

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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| In the Matter of |) | |
| |) | IB Docket Nos. 11-109, 12-340 |
| Request for Prompt Commission Action |) | |
| Under Section 7 of Ligado Networks LLC |) | IBFS File Nos. |
| |) | SES-MOD-20151231-00981 |
| |) | SAT-MOD-20151231-00090 |
| |) | SAT-MOD-20151231-00091 |
| |) | SAT-AMD-20180531-00044 |
| |) | SAT-AMD-20180531-00045 |
| |) | SES-AMD-20180531-00856 |
| |) | |

**OPPOSITION OF COALITION OF AVIATION, SATCOM,
AND WEATHER INFORMATION USERS**

COALITION OF AVIATION, SATCOM, AND
WEATHER INFORMATION USERS

July 25, 2019

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**OPPOSITION OF COALITION OF AVIATION, SATCOM,
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I. INTRODUCTION AND SUMMARY

The undersigned coalition of satellite, aviation, and weather data industry leaders (“Coalition”)¹ hereby opposes the request of Ligado Networks LLC (“Ligado”) for action by the Federal Communications Commission (“Commission”) under Section 7 of the Communications

¹ The Coalition members are or represent long-time satellite operators and users of satellite communications (“SATCOM”) in the L-band spectrum. The organizations represented by the Coalition provide and rely upon critical GPS, SATCOM services, and essential weather and other environmental data. Over the course of the Commission’s review of Ligado’s applications, representatives from the aviation, SATCOM, and weather data users have raised their concerns with Ligado’s proposal. *See* Letter from Coalition of Aviation, SATCOM, & Weather Information Users, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340 (filed Oct. 18, 2018); Letter from Coalition of Aviation, SATCOM, & Weather Information Users, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340 (filed Sept. 27, 2018); Letter from Coalition of Aviation, SATCOM, & Weather Information Users, to Ajit Pai, Chairman, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File No. SES-MOD-20151231-00981 et al. (filed July 18, 2018) (“Coalition July 18 Letter”); Letter from Coalition of Aviation, SATCOM, & Weather Information Users, to Ajit Pai, Chairman, FCC, IB Docket Nos. 11-109 & 12-340 (filed June 27, 2017).

Act (“Request”).² Ligado’s Request is totally devoid of merit – the above-referenced license modification applications involve no new technologies or services, as required by Section 7 of the Communications Act, as amended (the “Act”) – and is nothing more than a procedurally deficient attempt to pressure the Commission into short-circuiting its processes and granting license modification applications that would undermine the public interest. The Commission should indeed act promptly – specifically, to deny Ligado’s misguided Request for Section 7 treatment.³

The Commission might be forgiven a sense of *déjà vu* in reviewing Ligado’s pleading. Thirteen years ago, another would-be provider more interested in procedural maneuvering than in the deployment of new technologies or services – in that case, M2Z Networks – similarly sought to wield Section 7 to force Commission approval of its unremarkable and ultimately doomed plans. The Commission rightly repudiated M2Z’s stratagem, finding it substantively flawed and adding that it was procedurally deficient for good measure.⁴ Ligado’s Request is uncannily reminiscent of M2Z’s, and is plagued by the same fundamental flaws.

² Request of Ligado Networks LLC for Prompt Commission Action Under Section 7, IB Docket No. 11-109, SES-MOD-20151231-00981 et al. (June 25, 2019) (“Request”).

³ To the extent that the Commission treats Ligado’s filing as an informal request under Section 1.41 of the Commission’s Rules and subject to the filing periods established by Section 1.45 of the Commission’s rules, the Coalition respectfully requests a waiver of Section 1.45 to consider this opposition as timely filed given the novelty of Ligado’s invocation of Section 7, the complexity of the issues involved, and the Coalition’s efforts to file this opposition as soon as practicable. Given that the Commission did not place Ligado’s Request on public notice and that the Request relates to the ongoing dispute over Ligado’s pending applications, which the Commission has designated permit-but-disclose, the Coalition believes that the Commission intends to treat Ligado’s request as an *ex parte* filing and therefore not as initiating a formal filing window for comments and oppositions.

⁴ After promptly rejecting the M2Z Section 7 request on the merits, the Commission considered the procedural arguments moot, as it represented to the Court of Appeals on review. *See Brief*

First, Ligado’s untimely effort to clothe its longstanding and ill-considered proposals in new Section 7 garb is entirely without merit, as was M2Z’s. Ligado asserts that it proposes to offer a “new technology, 5G,” as well as a new service, and that Section 7 therefore entitles it to a grant of its 2015 license modification applications.⁵ As demonstrated below, however, Ligado is offering nothing that could possibly come within the ambit of Section 7. The mere invocation of the 5G talisman is not sufficient to qualify Ligado’s envisioned offering as a “new” service under Section 7. If it were, literally thousands of pending applications to provide 5G would qualify for Section 7 treatment, circumventing the Commission’s numerous efforts to promote next-generation mobile wireless services. In any event, Ligado’s proposed offering is not even 5G. Indeed, Ligado lacks sufficient contiguous spectrum to provide even a robust 4G solution, let alone 5G – and this is only one of many roadblocks to Ligado’s provision of true 5G. The Commission has notably omitted Ligado or any other L-band spectrum from its 5G FAST Plan.⁶

Moreover, any Section 7 inquiry would necessarily result in a holding that Ligado’s service is *not* “in the public interest.” On this issue, the record is clear: There is nothing new about the technologies and services that are the subject of Ligado’s modification applications. Even assuming *arguendo* that there were, Coalition members and many others have pointed out time and again that a grant of Ligado’s pending applications would *undermine* the public interest by jeopardizing America’s leadership in space across three critical satellite sectors: GPS, Weather, and SATCOM. If Ligado sees Section 7 as a cure-all requiring the Commission to

for Appellee/Respondents, at n.12, *M2Z Networks, Inc. v. FCC*, 558 F.3d 554 (D.C. Cir. 2009) (Nos. 07-1360 & 07-1441). The Commission should do the same here.

⁵ Request at 1 (emphasis omitted).

⁶ See FCC, The FCC’s 5G FAST Plan (Sept. 28, 2018) (“5G FAST Plan”), <https://docs.fcc.gov/public/attachments/DOC-354326A1.pdf>.

ignore the pervasive problems that have precluded approval of its plans until now, it is sorely mistaken.

Second, like M2Z before it, Ligado wrongly implies that because Section 7 establishes a one-year deadline for Commission action on an application proposing a “new technology or service,” the agency should have long ago granted Ligado’s December 2015 applications. “Three years and six months later,” Ligado complains, “the Commission has not ruled on the Applications.”⁷ “Under Section 7,” it contends, “the time for a final Commission decision on the Applications is well past due,”⁸ and – having failed to do so earlier – the Commission must now grant the applications “prompt[ly].”⁹ This is nonsense. Ligado never once mentioned Section 7 in its applications, and – until now – neglected to mention it in the several years since those applications were filed. Under clear Commission precedent, as affirmed by the U.S. Court of Appeals for D.C. Circuit, the one-year period does not begin until the applicant has affirmatively invoked Section 7. Given that Ligado first raised Section 7 in its June 25, 2019 Request, even if Ligado qualifies for Section 7 (which it does not), the Commission has at least until June 25, 2020 to act. Further, by rejecting the Request on its merits expeditiously, the Commission will render the procedural arguments moot.

For these reasons and others, the Commission should reject Ligado’s Section 7 gambit and deny its Request.

⁷ Request at 2.

⁸ *Id.* at 7.

⁹ *Id.*

II. DISCUSSION

A. ***LIGADO WILL NOT PROVIDE “NEW TECHNOLOGIES OR SERVICES” UNDER SECTION 7.***

Ligado’s applications are not eligible for Section 7 treatment, because the offering it proposes is not a “new technology or service” under Section 7. Ligado states that “5G, especially deployed in the satellite and terrestrial networks Ligado is pursuing, represents a new technology or service” eligible for Section 7 treatment.¹⁰ This argument fails. First, 5G does not constitute a new technology or service for Section 7 purposes, as demonstrated by the plentiful assortment of new 5G networks that have already been turned up and continue to proliferate. Second, even if 5G qualified for Section 7 treatment, Ligado’s proposed service would not offer true 5G service. Third, there is nothing new about the technology in Ligado’s proposed system that would otherwise justify application of Section 7.

1. **PROVIDING 5G SERVICE ALONE CANNOT SATISFY SECTION 7.**

Ligado relies on its claim that it plans to offer “5G” service as justification for its Section 7 Request,¹¹ but Commission precedent clearly refutes this logic. In the agency’s words, “since Section 7(b) refers to ‘a new technology or service,’ it cannot be interpreted to endorse methods for the provision of existing services at additional locations, or the continued use of older, outmoded technologies.”¹² In the *M2Z Order*, the Commission explained that where an

¹⁰ *Id.* at 6.

¹¹ *Id.*

¹² *Southwestern Bell Telephone Company Revisions to Tariff F.C.C. No. 6*, Memorandum Opinion and Order, 6 FCC Rcd 3760, 3764 ¶ 31 (1991). *See also Waiver Requests by Clarity Media Systems, LLC, to Operate CARS Stations at Flying J Travel Plazas*, Order, 28 FCC Rcd 9629, 9634 ¶ 14 n.45 (2013) (finding that “wireless cable service” was not eligible for Section 7 treatment because it was “not a new technology or service”).

applicant proposes to use “technologies that other service providers are already using” to provision “a service that currently is being offered by other service providers to consumers,” the application does not “propose[] a ‘new service’ or ‘new technology’ falling within the scope of Section 7.”¹³ For this reason, the Commission declined to review M2Z’s proposed deployment of wireless broadband service under that provision.¹⁴ Similarly, the FCC’s Office of Engineering and Technology and the Wireless Telecommunications Bureau staff concluded last year that a Section 7 request to allow point-to-multipoint services to share the 3.7-4.2 GHz band with fixed services did not qualify as a “new” technology or service under Section 7,¹⁵ because point-to-multipoint services, which are deployed in numerous spectrum bands, are not new, and coordination procedures proposed were frequently used by parties sharing spectrum.¹⁶

Like the offerings considered in 2007 and 2018, 5G is a platform that numerous providers already have deployed or are in the process of deploying. As the Commission has facilitated and well knows, 5G represents a paradigm shift in the broader telecommunications industry that is well underway. A vast array of companies, including chip manufacturers, major wireless network operators, and others, are already provisioning and seeking to launch 5G service in a wide variety of ways.¹⁷ Ligado’s applications are no more eligible for Section 7 treatment than

¹³ *Applications for License and Authority to Operate in the 2155-2175 MHz Band*, Order, 22 FCC Rcd 16563, 16571 ¶ 13 (2007) (“M2Z Order”).

¹⁴ *See id.*

¹⁵ *See* Letter from Julius P. Knapp, Chief, Office of Engineering and Technology, FCC, to The Broadband Access Coalition, RM-11791, at 1 (June 26, 2018).

¹⁶ *Id.*

¹⁷ Just to name a few, Verizon, AT&T, and T-Mobile have all announced that they are already providing 5G services or are aiming to do so soon. *See* News Release, Verizon, *Customers in Denver and Providence are the next to get Verizon 5G Ultra Wideband service*, (June 27, 2019), <https://www.verizon.com/about/news/customers-denver-providence-verizon-5g>; News Release,

M2Z's. This is particularly true given that not a single other provider of 5G (most of whom are far more credible than Ligado) has been granted expedited review under Section 7. It is axiomatic that government should not put its thumb on the scale by affording one company special treatment over similarly situated competitors.¹⁸ Even repeated incantation of the latest industry buzzword – “5G, 5G, 5G” – cannot overcome settled Commission and court precedent and endow Ligado with the special treatment it seeks here.

2. LIGADO IS NOT PROPOSING TO OFFER 5G SERVICE.

Even if invocation of 5G were sufficient to qualify as a new technology or service, Ligado's proposed offering does not provide true 5G. The Commission has recognized as much in declining to include Ligado's spectrum in its 5G FAST plan.¹⁹ In fact, there is nothing new about any of Ligado's outsized claims regarding its expected offerings. Ligado and its predecessors have consistently sought to tempt the FCC with promises of newest, most politically popular flavor of mobile technology. In 2004, the FCC noted that MSV detailed how

AT&T, *AT&T is the First to Offer Mobile 5G in 7 More U.S. Cities* (Apr. 9, 2019), https://about.att.com/story/2019/mobile_5g.html; T-Mobile Sprint, *Creating a 5G Future For All*, New T-Mobile, https://newtmobile.com/?icid=WMM_TM_19NETWORK_JOL45FPNJTU-VK00H116077 (last visited July 25, 2019).

¹⁸ See, e.g., *Airmark Corp. v. FAA*, 758 F.2d 685, 691 (D.C. Cir. 1985) (“Deference to agency authority or expertise ... is not a license to ... treat like cases differently.”) (citation omitted); *Marco Sales Co. v. FTC*, 453 F.2d 1, 7 (2d Cir. 1971) (agency may not “grant to one person the right to do that which it denies to another similarly situated”; there “may not be a rule for Monday, another for Tuesday”) (citation omitted).

¹⁹ See 5G FAST Plan. In identifying prospects for additional mid-band spectrum suitable for 5G, the Commission has identified the 2.5 GHz band (2496-2690 MHz, 194 MHz of contiguous spectrum), the 3.5 GHz band (3550-3700 MHz, 150 MHz of contiguous spectrum) and the 3.7-4.2 GHz band (at least 200 MHz of contiguous spectrum).

its ATC system would successfully utilize GSM (*i.e.*, 2G) technology.²⁰ In 2008, SkyTerra told the SEC that “access to this amount of spectrum provides us with the ability to pursue a network architecture using a choice of third generation (‘3G’) and fourth generation (‘4G’) wireless air interfaces.”²¹ In 2011, the FCC noted LightSquared’s planned deployment of a 4G satellite/terrestrial network in the L-Band when it granted a conditional waiver to LightSquared.²² The fact that Ligado now claims that it is a 5G service is not surprising, but such claims should be summarily dismissed. Ligado’s history indicates a facility for deploying attractive catch-phrases, but a consistent inability to deploy technologies or networks capable of fulfilling its promises to the American people.

Ligado’s current claims are no less hyperbolic than those of times past. In reality, the fractured and encumbered spectrum available to Ligado would not begin to meet America’s 5G needs, for several reasons:

- Ligado’s spectrum holdings are not contiguous and allow only for narrow channel widths with significant interference issues. At best Ligado could provide 10 megahertz-wide channels. This is weak tea in the 5G world, where network designers are contemplating channel widths of 100 megahertz for future 5G applications.²³

²⁰ See *Mobile Satellite Ventures Subsidiary LLC*, Order and Authorization, 19 FCC Rcd 22144 (IB 2004).

²¹ SkyTerra Communications, Inc., Annual Report (Form 10-K) (Feb. 28, 2008), <https://www.sec.gov/Archives/edgar/data/756502/000119312508042020/d10k.htm>.

²² *LightSquared Subsidiary LLC*, Order and Authorization, 26 FCC Rcd 566, 566 ¶ 1 (IB 2011).

²³ For example, in the Commission’s ongoing C-band proceeding numerous commenters mentioned the need for very wide channels for 5G services. See, e.g., Comments of CTIA, GN Docket No. 18-122, at 9 (filed Oct. 29, 2018) (stating that “wide channelization will enable key 5G attributes” and that “the Commission should ensure that licensees can assemble 100 megahertz holdings”); Comments of Qualcomm Incorporated, GN Docket No. 18-122, at 4-5 (filed Oct. 29, 2018) (suggesting that the FCC should consider 100 megahertz channels for increased 5G performance); Comments of Verizon, GN Docket No. 18-122, at 18 (filed Oct. 29, 2018) (stating that “some 5G and other advanced services will require the faster speeds and low

- Most of the spectrum that Ligado would use for its “5G” network is allocated to satellite services. For years, Ligado has failed to demonstrate that its proposed terrestrial operations in those bands will not cause interference to incumbent satellite services.²⁴
- Ligado’s spectrum is not part of the 3GPP standards for 5G, or any other recognized standard, and much of the spectrum Ligado proposes for its network is not even harmonized regionally for terrestrial use. Although Ligado mentions that it has been working with Nokia and Ericsson to “formulate specific inputs for Ligado’s 3GPP plan,”²⁵ and even quotes from technical studies apparently conducted by these companies,²⁶ the quoted studies are unavailable to the public. Ligado apparently wants the Commission to accept its statements at face value without providing any factual support – a common tactic for Ligado, but no basis for treating Ligado as part of the 5G future.

Ligado’s inability to provision true 5G again places it on the wrong end of the Commission’s M2Z precedent. Rejecting M2Z’s bid for Section 7 review, the Commission found that “the relatively slow speed of M2Z’s proposed broadband service does not support its Section 7 claim that is proposing to provide a ‘new’ technology or service.” It further observed that “the transmission speeds proposed by M2Z are unremarkable compared to other broadband services currently being deployed.” For these reasons, as well as those discussed above, the agency “conclude[d] that M2Z’s proposed service does not exemplify a ‘new technology or service’ contemplated by Section 7, and thus that its application does not fall within the scope of that section.” Indeed, “in light of the relatively slow speed proposed and the evolving nature of

latency that can be delivered over 100 megahertz channels”). *See also*, *5G Spectrum*, GSMA Public Policy Position, at 4, GSMA (Nov. 2018), <https://www.gsma.com/spectrum/wp-content/uploads/2018/11/5G-Spectrum-Positions.pdf> (noting that regulators should “aim to make available 80-100 MHz of contiguous spectrum per operator” available for 5G).

²⁴ *See infra* Section II.C.

²⁵ Request at 11.

²⁶ *Id.* at 11-12, nn. 26 & 27.

broadband internet access service, the grant of such an application would not serve the public interest.”²⁷

There is similarly nothing about Ligado’s vague references to its satellite offering that would justify consideration under Section 7. Ligado works to rewrite history, claiming it is the first to propose such a combined satellite-terrestrial ATC network, when the Commission adopted rules for it *nearly 20 years ago*.²⁸ It obviously is not.²⁹ Ligado would also apparently have the Commission ignore the dismal history of ATC service since those rules were adopted: Not a single ATC terminal has been deployed by Ligado or its predecessors. As for the satellite network that would “support” this “new” ATC system, Ligado currently operates three satellites launched many years ago and has shown no intent to replace any of them.³⁰ Two of these satellites, MSAT-1 and MSAT-2, are each well over 20 years old – ancient given the

²⁷ *M2Z Order*, 22 FCC Rcd at 16572 ¶ 14.

²⁸ *See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L Band, and the 1.6/2.4 GHz Bands*, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962 (2003).

²⁹ *See* Letter from Lawrence H. Williams & Suzanne Hutchings, New ICO Global Communications (Holdings) Ltd., to Michael K. Powell, Chairman, FCC, IB Docket No. 99-81 (Mar. 8, 2001) (seeking flexibility to integrate an ancillary terrestrial component into its satellite network by re-using assigned MSS frequencies); Application filed by Motient Services Inc. & Mobile Satellite Ventures Subsidiary LLC for Assignment of Licenses and for Authority to Launch and Operate a Next-Generation Mobile Satellite Service System, IBFS File No. SAT-ASG-20010302-00017 et al. (Mar. 2, 2001) (same).

³⁰ In addition, Ligado is flouting the gating criteria rules created to ensure that the terrestrial portion of ATC remains truly *ancillary* to the satellite operations by proposing a terrestrial service that effectively removes the ancillary nature of its proposed services. Letter from Bryan N. Tramont & Patrick R. Halley, Counsel to Iridium Communications Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File No. SES-MOD-20151231-00981 et al., at 5 (filed Aug. 3, 2017).

advancements in satellite technology – and MSAT-2 is in any event only a backup.³¹ Even the SkyTerra-1 satellite, which Ligado has preposterously described as “one of the most sophisticated satellites flying today,”³² is nearly 10 years old. There is no evidence that Ligado has made any significant investment in its satellite service in years, nor that it has any intent to do so going forward. In sum, there is nothing new that would justify any consideration under Section 7.

3. LIGADO’S PROPOSED SYSTEM IS NOT OTHERWISE A NEW TECHNOLOGY OR SERVICE UNDER SECTION 7.

Nor is there anything else about Ligado’s proposal that justifies Section 7 review. Buzzwords notwithstanding,³³ Ligado is offering nothing new. Ligado states that it will offer “custom private networks.”³⁴ Private networks have existed in various forms for years.³⁵ The fact that the concept represents a new business plan *for Ligado* does not make it a new service for Section 7 purposes. Nor is there anything about the spectrum that Ligado proposes to use that would render its private network services or technologies “novel.”³⁶ Further, Ligado is

³¹ See Ligado Networks Subsidiary LLC, IBFS File No. SAT-MOD-20181214-00090, Exhibit D at 1 (Dec. 14, 2018) (stating that MSAT-2 “currently does not carry customer traffic”).

³² Reply Comments of Ligado Networks LLC, IB Docket No. 16-131 & CB Docket No. BO 18-31, at 2 (filed Jan. 23, 2019).

³³ See, e.g., Request at 6 (claiming that Ligado is “pioneering first-of-its-kind, seamless satellite and terrestrial connectivity enabled by this spectrum to deliver 5G and Internet of Things (‘IoT’) services to industrial customers via custom private networks”).

³⁴ See *id.* at 10-11.

³⁵ For example, the Union Pacific Corporation, a railroad company, operates one of the largest private communications networks in the country. See Comments of Union Pacific, GN Docket No. 17-258 (filed Dec. 28, 2017).

³⁶ Private networks use many different frequency bands. For example, in a recent filing in the docket for the Commission’s ongoing C-Band proceeding, Robert Bosch LLC noted that internationally several countries, including Japan, the UK, Germany, and Sweden are looking at

hardly the first provider interested in facilitating IoT connections: IoT applications and services have been in use for many years,³⁷ and the fundamental principle of IoT has been well established for at least a decade.³⁸ Ligado’s decision to target “industrial customers” does not rescue its bid for Section 7 treatment either, for industrial customers have *always* consumed communications offerings, including wireless offerings which support IoT machine-to-machine communications.

In short, there is nothing whatsoever either new or innovative about Ligado’s proposed offering. If Ligado wants to make a serious attempt at deploying truly novel facilities or services, warranting Section 7 treatment, it should consider actually investing in its network rather than its army of lobbyists.³⁹

B. *EVEN IF SECTION 7 APPLIED HERE, THAT PROVISION’S SHOT CLOCK ONLY STARTED TICKING ON JUNE 25, 2019.*

Ligado’s core claim is that, under Section 7, the Commission had just one year to act on its applications, and that the agency failed to do so. Even if Ligado’s license modification applications constituted efforts to introduce a new technology within the meaning of Section 7 (which, as described above, they do not), its Request unravels under even the mildest scrutiny, because the Commission and the courts alike have held that the clock only begins ticking when

the C-Band for use in private networks. *See* Comments of Robert Bosch LLC, GN Docket Nos. 18-122 & 17-183, at 11, 9-16 (filed June 10, 2019).

³⁷ *See* Dave Evans, *The Internet of Things: How the Next Evolution of the Internet Is Changing Everything*, at 2, Cisco (Apr. 2011), https://www.cisco.com/c/dam/en_us/about/ac79/docs/-innov/IoT_IBSG_0411FINAL.pdf (defining IoT as “the point in time when more ‘things or objects’ were connected to the Internet than people”) (citation omitted).

³⁸ *See id.* at 2-3 (IoT was first realized as early as 2010).

³⁹ Ligado has spent nearly \$18 million spent on lobbying in less than 10 years, with total fees of \$2,835,000 in 2016, \$2,480,000 in 2017, and \$3,315,000 in 2018. In the first half of 2019 alone, Ligado has already spent \$2,400,000. Of course, mere investment in a network would not qualify for Section 7 treatment, in any event, though it would be a start.

an applicant has expressly invoked Section 7. Here, Ligado first referenced Section 7 in its June 25, 2019 filing. As such, even if Section 7 applied, the Commission would have until June of 2020 to respond.

Ligado repeats *ad nauseum* the fact that it filed its applications more than 1,200 days ago. But that point does not advance Ligado's cause, because until a few weeks ago, Ligado never sought relief under Section 7. Its applications did not mention that provision, let alone attempt to show that the statutory requirements were met. Now, more than 1,200 days later, Ligado argues for the first time that the applications must be considered under Section 7. If anyone is untimely here, it is Ligado – by more than 1,200 days.

Ligado cites no Commission rule or precedent supporting its claim that the Commission was obliged to undertake a Section 7 review in the absence of any request that it do so. To the contrary, it *ignores* Commission and court precedent making clear that the agency has no such duty, failing to mention that this very issue was resolved in the Commissions' consideration of a similarly ill-conceived request made by M2Z Networks in 2006. M2Z had filed an application to provide service in the 2155-2175 MHz band on May 5, 2006. That application did not mention Section 7. M2Z only first mentioned Section 7 in a September 1, 2006 filing, and first requested Section 7 treatment for its application in March 2007.⁴⁰ The Commission denied M2Z's application on August 31, 2007,⁴¹ explaining that it had complied with the Section 7's time period for action.⁴² The Commission asserted that it "d[id] not believe that the one-year

⁴⁰ See *M2Z Order*, 22 FCC Rcd at 16574 ¶ 17.

⁴¹ See generally *id.*

⁴² See also *supra* note 4.

timeframe specified in Section 7(b) can be triggered by the filing of an application that does not purport to offer a new technology or service under section 7.”⁴³ The one-year timeframe “could not have begun to run until September 1, 2006 *at the earliest*” – *i.e.*, when M2Z first mentioned the provision in connection with its application.⁴⁴ An applicant, the Commission emphasized, “cannot retroactively trigger the Section 7 one-year time frame by engaging in procedural gamesmanship and later claiming that Section 7 applies to a prior-filed application.”⁴⁵ On appeal, the U.S. Court of Appeals for the District of Columbia Circuit agreed, observing that M2Z could not “force the FCC to act in less time than the statute permits” by “piggy-backing” a Section 7 petition on its prior application.⁴⁶ More recently, the Commission proposed rules to establish a framework consistent with its M2Z ruling and the D.C. Circuit’s decision.⁴⁷ Those proposed rules provide that any request for Section 7 must be made explicit at the time an application is filed.⁴⁸ Ligado notes the existence of the ongoing Section 7 NPRM,⁴⁹ but makes no attempt to follow any of the Section 7 processes proposed therein, or to adhere to the M2Z ruling and D.C. Circuit precedent.

Now that Ligado has invoked Section 7, the Commission may ultimately decide to address its Section 7 arguments (which are, as discussed above, substantively meritless). But Ligado’s insistence that the Commission has *already* missed the Section 7 deadline is frivolous.

⁴³ *M2Z Order*, 22 FCC Rcd at 16574 ¶ 17.

⁴⁴ *Id.* (emphasis added).

⁴⁵ *Id.* at 16574-75 ¶ 17 (citation omitted).

⁴⁶ *M2Z Networks*, 558 F.3d at 562 n.2.

⁴⁷ *Encouraging the Provision of New Technologies and Services to the Public*, Notice of Proposed Rulemaking, 33 FCC Rcd 2512 (2018) (“Section 7 NPRM”).

⁴⁸ *See id.* at 2516 ¶ 13.

⁴⁹ Request at n.15.

If left unanswered, Ligado's argument could open the door to every pending applicant to invoke Section 7 *post hoc*, claim that it had proposed a new technology or service, and argue that the one-year period began to run when its application was filed. The Commission would be faced with innumerable claims that it violated Section 7 and be forced to divert its finite resources to addressing those claims. To avoid this outcome, it is imperative that the Commission directly and expeditiously address, as it did for M2Z, Ligado's improper attempt to relate back its Section 7 request.

C. *EVEN IF IT WERE OFFERING A NEW TECHNOLOGY OR SERVICE, LIGADO HAS NOT RESOLVED LONGSTANDING PUBLIC INTEREST CONCERNS WITH ITS PROPOSED TERRESTRIAL NETWORK.*

Not only does Ligado have to provide a new technology or service to merit Section 7 treatment, its technology or service must be in the public interest. Grant of Ligado's applications based on the current record would not further the public interest. Rather, as currently articulated, Ligado's applications would be counter to the public interest.

In support of its Request, Ligado claims that it has resolved all concerns arising from its application, including those related to GPS devices and aviation, as well as other problems such as those raised by Iridium Communications Inc. ("Iridium").⁵⁰ Ligado's asserted reality is a myth. In fact, Ligado's proposed network poses grave risks to the reliability of critical position, navigation and timing ("PNT") services, including GPS, and to an emerging satellite time and location ("STL") capability augmenting GPS. Moreover, tests conducted by the National Space-Based Positioning, Navigation, and Timing Systems Engineering Forum ("NPEF"), the Department of Transportation ("DOT"), and others found significant flaws in the methodology

⁵⁰ *Id.* at 18-19.

Ligado used to “demonstrate” that its proposed terrestrial operations will not interfere with GPS.⁵¹ Last year, DOT confirmed in its Adjacent Band Compatibility Assessment that Ligado’s service would cause interference for all classes of GPS, leaving a GPS receiver “unpredictable in its ability to meet the accuracy, availability, and integrity requirements of its intended application.”⁵² And in an August 2018 letter to the PNT Executive Committee, the PNT Advisory Board – led by the nation’s foremost GPS experts – stated plainly that Ligado’s proposal “will create totally unacceptable interference for a great number of GPS users in the United States.”⁵³ Ligado suggests that major GPS manufacturers are content that its operations

⁵¹ See National Space-Based Positioning, Navigation, and Timing Systems Engineering Forum, *Assessment to Identify Gaps in Testing of Adjacent Band Interference to the Global Positioning System (GPS) L1 Frequency Band*, Final Report (Mar. 5, 2018), <https://www.gps.gov/spectrum/-ABC/2018-03-NPEF-gap-analysis.pdf>. The analysis was done at the request of the National Executive Committee for Space-Based Positioning, Navigation, and Timing (“PNT EXCOM”). Notably, in July of 2017 the PNT Advisory Board recommended to the PNT EXCOM that it “reaffirm the conclusion in the 2012 letter” to NTIA “stating the unanimous conclusion of the PNT EXCOM agencies that [Ligado’s] proposed mobile network would cause harmful interference to many GPS receivers.” See Letter from John Stenbit, Chair, National Space-based PNT Advisory Board, to Robert O. Work, Deputy Secretary, U.S. Department of Defense, Jeffrey A. Rosen, Deputy Secretary, U.S. Department of Transportation, & the National Executive Committee for Space-based Positioning, Navigation and Timing, at 1-2 (July 5, 2017), <https://www.gps.gov/governance/advisory/recommendations-/2017-07-letter-to-excom.pdf>.

⁵² See U.S. Department of Transportation, *Global Positioning System (GPS) Adjacent Band Compatibility Assessment*, Final Report, at IV (Apr. 2018), <https://www.transportation.gov/sites/dot.gov/files/docs/subdoc/186/dot-gps-adjacent-band-final-reportapril2018.pdf>.

⁵³ Letter from Bradford W. Parkinson, 1st Vice-Chair, on behalf of the PNT Advisory Board, to Patrick M. Shanahan, Deputy Secretary, U.S. Department of Defense, Jeffrey A. Rosen, Deputy Secretary, U.S. Department of Transportation, & Co-Chairs, National Executive Committee for Space-based Positioning, Navigation and Timing, at 3 (Aug. 10, 2018), <https://www.gps.gov/governance/advisory/recommendations/2018-08-letter-to-excom.pdf>.

will not interfere with their GPS devices,⁵⁴ but entities including Garmin, Trimble Inc., and others have repeatedly repudiated that claim.⁵⁵

Ligado has also failed to resolve specific concerns about the threat posed by its proposed system to aviation safety. Last year a letter from eleven national aviation organizations to Federal Aviation Administration (“FAA”) Acting Administrator Daniel Elwell stated that “[t]here remain outstanding issues that call into question the impacts such a system would have on airspace safety.”⁵⁶ In a letter to the Commission, aviation interests specifically stated that “[t]he concerns and safety issues of the [aviation] industry have NOT been addressed, particularly when considering the lack of testing in key areas.”⁵⁷ Ligado has yet to present any new information that addresses such concerns about the impact of its operations on uncertified GPS receivers and protection of GPS receivers generally from aggregate interference.

⁵⁴ Letter from Gerard J. Waldron, Counsel to Ligado Networks LLC, to Marlene H. Dortch, Secretary, FCC, IB Docket No. 11-109, IBFS File No. SES-MOD-20151231-00981 et al., at 1-2 (filed Apr. 12, 2018).

⁵⁵ See Letter from M. Anne Swanson, Counsel to Garmin International, Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File No. SAT-MOD-20120928-00160 et al., at 2-3 (filed May 16, 2018); Letter from M. Anne Swanson, Counsel to Garmin International, Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File No. SAT-MOD-20120928-00160 (filed Mar. 19, 2018); Letter from F. Michael Swiek, Executive Director, GPS Innovation Alliance, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File No. SAT-MOD-20120928-00160 et al. (filed July 13, 2017); Comments of Trimble Inc., IB Docket Nos. 11-109 & 12-340, IBFS File No. SES-MOD-20151231-00981 (filed July 9, 2018); Comments of Trimble Navigation Limited, IB Docket Nos. 11-109 & 12-340, at 15 (filed May 23, 2016); Letter from Edward A Yorkgitis, Jr., Counsel for Aviation Spectrum Resources, Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340; IBFS File No. SES-MOD-20151231-00981 et al., at 2, Attachment B at 3 (filed July 29, 2016); Reply Comments of Deere & Company, IB Docket Nos. 11-109 & 12-340, IBFS File Nos. SAT-MOD-20120928-00160 et al., at 7-9 (filed June 21, 2016).

⁵⁶ Coalition July 18 Letter at 2 (quoting Letter from Eleven Aviation Organizations to Daniel K. Elwell, Acting Administrator, Federal Aviation Administration, IB Docket Nos. 11-109 & 12-340 (filed June 18, 2018)).

⁵⁷ *Id.* at 2.

On the SATCOM side, interference to the mobile satellite service (“MSS”) from Ligado’s terrestrial operations at 1627.5-1637.5 MHz remains a serious concern. Iridium operates an MSS network in the 1617.775-1626.5 MHz, and has submitted analyses demonstrating that Ligado’s proposed out of band emission limits will cause interference to Iridium’s operations.⁵⁸ Neither in its amendments to its applications nor in any of its other filings has Ligado ever addressed the serious harmful interference concerns raised by Iridium.

Interference to SATCOM also exists with respect to critical air traffic control and other safety-of-life communications used by the commercial and general aviation industry with the Inmarsat MSS network. Ligado has acknowledged the potential interference to SATCOM transceivers installed on thousands of in-service aircraft, indicating in June 2016 that it would “collaborate” with Inmarsat and others “in an effort to resolve these issues.”⁵⁹

Aviation industry studies have determined that the interference from Ligado’s network could likely be avoided through the installation of a new Diplexer/Low Noise Amplifier (“DLNA”) in each aircraft. This retrofit process across thousands of in-service aircraft, however, would certainly be time-consuming and costly. Extensive efforts would be needed to design, test, and secure Type Certifications from the FAA for every type of aircraft utilizing the satellite system. Additional time would be required to deploy these devices on a rolling basis on commercial and government aircraft as they become available for routine servicing.

⁵⁸ Letter from Bryan N. Tramont & Patrick R. Halley, Counsel to Iridium Communications Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 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 & 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 & 12-340 (filed Sept. 1, 2016).

⁵⁹ Further Reply Comments of Ligado Networks LLC, IB Docket No. 11-109, at 8 (June 21, 2016).

Compensation would also be required to cover the significant installation costs for aircraft servicing centers and lost opportunity costs for aircraft owners.

Although Ligado has previously acknowledged its responsibility to ensure this retrofit process is funded and completed, Ligado is now disclaiming any such obligation, asserting to the Commission that “this dispute is at bottom a disagreement between a vendor and its customers, an issue that is being played out around the globe and does not involve Ligado.”⁶⁰

Of course, ensuring the reliability of aviation safety communications is not simply a matter of private contract, it is a fundamental public interest obligation of the Commission. Therefore, the Commission must ensure that this issue is resolved fully before Ligado is authorized to operate its proposed terrestrial broadband communications network in the L-band.

Finally, there is the ongoing threat posed by Ligado’s proposed terrestrial network to weather data users in the 1675-1680 MHz band. NOAA Geostationary Operational Environmental Satellite (“GOES”) satellites operate in the 1675-1695 MHz band and provide real-time environmental data via direct broadcast and data collection systems, which provide important early-warning capabilities to numerous state/local emergency officials.⁶¹ The Commission recently adopted an NPRM proposing to authorize terrestrial use of the 1675-1680 MHz band.⁶² However, the substantial record produced in response to Ligado’s Petition for Rulemaking and the Commission’s NPRM to date includes comments from numerous weather

⁶⁰ Request at 19 n.51.

⁶¹ Users of the GOES system include a diverse range of interests, including weather forecasting companies like AccuWeather, Inc., state and local government entities like the City of Portland Water Bureau and the Colorado Water Conservation Board, universities like the University of North Florida, and meteorologists like Mike Nelson of KMGH-TV Denver.

⁶² *Allocation and Service Rules for the 1675–1680 MHz Band*, Notice of Proposed Rulemaking, FCC 19-43 (rel. May. 13, 2019) (“NPRM”).

data users who rightfully raise concerns about the impact terrestrial operations, like those Ligado has championed, could have on the groups that receive and depend upon real-time weather and environmental information from NOAA satellites. In particular, the concerned commenters, call into question the effectiveness, timeliness, and reliability of weather data provided through Ligado’s proposed “content delivery system,” and the detrimental impact terrestrial operations could have on weather forecast accuracy and public safety relying on the 1675 MHz band.⁶³ NOAA is conducting an ongoing Spectrum Pipeline Reallocation Engineering Study that explores the impact of potential spectrum sharing in this band. The Commission should not proceed with this rulemaking until the NOAA study is complete.⁶⁴

In short, Ligado’s proposed terrestrial operations have been proven to cause harmful interference to the countless government and commercial entities that rely on GPS and SATCOM services. This interference will threaten aviation safety, other critical services, and citizens who depend upon real-time weather and related environmental information from NOAA. Ligado has *not* addressed these fundamental concerns, and a grant to Ligado before it does so would disincentivize operators from investing in communications services with high sunk

⁶³ See, e.g., Comments of AccuWeather, Inc., WT Docket No. 19-116 (filed June 21, 2019); Comments of American Geophysical Union, American Meteorological Society, & National Weather Association, WT Docket No. 19-116 (filed June 20, 2019) (“American Geophysical Union Comments”); Comments of the National Hydrologic Warning Council, WT Docket No. 19-116 (filed June 20, 2019); Comments of The Boeing Company, WT Docket No. 19-116 (filed June 21, 2019); Comments of Lockheed Martin Corporation, WT Docket No. 19-116 (filed June 21, 2019) (“Lockheed Martin Comments”); Comments of Advanced Environmental Monitoring, WT Docket No. 19-116 (filed June 20, 2019).

⁶⁴ See, e.g., Lockheed Martin Comments at 4; American Geophysical Union Comments at 3; Comments of Brian Kopp, WT Docket No. 19-116, at 5 (filed June 21, 2019); Comments of OTT Hydromet Corp., WT Docket No. 19-116, at 1 (filed June 21, 2019); Comments of Space Science and Engineering Center, WT Docket No. 19-116, at 1 (filed June 27, 2019).

investment costs.⁶⁵ Unless and until Ligado addresses these concerns – in a manner satisfactory to the Commission and other authorities, not merely to Ligado itself – the public interest will not be served by authorizing Ligado’s proposed system, under Section 7 or any other authority.

III. CONCLUSION

The Commission must look past Ligado’s rhetoric to see that its request for action under Section 7 is deficient, both substantively and procedurally. Ligado’s license modification requests are not eligible for Section 7 review. Ligado’s failure to put any new services or technologies before the Commission, as well as the overriding public interest harm, preclude grant of Ligado’s applications, whether pursuant to Section 7 or otherwise. Even if Ligado had, for the sake of argument, presented new technologies or services, at best, the one-year timeline only began at the point at which Ligado sought such review – on June 25, 2019. The Commission should reject Ligado’s Request, making clear that Ligado should devote its attention not to substantive shortcuts and procedural gimmicks but rather – finally – to actually curing the many serious defects that plague its proposal.

⁶⁵ See T. Randolph Beard, George S. Ford, & Michael Stern, *Skin in the Game: Interference, Sunk Investment, and the Repurposing of Radio Spectrum*, Phoenix Center Policy Bulletin No. 40, at 24 (Mar. 2017), <http://www.phoenix-center.org/PolicyBulletin/PCPB40Final.pdf> (noting that a failure by the Commission to properly account for interference concerns raised in the Ligado case by entities with significant sunk cost investments may discourage long-term investment in activities requiring such high sunk costs and deprive the public of social benefits).

Respectfully submitted,

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