

May 6, 2021

BY ECFS

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:

Pursuant to Section 1.1206 of the Federal Communications Commission's ("Commission's") rules,¹ this letter provides notice that on May 4, 2021, Iridium Communications Inc. ("Iridium"), held a call with Commissioner Nathan Simington; Carolyn Roddy, Chief of Staff and Senior Legal Advisor for Wireline Issues; Erin Boone, Acting Wireless Advisor; Adam Cassady, Media Advisor; and Michael Sweeney, Confidential Assistant. Iridium was represented by Matt Desch, Chief Executive Officer; Tom Hickey, Chief Legal Officer; Maureen C. McLaughlin, Vice President of Public Policy; Robert McDowell, Cooley LLP; and the undersigned. During the call Iridium discussed the attached presentation concerning the above captioned proceedings.

Please direct any questions concerning this submission to the undersigned.

Respectfully Submitted,

/s/ Bryan N. Tramont
Bryan N. Tramont
Counsel to Iridium Communications Inc.

¹ 47 C.F.R. § 1.1206.

WILKINSON) BARKER) KNAUER) LLP

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Attachment

cc: Commissioner Nathan Simington
Carolyn Roddy
Erin Boone
Adam Cassady
Michael Sweeney



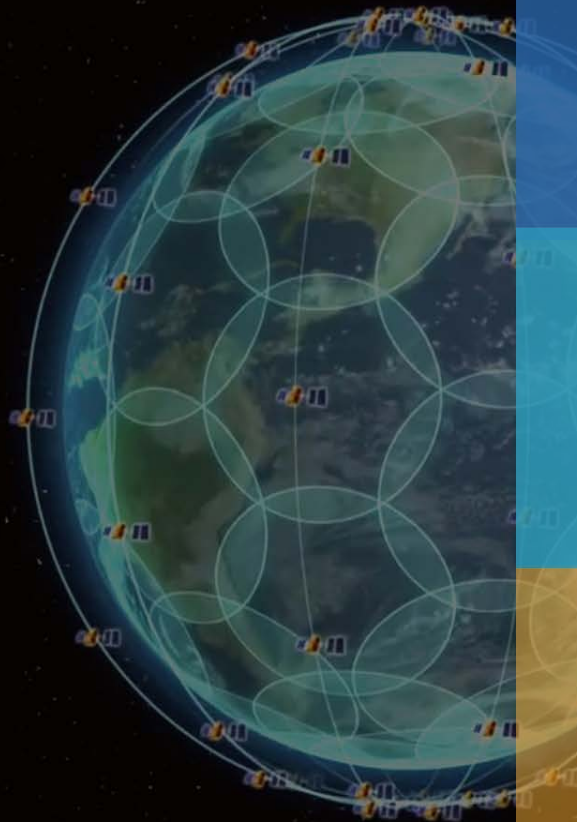
HARMFUL INTERFERENCE TO IRIDIUM FROM LIGADO ORDER

May 2021



Iridium is the only fully global provider of **mobile voice & data services**.

Our network connects vital services, **including over one million IoT subscribers**, using just 8.725 MHz of spectrum and 75 in-orbit satellites.



Serving
>1.51 million
Subscribers

Backed by
450+
Global Distribution
Partners (Wholesale-
only Business)

Business Lines:
Land Mobile
Maritime
Aviation
IOT
Government

A NEW ERA FOR GLOBAL CONNECTIVITY

Iridium completed the **largest satellite constellation replacement ever** by launching 75 state-of-the-art Iridium® NEXT satellites at a cost of \$3 billion.

This enabled the launch of Iridium Certus®, the fastest L-band broadband service available to support voice and data capabilities for ships, vehicles, aircraft, and IoT devices.

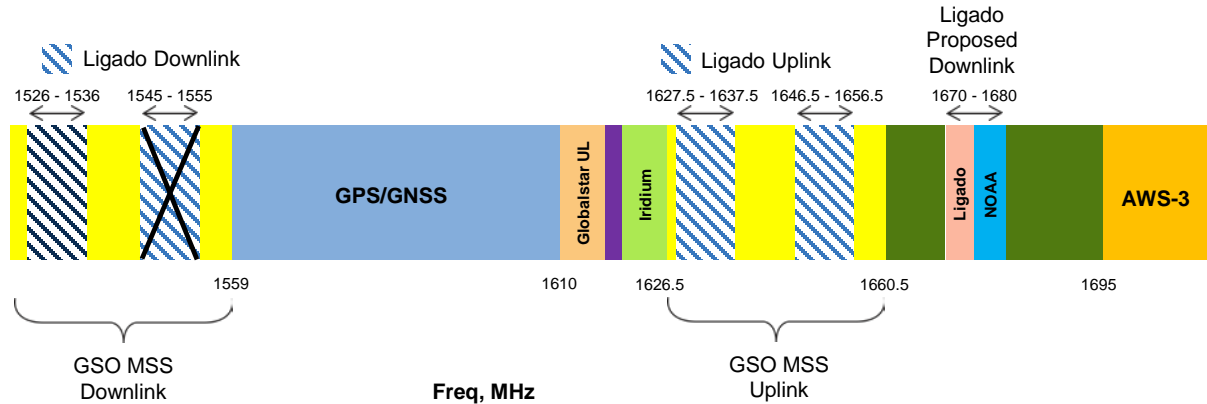




OVERVIEW

- The Ligado Order fails to address Iridium's substantial concerns about harmful interference from Ligado's terrestrial operations.
- A new mandate from the National Defense Authorization Act (NDAA) for the Department of Defense (DoD) and the National Academies of Science (NAS) to study the harmful effects of the FCC's Order necessitates a stay to prevent harmful interference from Ligado's terrestrial operations during this review process.
- The NDAA Report language underscores Congress's concerns that the Ligado Order did not address the substantial harmful interference to Iridium from Ligado's terrestrial operations.
- The FCC should ultimately reduce Ligado's authorized power level in the 1627.5-1637.5 MHz band to protect Iridium's satellite communications system.
- The FCC should also impose additional conditions to ensure that Ligado remedies any harmful interference caused to Iridium.

THE LIGADO ORDER WILL RESULT IN HARMFUL INTERFERENCE TO L-BAND SATELLITE SERVICES



- The FCC's grant of terrestrial authority to Ligado Networks results in significant harmful interference to satellite services across the L-band, including GPS and SATCOM providers. Ligado's proposal to operate in the 1675-1680 MHz band would impact the weather/environmental data community and is pending before the FCC.
- The FCC ignored the purpose of its Ancillary Terrestrial Component (ATC) rules, which require ATC operators like Ligado to resolve any harmful interference from their terrestrial operations to other services.
- The conditions that the FCC placed on Ligado are inadequate.



LIGADO'S OPERATIONS WILL IMPACT THE MANY CRITICAL SERVICES PROVIDED BY IRIDIUM

- Iridium has a 20+ year history of providing essential satellite communications services, including to the Department of Defense (DoD).
 - Through the Enhanced Mobile Satellite Services (EMSS) Program, DoD (and other US Government agencies) receive unlimited satellite communications services under a 7-year, \$738.5 million contract (most recent version of EMSS contract signed with Iridium in 2019).
 - Iridium supports the US Government through many different satellite-based services, including terrestrial voice (terrestrial- and maritime-based), aviation services, Internet of Things, push-to-talk, and one-way messaging, with its \$3 billion second-generation satellite constellation.
- Iridium provides the U.S. Air Force (USAF) with Aircraft Secure Communications, Data Exfil, Expeditionary/Infantry COTM, and Air Safety Services.
- The Iridium constellation also enables Satellite Time and Location (STL), a secure alternate PNT solution that is 1,000 times stronger than GPS signals.
 - STL can reach deep into buildings and urban canyons, improving access and coverage to provide high accuracy timing even indoors, beyond where GPS signals can reach. STL leverages cryptographic security features, ensuring that our nation's infrastructure is less vulnerable to disruption and attack.



CONGRESS HAS SPOKEN: THE FCC SHOULD STAY THE LIGADO ORDER

- The overwhelmingly bipartisan National Defense Authorization Act (NDAA) became law on Jan. 1, 2021, and clearly supports a stay of the Ligado Order.
 - The NDAA requires DoD to arrange an independent evaluation of the Order with the National Academies of Science—a stay is consistent with this mandate.
 - The unequivocal language of the NDAA demonstrates Congress's strongly bipartisan and bicameral view that the Order failed to adequately assess the real-world risks of harmful interference to SATCOM and other critical services from Ligado's terrestrial network.
 - Although other factors are also in play, failure to grant a stay could enable Ligado to begin deployments, creating real-world risks of harmful interference and frustrating the intent of Congress.
- Grant of a stay would be consistent with concerns about the Ligado Order raised by the National Telecommunications and Information Administration and by members of industries that provide L-band satellite services and use L-band services every day, including the aerospace, agriculture, ground transportation, mapping, marine, metrological, public safety, satellite communications, and surveying industries.



THE ORDER FAILS TO ADDRESS HARMFUL INTERFERENCE TO IRIDIUM

- Iridium's technical analysis, aviation-specific technical analysis, and various supplements indicate that Ligado's terrestrial operations, operating only 1 MHz from Iridium's spectrum, would result in significant harmful interference to Iridium's mobile terminals – including those used for mission critical federal government users like DoD and DOE.
- The Order's rejection of Iridium's technical analyses does not withstand minimal scrutiny.
 - Iridium's assumptions regarding simultaneously transmitting devices, power levels and free-space path loss were based on Ligado's proposal, FCC Rules, and CSMAC/DOT/RTCA studies, respectively, so the Order's criticism of these assumptions are without merit.
- The Order fails to address the consequences of harmful interference to Iridium's aviation services and without elaboration treats interference to aviation services the same as any other Iridium MSS service.



THE 2005 ATC OOBЕ LIMITS WILL NOT PROTECT IRIDIUM

- The out-of-band emissions (OOBE) levels adopted in the 2005 ATC Order were premised on a far smaller number of user terminals than Ligado now plans to deploy. The FCC's decision to retain these levels for Ligado is unsupported by the record.
- Ligado's predecessor, MSV, even acknowledged that the limits adopted in the 2005 ATC Order would need to be revisited if significantly larger numbers of ATC user terminals were deployed than were contemplated at the time.
- At the 2005 levels, a single Ligado user terminal can produce harmful interference to an Iridium user up to 1 km away and make Iridium users unable to receive transmissions from Iridium's satellites while Ligado terminals are transmitting.



THE ORDER FAILS TO APPLY FCC RULES AND WAIVER CRITERIA

- Section 25.255 provides that “[i]f harmful interference is caused to other services by ancillary MSS ATC operations ... the MSS ATC operator must resolve any such interference.”
 - This rule reflects the FCC’s determination that the ATC operator bears a duty to resolve harmful interference. The FCC has previously interpreted Section 25.255 as placing an “absolute obligation” to “resolve any ... interference” to any “other services” on the ATC operator itself – not on the entity whose operations will face interference.
 - The Order mentions Section 25.255 only once, merely to assert (without support) that Ligado will cure any interference caused to other services, transforming Section 25.255 from legal obligation into mere aspiration.
- The Order grants Ligado’s waiver of the integrated service rule (which requires MSS ATC licensees to offer an integrated satellite and terrestrial service), but fails to satisfy the FCC’s criteria for such a waiver.
 - For such a substantial deviation from its ATC rules, the FCC should have conducted a rulemaking, as it did in other cases like Globalstar and AWS-4.



THE ORDER'S PUBLIC INTEREST ANALYSIS IS DEFICIENT

- The Order offers no substantive assessment of the public interest benefits of Ligado's terrestrial operations.
 - The 74-page Order allocates a scant 6 paragraphs to the critical question of whether grant of Ligado's proposals will serve the public interest.
 - The Order relies largely on Ligado's self-serving rhetoric while disregarding the significant costs raised by stakeholders on the record.
- The Order is completely devoid of a rigorous cost-benefit analysis, despite the clear impact of the Ligado Order on satellite services which contribute tens-of-billions of dollars to the U.S. economy each year.
 - The FCC disregarded evidence of economic harms from Ligado's operations and focused only on speculative benefits presented by Ligado itself.
- While Ligado asserts that it will advance 5G in the U.S., this is mere puffery—there is no evidence that Ligado will meaningfully do anything to help the U.S. win the race to 5G (as NTIA already found).

BROAD OPPOSITION TO LIGADO PROPOSAL

"Although Ligado continues to attempt to convince policymakers that its proposed terrestrial service will not cause harmful interference and is somehow critical to American success in 5G, the executive branch and affected parties have repeatedly detailed the adverse economic, national security, and public safety impact of the proposed Ligado operations. As for Ligado's 5G fallacy, NTIA concluded that 'an inability to deploy terrestrial 5G or related services using the frequencies involved in the Ligado applications would not hold back the timely deployment of 5G' across the U.S. Tellingly, Ligado's spectrum is not internationally harmonized for 5G, nor is it part of any 5G standard."

- April 22, 2021 letter from 98 Different L-Band Network Operators and Users

AccuWeather, Inc.	Arizona Agricultural Aviation Association	General Aviation Manufacturers Association	National Corn Growers Association	South Dakota Aviation Association
Aerospace Industries Association (AIA)	Arkansas Agricultural Aviation Association	GeoOptics, Inc.	National Cotton Council	Space Science and Engineering Center at the University of Wisconsin-Madison
Agricultural Retailers Association	Associated Equipment Distributors	Georgia Agricultural Aviation Association	National Defense Industrial Association (NDIA)	Spirit Airlines
Air Line Pilots Association, International	Association of Equipment Manufacturers	Geospatial Equipment & Technology Institute (GETI)	National Society of Professional Surveyors (NSPS)	Subsurface Utility Engineering Association (SUEA)
Aircraft Electronics Association	Association of Marina Industries	Helicopter Association International	National Weather Association (NWA)	Sun Country Airlines
Aircraft Owners and Pilots Association	Association of Montana Aerial Applicators	Hellen Systems	Nebraska Aviation Trades Association	Tennessee Aerial Applicators Association
Aireon	Association of Washington Aerial Applicators	Illinois Agricultural Aviation Association	NENA: The 9-1-1 Association	Texas A&M Transportation Institute
Airlines for America (A4A)	Aviation Spectrum Resources, Inc.	Intelligent Transportation Society of America	NetJets Association of Shared Aircraft Pilots (NJASAP)	Texas Agricultural Aviation Association
Airo Drone	BoatUS	International Air Transport Association	New Mexico Agricultural Aviation Association	Trimble
Airo Group	CalAmp	Iridium	North Dakota Agricultural Aviation Association	U.S. Contract Tower Association
ALERT Users Group	California Agricultural Aircraft Association	Kansas Agricultural Aviation Association	Northeast Agricultural Aviation Association	U.S. Geospatial Executives Organization (U.S. GEO)
Allegiant Air	Cargo Airline Association	Lockheed Martin Corporation	Ohio Agricultural Aviation Association	USA Rice
American Association of Airport Executives	CNH Industrial	Michigan Agricultural Aviation Association	Oregon Agricultural Aviation Association	University Corporation for Atmospheric Research (UCAR)
American Bus Association	CoBank	Microcom Environmental	Pacific Northwest Aerial Applicators Alliance	Vertical Flight Society
American Farm Bureau Federation	Colorado Agricultural Aviation Association	Minnesota Agricultural Aircraft Association	PlanetIQ	Weather Elevate
American Geophysical Union (AGU)	Cubic Corporation	Narayan Strategy	Regional Airline Association	Wisconsin Agricultural Aviation Association
American Meteorological Society (AMS)	DTN	National Agricultural Aviation Association	Resilient Navigation and Timing Foundation	
American Soybean Association	Equipment Dealers Association	National Air Carrier Association	Satelles	
American Sportfishing Association	Frontier Airlines	National Air Transportation Association	The Semaphore Group	
American Road & Transportation Builders Association	Florida Agricultural Aviation Association	National Business Aviation Association	SKYTRAC	



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