addition, the Commission’s rules unequivocally place the responsibility on the ATC operator – LightSquared in this instance – to resolve any interference caused to GPS at its own expense. Section 25.255 unambiguously states that “[i]f 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 . . .”^{100/} Consequently, it is clear that LightSquared never had authority to operate a stand-alone terrestrial service, and therefore revocation of the *Conditional Waiver Order* permitting such operations is consistent with how the FCC always intended MSS L-Band spectrum to be used.

IV. THE INTERNATIONAL BUREAU SHOULD SUSPEND INDEFINITELY LIGHTSQUARED’S ATC AUTHORITY.

While the Coalition has never objected to LightSquared’s use of its ATC authority as initially and consistently envisioned by the FCC as an ancillary, gap-filling service, it now appears that significant terrestrial use of MSS L-Band spectrum is problematic based on the findings of the *NTIA Letter* and its supplemental reports. It is therefore appropriate, based on this new evidence, for the Commission to suspend indefinitely LightSquared’s ATC authority until these interference issues are fully considered and resolved. If the Commission finds, after full consideration of the technical evidence and the costs and benefits of terrestrial operations and effects on GPS, that LightSquared cannot operate *any* terrestrial services without causing harmful interference to GPS, then LightSquared’s ATC authority should be revoked.

^{99/} *Id.* ¶ 70 (agreeing that “it is essential to ensure that GPS does not suffer harmful interference,” recognizing that Presidential policy requires the protection of the radio frequency spectrum used by GPS, and committing to “establish discussions with other agencies . . . to better understand what protection levels for GPS are warranted . . . in order to ensure that all FCC services provide adequate protection to GPS”).

^{100/} 47 C.F.R. § 25.255.

Section 316(a) of the Communications Act gives the FCC broad authority to modify any station license, “either for a limited time or for the duration of the term thereof, if in the judgment of the Commission such action will promote the public interest, convenience, and necessity, or the provisions of this Act . . . will be more fully complied with.”^{101/} The Commission has relied on this provision in making a wide variety of modifications to existing licenses, including – for example – revocation of a licensee’s authority to operate on certain frequencies and modification of the technical parameters governing a licensee’s operations.^{102/} The Commission also has previously found that it has ample authority under Section 316 to modify a license at any time to address interference issues, specifically determining that it can modify an authorization to alleviate interference that a licensee may cause to operations in an adjacent band.^{103/}

In addition to the Commission’s broad discretion to modify FCC licenses at any time in furtherance of the public interest, the FCC has the more general authority and obligation to revisit its decisions when new evidence is presented.^{104/} For instance, the Commission recently

^{101/} *Id.* § 316(a).

^{102/} *See, e.g., License Communications Services, Inc., et al.*, Memorandum Opinion and Order, 13 FCC Rcd 23781, ¶ 30 (1998) (relying on Section 316 to essentially revoke authorizations to a licensee for seven out of eight of its frequencies – and substituting other frequencies for the same – because the Wireless Telecommunications Bureau’s Licensing Division failed to condition the licenses on the outcome of a pending Application for Review); *License of Comtex Communications, Inc.; Licensee of Special Industrial Radio Service Station WPKR712, Red Oak, Texas*, Order, 15 FCC Rcd 11730, ¶¶ 1, 6 (2000) (modifying a broadcast station license by reducing the licensee’s authorized loading from 90 to 55 mobile units).

^{103/} *See Pacific Gas and Electric Company; Request to Revoke the Grant of the License of Alon Shatzki for Trunked Industrial/Business Pool Radio Service Station WPMU363, Milpitas, California*, Memorandum Opinion and Order, 18 FCC Rcd 22761, ¶¶ 1, 7-8 (2003) (reducing a licensee’s authorized effective radiated power to address interference the licensee was causing to adjacent band operations).

^{104/} *See State of New Jersey, et al. v. EPA*, 517 F.3d 574 (D.C. Cir. 2007) (“[The] fundamental principle of administrative law [is] that an agency has inherent authority to reverse an earlier administrative determination or ruling where an agency has a principled basis for doing so.”) (citations omitted); *see also Exclusive Service Contracts for Provision of Video Services in Multiple Dwelling Units and Other Real Estate Developments*, Report and Order and Further Notice of Proposed Rulemaking, 22

vacated a 2007 Order implementing amended public file rules in recognition of changes to and new advancements in technology.^{105/} In deciding to overturn its previous decision, the FCC noted that “[t]he Commission has inherent authority to revisit its policy determinations at any time,”^{106/} and that it did not believe that its previous decision in any way constrained its ability to reexamine its policies based upon an updated record. The Commission also explained that among the reasons it chose to vacate its previous Order was the fact that it was adopted based upon decisions that were issued over a decade ago and that the record in the proceeding did not reflect the rapid technological advances that have occurred over the last ten years. Further, the FCC asserted that when it does revisit a previous policy decision, it “need not demonstrate to a court’s satisfaction that the reasons for the new policy are better than the reasons for the old one; it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency believes it to be better, which the conscious change of course adequately indicates.”^{107/}

Similarly, the Commission has authority to revisit and rescind its decision to grant LightSquared ATC authority. Several years have passed since LightSquared was granted its ATC authority and much has changed since that time. At a minimum, as noted above and

FCC Rcd 20235, ¶ 5 (2007) (explaining that the FCC had previously declined to take action regarding exclusivity clauses in both new and existing service contracts between cable operators and multiple dwelling unit owners, developers, and managers, but that it did “not close the door to action if *new circumstances* arose in which such clauses had new anti-competitive effects”) (emphasis added); *American Telephone and Telegraph Company; Petition for Waiver of Section 64.702 of the Commission’s Rules and Regulations*, Memorandum Opinion and Order, 88 F.C.C.2d 1, ¶ 21 (1981) (“If we are to reverse our previous judgment it must be on the basis of either new evidence or a reinterpretation of our existing standards.”).

^{105/} See *Standardized and Enhanced Disclosure Requirements for Television Broadcast Licensee Public Interest Obligations; Extension of the Filing Requirement For Children’s Television Programming Report (FCC Form 398)*, Order on Reconsideration and Further Notice of Proposed Rulemaking, 26 FCC Rcd 15788, ¶¶ 1-2 (2011).

^{106/} *Id.* ¶ 8, n.24.

^{107/} *Id.* (citing *FCC v. Fox Television Stations, Inc.*, 129 S. Ct. 1800, 1811 (2009)).

recognized in the *Public Notice*, the *NTIA Letter* and its supplemental reports now demonstrate that *any* terrestrial use of MSS L-Band spectrum may be problematic. The updated record demonstrates that it may no longer be appropriate to allow LightSquared to proceed with any terrestrial operations using its MSS frequencies, and therefore the Commission should suspend indefinitely LightSquared’s ATC authority until the newly developed concerns can be fully evaluated and LightSquared is able to demonstrate that it will not cause harmful interference to GPS operations.

V. THE RECENT FOCUS ON INTERFERENCE AND OTHER STANDARDS SUPPORTS SUSPENSION OF LIGHTSQUARED’S AUTHORITY.

NTIA reported that EXCOM “will move forward this year to develop and establish new GPS spectrum interference standards that will help inform future proposals for non-space commercial uses in the bands adjacent to the GPS signals . . .”^{108/} The implementation of such proposals “will require striking the right balance between interference caused by transmitters and performance of GPS receivers” and ensure the protection of “existing and evolving uses of space-based PNT services vital to economic, public safety, scientific, and national security needs.”^{109/} NTIA also pledged to encourage the Department of Transportation to request that the FAA “initiate an effort to examine what changes could be made to the existing standard to eventually make certified GPS aviation receivers compatible with a signal in the lower 10 MHz.”^{110/}

In addition, Congress recently directed the Comptroller General of the U.S. Government Accountability Office (“GAO”) to undertake a study to ensure that communications systems are “designed and operated so that reasonable use of adjacent spectrum does not excessively impair

^{108/} *NTIA Letter* at 6.

^{109/} *Id.*

^{110/} *Id.* at 7.

the functioning” of such systems.^{111/} In conducting this study, the Comptroller General must consider – among other things – the value of improving receiver performance and the operation of services.^{112/} The Coalition supports each of these efforts and will cooperate to the fullest extent useful with the responsible agencies.

The Coalition also recognizes that the FCC has already undertaken a similar effort. As NTIA states in the *NTIA Letter*, it “recognizes the importance that receiver standards could play as part of a forward-looking model for spectrum management even beyond the immediate issue of GPS,” and therefore – in parallel with NTIA’s efforts with the federal agencies – “NTIA urges the FCC, working with all stakeholders, to explore appropriate actions to mitigate against the impact GPS and other receivers may have to prevent the full utilization of spectrum to meet the nation’s broadband needs.”^{113/}

The Commission has already initiated actions in this regard by conducting a workshop on “spectrum efficiency and receivers” on March 12-13, 2012.^{114/} Recognizing that “[r]eceiver performance issues have often arisen as a conflict between legacy stakeholders and new entrants where deployment of new technologies and services threatens to adversely impact an incumbent” and citing the current threat to GPS by LightSquared’s proposed operations as an example, the two-day workshop was designed to “discuss the characteristics of receivers and how their performance can affect the efficient use of spectrum and opportunities for the creation of new

^{111/} Middle Class Tax Relief and Job Creation Act of 2012, H.R. 3630, 112th Cong. § 6408(a) (2012).

^{112/} *Id.* § 6408(b).

^{113/} *NTIA Letter* at 7.

^{114/} *Office of Engineering and Technology, Wireless Telecommunications Bureau, and Office of Strategic Planning Announce Workshop on Spectrum Efficiency and Receiver Performance*, Public Notice, DA 12-378 (rel. March 9, 2012); *Office of Engineering and Technology, Wireless Telecommunications Bureau, and Office of Strategic Planning Announce Workshop on Spectrum Efficiency and Receiver Performance*, Public Notice, DA 12-280 (rel. Feb. 24, 2012).

services” and “will include perspectives from licensees, equipment manufacturers, component providers, and other interested parties.”^{115/}

While the Coalition stands ready to fully participate in these efforts, it agrees with NTIA that setting equipment performance criteria is a long and complicated process.^{116/} For example, “[c]hanging domestic and international aviation standards for compatible operation with signals in the lower 10 MHz may be possible, but will take many years, and retro-fitting or replacing the GPS receivers to be compliant with the new standards once they are adopted will take many more years.”^{117/} The complexity associated with developing and implementing new GPS technology – incorporating new performance criteria or otherwise – has been well-documented in these proceedings.^{118/}

^{115/} *Id.*

^{116/} Before the Commission determines to proceed with imposing receiver standards, it must determine whether it has authority to do so; the Coalition questions whether clear authority exists under the Communications Act. *See, e.g., Interference Immunity Specifications for Radio Receivers, et al.*, Notice of Inquiry, 18 FCC Rcd 6039, ¶ 22 (2003) (requesting comment on whether the Commission “has the necessary statutory authority to promulgate receiver immunity guidelines and standards”) (proceeding terminated without decision in *Interference Immunity Specifications for Radio Receivers*, Order, 22 FCC Rcd 8941 (2007)); *Spectrum Policy Task Force*, Report, Docket No. 02-135, at 31 (2002) (recommending the enactment of “legislation more explicitly granting . . . authority” to the FCC to promulgate receiver performance standards prior to the Commission’s adoption of such standards); *Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010; Establishment of Rules and Requirements For Priority Access Service*, Second Notice of Proposed Rulemaking, 12 FCC Rcd 17706, ¶ 71 (1997) (“We observe that the Commission’s authority to regulate receiver performance may be limited.”). Moreover, the Coalition questions whether, even if the FCC has authority to regulate receiver performance, those criteria are the most effective way to ensure the most intense use of spectrum in adjacent bands. Instead of receiver performance requirements, the Commission should examine other mechanisms to enhance spectrum use, including interference protection criteria. The Coalition and its members look forward to working with the Commission and other federal and commercial entities to examine these important issues in the future.

^{117/} *NTIA Letter* at 7; *see also id.* (recognizing that NTIA’s review of receiver requirements “will not produce a solution for the majority of devices in the marketplace”).

^{118/} *See, e.g., Sustaining GPS for National Security: Hearing Before the Subcomm. on Strategic Forces of the H. Comm. on Armed Services*, 112th Cong. at *11 (Sept. 15, 2011) (oral testimony of General William L. Shelton, Commander, Air Force Space Command), *available at* http://findarticles.com/p/news-articles/political-transcript-wire/mi_8167/is_20110916/rep-michael-turner-

Moreover, the Commission has generally declined to impose receiver standards, finding that such matters are more appropriately addressed by marketplace dynamics. For example, the Commission “has adopted rules only as necessary to limit interference between communications systems, and has not specified performance or quality standards for receivers”; instead, it has “typically relied on market forces to determine the appropriate balance between the quality of receivers used . . . and their cost.”^{119/} Accordingly, the current inquiries regarding receiver performance may lead to the same conclusion that the Commission has historically reached: that the delicate balance of achieving the optimum performance of receivers at the lowest cost and without stifling innovation is a balance “best left to the market.”^{120/} Because any ability for LightSquared to proceed will likely be tied to the outcome of these inquiries, it is appropriate for

holds-hearing/ai_n58165676/ (estimating that “the cost would be in the billions of dollars” for any technical solution to the GPS interference problem and that it would probably take “a decade or more to accomplish all this”); Letter from James A. Kirkland, Vice President and General Counsel, Trimble Navigation Limited, to Honorable Michael Turner, Chairman, Strategic Forces Subcommittee, and Honorable Loretta Sanchez, Ranking Member, Strategic Forces Subcommittee, Docket No. 11-109, at 17 (filed Oct. 6, 2011) (explaining the comprehensive testing, evaluation, and certification programs the Department of Defense must conduct before incorporating any new GPS equipment into its various operations).

^{119/} *Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, et al.*, Notice of Proposed Rulemaking and Order, 14 FCC Rcd 152, ¶ 118 (1998); *Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, et al.*, Second Notice of Proposed Rulemaking and Order, 12 FCC Rcd 17706, ¶ 71 (1997) (“In the past, we have generally relied on the market to address receiver standards.”); *Fostering Innovation and Investment in the Wireless Communications Market; A National Broadband Plan for Our Future*, Notice of Inquiry, 24 FCC Rcd 11322, ¶ 36 (2009) (recognizing that “the Commission’s rules are designed to control interference by regulating transmitter performance (e.g., power, emissions limits, and field strength) but not receiver performance”).

^{120/} *See, e.g., Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010; Establishment of Rules and Requirements for Priority Access Service*, Fourth Notice of Proposed Rulemaking, 15 FCC Rcd 16899, ¶ 57 (2000); *Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, et al.*, Report and Order and Memorandum Opinion and Order, 17 FCC Rcd 368, ¶ 70 (2002) (“[C]onsistent with rules for most radio services regulated by the Commission, we will not adopt receiver performance standards for this band.”).

the FCC to now suspend any authority that LightSquared has to offer terrestrial services until such time as they are completed.

VI. CONCLUSION

The *NTIA Letter*, its supporting documents, and the record make it clear that LightSquared has failed to meet the condition imposed upon it by the FCC's International Bureau that it must resolve any potential interference to GPS prior to commencing commercial operations. Consequently, the Bureau's *Conditional Waiver Order* should be revoked and LightSquared's ATC authority suspended indefinitely.

Respectfully submitted,

/s/ Paul G. Scolese_____

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