

August 26, 2019

BY ECFS

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW, 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; IB Docket Nos. 12-340, 11-109

Dear Ms. Dortch:

Iridium Communications Inc. (“Iridium”) files this letter to address several points raised in a recent *ex parte* letter (“Letter”) filed by Ligado Networks LLC (“Ligado”) concerning a meeting with Commission staff regarding Ligado’s pending license modifications in the above-captioned proceedings.¹ This latest attempt by Ligado to assure the Commission that all is well and that its applications are ready for grant is at odds with reality, and even Ligado’s own filing fails to live up to the rhetoric. This letter sets the record straight on several key issues raised in Ligado’s letter, including the continued risk of harmful interference posed by Ligado’s system to incumbents, and the fact that Ligado has no realistic or substantial role to play in America’s 5G leadership.

Ligado has not resolved out-of-band emissions from the 1627.5-1637.5 MHz band. Ligado once again makes no effort to address Iridium’s concerns about harmful interference from the Ligado system. In its letter, Ligado makes passing reference to out-of-band emissions (“OOBE”) from its operations in the 1627.5-1637.5 MHz band in one sentence of one paragraph in a section generically titled “Other issues.” That passage states only that Ligado and the

¹ Letter from Gerard J. Waldron, Counsel to Ligado Networks LLC, to Marlene H. Dortch, Secretary, FCC, IB Docket No. 11-109, IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and SAT-MOD-20151231-00091 (filed Aug. 6, 2019) (“Ligado *Ex Parte*”).

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Commission “discussed the [out-of-band emission] levels” and that Ligado “outlined the analysis Ligado has submitted that addresses those concerns.”² What Ligado apparently failed to mention during the meeting was that “those concerns” about Ligado’s OOB are Iridium’s well documented concerns, and these concerns have not been resolved. Iridium has submitted detailed analyses of harmful interference demonstrating that Ligado’s proposed operations are likely to cause harmful interference to the Iridium system,³ and has repeatedly noted Ligado’s failure to address these concerns.⁴ These interference concerns are driven by Ligado’s potential introduction of millions of mobile consumer handsets into the band adjacent to Iridium’s system, and the fact that such widespread terrestrial use was not contemplated when the L-band was divided among existing satellite services. Ligado fails to acknowledge or engage with these legitimate concerns, and acts as though the interference problems do not exist. Iridium continues to oppose Ligado’s proposals due to the persistent threat of harmful interference. Until Ligado addresses Iridium’s concerns, the Commission should refrain from any grant of Ligado’s proposals.

Ligado has not addressed concerns raised by other interested parties. Iridium is not alone in its ongoing concern about Ligado’s proposals. A coalition of aviation, SATCOM, and weather information users (“Coalition”), of which Iridium is a member, has made multiple filings in the Ligado proceedings, outlining in great detail the problems with Ligado’s proposals and reiterating that, contrary to Ligado’s assertions, the concerns about harmful interference to multiple American satellite entities have not been resolved.⁵ In addition to Iridium’s concerns, the Coalition also points to Ligado’s failure to address the concerns of the aviation industry about the potential for Ligado to interfere with sensitive GPS receivers, and the impact that

² *Id.* at 9.

³ Letter from Bryan N. Tramont & Patrick R. Halley, Counsel to Iridium Communications Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 and 12-340, at 2 (filed Mar. 27, 2017); Letter from Bryan N. Tramont & Patrick R. Halley, Counsel to Iridium Communications Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 and 12-340, at 6-7 (filed Dec. 14, 2016); Letter from Bryan N. Tramont, Counsel to Iridium Communications Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 and 12-340 (filed Sept. 1, 2016).

⁴ *See, e.g.*, Reply Comments of Iridium Communications Inc., IB Docket Nos. 11-109 and 12-340, IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, SAT-MOD-20151231-00091, SAT-AMD-20180531-00044, SAT-AMD-20180531-00045, and SES-AMD-20180531-00856 (filed Jul. 26, 2018).

⁵ *See, e.g.*, Opposition of Coalition of Aviation, SATCOM, and Weather Information Users, IB Docket Nos. 11-109 and 12-340, IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, SAT-MOD-20151231-00091, SAT-AMD-20180531-00044, SAT-AMD-20180531-00045, and SES-AMD-20180531-00856 (filed Jul. 25, 2019).

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Ligado's proposals may have on timely and reliable access to weather information.⁶ The public interest will not be served by acting on Ligado's proposals without addressing these substantial lingering issues.

Ligado is not 5G. Perhaps in the hope that repetition creates reality, Ligado again claims to be a 5G player. However, its latest filing provides no further evidence in support of that claim than any prior filing, and in fact provides evidence to the contrary. Ligado explains how a study that it commissioned from Nokia "validate[s] the importance of lower mid-band spectrum to 5G deployments."⁷ It does not. As an initial matter, Ligado glosses over the fact that this study explores only the use of Ligado's spectrum in the context of LTE networks—not 5G networks. Setting aside this fundamental limitation, the Nokia study plainly demonstrates the limited role that Ligado can play even in an LTE network. According to the study, Ligado's proposal to limit downlink power to 9.8 dBW in the 1526-1536 MHz band will require the use of small cell sites that are located at relatively close distances of around 600 meters to operate efficiently. However, the study also indicates that if the Ligado transmitters are located too close together, under around 500 meters, then the network will lose efficiency from co-channel interference. These upper and lower limits mean that for Ligado operate in a spectrally efficient manner it will need to place transmitters only within this "Goldilocks" range between 500 and 600 meters. While it is not clear that such deployment limitations will make Ligado's 1526-1536 MHz spectrum sensible for any terrestrial use, when considered with necessary power limits on Ligado's operations to limit OOB from the 1627.5-1637.5 MHz band to protect Iridium's adjacent band operations and restrictions on Ligado's proposed use of the 1675-1680 MHz to protect incumbent satellite operations, economics will dictate that Ligado only deploys in densely populated urban areas rather than rural areas. Contrary to Ligado's rhetoric, it will not help bridge the digital divide.

In addition to the limitations of Nokia study, Ligado's spectrum remains outside of international 5G standards. Ligado acknowledges that it has not bothered going through the process of achieving 5G standardization under 3GPP, but promises that it "plans to go back to 3GPP for any required modifications."⁸ Such promises ring hollow considering that in 2015 Ligado (then "New LightSquared") said that it was going to be part of the 5G standard by 2017 as part of Release 14.⁹ 3GPP is currently at Release 16, and in the more than 3 years since that

⁶ *Id.* at 15-21.

⁷ Ligado *Ex Parte* at 7.

⁸ *Id.* at 6.

⁹ See Letter from Gerard J. Waldron, Counsel to New LightSquared, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 and 12-340, IBFS File Nos. SAT-MOD-20120928-00160, SAT-MOD-20120928-00161, and SES-MOD-20121001-00872, at 6 (filed Dec. 31, 2015).

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filing Ligado has yet to complete this process. Ligado gives no reason for the Commission to trust this promise any more than those in the past.

Ligado plainly has no role in 5G, and when one weighs the limited utility of its spectrum for a terrestrial network against the substantial risk of harmful interference to incumbents, grant of Ligado's proposals is clearly not in the public interest.

Please direct any questions concerning this submission to the undersigned.

Respectfully Submitted,

/s/ Bryan N. Tramont

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