Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of		
LightSquared Technical Working Group Report	)	IB Docket No. 11-109
LightSquared License Modification Application, IBFS Files Nos. SAT-MOD-20120928-00160, -00161, SES-MOD-20121001-00872	)	IB Docket No. 12-340
New LightSquared License Modification Applications IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and SAT-MOD-20151231-00091	)	IB Docket No. 11-109; IB Docket No. 12-340
Ligado Amendment to License Modification Applications IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and SAT-MOD-20151231-00091	)	IB Docket No. 11-109

PETITION FOR RECONSIDERATION

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May 22, 2020

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EXECUTIVE SUMMARY

The Resilient Navigation and Timing Foundation respectfully requests reconsideration based upon: the Commission's failure to assess the impact of the proposal upon the American public and economy with a cost-benefit or similar analysis; the Commission's failure to comply with the Communications Act of 1934 as amended by the 2017 National Defense Authorization Act; the Commission's apparent failure to follow its own rules and the requirements of the Administrative Procedure Act ("APA"); and Ligado's predecessor-in-interest withholding information crucial to the hearing.

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PETITION FOR RECONSIDERATION

I. INTRODUCTION

The Resilient Navigation and Timing Foundation respectfully requests that, pursuant to Section 1.106 of the Federal Communications Commission's ("Commission's") rules,[1] the Commission reconsider the Report and Order ("Order") adopted in the above captioned proceedings granting the license modification applications of Ligado Networks LLC ("Ligado").[2] The Commission should stay, nullify, or reverse the Order, as appropriate.

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[1] 47 C.F.R. § 1.106.

[2] *LightSquared Technical Working Group Report et al.*, Order and Authorization, FCC 20-48, IB Docket Nos. 11-109, 12-340 (rel. Apr. 22, 2020).

This request is based upon: the Commission's failure to assess the impact of the proposal upon the American public and economy with a cost-benefit or similar analysis; the Commission's failure to comply with the Communications Act of 1934 as amended by the 2017 National Defense Authorization Act; the Commission's apparent failure to follow its own rules and the requirements of the Administrative Procedure Act ("APA"); and Ligado's predecessor-in-interest withholding information crucial to the hearing.

II. DISCUSSION

A. Failure to Assess Impact of the Proposal on Americans and the Economy

Hundreds of millions of GPS receivers were manufactured to function within a spectrum environment created by the Commission. When the Commission changed that environment, it failed to consider that many receivers would not function, or would function less well, under the changed conditions and the resulting operational and economic impact on the majority of Americans.

In response to criticism about its public policy making process, the Commission created in January 2018 an Office of Economics and Analytics. The Commission's Order doing so states: "We find it appropriate to make these organizational changes to integrate the use of economics and data analysis into the Commission's various rulemakings and other actions in a more comprehensive and thorough manner."[3] We find no evidence this was done as part of the Commissions decision making process in this case.

The Commission's Order approving Ligado Networks' application makes it clear that at least some interference with existing receivers is anticipated, even those owned by the

[3] *Establishment of the Office of Economics and Analytics*, Order, FCC 18-7, 33 FCC Rcd 1539 (2018).

Department of Defense and other federal agencies. Civil users, who typically have less sophisticated equipment, will experience some interference as well.

Even if this interference is minor, the sheer number of civil receivers extant in the United States would make the aggregated negative impact substantial. The Commission should have assessed this proposed cost and compared it to the estimated benefit to the nation of approving the application. That the Commission did not do so appears a failure in its goal of incorporating such analysis in its decision making. It also appears to evidence a failure in due diligence and a disregard of the Commission's responsibility to make public policy and decisions in the best interest of the nation.

We request the Commission stay its Order until such time as such an analysis has been completed and published. We further request the Commission's subsequent actions on the application based on the overall greater benefit to nation as a whole.

B. Failure to Comply with the Communications Act of 1934 (47 U.S.C. 301 et seq.) as Amended

The National Defense Authorization Act of 2017 (P. L. 114–328) amended the Communications Act by adding:

> **SEC. 343. CONDITIONS ON COMMERCIAL TERRESTRIAL OPERATIONS.**
> (a) IN GENERAL.—The Commission shall not permit commercial terrestrial operations in the 1525–1559 megahertz band or the 1626.5–1660.5 megahertz band until the date that is 90 days after the Commission resolves concerns of widespread harmful interference by such operations in such band to covered GPS devices.[4]

[4] National Defense Authorization Act of 2017, Pub. L. No. 114-328, tit. XVI, § 1698, 130 Stat. 2641 (2016) (codified at 47 U.S.C. § 343).

Letters and public statements from executive branch agencies, numerous members of Congress, industry coalitions, and the public show that the Commission has not "resolved concerns."[5] While it is rarely possible to resolve all the concerns of all parties in any issue, it is clear in this case that many concerns remain, they are credible, and are widespread.

Central to concerns raised by many is the interpretation of interference testing results accepted by the Commission. Ligado used, and the Commission accepted, a view of acceptable interference that might be paraphrased "There is no harmful interference unless the receiver fails." The Department of Transportation used a criterion for acceptable interference in navigation receivers which frequently impact safety-of-life. It can be summarized as "Interference from any one source should be limited to a point slightly before which receivers begin to fail."[6] This is much like the Department of Transportation establishing a load limit for each vehicle traversing a bridge to prevent the bridge from ever reaching its breaking point.

Preventing failure and subsequent loss of life and property is almost always more cost effective for the nation than response and remediation. It is a well-accepted practice in transportation and safety applications and is sound public policy.[7] By accepting Ligado's criteria for acceptable interference over that of the Department of Transportation's, the Commission

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[5] *See*, *e.g.*, Letter from James M. Inhofe, U.S. Senator, *et al.*, to Ajit Pai, Chairman, FCC, *et al.*, IB Docket Nos. 11-109, 12-340 (May 15, 2020).

[6] The internationally accepted criteria is a 1dB degradation in the signal to noise ratio. This has also been empirically demonstrated. *See*, *e.g.*, G. Buesnel, M. Hunter, and C. Perry, *Real World Receiver Testing and the 1 dB Criteria* (Dec. 2018), *available at* https://www.gps.gov/governance/advisory/meetings/2018-12/buesnel.pdf.

[7] Note that establishing such a buffer for GPS receivers is especially appropriate as it is more difficult for them to acquire or reacquire signals than it is for them to track signals. To recover signal tracking a receiver would have to move even farther away from an interference source than it was before the source was first encountered.

accepted the greater risk to life and property for hundreds of millions of Americans. It will not be possible for the Commission to "resolve concerns" without it adopting the Department of Transportation's definition of harmful interference.

We request the Commission stay its Order, accept the Department of Transportation's definition of acceptable interference, and re-examine the relative benefits of approving and denying Ligado's application. We further request the Commission publish such results and receive public comment as part of its efforts to resolve concerns before considering further action.

C. Procedural Errors

1. *The Commission Appears to have Required Ligado's Predecessor-in-Interest to Violate the Commission's Rules*

The Commission's decision to impose a condition on the acquisition by Harbinger Capital Partners of SkyTerra (now Ligado) appears to have required the applicant to violate the Commission's own rules prohibiting stand-alone terrestrial networks in the Mobile-Satellite Service ("MSS") L-band spectrum (1525-1559/1626.5-1660.5 MHz). Specifically, Condition 2 of the Conditions at the end of the March 26, 2010 Memorandum Opinion and Order and Declaratory Ruling ("Harbinger Order") required:

> "Without regard to satellite service, SkyTerra shall construct a terrestrial network to provide coverage to at least 100 million people in the United States by December 31, 2012; to at least 145 million people in the United States by December 31, 2013; and to at least 260 million people in the United States by December 31, 2015."[8]

[8] *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, Release No. DA 10-535, 25 FCC Rcd 3059, 3098 (2010) ("*Harbinger Order*").

This Condition appears to violate the Commission's prohibition against stand-alone terrestrial broadband networks in the MSS L-band spectrum or, as the Commission put it in its 2003 MSS Ancillary Terrestrial Component ("ATC") Order: "We do not intend, nor will we permit, the terrestrial component to become a stand-alone service."[9] This Condition would have undoubtedly raised an expectation by the applicant that since the Commission required the applicant to violate Commission rules prohibiting stand-alone terrestrial services, the Commission would either revise or waive its rules to allow the applicant to meet the acquisition condition imposed.

In a lawsuit[10] filed by Harbinger against the United States and the Commission in July 2014, this illegitimate condition was described as an element of a "contract" and one of the allegations made was breach of this "contract." While the issue of whether this requirement constituted a "contract" was never established as fact in court, the Commission's action placed the U.S. at risk in the Harbinger litigation, which was dismissed without prejudice in December 2015, and may still have influenced the Ligado proceeding.

[9] *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Report and Order and Notice of Proposed Rulemaking, FCC 03-15, 18 FCC Rcd 1962, 1965 (2003).

[10] The litigation against the United States was filed in the Court of Federal Claims by Harbinger in July 2014 and was "contributed" to the LightSquared (now Ligado) estate by Harbinger as a condition of the court-approved plan for LightSquared to emerge from bankruptcy. This occurred at the "effective date" of the plan in early December 2015. The lawsuit against the US was dismissed without reason given, without a responsive pleading from the US, and without prejudice to refiling later that same month.

We request the Commission stay its Order and direct an independent investigation into this issue. If the investigation shows the Commission directed a violation of its own rules, we request the Order be nullified.

2. *The Commission Likely Violated the Administrative Procedure Act*

Requiring the applicant to provide stand-alone terrestrial services, in addition to being an apparent violation of the Commission's rules prohibiting stand-alone terrestrial services, was effectively a reallocation of the MSS L-band spectrum to Mobile Service. This should have been the subject of a Notice of Proposed Rulemaking ("NPRM") as required under the APA.

The Commission did not, in the March 26, 2010 Harbinger Acquisition Order, the March 26, 2010 SkyTerra MSS ATC License Modification Order, nor in the January 26, 2011 Conditional Waiver Order, explain why a public rulemaking process for conversion of the MSS L-band spectrum to allow stand-alone terrestrial service (e.g., effectively a Mobile Service reallocation) was not conducted. Nor did it explain why the "notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest" as required by the APA. Such a consequential decision by the Commission should have been made publicly and as part of the public process rather than out of the public view.

Harbinger Capital, in a February 26, 2010 confidential letter allowed by a Protective Order issued by the Commission in November 2009, indicated its intent to "develop a nationwide terrestrial broadband mobile 4G LTE network, which, without regard to satellite coverage, will provide wireless data on a nationwide basis" and "[w]ithout regard to satellite coverage, the terrestrial network will achieve population coverage of at least 260 million by 2015, which is comparable to the coverage provided by other nationwide terrestrial carriers."[11]

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[11] *See Harbinger Order*, 25 FCC Rcd at 3096-97.

The request for confidential treatment of the letter was withdrawn in a subsequent letter dated April 15, 2010, days after the Commission Harbinger Acquisition Order was released (March 26, 2010). The conditions in the confidential letter were incorporated, in principle and substance, in the Harbinger Order without input by the public or affected federal agencies, who were unaware, based on the record of the proceeding at the time, that stand-alone terrestrial services in the MSS L-band spectrum were being contemplated by the Commission.

A normal NPRM process would have been consistent with how the Commission handled a very similar request from Dish Network to convert its MSS spectrum holdings to allow for terrestrial stand-alone services in its 2 GHz MSS spectrum (e.g., making an allocation for Fixed and Mobile Services (Notice of Proposed Rulemaking (NPRM) 7/15/2010, Report and Order 4/4/2011); developing service rules to use the allocations (NPRM 3/21/2012, Order 1/30/2013); then modifying the Dish licenses after a public comment period to comply with the service rules (4/3/2013)).

Consistent with the 2000 Orbit Act[12] which prohibits the Commission from auctioning satellite service spectrum, Dish Network's spectrum was not auctioned, but conversion of Dish's MSS spectrum to provide terrestrial broadband service was conditioned on Dish bidding at least 1.564 billion dollars in the H-block spectrum auction. In the conversion of Dish's spectrum to

[12] Open-Marked Reorganization for the Betterment of International Telecommunications Act (Orbit Act), 106 Pub. L. 180, 114 Stat. 57 (2000) (codified at 47 U.S.C. § 765f ("Notwithstanding any other provision of law, the Commission shall not have the authority to assign by competitive bidding orbital locations or spectrum used for the provision of international or global satellite communications services. The President shall oppose in the International Telecommunication Union and in other bilateral and multilateral fora any assignment by competitive bidding of orbital locations or spectrum used for the provision of such services.")

allow stand-alone terrestrial services, the U.S. Treasury and American taxpayers saw some benefit from a public auction. However, it is unclear why the Commission gave apparent preferential treatment to Ligado's predecessor-in-interest by allowing it to convert its MSS spectrum to provide stand-alone terrestrial services without competitive bidding (auction), which would result in a financial windfall amounting to billions of dollars based on market analysis performed by the Brattle Group in 2011 for LightSquared (now Ligado).

We request the Commission stay its Order and direct an independent investigation into this issue. If the investigation shows the Commission violated the APA, we request the Order be nullified.

3. *Ligado's Predecessor-in-Interest Apparently Withheld Material Information Crucial to the Commission's Proceeding*

The applicant appears to have been derelict, at best, in following Commission rules. In December 2017, in a lawsuit filed against former directors of SkyTerra (Apollo Global Management, et. al.) by Harbinger Capital Partners, it was alleged that Ligado's predecessor-in-interest, Mobile Satellite Ventures ("MSV"), had performed testing in 2001 that showed potential receiver overload interference to GPS receivers.[13] This appears to have been the case as evidenced by an October 10, 2001 briefing titled "Desensitization Performance of GPS Receiver and MSV System Implications" that was contained in a U.S. Patent and Trademark Office filing referenced in the Harbinger lawsuit. This information, and a request that the Commission consider this issue, was entered in the Ligado docket by the Resilient Navigation and Timing Foundation in March of 2018.[14]

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[13] *See* Letter from Dana A. Goward, President, Resilient Navigation and Timing Foundation, to Ajit Pai, Chairman, FCC, *et al.*, IB Docket Nos. 11-109, 12-340 (filed Mar. 20, 2018).

[14] *Id.*

Failing to disclose material information appears to be a violation of the Commission's rules.[15] Commission officials, in Congressional testimony in September 2012,[16] indicated the Commission had no knowledge of the GPS receiver overload issue until it was raised by GPS interests in 2010. It appears that information material to the Commission's decision in March 2010 in the Harbinger Acquisition Order may have been withheld by Ligado's predecessors-in-interest in violation of Commission rules that are fundamental to its regulatory decision-making process. The aforementioned testing in 2001 preceded adoption of initial MSS ATC rules by the Commission in 2003 and the initial license grant to MSV (now Ligado) in 2004 to provide MSS ATC service. Despite this being entered into the docket by the Resilient Navigation and Timing Foundation, the Commission's final Order failed to address this important issue.

We request the Commission stay its Order and direct an independent investigation into this issue. If the investigation shows that information the applicant or a predecessor-in-interest knew or had reason to know was withheld, we request the Order be reversed with prejudice.

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[15] 47 C.F.R. § 1.17.

[16] *See* Joint Written Statement of Julius P. Knapp Chief, Office of Engineering and Technology, Mindel De La Torre, Chief, International Bureau, Federal Communications Commission, Before the House Oversight and Investigations Subcommittee, Energy and Commerce Committee, U.S. House of Representatives, "The LightSquared Network: An Investigation of the FCC's Role" (Sept. 21, 2012).

III. CONCLUSION

The number of seeming errors and omissions in the Commission's process reaching its decision mandate that the Order be stayed pending resolution of each of these issues.

Respectfully submitted,

By:

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May 22, 2020

CERTIFICATE OF SERVICE

I, Dana A. Goward, President of the Resilient Navigation and Timing Foundation, hereby certify that on this 22nd day of May, 2020, and pursuant to agreement made on May 21, 2020 with counsel of Ligado Networks LLC to accept service via email, I caused a copy of the foregoing Petition for Reconsideration of the Resilient Navigation and Timing Foundation to be served via email on the following:

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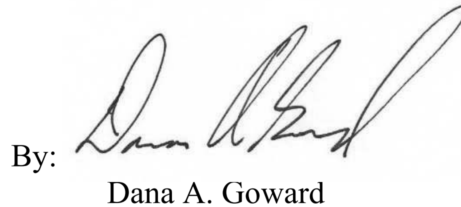
By: 
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