Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 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

REPLY TO OPPOSITIONS TO
PETITIONS FOR RECONSIDERATION

Pursuant to Section 1.106(h) of the Federal Communications Commission's ("FCC's" or "Commission's") rules, the undersigned parties reply to the Oppositions filed by Ligado Networks LLC ("Ligado")[1] and its surrogates in this matter.[2]

I. LIGADO AND ITS ALLIES DO NOT EVEN ATTEMPT TO RESPOND TO SEVERAL IRIDIUM ARGUMENTS.

In many instances, Ligado has not even attempted to rebut Iridium's arguments.

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[1] *See* Opposition of Ligado Networks, LLC (filed June 1, 2020) ("Ligado Opp."). As used in this petition, "Ligado" includes all predecessors-in-interest.

[2] *See* Opposition of The Brattle Group (filed June 1, 2020) ("Brattle Opp."); Opposition of Roberson and Associates, LLC (filed June 1, 2020) ("Roberson Opp."); Opposition of JHW Unmanned Solutions, LLC (filed June 1, 2020) ("JHW Opp."). Notably, Brattle and Roberson are entities Ligado has paid for analysis in this matter, and JHW states that it "has been under contract to Ligado since 2017." JHW Opp. at 1 n.2.

The Order Ignored Material Evidence and Arguments. Iridium *et al.* showed that, contrary to the requirements of the Administrative Procedure Act ("APA"), the *Order*[3] ignored evidence and arguments that represented "important aspect[s] of the problem" before it. *Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). It failed to contend with substantial evidence that Ligado's claimed public-interest benefits were vastly overstated, that Ligado would harmfully interfere with aeronautical mobile satellite (route) service ("AMS(R)S"), that granting Ligado's request would threaten grave economic harm to providers and users of valuable services in the relevant portion of the L-band, and more. Perhaps following the *Order*'s example, neither Ligado nor its surrogates even attempt to respond to these points.

The Order is Constitutionally Deficient. Iridium *et al.* showed that, by interpreting the Communications Act to allow the FCC to override executive branch concerns regarding interference to military equipment, the *Order* unconstitutionally infringed on "the President's role as Commander in Chief." *PHH Corp. v. Consumer Fin. Prot. Bureau*, 881 F.3d 75, 107 (D.C. Cir. 2018) (*en banc*). It is well established that courts and agencies should interpret statutes to avoid constitutional concerns of this type.[4] *Cf. Bendix Aviation Corp., Bendix Radio Div. v. FCC*, 272 F.2d 533, 540 (D.C. Cir. 1959) (recognizing, in view of President's Commander-in-Chief powers, that FCC acts appropriately when it serves national security interests identified by executive branch). Ligado failed to address this argument.

The Order's Repair-and-Replace Condition is Infeasible, Toothless, and Unlawful. Iridium *et al.* demonstrated that the *Order*'s repair-and-replace condition with respect to federal

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[3] *LightSquared Technical Working Group Report et al.*, Order and Authorization, FCC 20-48 ¶ 117 (rel. Apr. 22, 2020) ("*Order*").

[4] The Supreme Court's avoidance doctrine provides that "[a] statute must be construed, if fairly possible, so as to avoid not only the conclusion that it is unconstitutional but also grave doubts upon that score." *FTC v. American Tobacco Co.*, 264 U.S. 298, 305-307 (1924). This doctrine applies to agency interpretations. *See Rust v. Sullivan*, 500 U.S. 173 (1991).

users was infeasible, toothless, and unlawful under the Miscellaneous Receipts Act ("MRA"). Ligado and its allies do not address any of these problems.[5]

II. WHERE LIGADO AND ITS SURROGATES PURPORT TO RESPOND TO IRIDIUM'S CLAIMS, THEIR SUPERFICIAL ARGUMENTS FAIL.

Ligado and its allies fare no better with respect to arguments they *attempt* to address.

Repeated Invocation of "Agency Expertise" Does Not Override APA Requirements. Time and again, Ligado rests on the suggestion that criticisms of the *Order* are irrelevant because the FCC is an expert agency, and that petitioners' arguments boil down to mere policy disagreements. *See* Ligado Opp. at 3, 9, 10, 11, 14, 15, 23. This is wrong. The APA expressly cabins an expert agency's discretion and sets forth specific requirements for agency factfinding and decision-making. In particular, "the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'"[6] Iridium and others have shown that the Commission failed to satisfy this requirement here. Instead, it ignored evidence that did not support its outcome and rendered irrational conclusions that were unsupported by the record. Under these circumstances, the *Order* is unlawful, irrespective of the agency's expertise.

FCC Failed to Satisfy Section 343 of the Act. Iridium *et al.* demonstrated that the *Order* violated Section 343's requirement that the agency "resolve[]" concerns of harmful interference to covered GPS services in the 1525–1559 MHz and 1626.5–1660.5 MHz bands. 47 U.S.C.

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[5] Ligado claims without any support that "the GAO decisions cited in the *Order* state that federal agencies have the authority under federal fiscal law to accept repair or in-kind replacement of damaged GPS devices." Ligado Opp. at 16. Iridium *et al.* showed that this was untrue. One of the three decisions cited by the *Order* stands for the proposition that a private party's provision of compensation to a government actor for damage to government property is unlawful under the MRA. One permitted the provision of services to a government actor while reemphasizing that provision of funds or goods would be unlawful. And the third did not address or involve the MRA at all. *See* Iridium *et al.* Petition at 17 & n.70. Ligado does not address this showing, or even mention Iridium *et al.* in connection with this argument, instead focusing only on NTIA.

[6] *State Farm*, 463 U.S. at 43. *See also Fox v. Clinton*, 684 F.3d 67, 74-75 (D.C. Cir. 2012).

§ 343(a).[7] Ligado replies that (1) petitioners did not "cite[] to any legal authority to support its argument," (2) Section 343 does not repeal or limit the Commission's authority over spectrum management, and (3) the provision does not "state[] how the Commission should resolve such concerns." Ligado Opp. at 4 n.3; *see id.* at 23 n.27 (cross-referencing note 3). The first two claims are wrong: Petitioners cited the *governing statute*, which on its face *does* cabin the agency's authority in matters involving interference to GPS. The third claim is irrelevant: Iridium *et al.*'s point is not that the *Order* resolved interference in the wrong way, but that – contrary to the statute's demand – it failed to do so *at all*. A head of state who directs the nation's diplomats to discuss peace with an adversary has not thereby "resolved" the underlying conflict; likewise, the FCC has not "resolved" interference by directing adverse parties to confer.

FCC Failed to Satisfy Section 25.255 of Its Rules. Iridium *et al.* also showed that the *Order* was incompatible with Section 25.255 of the Commission's rules. Ligado contends that this rule is irrelevant because Iridium's authorization in the applicable band is "on a secondary basis" and thus, under Section 2.105(c), warrants no interference protection against Ligado's "primary" use. Ligado Opp. at 22-23. Ligado's central premise is wrong: Iridium enjoys primary status for its uplink operations and operates its downlink on a secondary basis only with respect to *its own* uplink services *in the same band*. There is no basis for Ligado to claim any superior right to Iridium's downlink operations. In any event, Ligado's position flatly contradicts Section 25.255 and its history. One goal of the Ancillary Terrestrial Component ("ATC") rules was to ensure that ATC operators did not cause harmful interference to any

[7] Ligado's contention that Iridium somehow lacks standing to raise concerns relating to GPS is unfounded. First, many Iridium end-user terminals (including both Iridium-branded terminals it distributes as well as terminals manufactured and distributed by its value-added manufacturers) include GPS receivers. Second, "any … person aggrieved or whose interests are adversely affected [by an FCC order] may petition for reconsideration." 47 U.S.C. § 405(a); *id.* § 309(e). There is no restriction limiting the arguments that such a party may present in its petition to those arguments that affect it directly. Thus, even if Iridium end-user terminals did not include GPS receivers, nothing would stand in the way of Iridium raising its well-founded concerns related to GPS.

Mobile Satellite Service ("MSS") operations in the frequency band. Accordingly, Section 25.255 is framed expansively, requiring the ATC operator to cure "*any*" harmful interference. 47 C.F.R. § 25.255 (emphasis added). Multiple Commission decisions underscore Section 25.255's breadth, and none supports the distinction between primary and secondary uses now touted by Ligado. *See* Iridium *et al.* Petition at 14-15. FCC leadership, the International Bureau, and Ligado have all acted in recognition that this is so – even extending Section 25.255's reach to services that are not licensed at all. *See id.* Moreover, Section 2.105(c) is irrelevant here, because Section 25.255's obligations apply to the ATC operator irrespective of whether another party "claim[s] protection" and irrespective of whether the party suffering interference is a primary or secondary user. Ligado must resolve *any* interference that its MSS ATC operations cause with respect to *any* service.[8]

FCC Inappropriately Dismissed Iridium's Technical Analyses. Ligado states that the *Order* provided "three reasons for not relying on" Iridium's technical analyses. Ligado Opp. at 21. Ligado does not mention the fact that Iridium addressed and refuted these "reasons," Iridium *et al.* Petition at 6-8, nor does it counter Iridium's showing. Ligado also fails to acknowledge, much less address, the revised analysis provided by Iridium, which demonstrates harmful interference even after accounting for several of the FCC's criticisms. *See id.* Attachment 1.[9]

Roberson attempts to rehabilitate the *Order*'s bases for rejecting Iridium's analysis, but fails. Roberson argues that Section 25.253 of the rules only requires the use of free-space path loss in "special cases." Roberson Opp. at 19. Roberson misunderstands why Iridium identified these rules in its petition. The examples of free-space path loss in Section 25.253 demonstrate

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[8] JHW claims that Iridium's concerns are moot because the *Order* reduced Ligado's emissions and "provides additional protection to Iridium" in the event of harmful interference. JHW Opp. at 13-14. Iridium has shown that (1) it will experience interference even at the reduced power level and (2) the *Order* merely encourages Ligado to confer with Iridium, providing no "additional protection" at all. Iridium *et al.* Petition at 8, 15.

[9] In any case, as Iridium *et al.* explained, the analysis Iridium previously submitted itself showed harmful interference at the power level ultimately adopted. *See* Iridium *et al.* Petition at 6-7.

clearly that the Commission has endorsed the use of free space path loss to evaluate interference in the L-band ATC rules. The rules' reliance on free-space path loss reflect the view that a conservative approach is needed to provide MSS and other operators sufficient protection from an ATC provider's terrestrial operations. It was, therefore, both reasonable and appropriate for Iridium to use free-space path loss in its interference analysis. Neither Roberson nor the *Order* provides a compelling argument that this aspect of Iridium's analysis was too "conservative."

With respect to Iridium's analysis demonstrating that Ligado's terrestrial operations would interfere with Iridium's datalink services for aircraft and its AMS(R)S, Iridium *et al.* Petition at 8-9, Roberson responds only that "[t]he *Order* requires Ligado to resolve any interference issues with AMS(R)S." Roberson Opp. at 20. This claim is disingenuous at best: All the *Order* requires is that Ligado resolve harmful interference to AMS(R)S *post-hoc* – cold comfort if interference disrupts aviation safety.

The FCC Improperly Applied the 2005 OOBE Limits. Ligado contends that, because the Commission adopted the 2005 Out-of-Band Emission ("OOBE") limits 15 years ago, it had no obligation to consider them anew here. Ligado Opp. at 22. This is nonsense. The question presented in this proceeding was whether other operators would be protected from harmful interference if Ligado was authorized to provide ATC service. One cannot expect that an OOBE limit adopted in 2005, when there were 184.7 million mobile devices in the United States,[10] is appropriate for 2023, when some expect there to be 4.6 billion networked devices in the United

[10] *See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Tenth Report, 20 FCC Rcd 15908, 15913 ¶ 5 (2005).

States,[11] any more than one could expect a college student to arrive at graduation dressed in the same outfit she wore the first day of second grade.[12]

Roberson's defense of the 2005 OOBE limit also fails. Roberson notes that the Commission reduced the OOBE limit by 9 dB, Roberson Opp. at 19, but fails to address Iridium's evidence that it will still suffer harmful interference at that limit. Roberson's reliance on the Commission's 2005 estimate of the number of devices likely to be in use, Roberson Opp. at 18, is misplaced for the same reason just discussed. Moreover, the fact that LTE and 5G user devices are scheduled in time and frequency by the network and never all transmit simultaneously, *id.* at 18, does not change the fact that even one device produces a likelihood of harmful interference to Iridium.

Ligado Lacks Incentives to Negotiate. Ligado does not address its lack of incentive to negotiate with Iridium and others in good faith post-grant. *See* Iridium *et al.* Petition at 16. Citing the Coase Theorem, Ligado's paid consultant Brattle Group asserts that "clarifying all parties' rights … facilitates negotiations, and in the absence of transaction costs this leads to an efficient outcome." Brattle Opp. at 13-14. Brattle neglects to mention that the regime Iridium *et*

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[11] *See* Cisco, Annual Internet Report Highlights Tool, https://www.cisco.com/c/en/us/solutions/executive-perspectives/annual-internet-report/air-highlights.html# (last visited Jun. 8, 2020).

[12] Ligado's suggestion that Iridium is somehow estopped from objecting to the Commission's decision to use the 2005 OOBE limit, Ligado Opp. at 22 n.25, misses the point. The FCC has the authority to change course in this manner, and in fact it did so, declining to apply the OOBE limits established by waiver in 2010 for Ligado's operations in favor of the previously applicable 2005 OOBE limits. When the Commission changes course, the APA requires it to "adequately explain[] the reasons for [the] reversal of policy." *National Cable & Telecommunications Association v. Brand X Internet Services*, 545 U.S. 967, 981 (2005); *see also Rural Cellular Ass'n v. FCC*, 588 F.3d 1095, 1105 (D.C. Cir. 2009) (quoting *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Ins. Co.*, 463 U.S. 29, 43 (1983)). The Commission's decision here was separate and distinct from the Commission's judgement reached in 2005 (and its waiver judgement 2010) and must be assessed based on the facts as they exist today as well as whether it satisfies the requirements of the APA. Thus, Iridium was in no way barred from challenging this new judgment as arbitrary and capricious. For the reasons stated here and in the Iridium *et al.* Petition, its decision not to reduce the OOBE limit below the 2005 limit was arbitrary and capricious.

al. advocated would *also* clarify rights and facilitate Coase-ian bargaining.[13] In conferring all relevant rights on Ligado and saddling Iridium and others with all the costs, the *Order* ensures that Ligado has no incentive to share any of the "benefits" by negotiating with Iridium or others.

The FCC Does Not Exercise Exclusive Control Over Spectrum Matters. Ligado is wrong in suggesting that the FCC enjoys exclusive control over spectrum matters *vis-à-vis* other federal actors. Ligado Opp. at 5-7. As Iridium *et al.* and others showed, federal law endows other entities, including NTIA, DOD, and DOT, with rights and responsibilities regarding spectrum management. Iridium *et al.* Petition at 9-10. Ligado never contends with the various statutory provisions that expressly reject the Commission's exclusive authority, and instead argues in generalities and cites irrelevant authorities. For example, Ligado relies on *Head v. New Mexico Bd. of Examiners in Optometry*, 374 U.S. 424, (1963), but that case stated only that "*federal* control" over "technical matters such as frequency allocation" is exclusive, and that *states* have no such authority. *Id.* at 429-430 n.6 (emphasis added). Similarly, although Ligado cites *U.S. Telecom Ass'n v. FCC*, 359 F.3d 554 (D.C. Cir. 2004), to support the FCC's purportedly exclusive authority, Ligado Opp. 16 n.18, that case does not speak to NTIA's or DOD's authority here. The decision barred the FCC from delegating its statutory authority to "outside entities" with no statutorily assigned role in the decision the FCC had delegated – namely, the states. *Id.* at 565-566. Here, there is no delegation at issue, and the other parties are federal agencies with relevant authority granted by Congress. The impropriety of Ligado's (and the Commission's) disregard for the authority of other executive agencies is highlighted by their selective embrace of the views of the Federal Aviation Administration. Quoting the *Order*, Ligado asserts that the FAA is "unquestionably the 'expert agency'" in matters relating to certified aviation GPS devices. Ligado Opp. 17. But Ligado then ignores the repeated concerns

[13] The Coase Theorem holds only that, absent transaction costs, parties will negotiate an outcome that maximizes total welfare. It does not speak to how that welfare is distributed as between the bargaining parties.

that DOD and NTIA have expressed, despite their unquestionable expertise in GPS matters—including an Air Force memo joined by the FAA.

Ligado is Not 5G. Roberson parrots the *Order*, contending that Ligado's network will support elements of two of the three "cornerstones" of 5G – massive machine type communication and ultra-reliable and low latency communications. Roberson Opp. at 19. As Iridium *et al.* demonstrated, this is not so. Iridium *et al.* Petition at 19-20. Roberson fails to address the reasons why – namely, the facts that Ligado lacks sufficient bandwidth to support 5G, its offering is not covered by any of the 3GPP 5G standards, and there is no record evidence that Ligado has even initiated the process to be included in the 3GPP standards for 5G.

The FCC Improperly Waived the Integrated Service Rule. Rather than addressing Iridium *et al.*'s demonstration that the *Order* failed to explain why its waiver of the integrated service rule satisfied the relevant criteria, Ligado simply insists that it did. Ligado Opp. at 23. But the *Order* speaks for itself on this point – it makes no effort to explain why the waiver "better serves the public interest" than enforcement of the rule, or to explain the "special circumstances to prevent discriminatory application and to put future parties on notice as to its operation." *Northeast Cellular Tel. Co., L.P. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990). While the *Order* expressly cites the previous 2011 waiver as support, it notably fails to consider whether the 2011 waiver even met its goals, a critical question when assessing whether a similar waiver will achieve similar goals going forward.

III. THE COMMISSION SHOULD CLARIFY THAT THE FIVE-YEAR EIRP RAMP-UP COMMENCED ON THE *ORDER*'S EFFECTIVE DATE.

Ligado confirms Iridium *et al.*'s concern that it would adopt a tortured, self-serving reading of the *Order*'s statement that, "for a period of five years, the maximum EIRP" for 1627.5-1632.5 MHz "will ramp up from -31 dBW at 1627.5 MHz to -7 dBW at 1632.5 MHz." *Order* ¶ 135, by insisting that the Commission could not have meant to "overrule the clear intent" of Garmin and Ligado when they reached their agreement. Ligado Opp. 23-25. The

Commission clearly intended this ramp-up, which it framed as occurring in the future ("*will* ramp up"), to provide going-forward protections – not to expire in six months, a full year before Ligado even expects to initiate service. The Commission should put an end to Ligado's gamesmanship and clarify that the five-year ramp-up commenced with the *Order*'s issuance.[14]

CONCLUSION

For the reasons stated herein and in the Iridium *et al.* Petition, the Commission should reconsider the *Order*, deny Ligado's requested license modifications, and decline to waive the integrated service requirement.

Respectfully submitted,

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[14] Ligado's claim that Iridium has forfeited its opportunity to seek clarification on this point because it failed to anticipate and address the *Order*'s ambiguity before the *Order* was released transparently lacks merit.

CERTIFICATE OF SERVICE

I, Russell P. Hanser, of Wilkinson Barker Knauer, LLP, hereby certify that on this 8th day of June, 2020, and pursuant to agreements with parties or their counsel to accept service by email, caused a copy of the foregoing Reply of Iridium Communications Inc. *et al.* to be served via email on the following:

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