

July 26, 2018

BY EFILE

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street S.W., Room TW-A325
Washington, DC 20554

Re: Ligado Network 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 (the “Modification Applications”); IB Docket Nos. 12-340, 11-109

Dear Ms. Dortch:

Iridium Communications Inc. (“Iridium”) hereby submits these reply comments in response to submissions concerning the Ligado Networks Subsidiary LLC’s (“Ligado”) May 31, 2018 Amendment to its applications pending before the Federal Communications Commission (“Commission”) to provide a terrestrial service in frequency bands allocated for satellite operations.¹

Three invalid claims require a response. First, notwithstanding its continued misinformation campaign, Ligado still has not addressed all of the interference issues posed by its applications. Second, the notion that the Commission should grant the Modification Applications to prevent Ligado’s spectrum from continuing to go “unused” turns fifty years of spectrum management policy on its head. According to Ligado, its spectrum is “unused” today and has remained largely unused for the better part of a decade. But that was not Ligado’s fate, it was Ligado’s choice. Ligado’s decision to waste 40 MHz of satellite spectrum should not be rewarded with a windfall. Finally, as the Commission is well aware, the Department of Defense Chief Information Officer (“DoD CIO”) has not reached any conclusions about this application,

¹ Ligado Networks 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 (the “Modification Applications”); IB Docket Nos. 12-340, 11-109 (May 31, 2018) (“Ligado Amendment”).

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nor has he filed in this docket. Federal agencies do not require Ligado to speak for them.² Ligado's latest filing is just another effort to distort the facts and mischaracterize the results of a confidential government process.

Ligado interference concerns have not been addressed. In its July 19 reply comments, Ligado once again inaccurately states that it has addressed all of the interference issues posed by its applications.³ To the contrary, a coalition of 27 national organizations and companies advised the Commission on July 18 that “the threat of harmful interference from Ligado’s proposed ancillary terrestrial component (“ATC”) service continues to pose a significant risk of harmful interference despite Ligado’s May 31, 2018, amendments to its license modification applications.”⁴ While a significant focus of the letter was on remaining GPS interference concerns, the coalition also recognized the harmful interference that Ligado’s proposed terrestrial services will cause to Iridium and agrees that “[w]hether the interference is to public safety communications, systems relied on by planes, helicopters, drones, ships or weather buoys, interference with SATCOM systems must not be permitted.”⁵ Boeing agreed that “the Commission needs to ensure that Ligado’s operations and Iridium transceivers, particularly those used in aviation, can co-exist”⁶ and argued that “[t]he availability and reliability of [Iridium SATCOM services] must be adequately protected to support general aviation and the operation of numerous types of aircraft, including business jets, small planes, helicopters, and drones.”⁷ As Iridium explained in its comments, the May 31 Ligado Amendment does nothing to resolve the harmful interference that Ligado’s proposed operations will cause to Iridium. Nor do Ligado’s June 19 reply comments.

Spectrum underutilization should not be rewarded. A common theme among some Ligado supporters is that Ligado’s Modification Applications should be granted so that its fallow spectrum can finally be put to use. The Free State Foundation, for example, suggested that the ongoing LightSquared/Ligado saga has “kept valuable L-band spectrum from being put to

² Reply Comments of Ligado, 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 (the “Modification Applications”); IB Docket Nos. 12-340, 11-109, at 4, 20-21 (July 19, 2018) (“Ligado Reply Comments”). Unless otherwise specified, all other filings in this proceeding will be short-cited without reference to file numbers.

³ Ligado Reply Comments at 21-22.

⁴ Coalition of Aviation, SATCOM, and Weather Information Users Letter at 1 (July 18, 2018) (“July 18 Coalition Letter”).

⁵ *Id.* at 5.

⁶ Boeing Comments at 2 (July 9, 2018).

⁷ *Id.* at 5.

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productive use.”⁸ Not only do they acknowledge that Ligado’s spectrum has gone unused, they suggest that “the L-band spectrum will *remain unused*,”⁹ resulting in lost opportunity costs and thus concluding that “the Commission should do all it can to *prevent that spectrum from remaining unused*.”¹⁰ The Information Technology & Innovation Foundation similarly suggests that “[t]his proceeding is a great opportunity to see Ligado’s spectrum put to a far more valuable use.”¹¹ Such comments are consistent with an earlier statement from Ligado Executive Vice President & Chief Legal Officer, Valerie Green, in a November 15, 2017 presentation to the National Space-Based Position, Navigation, and Timing Advisory Board, who noted that “every month this spectrum goes unused”¹² there is value lost to the economy.

Iridium agrees that consumers and the economy suffer when spectrum is not put to productive use. However, in this case, it was Ligado and its predecessors’ failed business decisions and its subsequent and protracted regulatory arbitrage gamble that resulted in the spectrum’s going “unused.” Ligado, and some supporters, wrongly suggest that the only alternative to putting the spectrum to use for a terrestrial mobile broadband service is for the spectrum to remain unused. Iridium’s exponential growth of its satellite business during the same period suggests otherwise.¹³ The stark differences between the two L-band operators is illuminating and undercuts any suggestion that the spectrum will necessarily remain unused if the Ligado Modification Applications are not granted.

⁸ Free State Foundation Reply Comments at 1-2 (July 19, 2018).

⁹ *Id.* at Appendix A, Cooper, Seth L., “Time for NTIA and FCC to Act on Ligado’s Application for Advanced IoT Network,” FSF Blog (June 13, 2018) (emphasis added).

¹⁰ Free State Foundation Reply Comments at 2 (emphasis added).

¹¹ ITIF Comments at 3 (July 9, 2018); *see also* CCA comments arguing that the Commission “should seize this opportunity to promote more efficient use of spectrum by granting Ligado’s requests.” Competitive Carriers Association Reply Comments at 6 (July 19, 2018).

¹² Valerie Green, Executive Vice President & Chief Legal Officer, Ligado Networks, LIGADO NETWORK’S MOBILE TERRESTRIAL SERVICES PLAN & THE PROTECTION OF GNSS SERVICE, NATIONAL SPACE-BASED POSITIONING NAVIGATION AND TIMING ADVISORY BOARD 22ND MEETING, <https://www.gps.gov/governance/advisory/meetings/2017-11/green.pdf> (Nov. 15, 2017) at Slide 7.

¹³ The growth of Inmarsat’s MSS business and the countless companies hoping to enter the satellite business today also suggests otherwise. *See, e.g.*, Inmarsat Group Limited, 2017 Annual Report, Mar. 14, 2018, http://investors.inmarsat.com/wp-content/uploads/2018/04/Inmarsat-Group-Limited-Annual-Report_2017.pdf.

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Ligado has held Mobile Satellite Service (“MSS”) authorizations for two satellites throughout this proceeding.¹⁴ In November 2010, Ligado’s predecessor LightSquared launched its newest satellite SkyTerra-1, two months before the Commission granted the Conditional Waiver Order which conditionally allowed LightSquared to offer terrestrial-only devices rather than having to incorporate both satellite and terrestrial services. At the time of its bankruptcy in 2013, LightSquared reported only approximately 300,000 subscribers in all of North America.¹⁵ Ligado states that it continues to serve customers on its 22 year old AMSC-1 satellite despite the fact that it inadvertently failed to file a timely request to extend the satellites license term for another year in 2017.¹⁶ Iridium does not know how many subscribers Ligado has today using its 40 MHz of spectrum, but given the fact that it claims its spectrum has gone unused and the lack of any significant announcements about new service offerings from the company in years, one must assume its subscriber numbers are not on the rise. A review of Ligado’s website makes clear its desire to offer future terrestrial wireless services, with significantly less focus on new satellite service offerings.

Nor is any information available from Ligado as to how many customers it serves, or what services (if any) it is providing, on the additional nationwide terrestrial spectrum it has been leasing from Crown Castle in the 1670-1675 MHz band for 11 years. Ligado has told the Commission that it is using the spectrum to provide a mobile video service, under the name “Modeo” that existing Ligado subscribers could add to their existing service package.¹⁷ Yet, after some research, it is not clear that one can actually purchase that offering. There is no reference to it on Ligado’s website. A website for Modeo,¹⁸ which includes no reference to Ligado, contains limited information, including how to order a device, but it appears to have been last updated in July 2015. The website provides no name, address or other information about the entity that claims to be providing Modeo. A search of eBay, Amazon, and Google for a Modeo handset produces no results. Finally, inquiries to the company using an online order form produce no responses. As with the rest of Ligado’s spectrum holdings, Ligado can, and should be, providing service in this band today, but it appears to have chosen to let it lay fallow

¹⁴ Ligado holds licenses for two satellites: AMSC-1, a satellite which began offering service in 1996. It has received annual extensions of its license term since 2011 and Skyterra 1 (Call Sign S2358) which was launched in November 2010.

¹⁵ Notice of Filing by Ad Hoc LP Secured Group of Solicitation Versions of First Amended Plan and Disclosure Statement, LightSquared, Inc., et al., Debtors, Chapter 11, Case No. 12-12080 (SCC), U.S. Bankruptcy Court, SDNY (filed Oct. 28, 2013).

¹⁶ Ligado Networks Subsidiary LLC, IBFS File No. SAT-STA-20170112-00004, Attachment A (filed Jan. 18, 2017).

¹⁷ One Dot Six Corp., Application for Renewal, Call Sign WPYQ831, ULS File No. 0006817249 (May 28, 2015).

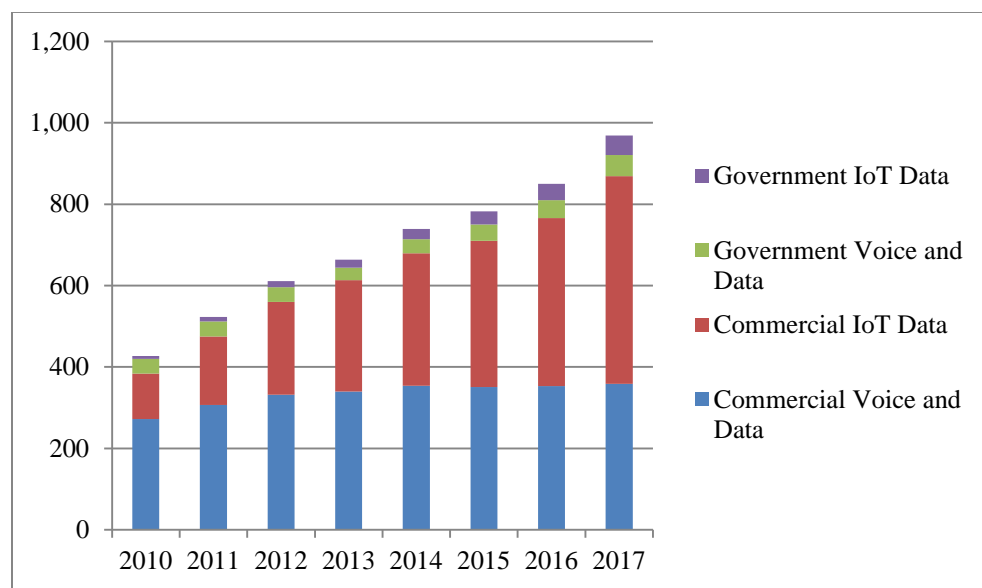
¹⁸ Modeo Video, <http://www.modeovideo.com/> (visited July 24, 2018).

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while it pursues its larger arbitrage objectives. This is not behavior that should be rewarded by the FCC.

During this same period of Ligado inactivity, Iridium has grown a highly successful satellite business operating in only 8.725 MHz of spectrum, 0.95 MHz of which is shared with adjacent MSS operator Globalstar. Today, Iridium has over one million subscribers,¹⁹ more than double the 427,000 subscribers it had in 2010 while relying on its first-generation MSS constellation, primarily in mobile voice and data services.²⁰



Iridium Subscriber Growth²¹

(subscribers in thousands)

In 2010, Iridium was in the planning stages for its second generation Iridium NEXT constellation. Iridium has since invested \$3 billion in the development of Iridium NEXT, a 66-

¹⁹ Press Release, Fifth Successful Iridium® NEXT Launch Completed as Iridium Surpasses 1 Million Subscribers, Mar. 30, 2018, <http://investor.iridium.com/news-releases/news-release-details/fifth-successful-iridiumr-next-launch-completed-iridium>.

²⁰ Iridium Communications Inc., 2011 Annual Report at 3, Mar. 6, 2012, <http://investor.iridium.com/static-files/9cf731b4-ecf7-46c4-929d-c702ee52b0c9>.

²¹ Iridium Communications Inc., 2017 Annual Report at 2, Feb. 22, 2018, <http://investor.iridium.com/static-files/acb77e41-0cef-43a0-b7df-6bbcf262d951>; Iridium Communications Inc., 2013 Annual Report at 2, Mar. 4, 2014, <http://investor.iridium.com/static-files/61e37c4c-d0c7-4190-aebb-59e6540c365f>.

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satellite constellation with nine on-orbit spares and six ground spares. Following the successful launch this week of ten additional satellites,²² 65 of the satellites have been launched to date and Iridium expects to complete the constellation by the end of 2018. As Iridium's satellite capabilities have advanced, it has expanded its service offerings, resulting in substantial commercial and government subscriber growth as evidenced by the chart above.

Iridium's launch of a next generation satellite system and the new services it enables proves that MSS satellite spectrum can be put to highly productive and efficient use (over 100,000 subscribers served per 1 MHz of spectrum in Iridium's case). Iridium's success demonstrates the fallacy that Ligado's spectrum must remain unused if its spectrum is not converted to terrestrial use. Moreover, there are tremendous economic benefits from satellite operations. And these satellite operations can occur without risking harmful interference – interference that the Commission's rules do not allow.²³ As the July 18 Coalition letter stated, granting Ligado's request “would convert 40 MHz of increasingly rare satellite spectrum away from satellite use, rewarding a company for underutilizing its satellite spectrum rather than investing in new satellite technologies.”²⁴

Ligado's representations about the Executive Branch's views should not be credited. Ligado's suggestion that the DoD CIO concluded that Ligado's operations will not cause harmful interference is similarly meritless. As part of a dialogue with the office of the DoD CIO, the parties engaged in confidential discussions with DoD and a DoD contractor, Alion Science and Technology Corporation (“Alion”). Unsurprisingly, the parties could not agree on a methodology or process to complete an interference assessment. Since, unlike Ligado, Iridium respects the fact that the discussions with the DoD CIO and its contractor Alion were confidential, we will not summarize here the litany of concerns that animated those discussions. However, we will note that, contrary to Ligado's claims, the DoD CIO has not taken any position on the merits of the interference claims between the parties or the public policy issues raised by this debate. Finally it is obviously not for Ligado to express the views of DoD – that is the task of the National Telecommunications and Information Administration (“NTIA”). The Commission should not countenance efforts by private parties to end run NTIA's role and statutory responsibilities. Ligado's claim is belied by the facts.

As the July 18 Coalition letter concluded, “[t]he existing services provided by the GPS, SATCOM, aviation and real-time environmental satellite data communities, which depend upon interference-free operations in spectrum adjacent to or co-channel to spectrum central to

²² Press Release, Iridium Completes Seventh Successful Iridium® NEXT Launch, July 25, 2018, <http://investor.iridium.com/news-releases/news-release-details/iridium-completes-seventh-successful-iridiumr-next-launch>.

²³ See 47 CFR § 25.255.

²⁴ July 18 Coalition Letter at 2.

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Ligado's plans, are too important to jeopardize, especially for the speculative benefits of Ligado's constantly evolving proposals..." The latest filings by Ligado and its limited supporters supply no basis whatsoever to grant Ligado's Modification Applications. To the contrary, there are ample grounds for the Commission to deny them, and it should do so forthwith.

Please direct any questions concerning this submission to the undersigned.

Respectfully submitted,

/s/ Bryan N. Tramont _____

Bryan N. Tramont

Patrick R. Halley

Counsel to Iridium Communications Inc.

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CERTIFICATE OF SERVICE

I, Karla E. Huffstickler, hereby certify under penalty of perjury that the foregoing Iridium Reply Comments was served this 26th day of July, 2018, by depositing a true copy thereof with the United States Postal Service, first class postage pre-paid, addressed to:

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