

June 29, 2021

Marlene H. Dortch
Secretary
Federal Communications Commission
45 L Street, NE
Washington, DC 20554

Re: Ligado Networks Subsidiary LLC, Amendment to License Modification Applications, IBFS File Nos. SAT-AMD-20180531-00045, SAT-AMD-20180531-00044, SES-AMD-20180531-00856; SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and SAT-MOD-20151231-00091; IB Docket Nos. 12-340, 11-109

Dear Ms. Dortch:

The Aerospace Industries Association (AIA), Aircraft Electronics Association (AEA), Aircraft Owners and Pilots Association (AOPA), Airlines for America (A4A), Air Line Pilots Association, International (ALPA), Aviation Spectrum Resources, Inc. (ASRI), Cargo Airline Association (CAA), General Aviation Manufacturers Association (GAMA), Helicopter Association International (HAI), International Air Transport Association (IATA), National Air Carrier Association (NACA), National Air Transportation Association (NATA), National Business Aviation Association (NBAA), and Regional Airline Association (RAA) (“hereby known as the “Joint Aviation Organizations “) take this opportunity to clarify the record in response to several statements by Ligado Networks LLC (“Ligado”) in some of its *ex parte* submissions in the above-referenced proceeding.¹ Some members of the Joint Aviation Organizations are parties to one of the pending petitions for reconsideration of the Commission’s April 2020 *Modification Order*² in the foregoing matters along with other joint aviation petitioners.³

The FAA Still Has Outstanding Safety Concerns for Aviation GPS Systems Stemming from Ligado’s Planned Operations

In its November 3, 2020, *ex parte* submission, Ligado, referring to several submissions by aviation and aerospace industry stakeholders,⁴ erroneously alleged that “the Aviation

¹ To be clear, the Joint Aviation Organizations’ choice not to address all statements made in the cited Ligado *ex parte* submissions should not be interpreted as endorsement of or concurrence in those Ligado’s statements, most, if not all, of which one or more of the Joint Aviation Organizations have responded to in other record filings.

² *In re Ligado Amendment to License Modification Applications*, Order and Authorization, FCC 20-48, IB Docket Nos. 12-340, *et al.* (rel. Apr. 22, 2020) (“Modification Order”).

³ See Petition for Reconsideration of the Aerospace Industries Association, *et al.*, IB Docket Nos. 12-340, *et al.* (May 22, 2020) (“Joint Aviation Petition”).

⁴ See Letter from Andrew Roy, Aviation Spectrum Resources Inc., and Max Fenkell, Aerospace Industries Association, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 12-340 and 11- 109 (filed Oct. 9, 2020) (“Aviation Representatives Oct. 9 Letter”); Letter from Andrew

Representatives seek to relitigate issues that were raised with the FAA and now want the FCC to reach a conclusion *different from their primary regulator*.⁵ Ligado maintains its misstated claim that “the [Modification] Order relied upon FAA conclusions based on the most-restrictive aviation scenarios, including the Helicopter Terrain Awareness and Warning Systems (“HTAWS”) scenarios.”⁶ Ligado also continues to assert that the aviation industry’s concerns about the *Modification Order*’s treatment of aviation’s concerns about Unmanned Aerial Systems (“UAS”) are “equally groundless.”

These oft-repeated claims by Ligado are not reconcilable with reality. The Joint Aviation Organizations need only quote NTIA, the FAA’s own representative to the Commission on this issue, to confirm the scope of the FAA’s analysis and conclusions:

“The Ligado Opposition (at 18) **misstates the adverse effects upon civil aviation and misrepresents the Department of Transportation’s (DoT) evaluation of this issue**. As explained in DoT’s GPS Adjacent Band Compatibility (ABC) Assessment, the analysis conducted by the Federal Aviation Administration did not exhaustively consider Terrain Awareness Warning Systems and Unmanned Aerial Systems, concluding that **concerns remain about operational and safety impacts in those contexts**.” See DoT ABC Assessment Final Report at 120 (Apr. 2018).⁷

The Joint Aviation Organizations also wish to underscore that NTIA generally supports the Joint Aviation Petition and other petitions filed by the aviation community, at least one GPS manufacturer, and other GPS user-stakeholders. Specifically, NTIA explained that “[t]he other petitioners echo and elaborate on the concerns the NTIA Petition raised regarding how Ligado’s operations would disrupt a wide range of civil GPS receivers.”⁸ We are confident that Ligado received the same public versions of the relevant studies and NTIA documents, and remain mystified how Ligado can assert that the FAA and NTIA do not mean what they plainly have written.

Roy, Aviation Spectrum Resources Inc., and Max Fenkell, Aerospace Industries Association, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 and 12-340 (filed Aug. 24, 2020).

⁵ See Letter from Gerard J. Waldron, Counsel to Ligado Networks LLC, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 12-340 and 11-109, at 6 (filed Nov. 3, 2020) (“November 3 Ex Parte”)

⁶ *Id.*

⁷ NTIA Reply to Ligado Networks LLC’s Opposition to Petitions for Reconsideration or Clarification, IB Docket Nos. 12-340, *et al.*, 8 n.18 (June 8, 2020) (“NTIA Opposition”) (emphases added). See Ligado Opposition to Petitions for Reconsideration or Clarification, IB Docket Nos. 11-109 and 12-340, 18 (June 1, 2020) (“Ligado Opposition”) (misstating that the FAA had considered the potential for interference from Ligado’s planned deployments in all aviation operational scenarios).

⁸ *NTIA Opposition* at 8.

The Ligado Tower Database Condition Suffers from Fundamental Deficiencies

In its *November 3 Ex Parte*, Ligado also seeks, without any justification, to cast aspersions toward the aviation community regarding its alleged lack of support for Ligado regarding the condition imposed *on Ligado* by the Commission in the *Modification Order* to develop a database of Ligado base stations.

Firstly, the Joint Aviation Organizations wish to reiterate the *Joint Aviation Petition*'s concerns about apparent deficiencies in the condition itself. As the *Joint Aviation Petition* explained, "the Commission lacks any authority to implement an obstacle database for aviation, as such action falls exclusively within the domain of the FAA. The FAA, as the authoritative source for pilot information regarding navigable airspace and obstructions to flight, currently provides obstacle information to pilots via charts, FAA NOTAMS, and digital information files. Pilots know and are accustomed to accessing such information through FAA databases."⁹ In sharp contrast, the standalone private database of nationwide airspace hazards resulting from Ligado's deployments that the *Modification Order* would have Ligado develop is without precedent and is outside the Commission's authority to require aircraft operators to use it. Through the present, sources for information regarding navigable airspace and obstructions to flight used by pilots and aviation operations are the result of the FAA's close involvement and incorporation into standard aviation practices. The database contemplated by the *Modification Order*, being developed by Ligado without FAA and aviation engagement, is likely to create dangerous confusion for aviation organizations, pilots, dispatchers, and other affected aviation stakeholders.

Ligado's averments regarding the aviation community's lack of involvement in its "progress" in developing the database not only are falsely made, but further underscore why the database condition is deficient, namely Ligado's failure to proceed collaboratively to invite input from relevant stakeholders. The *Modification Order* placed the burden of database development *on Ligado alone*, yet Ligado does not appear to have taken steps even to identify the "relevant stakeholders."¹⁰ While Ligado sought to cast blame in the *November 3 Ex Parte* by blithely contending that "ASRI continues to refuse to participate in any way in [the database's] construction or maintenance,"¹¹ Ligado neglects to mention that, after the Commission adopted

⁹ *Joint Aviation Petition* at 14

¹⁰ *Modification Order*, ¶ 147.

¹¹ These assertions echo Ligado's "six-month status report" provided to the Commission on October 22, 2020. See Attachment to Letter from Valerie Green, Chief Legal Officer, Ligado Networks LLC, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 12-340 and 11-109, at 1-3 (Oct. 22, 2020) (contending that Ligado is "prepared, with or without the involvement of ASRI or others [in the aviation community], to move forward with building and maintaining a base station database.") Ligado has not submitted a further status report to the Commission regarding its database development efforts. Ligado appears to specifically fixate on ASRI as the

the *Modification Order*, Ligado had never publicly called for participation or formally reached out to members of the aviation industry for input.¹² The most recent of a periodic series of meetings in which Ligado attends organized by the Airlines Electronic Engineering Committee (“AEEC”) has organized to discuss satellite communications (“SATCOM”) issues raised by Ligado’s proposals confirms this is still the case. At that April 21, 2021, meeting, Ligado reported again that it is working on a database, but in response to questions from several aviation representatives, it was clear that Ligado has not yet identified, let alone commenced engagement, with the relevant aviation stakeholders to establish the necessary requirements, which may include the FAA, aviation operators, pilot organizations, and any other relevant expert aviation groups like the AEEC aviation navigational database subcommittee. Several aviation representatives again suggested to Ligado that, to address this safety issue, it should not rely on word of mouth or misplaced attempts to shift the burden for development of the database to others by raising the topic solely at an aviation standards sub-committee meeting for SATCOM.¹³ The Joint Aviation Organizations are not aware of Ligado taking any corrective steps relevant to the foregoing deficiencies after the April AEEC meeting.

Assuming for the moment that the imposition of the database condition by the Commission was not legally deficient, as it is, the importance of Ligado working with the FAA to satisfy that condition cannot be overstated, as the FAA would determine by its operational safety oversight authority what procedures rotorcraft and airplane pilots, dispatchers, air traffic controllers, and aviation organizations (such as airlines) must follow with respect to use of the Ligado database.

Therefore, in the event the *Modification Order* is not reconsidered as requested in the *Joint Aviation Petition*, the Joint Aviation Organizations urge Ligado, per its obligations in paragraph 147 of the *Modification Order*, to first identify relevant stakeholders publicly soliciting participation in the development of the notification database (for example, by

solution to its tower database issue. While ASRI does important work on spectrum issues for the aviation industry, including its primary role of managing the AES VHF and HF spectrum on behalf of domestic operators and the FCC, ASRI does not have the required skill sets or resources for managing or implementing an obstacle database for all operators nationwide. This has been communicated to Ligado several times, and yet Ligado still seems intent on labeling ASRI as somehow essential to implement a requirement that is explicitly Ligado’s responsibility as per the *Modification Order*. While ASRI is willing to provide its observations from its general perspective to what is essentially an engineering project and is willing to identify appropriate elements for inclusion, it is not an airspace obstacle database organization.

¹² The aviation industry has spent significant time consulting with many aviation interests to discover if anyone had received a formal invitation from Ligado to participate at some level, and has uncovered nothing as of this time. Furthermore, in early February 2021 the U.S.

Aeronautical Frequency Committee contacted Ligado directly to specifically ask if Ligado has issued such an invite. No response from Ligado has been received.

¹³ This suggestion has been made previously to Ligado by different aviation representatives.

publishing an invitational notice in the Commission's relevant dockets and files), and then engage with any respondents. A more formal process such as this is critical given that aviation safety is at stake, and the Commission squarely placed the burden on Ligado as a condition of the license modification it requested.¹⁴

The Inmarsat Replacement Program Anticipated by the Commission Remains Unfunded

Lastly, the Joint Aviation Organizations note that there has yet to be any formal implementation plan to fund the replacement of aviation Inmarsat terminals receiving interference from Ligado operations to the power flux density limit of -56.8 dBW/m²/200 kHz specified in the *Modification Order*.¹⁵ Despite repeated direct requests by aviation operators to Ligado and Inmarsat about where such funding would come from, there has been silence from both organizations on a formal funding plan despite Inmarsat's own public comments that the specifics of how this will be accomplished can be left to it, Ligado, and perhaps other parties – Inmarsat is never quite clear – to determine through “established processes.”¹⁶ With an aviation industry hit hard by COVID-19, private aircraft operators and organizations have no plans to self-fund such a modification at this time, and once again the Joint Aviation Organizations request guidance and information from Ligado and/or Inmarsat on the plan developed through the “commercial channels” they have alluded to in the docket.¹⁷

¹⁴ The Joint Aviation Organizations reserve comment, until Ligado reveals more information, on the effectiveness and sufficiency of the interference reporting and resolution mechanisms and stop buzzer capability that Ligado claimed late last year it is developing. *See November 3 Ex Parte* at 3-5.

¹⁵ *Modification Order*, ¶111.

¹⁶ *See* Reply Comments of Inmarsat Inc., IB Docket No. 11-109 and Files Nos. SAT-AMD-20180531-00044 and SAT-AMD-20180531-00045, at 1-2 (filed July 19, 2018) (Ligado's “ATC system will be deployed subject to an inter-operator cooperation agreement with Inmarsat, which provides a basis to address the interference concerns about Inmarsat transceivers going forward,” and, if “Inmarsat's network would need to be upgraded as part of Ligado's network deployment, the specifics of how this will be accomplished can be left to the parties to determine through established processes.”).

¹⁷ *See, e.g.*, Further Reply Comments of Ligado Networks LLC, IB Docket No. 11-109 and IBFS Files Nos. SAT-AMD-20180531-00044 and SAT-AMD-20180531-00045, at 3, 6-7 (filed July 26, 2018). Ligado has, in the record since the *Modification Order*, acknowledged that it “must first upgrade Inmarsat devices” and then apply for a further waiver of the Commission's rules, which is not automatic. Letter of Gerard J. Waldron, Counsel to Ligado Networks LLC, to Marlene H. Dortch, Secretary FCC, IB Docket Nos. 11-109 *et al.*, at 4 (filed Aug. 19, 2020). But again there is no explicit mention of who will pay for the upgrades, which is a key component to any implementation plan.

This written ex parte presentation is being filed in conformance with Section 1.1206(b)(2) of the Commission's Rules. 47 C.F.R. § 1.1206(b)(2).

Respectfully submitted,

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