

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
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)
Application of Ligado Networks Subsidiary,)
LLC, Debtor in Possession) File No. SAT-MOD-20251206-00374
)
Application for modification of satellite)
authorization)

COMMENTS OF GPS, AVIATION, WEATHER, WATER, AND SATCOM USERS

Satellite Safety Alliance

March 2, 2026

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I. INTRODUCTION AND SUMMARY.

The Satellite Safety Alliance,¹ representing entities that provide and rely upon critical global positioning system (“GPS”), aviation, weather and other environmental data, and satellite communications (“SATCOM”) services (together, the “Alliance”) respectfully submit these comments² on Ligado Networks Subsidiary, LLC, Debtor-in-Possession’s (“Ligado’s”) modification application (“Application”) seeking to replace its single L-band GSO satellite with a constellation of 96 satellites.³

The Alliance members and their constituents rely heavily upon L-band spectrum to provide critical national security and safety-of-life services upon which the U.S. Government and the American people rely. Alliance members represent industries that provide L-band satellite services and use L-band services every day, including the aviation, aerospace, agriculture,

¹ The membership of the Alliance is available [here](#).

² See 47 C.F.R. § 25.154(a).

³ See Application for Modification of Space Station License of Ligado Networks Subsidiary LLC, ICFS File No. SAT-MOD-20251206-00374, Call Sign S2358 (filed Dec. 8, 2025) (the “Application”).

ground transportation, mapping, maritime, meteorological, public safety, satellite communications, and surveying industries. Indeed, the stability of the L-band spectrum environment has allowed GPS, aviation, weather, water, and SATCOM services to thrive, resulting in innovative, successful, and ubiquitous technologies that generate substantial economic benefits to Americans. Alliance members are therefore deeply concerned about the potential impacts of the Application on those services.

GPS receivers operate primarily in L-band spectrum and support nearly every economic sector, including critical infrastructure, adding over \$1.4 trillion into the U.S. economy.⁴ GPS is particularly important to the manufacturing, agricultural, and construction sectors, employing many thousands of workers to build equipment, improving crop yields while reducing waste of America's farms, and improving construction productivity, all yielding tremendous economic benefits to Americans.⁵ Likewise, the aviation industry relies on GPS for safety-of-life operations, such as precision approach and landing, Terrain Awareness Warning Systems, and Unmanned Air Systems. The weather community also relies on GPS for navigation and positioning as well as radio occultation measurements used in weather prediction models. And nearly every American utilizes GPS in their everyday lives.

Critically, because GPS transmits signals more than 20,000 km from the Earth's surface, the signals fall below the noise floor. Even minor increase in the effective noise floor can

⁴ See *GPS Economic Study Presentation*, Office of Space Commerce (Aug. 9, 2019), <https://space.commerce.gov/gps-economic-study-presentation/>.

⁵ See *RTI International, Economic Benefits of the Global Positioning System (GPS)*, (2019) ("Economic Benefits of GPS"), <https://www.rti.org/publication/economic-benefits-global-positioning-system-gps/fulltext.pdf>; see also *Smart Construction: Increasing Opportunities for Small Businesses in Infrastructure*: Hearing Before the House Committee on Small Business Subcommittee on Contracting and Infrastructure (Nov. 19, 2019) (written testimony of Chris Shephard, Vice President, Construction Solutions Group, Trimble).

impede the ability of GPS receivers to extract position, velocity, and timing signals from the noise, thereby degrading performance. And losing mission-critical and safety-of-life services that rely on GPS – even momentarily – can prove catastrophic.

Aviation entities also utilize L-band SATCOM terminals as the primary means of Air Traffic Control communications and surveillance when flying in remote or oceanic areas, systems that must be systematically checked on the ground before takeoff. These aircraft capabilities⁶ are required for aircraft to enter certain airspaces, including the heavily travelled North Atlantic oceanic airspace between Europe and North America.⁷ Moreover, the Federal Aviation Administration and other Air Navigation Service Providers require high levels of service availability. Any degradation of such services can have significant impacts on aviation operations and potentially undermine aviation safety.

The National Oceanic and Atmospheric Administration’s (“NOAA”) current series of operational geostationary satellites, known as Geostationary Operational Environmental Satellites Series R (“GOES”), also utilize L-band to collect and disseminate critical, real-time information on weather, hydrologic, and other environmental conditions. Real-time data access to data communications services operating in the L-band, such as GOES Rebroadcast and Data Collection System, play numerous roles in support of severe weather forecasting, flood prediction, and wildfire response, as well as provide crucial information to the emergency management, aviation, and agriculture sectors, all with significant economic impacts.⁸ This

⁶ The aircraft capabilities are called Controller-Pilot Data Link Communications and Automatic Dependent Surveillance – Contract.

⁷ ICAO, *Implementation of Performance Based Separation Minima-Expanded Publication of PBCS OTS*.

⁸ U.S. Department of Commerce. NOAA. National Environmental Satellite Data Information Service (“NESDIS”). *Spectrum Pipeline Reallocation 1675–1680 MHz Engineering Study*

satellite series, expected to operate through at least 2039, relies on spectrum adjacent to Ligado’s leased spectrum from Crown Castle at 1670-1675 MHz, which the Application claims will be used to implement SkyTerra Next.⁹

Considering the importance of the foregoing L-band services, the Commission should require that Ligado: (i) provide additional technical information that can be used to show how its proposed operations will protect other L-band users, including by requiring Ligado to provide comprehensive aggregate interference analyses for the proposed NGSO system to address impacts to GPS, aviation, weather, water, and SATCOM services; and (ii) demonstrate that Ligado has completed NGSO coordination with all other L-band users. The Commission should also find that implementation of the Ligado’s proposed arrangement with AST would constructively terminate Ligado’s ancillary terrestrial component (“ATC”) authority and grant the pending Petitions for Reconsideration filed in response to the *2020 Ligado Order*.¹⁰

II. LIGADO’S APPLICATION RAISES SUBSTANTIAL HARMFUL INTERFERENCE CONCERNS TO OTHER L-BAND OPERATORS.

Ligado claims that its SkyTerra Next “will not result in any new interference risks,”¹¹ but it (i) ignores substantial differences between its existing GSO operations and its proposed NGSO operations that can impact other L-band users; and (ii) has not completed coordination with Inmarsat, despite Ligado’s statements to the contrary.¹²

(“SPRES”) *Program Report*. Silver Spring, MD: NESDIS, October 2020. Released September 2022. 46-62.

⁹ See Application, Narrative at 10, n.22.

¹⁰ *LightSquared Technical Working Group Report et al.*, Order and Authorization, 35 FCC Rcd 3772 (2020) (“*2020 Ligado Order*”).

¹¹ See Application, Narrative at i.

¹² Petition to Deny of Viasat, Inc., ICFS File No. SAT-MOD-20251206-00374 (Feb. 27, 2026) (“*Viasat Petition to Deny*”).

A. Ligado’s Application Would Materially Change the Interference Environment, Creating Harmful Interference Risks to Other L-band Users.

As an initial matter, there are substantial differences between Ligado’s currently licensed GSO system architecture and the proposed SkyTerra Next NGSO constellation. Ligado’s current authorization is limited to a single GSO satellite operating at around 36,000 km that presents a static interference risk.¹³ In contrast, the proposed SkyTerra Next NGSO system would be comprised of 96 NGSO satellites each operated by AST at an altitude of 690 km and circling the Earth around 13 times every day on a unique orbital plane. Such orbital characteristics result in a dynamic interference environment that is materially more complex than a GSO satellite.

While Ligado claims that the Application will not have any impact on the interference environment, including to co-channel or adjacent-band services,¹⁴ Ligado does not attempt to address the differences between its GSO satellite and the proposed SkyTerra Next constellation. Compared to its existing GSO satellite, the SkyTerra Next constellation will operate with very high transmit EIRP levels combined with lower path loss due to the low Earth orbits (“LEO”), potentially resulting in higher power levels received at the Earth’s surface.¹⁵ Furthermore, the constellation may be concentrating this greater power in large numbers of spot beams covering the entire United States (as opposed to the smaller coverage footprint of a terrestrial wireless network), increasing the probability of impacting ubiquitously deployed GPS receivers. These

¹³ See Call Sign S2358, ICFS File No. SAT-MOD-20151231-00091 (granted June 23, 2025) (“SkyTerra-1 License”). Ligado filed an application to renew its authorization for SkyTerra-1. See ICFS File No. SAT-MOD-20251126-00344 (filed Nov. 26, 2025) (seeking to extend SkyTerra-1 License term through January 21, 2031).

¹⁴ See Application, Narrative at 12.

¹⁵ The Satellite Safety Alliance believes this could be up to 30 dB higher based on the limited information provided in the Application, but the lack of data provided by Ligado does not allow for verification.

characteristics would result in higher aggregate emissions from the SkyTerra Next constellation than Ligado's authorized single GSO satellite. Additionally, Ligado is proposing to operate with space-to-Earth transmissions that are immediately adjacent to the GPS band at 1559 MHz, raising concerns about adjacent-band interference due to out-of-band emissions ("OOBE") and GPS receiver blocking. All of these concerns are a direct result of a large, high-powered, LEO constellation of satellites in contrast with a single GSO satellite.

Additionally, because the NGSO satellites are transiting across the sky, the associated earth stations – in this case mass market handheld devices – would regularly be operating at lower elevation angles than would be the case with the GSO satellite. These earth stations would necessarily employ omnidirectional antennas, which would increase the likelihood of introducing additional interference into co- and adjacent-band operations, which is especially concerning given the increased aggregate emissions from ubiquitous earth stations across the entire United States.

Ligado's Application ignores these issues and instead asks the Commission to accept that Ligado will now operate space stations on AST's 96 satellites that will not have a materially different impact on the interference environment in contrast with a single GSO satellite. Considering that Ligado has failed to substantiate this non-intuitive claim in any meaningful way, the Commission cannot proceed, nor can stakeholders fully address the operations proposed by the Application. In order to move forward, Ligado should be required to submit comprehensive details to support interference analyses addressing the impacts of its new NGSO system (accounting for the earth stations as well as space stations) on existing L-band users. As part of this work, the Commission should require Ligado to provide an analysis that (i) shows the difference between AST satellites transmitting with no guard band at 690 km separation, with

Ligado’s planned ATC base stations that are approximately 1 km away from GPS receivers, but with 23 MHz guard band, and (ii) provides further technical information on its satellite beam OOB and/or conduct an OOB interference analysis to demonstrate adjacent-band services are fully protected. Only then can operators fully analyze Ligado’s planned operations and enable the Commission, as necessary, to impose the appropriate conditions on the SkyTerra Next constellation if the Application moves forward.

B. Ligado’s SkyTerra Next System Remains Uncoordinated, Undermining its Claims That its Operations Will Not Cause Harmful Interference.

Ligado asserts that “its proposed system does not pose new risks of harmful interference to other users because Ligado commits to operating its LEO L-band payload consistent with existing coordination agreements,”¹⁶ that it “has completed coordination”¹⁷ for the NGSO payload, and that “Inmarsat and Viasat have agreed that they will affirmatively support this Modification Application provided that it satisfies certain agreed upon conditions.”¹⁸ But these claims are disputed by Inmarsat’s own recent sworn submissions in court,¹⁹ and Viasat’s Petition

¹⁶ Letter from Gerard J. Waldron, Covington & Burling LLP, Counsel to Ligado, to Marlene H. Dortch, Secretary, FCC, ICFS File No. SAT-MOD-20251206-00374, at 2 (filed Dec. 29, 2025).

¹⁷ Application, Narrative at 20; *see also id.* at ii, 8 (Ligado argues that it will “coexist with Inmarsat and Viasat operations in the L-band” and that it has “already . . . coordinated access over North America.”). Ligado also notes the requirement that an operator in the L-band in ITU Region 2 must coordinate with existing operators in the United States, Canada, Mexico, Russia, and the United Kingdom pursuant to the Mexico City Memorandum of Understanding before it can use spectrum in the band. *See* Narrative at 20. However, nowhere in the Application does Ligado confirm that it has completed coordination with these other administrations for these proposed NGSO operations. *See generally id.*

¹⁸ Application, Narrative at ii.

¹⁹ *See* Declaration of John P. Janka, *Inmarsat Global Ltd. v. AST & Science, LLC, and Ligado Networks LLC*, No. 1:26-cv-00118 (Dist. Ct. Del. Feb. 3, 2026) (“Declaration of John P. Janka”).

to Deny the Application.²⁰ Those documents reveal that coordination has not been effected, that essential coordination work was left unfinished, and that Ligado nevertheless proceeded to file the Application representing the opposite. These facts raise technical and public interest concerns for all L-band operators.

In fact, Ligado’s L-band system proposed in the Application “has not been coordinated” with Inmarsat.²¹ Inmarsat asserts that while it maintained a longstanding cooperation agreement with Ligado to address sharing L-band spectrum, that agreement coordinated “[o]nly *one* operational Ligado GSO satellite” and, therefore, the parties needed to amend their agreement to cover the “complex coordination issues” of Ligado and AST’s proposed NGSO 96-satellite constellation.²² Inmarsat asserts that it, Ligado, and AST were in the process of negotiating amendments to the cooperation agreement, but apparently those negotiations were never completed.²³ And while Inmarsat informed Ligado that coordination had not been completed prior to Ligado filing its Application,²⁴ Ligado now asserts that it had completed coordination with Inmarsat. This conflict remains unresolved.

²⁰ See Viasat Petition to Deny; see also Letter from Jarrett S. Taubman, VP & Deputy Chief Government Affairs and Regulatory Officer, Viasat, to Marlene H. Dortch, Secretary, FCC, ICFS File No. SAT-LOA-20250718-00178 (Nov. 21, 2025).

²¹ Declaration of John P. Janka at 9-10.

²² *Id.* at 5; Inmarsat Emergency Motion for Stay Pending Appeal, *Inmarsat Global Ltd. v. AST & Science, LLC, and Ligado Networks LLC*, No. 1:26-cv-00118, at 4 (Dist. Ct. Del. Feb. 3, 2026) (“Inmarsat Motion for Stay”).

²³ Declaration of John P. Janka at 9 (“. . . the important effort to coordinate the Proposed NGSO System remained unfinished business.”).

²⁴ *Id.* at 9-10 (“on November 6, 2025, Inmarsat’s counsel made clear (i) that the Proposed NGSO System had not been coordinated with Inmarsat, (ii) that Ligado and AST were invited to continue the coordination process, and (iii) that Ligado should not make any (false) representation to the FCC suggesting that the Proposed NGSO System was coordinated[.]”).

As the Viasat Petition to Deny explains, in addition to mischaracterizing the state of coordination with Viasat, Ligado “materially understates the interference risks posed by the proposed ‘SkyTerra Next’ operations.”²⁵ Ligado’s operations “would be fundamentally different from [its] GSO operations and would present materially different and substantially greater interference risks.”²⁶ In particular, the proposed constellation poses dynamic, probabilistic, and aggregated interference risks, that, because they have not been coordinated, pose “unacceptable risks of harmful interference to other L-band services” that must be “investigated and mitigated.”²⁷

Considering the foregoing, there is material evidence that Ligado has not completed coordination with Inmarsat, as Ligado alleges. Nor does Ligado present any evidence that it has completed coordination with other L-band users. Given the importance of L-band services provided by the Alliance members, the nature of the L-band’s coexistence environment, and the interference risks noted above, the Commission should require Ligado to complete coordination with other L-band users before it would be allowed to operate in order to mitigate harmful interference risks to co-channel and adjacent-band operators.

III. LIGADO’S APPLICATION EFFECTIVELY TERMINATES ITS ATC AUTHORITY.

Ligado’s agreement with AST demonstrates that Ligado is abandoning its ATC authority that has long been subject to multiple petitions for reconsideration as well as legislation.²⁸ In

²⁵ Viasat Petition to Deny at 2.

²⁶ *Id.* at 3.

²⁷ *Id.* at 2, 7.

²⁸ Eight petitions for reconsideration of the *2020 Ligado Order* with more than twenty signatories remain pending before the Commission. *See* Petitions for Reconsideration of the National Telecommunications and Information Administration; the Air Line Pilots Association, International; the American Road & Transportation Builders Association, the American Farm

2020, the Commission granted Ligado authority to operate a terrestrial network, premised on a disputed conclusion that Ligado could operate that terrestrial service without causing harmful interference to services provided by Alliance members.²⁹ The Commission conditioned that grant on requiring Ligado to “ensure market availability of substantial MSS and commercially competitive satellite/terrestrial services and devices.”³⁰ Among other things, the Commission conditioned Ligado’s ATC authority on Ligado: (i) offering commercial satellite access agreements enabling integrated MSS/ATC service; (ii) ensuring the availability of dual-mode MSS/ATC L-band devices by specified milestones; (iii) ensuring network capability for MSS/ATC devices using standards-based technology, and (iv) refraining from preferential terrestrial-only terms that discourage combined MSS/ATC.³¹ These conditions serve as pre-

Bureau Federation, and the Association of Equipment Manufacturers; the Joint Aviation Petitioners; Iridium Communications Inc., Flyht Aerospace Solutions Ltd., Aireon LLC, and Skytrac Systems Ltd.; Lockheed Martin Corporation; Trimble Inc.; and the Resilient Navigation and Timing Foundation, IB Docket Nos. 11-109 & 12-340 (all petitions for reconsideration were filed on or about May 22, 2020). The ten “Joint Aviation Petitioners” consist of the Aerospace Industries Association, the Aircraft Owners and Pilots Association, Airlines for America, Aviation Spectrum Resources, Inc., the Cargo Airline Association, the General Aviation Manufacturers Association, the Helicopter Association International, the International Air Transport Association, the National Air Transportation Association, and the National Business Aviation Association.

²⁹ This determination has been shown to be incorrect. Congress enacted several provisions to address the harmful interference caused by the *2020 Ligado Order*. See *William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021*, Pub. L. No. 116-283, §§ 1661-1664, 134 Stat. 3388 (2021) (“2021 NDAA”); *National Defense Authorization Act for Fiscal Year 2022*, Pub. L. No. 117-81, §§ 1613, 135 Stat. 1541, 1682 (2021). The 2021 NDAA mandated a study by the National Academies of Sciences, Engineering, and Medicine which showed that the *2020 Ligado Order* is inadequate to protect incumbent services from Ligado’s terrestrial operations. *Analysis of Potential Interference Issues Related to FCC Order 20-48*, National Academies of Sciences, Engineering, and Medicine (2023), <https://doi.org/10.17226/26611>.

³⁰ *2020 Ligado Order*, 35 FCC Rcd at 3831 ¶ 120 .

³¹ *Id.* at 3840 ¶ 150(ii).

requisites justifying the Commission’s grant of ATC authority to Ligado. And, in any event, Ligado has never implemented operations relying upon this authority.

The Application, if granted, would constructively render Ligado’s terrestrial authority null and void. Pursuant to Ligado and AST’s agreement, Ligado would not be providing or marketing its own MSS service (those are done by AST) or ensuring the corresponding integrated MSS/ATC device availability and network capability as required by the *2020 Ligado Order*’s conditions. Indeed, it is unclear under this latest proposal how Ligado feasibly could implement SkyTerra Next and at the same time provide the integrated MSS/ATC service that the Commission contemplated and required when it authorized Ligado’s terrestrial network. In any event, the Application does not attempt to address this matter. Moreover, since Ligado and AST admit in other federal filings that their ultimate intent is to “negotiate terms for the transfer of [Ligado’s] licenses, space station and ground station assets to AST, LLC,”³² it would seem that Ligado has no intention of ever providing its ATC service.

Ligado’s terrestrial authority is ancillary to and contingent upon the licensee’s own continued provision of MSS and integrated MSS/ATC services. Implementing the AST-centered arrangement through the Application would sever that nexus and extinguish Ligado’s ability to lawfully provide terrestrial services. Considering this, the Commission should find that Ligado

³² AST SpaceMobile, Inc., Current Report, at 3 (Form 8-K) (Mar. 22, 2025), <https://www.sec.gov/Archives/edgar/data/1780312/000164117225000330/form8-k.htm>; *see also* Ligado-AST Spectrum Usage Agreement at 17 (“Ligado shall notify SpectrumCo [i.e., AST] immediately following resolution (including settlement) of the Takings Litigation” after which “the Parties shall negotiate in good faith the terms on which . . . the Ligado L-band MSS Assets, the Ligado L-band MSS Spectrum, the Ligado L-band Licenses and Ligado’s rights under the Cooperation Agreement would be transferred and assigned to SpectrumCo as soon as reasonably practicable[.]”).

has abandoned its terrestrial ambitions, grant the still-pending petitions for reconsideration, and rescind the *2020 Ligado Order*.

IV. CONCLUSION.

Considering the foregoing, the Commission should: (i) require Ligado to submit technical information and supply a full compatibility analysis that demonstrates how it will protect other L-band users, including Alliance members, from harmful interference; (ii) require Ligado to submit detailed evidence that it has completed coordination with all other L-band users; and (iii) find that implementation of the proposed arrangement would constructively terminate Ligado's ATC authority, grant the pending petitions for reconsideration, and rescind the *2020 Ligado Order*.

Respectfully Submitted,

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