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

In the Matter of

LightSquared Subsidiary LLC
IB Docket No. 11-109

Technical Working Group Report

In re the Application of

LightSquared Subsidiary LLC
File No. SAT-MOD-20101118-00239

Request for Modification of its Authority for an Ancillary Terrestrial Component

COMMENTS OF THE U.S. GPS INDUSTRY COUNCIL

U.S. GPS INDUSTRY COUNCIL

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Summary

In its February 15th Public Notice, the International Bureau seeks comment in response to the February 14th NTIA Letter, in which NTIA concludes that “LightSquared’s proposed mobile broadband network will impact GPS services and there is currently no practical way to mitigate the potential harmful interference from LightSquared’s planned terrestrial operations in the 1525-1559 MHz band.” The Commission proposes two actions in light of the technical findings detailed in the NTIA Letter and the explicit terms of the LightSquared Conditional Waiver Order. First, the Bureau proposes to vacate the portion of the Conditional Waiver Order that provisionally allowed LightSquared to initiate L-band terrestrial mobile broadband service at 1525-1559 MHz, provided that it was first able to demonstrate that no harmful interference would be caused to GPS receivers in the neighboring radionavigation-satellite service (“RNSS”) band at 1559-1610 MHz. Second, the Bureau proposes to modify LightSquared’s license to suspend indefinitely LightSquared’s underlying Ancillary Terrestrial Component (“ATC”) authorization “to an extent consistent with the NTIA Letter.”

The U.S. GPS Industry Council (the “Council”) agrees that rescission of the authority granted in the Conditional Waiver Order is the only appropriate action in light of the interference data developed through the Technical Working Group (“TWG”) process and the confirming studies subsequently conducted at the direction of NTIA, which underpin the conclusions reached in the NTIA Letter. Based on these findings, there is no doubt that the unallocated and non-conforming ubiquitous terrestrial mobile broadband service that LightSquared wishes to provide in the 1525-1559 MHz band is simply incompatible with mobile-satellite service (“MSS”) use in this band and with GPS and other RNSS uses in the
upper adjacent 1559-1610 MHz band allocated on a primary basis in both the U.S. and international Frequency Allocation Tables.

The Council also agrees that the NTIA Letter and the findings stated in both the U.S. government studies and in the work of the TWG seriously undermine the technical feasibility of providing a terrestrial mobile broadband service in the 1525-1559 MHz band – because such operations would cause significant harmful interference to GPS and GPS-dependent applications. The rigorous empirical analyses undertaken in these studies show that LightSquared’s proposed terrestrial mobile broadband operations would in fact cause harmful interference to GPS. To the extent these results and others have informed the NTIA conclusion that there is no practical way to mitigate the potential interference to GPS at this time, as well as the Commission proposal to modify LightSquared’s license to suspend the underlying ATC authority, the Council agrees and acknowledges the technical justification.

The Council has cooperated and worked with LightSquared’s predecessor, the federal agencies, and NTIA to protect existing and evolving GPS applications based on the characteristics of the original ATC model of operation described at its inception (i.e., primarily voice, gap-filler, co-channel, co-frequency). However, as the result of new facts developed during testing of LightSquared’s proposed model of terrestrial operation (i.e., ubiquitous broadband coverage) by, among others, the TWG and NTIA (along with the federal agencies that have conducted comprehensive testing), it is now clear that serious interference may be caused to GPS by LightSquared’s planned ATC operations in the L-Band even if the 2011 waiver is vacated as proposed. For this reason, it is both appropriate and responsible for the Commission to suspend indefinitely LightSquared’s ATC authorization, to the extent consistent with the NTIA Letter, as it proposes in the Public Notice.
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In the Matter of

LightSquared Subsidiary LLC  )
IB Docket No. 11-109

Technical Working Group Report

In re the Application of

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File No. SAT-MOD-20101118-00239

Request for Modification of its Authority for an
Ancillary Terrestrial Component

COMMENTS OF THE U.S. GPS INDUSTRY COUNCIL

The U.S. GPS Industry Council (the “Council”), by its attorneys and pursuant to the
Public Notice released February 15, 2012,1 hereby comments on the issues raised in the Public
Notice in response to the February 14, 2012 National Telecommunications and Information
Administration (“NTIA”) letter2 regarding the Conditional Waiver Order3 issued January 26,
2011 in the above-captioned application proceeding, which has been subject to further
proceedings in IB Docket No. 11-109. In the Public Notice, the International Bureau (the

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“Bureau”) notes that “NTIA has concluded that LightSquared’s proposed mobile broadband network will impact GPS services and there is currently no practical way to mitigate the potential harmful interference from LightSquared’s planned terrestrial operations in the 1525-1559 MHz band.”\textsuperscript{4} The Commission itself goes on to state that the record in this docket, as supplemented by the \textit{NTIA Letter} and accompanying documents, indicates that “it is highly unlikely that LightSquared will, in any reasonable period of time, be able to satisfy the requirements of the \textit{Conditional Waiver Order} for providing commercial ATC service in the 1525-1559 MHz band.”\textsuperscript{5} Accordingly, the International Bureau proposes two actions based on these findings and the explicit terms of the \textit{Conditional Waiver Order}.

First, the Bureau proposes to vacate the terms of the \textit{Conditional Waiver Order}, which provisionally allowed LightSquared to proceed with deployment of a terrestrial mobile broadband service in the 1525-1559 MHz band allocated on a primary basis to the mobile-satellite service (“MSS”), provided that it was first able to demonstrate to the satisfaction of the FCC, in consultation with NTIA, that no harmful interference would be caused to GPS receivers in the neighboring radionavigation-satellite service (“RNSS”) band. The Bureau contemplates this action “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.”\textsuperscript{6}

Second, in addition to revoking the authority granted in the \textit{Conditional Waiver Order}, the Bureau proposes to modify LightSquared’s license pursuant to Section 316 of the

\textsuperscript{4} \textit{Public Notice} at 3.
\textsuperscript{5} \textit{Public Notice} at 4.
\textsuperscript{6} \textit{Public Notice} at 4 (proposed action number 1).
Communications Act to suspend indefinitely LightSquared’s underlying Ancillary Terrestrial Component (“ATC”) authorization “to an extent consistent with the NTIA Letter.”

With respect to these two proposed actions, the Council agrees that rescission of the authority granted in the Conditional Waiver Order is the only appropriate action in light of the data on interference developed through the Technical Working Group (“TWG”) process and the confirming studies subsequently conducted at the direction of NTIA, which underpin the conclusions reached in the NTIA Letter. Based on these findings, there is no doubt that the unallocated and non-conforming ubiquitous terrestrial mobile broadband service that LightSquared wishes to provide in the 1525-1559 MHz band is simply incompatible with the uses of this band and of the upper adjacent 1559-1610 MHz band by services to which the bands are allocated on a primary basis in both the U.S. and international Frequency Allocation Tables – MSS in the case of the 1525-1559 MHz band, and GPS and other RNSS systems in the case of the upper adjacent 1559-1610 MHz band.

The Council also believes that the NTIA Letter and the findings stated in both the U.S. government studies and in the work of the TWG seriously undermine the basic premise under which ancillary terrestrial services have been authorized in the 1525-1559 MHz band – that such operations would not cause harmful interference to GPS and GPS-dependent applications. The rigorous empirical analyses undertaken in the TWG study and in the government studies cited in the NTIA Letter show that LightSquared’s proposed broadband ATC operations would in fact cause harmful interference to GPS. In its recent report, a follow-on study to NPEF’s

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7 Public Notice at 4 (proposed action number 2).
own June 2011 review, NPEF specifically found that “[n]o additional testing is required to
determine that terrestrial high-power transmission in the [1525-1559 MHz] band impacts
general navigation receivers” and concluded that “[i]mmediate use of the Mobile Satellite
Spectrum (MSS) for terrestrial service is not viable due to significant systems engineering and integration challenges.”

To the extent these results and others have informed both NTIA’s conclusion that there
is no practical way to mitigate the potential interference to GPS at this time and the
Commission’s proposal to modify LightSquared’s license to suspend the underlying ATC
authority to the extent consistent with the NTIA Letter, the Council agrees and acknowledges
the technical justification. The Council has cooperated and worked with LightSquared’s predecessor, the federal agencies, and NTIA, to protect GPS existing and evolving operations, based on the facts about the original ATC model of operation (i.e., primarily voice, gap-filler) that were available at the time. As the result of new facts developed by, among others, the TWG and NTIA (along with the federal agencies that have conducted comprehensive testing) during testing of LightSquared’s new model of ATC operation (i.e., terrestrial broadband), it is now clear that serious interference may be caused to GPS by terrestrial broadband ATC operations in the L-Band even if the 2011 waiver is vacated as proposed. For this reason, it is both appropriate and responsible for the Commission to set aside LightSquared’s ATC authorization as proposed in the Public Notice.

“significant technical concerns remain that operation of an ATC service can successfully coexist with GPS.” NPEF June 2011 Study, Executive Summary at ii (Public Version, released June 14, 2011). NPEF recommended that the U.S. Government conduct studies that “include compatibility of ATC architectures in the MSS L Band with GPS-dependent applications ….” Id.


The Council endorses the great majority of the conclusions reached by NTIA based on the various technical studies that are relied upon and annexed to the NTIA Letter. It addresses herein, by category, each of the types of GPS receiving equipment covered by the testing undertaken at NTIA’s direction and discussed in the NTIA Letter.

A. Personal/General Navigation GPS Receivers

Of principal importance, even if LightSquared’s terrestrial mobile operations were limited to the lower ten megahertz of the band (1525-1535 MHz), the signals from LightSquared’s proposed base stations would adversely impact millions of currently deployed personal and general navigation GPS receivers. In particular, the NPEF data summary demonstrates that 75% of the 92 receivers that were tested suffered harmful interference from transmissions in the lower ten megahertz of the band.10 The NPEF January 2012 Study concludes that mitigation of this interference is not feasible. Even if mutually agreed and fully tested technical solutions were to materialize in the future for application to later generations of GPS receivers in various applications, a long-term implementation plan would be necessary to bring such solutions, once they have been fully developed, to the marketplace and to ensure a complete and orderly transition of existing GPS receivers.11

There is no doubt that the NPEF January 2012 Study’s conclusions based on the testing at the Army Research Laboratory Electromagnetic Vulnerability Assessment Facility at White Sands Missile Range reflect a fair process and an unbiased analysis of the data produced. The results have been subject to verification by two independent entities. Idaho National

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10 See NPEF January 2012 Study, § 5.1.1.2, at 30. See also id., § 5.2, Conclusion 1, at 35.
11 See NPEF January 2012 Study, § 5.2, Conclusion 2, at 35-36.
Laboratories had an observer on-site and performed an independent assessment of the test plan, setup, and execution. In addition, the Massachusetts Institute of Technology Lincoln Laboratory conducted an independent peer-review and engineering assessment of the NPEF testing methods and findings, concluding that they support the “conclusion that Lower 10 MHz LightSquared signal results in harmful interference to a majority of GPS devices tested.”

B. Aviation GPS Receivers

LightSquared’s proposed operations in the 1525-1535 MHz band would also have adverse impact on safety-critical GPS aviation receivers. The Federal Aviation Administration (“FAA”) analysis found interference in fixed wing and helicopter landing scenarios, as well as for Terrain Awareness and Warning System (“TAWS”) applications, including Helicopter TAWS. These functions are critically important to aviation safety. In particular, the adoption of TAWS is widely considered to be one of the most effective improvements to commercial airline safety.

As part of its proposal to achieve compatibility with TAWS and other critical low altitude safety applications, LightSquared has proposed limiting base station effective isotropically radiated power (“EIRP”) as a function of antenna height. This is simply a revival of LightSquared’s “Option 2” power-on-the-ground proposal, repurposed as “power-in-

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12 See NPEF January 2012 Study, § 1.3, at 3.
13 U.S. Department 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,” § 3.3.3 at 52; § 3.4.1 at 57; § 3.4.2 at 59; § 3.4.3 at 61; § 3.5 at 62 (Public Version, released January 25, 2012) (“FAA Report”).
15 FAA Report, Appendix C: LightSquared Perspective, at C-13 to C-16.
the-air.” In this new incarnation, it appears that LightSquared proposes increasing antenna
downtilt (from 2 to 4 degrees) instead of decreasing downtilt, as in the power-on-the-ground
proposal. It also appears to be reducing base station EIRP as the antenna height is increased.
This is the opposite of what LightSquared proposed in an October 5, 2011 ex parte meeting
with FCC staff.16 Under the plan discussed at that time, LightSquared proposed reducing base
station EIRP as the antenna height is reduced. LightSquared is advocating one proposed
avoidance technique to assuage concerns about interference to ground-based receivers, but at
the same time is proposing a wholly inconsistent approach to address concerns about
interference to airborne GPS receiving equipment. It is clear that LightSquared’s self-
contradictory claims cannot be credited. It is impossible for it to implement both of these
interference mitigation proposals. And the implementation of either one, while arguably
reducing some interference to some types of GPS receivers, would necessarily increase the
level of harmful interference to other significant categories of GPS receivers.

The FAA’s analysis of LightSquared interference is based on aviation receiver
interference rejection requirements that were first published in 1996, which were subsequently
adopted by the FAA in 1998, and later accepted by the International Civil Aviation
Organization (“ICAO”) in 2001.17 These standards predate the FCC’s authorization of L-band

16 See Letter from Henry Goldberg, Counsel to LightSquared Subsidiary LLC, to Marlene H.
Dortch, Secretary, FCC, IB Dkt. No. 11-109, File No. SAT-MOD-20101118-00239,

17 The current aviation GPS receiver interference rejection standards were initially published
Positioning System/Wide Area Augmentation System Airborne Equipment.” The FAA
invoked RTCA/DO-229A in 1998 when it published Technical Standard Order TSO-C145,
“Airborne Navigation Sensors using the Global Positioning System (GPS) Augmented by the
Wide Area Augmentation System (WAAS).” The International Civil Aviation Organization
adopted these standards in 2001 as Amendment 76 to Annex 10, Volume 1 of the
MSS ATC. The FAA has correctly concluded that LightSquared’s proposed terrestrial network is not compatible with low altitude operations dependent on GPS receivers built to these specifications.\(^\text{18}\)

**C. Space-Based GPS Receivers**

In addition, the Council concurs with NTIA’s conclusions with respect to space-based GPS applications. NASA implementations of GPS would be subject to particularly adverse impact from widespread terrestrial deployment of high-power base stations due to their wider front-end filter bandwidths.\(^\text{19}\)

**D. Cellular GPS Receivers**

The Council takes exception to one statement in the NTIA summary of conclusions. The Council would condition the broad conclusion stated in the *NTIA Letter* with respect to cellular GPS receivers. The *NTIA Letter* states generally that “the lower 10 MHz base station signal does not significantly impact GPS receivers used in cellular devices.”\(^\text{20}\) The report to the NTIA on cellular GPS receivers makes what the Council believes is an overly broad assessment, grounded in the studies detailed in the TWG Final Report, that there would be no significant impact to cellular devices from LightSquared’s transmissions in the lower ten megahertz of its licensed spectrum (1525-1535 MHz).\(^\text{21}\) In fact, as indicated in the TWG Final Report, there are several types of cellular handsets (numbering at least a half dozen) that

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\(^{18}\) See FAA Report, Executive Summary, Conclusion 1, at ii, and § 1.3 at 11.

\(^{19}\) See NTIA Letter at 6.

\(^{20}\) NTIA Letter at 3.

experienced disabling interference to GPS reception at the -15 dBm threshold used by the NPEF. 22 These results cannot simply be overlooked as if the findings were not established in the initial testing. The ultimate conclusions drawn in the Cellular Report are also predicated on the assumed ability of LightSquared to successfully implement Phase 1 of its “power-on-the-ground” proposal, limiting power to -30 dBm. 23 The Council, however, has shown that the power-on-the-ground proposal that LightSquared has outlined is not feasible. 24

E. High Precision and Precision Timing Applications

In light of the other adverse interference testing results, there is no point in continuing to pursue solutions to mitigate interference issues with respect to high-precision and timing GPS receivers that were identified in the TWG Report and not subject to further USG testing. These substantial interference issues were identified in the original TWG tests, and there has been no further data adduced to suggest that they can be successfully mitigated.

F. Long-Term Outlook for Possible Technological Solutions

As correctly indicated in the NTIA Letter, any equipment-based technological solution, even if achievable and limited to the lower 10 MHz of the L-band MSS spectrum, would take many years to develop and many additional years to implement through replacement or retrofitting of GPS receivers already deployed. 25 Under these circumstances, there is no basis upon which to conclude that LightSquared could satisfy the requirements imposed in the Conditional Waiver Order within any reasonably acceptable period of time.

22 See TWG Final Report at 77 & 79.


25 See NTIA Letter at 7.
II. The Bureau Should Vacate the LightSquared *Conditional Waiver Order, as Proposed.*

LightSquared is affirmatively required under the *Conditional Waiver Order* to address GPS interference concerns and demonstrate its ability to implement “measures necessary to prevent harmful interference to GPS.”\(^{26}\) The *Conditional Waiver Order* further provides that the process would only be complete, such that the condition could be lifted, “once the Commission, after consultation with NTIA, concludes that the harmful interference concerns have been resolved …”\(^{27}\)

With the delivery of the *NTIA Letter* to the Commission, the FCC is now at the final stage of the evaluation process contemplated in the *Conditional Waiver Order*. NTIA has specifically concluded that “LightSquared’s proposed mobile broadband network will impact GPS services and that there is no practical way to mitigate potential interference at this time.”\(^{28}\)

As detailed above, these conclusions are based on sound science, including the careful examination and analysis of detailed, independently verified test results covering a broad range of deployed GPS equipment. Given these findings, the FCC cannot credibly conclude that “harmful interference concerns have been resolved.”\(^{29}\) This circumstance necessarily means that the critical condition placed upon LightSquared’s authorization has not been met, and further that there is “no practical way”\(^{30}\) that such condition could be satisfied within any reasonable period of time.

\(^{26}\) *Conditional Waiver Order*, 26 FCC Rcd at 586 (¶ 41).

\(^{27}\) *Conditional Waiver Order*, 26 FCC Rcd at 587 (¶ 43) & 588 (¶ 48).

\(^{28}\) *NTIA Letter* at 1.

\(^{29}\) *Conditional Waiver Order*, 26 FCC Rcd at 587 (¶ 43).

\(^{30}\) *NTIA Letter* at 1.
Under these circumstances, the Bureau has correctly observed in the *Public Notice* that “it is highly unlikely that LightSquared will, in any reasonable period of time, be able to satisfy the requirements of the *Conditional Waiver Order.*” Accordingly, LightSquared has failed to meet in a timely manner the critical condition of the *Conditional Waiver Order*, as affirmatively enacted into law by the recent statutory requirements, and its conditional authority should be rescinded as the Bureau proposes.

### III. The Commission Should Adopt its Proposal to Suspend Indefinitely LightSquared’s Underlying L-Band MSS ATC Authority, to the Extent Consistent with the *NTIA Letter.*

MSS ATC was originally established as a gap-filler offering, truly supplementary to MSS, with the sole objective of enabling the MSS operator to improve the availability of its satellite-based, primarily narrowband voice, service in hard to reach areas such as urban

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31 *Public Notice* at 4.

32 The Council also observes that vacatur of the *Conditional Waiver Order* would be consistent with (although need not be based upon) two statutory provisions recently enacted by Congress which mandate that the Commission cannot remove the condition on LightSquared’s authorization until all GPS interference issues have been resolved. In particular, the Consolidated Appropriations Act of 2012 precludes the FCC from authorizing LightSquared to operate standalone terrestrial transmitters “until the Commission has resolved concerns of potential widespread harmful interference by such commercial terrestrial operations to commercially available [GPS] devices.” Consolidated Appropriations Act, 2012, Pub. L. No. 112-74, at Division C – Financial Services and General Government Appropriations Act, 2012 (enacted Dec. 23, 2011). In addition, the National Defense Authorization Act for Fiscal Year 2012 contains a similar provision relating specifically to GPS devices used by the Department of Defense. See National Defense Authorization Act for Fiscal Year 2012, Pub. L. No. 112-81, at Title IX, Department of Defense Organization and Management, Subtitle B, Space Activities, § 911 (enacted Dec. 31, 2011).
canyons and locations with natural terrain obstructions.\textsuperscript{33} ATC complemented and completed MSS; it did not supplant it.\textsuperscript{34} In fact, it remains a plank in the Commission’s ATC platform that a system offering MSS (space-to-Earth) in the 1525-1559 MHz band must have its signal received in the same area and on the same frequencies that it uses for ATC.\textsuperscript{35}

Based on that understanding, MSS ATC was not expected to be problematic to GPS from a technical standpoint when implemented in full compliance with the Commission's

\textsuperscript{33} When it subsequently adopted the ATC rules, the Commission specified that it was authorizing limited MSS ATC operations “subject to conditions that ensure that the added terrestrial component remains ancillary to the principal MSS offering.” \textit{See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band}, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962, 1964-65 (¶ 1) (2003) (“MSS ATC R&O”). It emphasized, “[w]e do not intend, nor will we permit, the terrestrial component to become a stand-alone service.” \textit{Id.} at 1965 (¶ 1).

\textsuperscript{34} The Commission explained that:

\begin{quote}
[W]e intend to authorize ATC only as an ancillary service to the provision of the principal service, MSS. We have established a number of gating requirements to ensure that ATC may only operate after the provision of MSS has commenced and during the period in which MSS continues to operate. . . . While it is impossible to anticipate or imagine every possible way in which it might be possible to “game” our rules by providing ATC without also simultaneously providing MSS and while we do not expect our licensees to make such attempts, we do not intend to allow such “gaming.” \textit{Id.} at 1965 (footnote 5). The Commission went beyond establishing limits on MSS ATC, and explained why any other approach, such as sharing between independent terrestrial and MSS use, was unworkable, making plain its carefully considered technical judgment that “shared usage between MSS and terrestrial services would likely compromise effectiveness to such a degree that neither service would prove cost-effective, and therefore would probably not be deployed.” \textit{Id.} at 1995 (¶ 55).
\end{quote}

\textsuperscript{35} \textit{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, 4633 (¶ 46) (2005) (“2005 MSS ATC Reconsideration Order”).
policies, rules and licensing orders.\textsuperscript{36} However, it is now apparent that L-Band ATC, at least as currently proposed by LightSquared, is technically problematic for GPS – whether such ubiquitous terrestrial mobile broadband operations are conducted on an integrated or a non-integrated basis. Therefore, the Council agrees with the Commission’s proposal in the \textit{Public Notice} to initiate license modification proceedings with a view to suspending indefinitely LightSquared’s ATC authority “to an extent consistent with the \textit{NTIA Letter}.”\textsuperscript{37}

In support of this position, the Council notes first that the comprehensive testing performed within the TWG and by the U.S. Government over the last year clearly demonstrates that terrestrial mobile broadband services in the 1525-1559 MHz band will cause harmful interference to GPS. NPEF’s initial study from June 2011 raised “significant technical concerns” about whether any ATC service in the LightSquared MSS bands can successfully coexist with GPS, and led NPEF to recommend further studies to determine whether any ATC architecture is compatible in these bands with GPS-dependent applications.\textsuperscript{38} The recent NPEF follow-up study seemed to answer the concerns with a definitive determination that no terrestrial high-power service in the MSS bands authorized to LightSquared can be provided that is compatible with GPS.\textsuperscript{39} The FAA’s separate study, also referenced in the \textit{NTIA Letter}, concluded that there are few alternatives with respect to terrestrial mobile service of any kind in the LightSquared MSS bands; “[e]ither LightSquared must significantly change their

\textsuperscript{36} The ATC authorization orders issued to LightSquared’s predecessors in interest included important limitations, not otherwise reflected in the Commission’s rules, on out-of-band emissions into the upper adjacent 1559-1610 MHz RNSS band. These limitations were the products of important agreements between the MSS ATC operator and the RNSS user communities, and must be preserved in any future terrestrial use of the MSS L-band.

\textsuperscript{37} \textit{Public Notice} at 4.

\textsuperscript{38} \textit{NPEF June 2011 Study}, Executive Summary at ii.

\textsuperscript{39} \textit{See NPEF January 2012 Study}, at 35.
operating conditions (e.g., transmit power, antenna deployment, antenna down tilt, etc) or the FAA must change the avionics specifications and all GPS-equipped aircraft[,] re-equip, or both." The comprehensive testing of prototype terrestrial mobile equipment over the last year, with real GPS equipment in operationally accurate scenarios, has thus revealed a harmful interference issue with respect to GPS that has no imminent solution. Moreover, the Commission now appears to accept that there is no viable way for LightSquared to achieve its obligation to offer any kind of mobile broadband service under its ATC authorization – whether on an integrated or a non-integrated basis – and thus the indefinite suspension of LightSquared’s currently planned terrestrial service offering under the ATC banner as proposed in the Public Notice is both necessary and required in the public interest.

Second, the FAA notes in its study that LightSquared had urged either acceptance of some level of disturbance/interference impact to GPS uses or a reexamination of the metrics by which harmful interference is assessed. While the FAA and ultimately the NTIA Letter properly rejected the notion that GPS either can or should accept harmful interference from a non-conforming terrestrial mobile operation, LightSquared continues to pursue such a possibility. In other words, LightSquared appears intent upon offering its terrestrial broadband version of “ATC” without regard to the consequences to existing spectrum users operating in

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40 FAA Report at 70.

41 The Council believes that the essential characteristics of the ATC model described at the time – low-power offerings designed to be a gap-filler ATC augmentation of MSS for primarily narrowband voice service provided on a co-coverage, co-frequency basis with MSS – may continue to be theoretically compatible with primary L-band services. These are the characteristics with which the Council and the Commission (the latter by rule and licensing action) expected MSS ATC to operate. See, e.g., 2004 Authorization Order, 19 FCC Rcd at 22176-77 (¶¶ 95(c) & (d)). However, NTIA and others appropriately tested the ATC component that LightSquared now proposes to utilize and found incontrovertible evidence of harmful interference.

42 FAA Report at 71.
primary allocations – despite the fact that such operations are now concluded to be incapable of being provided without causing harmful interference to GPS. In the face of compelling technical evidence, this intention on LightSquared’s part provides an independent justification for the indefinite suspension action the Commission has proposed.

Third, although LightSquared’s MSS ATC authorization was granted in 2004, LightSquared currently has not deployed any ATC facilities – a fact that LightSquared itself has reiterated more than once in its recent FCC filings. The absence of such facilities, putting aside the licensee’s aspirations to provide a dedicated terrestrial mobile broadband service, at least suggests it is not untimely for the Commission to question the necessity of an ATC augmentation, including as originally proposed.

The Council thus agrees with the Commission’s proposal to revisit LightSquared’s ATC authorization – at least to the extent that the existing ATC authorization allows on an integrated basis the same type of equipment and transmissions for ATC that the TWG and federal agencies’ testing have now shown conclusively to cause harmful interference to GPS and other RNSS users in the 1559-1610 MHz band. Accordingly, the Commission should adopt the second proposal from the Public Notice to suspend LightSquared’s terrestrial operations.

43 See Letter from Jeffrey J. Carlisle, Executive Vice President, Regulatory Affairs and Public Policy, LightSquared Subsidiary LLC, to Marlene H. Dortch, Secretary, FCC, IB Docket No. 08-184 and SAT-MOD 2011 1118-00239, at 1 (filed January 27, 2012) (“LightSquared has not commenced the provision of commercial MSS/ATC”); LightSquared Motion for Extension of Time, IB Dkt. No. 11-109 and File No. SAT-MOD-20101118-00239, at 5 (filed February 23, 2012) (arguing that “no party will be prejudiced by the requested extension [of time to comment on the Public Notice] in this proceeding because LightSquared’s terrestrial operations remain non-operational”).

44 As the Council has recommended since the outset of this proceeding, it believes that questions relating to basic policy, such as the suitability of continued MSS ATC operations as permitted under the current rules, should be considered in the first instance by the Commission
IV. Conclusion

For all of the foregoing reasons, the Council urges the Bureau to accept the NTIA Letter’s soundly supported conclusions with respect to predicted interference from LightSquared’s proposed terrestrial broadband operations to personal/general navigation, aviation, space-based and high precision and precision timing GPS receivers. Consistent with these findings, the Bureau should vacate the Conditional Waiver Order granted to LightSquared in January 2011 because LightSquared has failed to satisfy the GPS non-interference condition imposed therein. Finally, the Commission should also adopt its proposal to suspend indefinitely LightSquared’s L-band MSS ATC authorization to the extent consistent with the NTIA Letter, and should take such further action as may be necessary to implement this proposal.

Respectfully submitted,

U.S. GPS INDUSTRY COUNCIL

By:  
\[s/Raul R. Rodriguez\]
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March 16, 2012 Its Attorneys

rather than at the Bureau level. See, e.g., 47 C.F.R. § 0.261(b)(1)(ii) (“Notwithstanding the authority delegated in paragraph (a) of this section, the Chief, International Bureau, shall not have authority … To act on any application, petition, pleading, complaint, enforcement matter, or other request that … Presents facts or arguments which appear to justify a change in Commission policy”).
CERTIFICATE OF SERVICE

I, Sharon A. Krantzman, hereby certify that on this 16th day of March, 2012, a copy of the foregoing “Comments of The U.S. GPS Industry Council” is being sent via first class, U.S. Mail, postage prepaid, to the following:

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Executive Vice President
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By:  
/s/Sharon A. Krantzman
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