

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Revision or Elimination of Rules Under the)	CB Docket No. BO 18-31
Regulatory Flexibility Act, 5 U.S.C. § 610)	
)	
2016 Biennial Review of Telecommunications)	IB Docket No. 16-131
Regulations)	

To: Federal Communications Commission

COMMENTS OF IRIDIUM

Bryan N. Tramont
Patrick R. Halley
Wilkinson Barker Knauer, LLP
1800 M Street, NW Suite 800N
Washington, DC 20036
202.783.4141
Counsel to Iridium

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EXECUTIVE SUMMARY

Ensuring spectrum policies meet the ever-changing needs of the American people in a constantly evolving technological landscape is a complex and challenging task. Sometimes innovative spectrum policy choices result in massive benefits to society. Take for example the Federal Communications Commission's ("FCC" or "Commission") decision to open up airwaves for Wi-Fi service, or the Commission's recently completed Broadcast Incentive Auction. Other times well-intentioned policy choices do not pan out, with the vision failing to become reality.

That is the case with the Commission's Ancillary Terrestrial Component ("ATC") rules. A policy vision fifteen years ago of supplemental terrestrial service to augment the reach of satellite networks has resulted in a total of exactly zero ATC deployments, multiple bankruptcies, costly litigation, and countless waivers and rulemaking requests producing substantial work for the FCC and other federal government stakeholders with no countervailing benefits. Sometimes regulations are simply a mistake. When this occurs, the FCC should correct the mistake. While well-intentioned, the ATC rules have not worked, and cannot work as envisioned. They should be rescinded.

In 2003, after significant debate about the technical and economic feasibility of the proposal, the Commission adopted new rules to allow Mobile Satellite Service ("MSS") operators to seek authority to integrate a terrestrial component into their operations in three spectrum bands so long as that terrestrial component remained ancillary to the satellite services. In the United States, MSS operations are authorized in the L band (1525-1544, 1545-1559 MHz; 1626.5-1645.5, 1646.5-1660.5 MHz), Big LEO band (1610-1626.5 MHz; 2483.5-2500 MHz), and 2 GHz MSS band (2000-2020 MHz; 2180-2200 MHz). This ancillary terrestrial component could be deployed only by an MSS provider operating in its satellite frequency band. The

Commission adopted the rules under the theory that they would allow MSS operators to expand their reach in areas that were previously difficult to serve with satellite services alone, such as urban areas and inside buildings. Over the past fifteen years, the Commission has granted applications to deploy ATC operations to four MSS operators, and their successors-in-interest. However, to date, MSS providers have been unable to deploy a single viable ATC service. Unable to meet the ATC rules, MSS operators have sought numerous waivers of the very rules the Commission adopted to ensure that ATC operations remain ancillary to MSS operations.

While each ATC proposal has been different, MSS operators never attempted to deploy ancillary terrestrial service consistent with the Commission's rules or the original theory of ATC. The 2003 *ATC Order* was based on the premise that only a single integrated operator could provide ATC in a manner that avoids interference to the MSS service. Yet, none of the MSS operators have tried to build an integrated solution, instead seeking waiver after waiver of the ATC rules in order to segment the bands into satellite and terrestrial services in a manner the Commission initially sought to prevent.

When it adopted the ATC rules, the Commission set five specific gating criteria which, if met, would ensure that MSS operators provide substantial satellite service and that ATC operations would remain ancillary to MSS. To meet the substantial satellite service requirement, the MSS provider must provide continuous satellite service in specified geographic areas, maintain one or more spare satellites, make MSS commercially available throughout the required coverage area, integrate ATC operations into the underlying satellite service, and satisfy gating criteria for each spectrum band in which the operator wishes to provide ATC. No company has made any serious attempt to satisfy these rules, instead asking the FCC to ignore its framework

in order to allow separate satellite and terrestrial operations or abandoning satellite altogether. For example, Globalstar’s current terrestrial service authorization was issued with a “limited exception” to the requirement that it meet three of the gating criteria. Similarly, LightSquared (now Ligado) has sought to waive three of these gating criteria in its effort to obtain authority for its proposed terrestrial service in addition to waivers of multiple technical rules. For two ATC applicants (DBSD and Terrastar), 2 GHz MSS spectrum has been completely converted to terrestrial and the ATC rules no longer apply. Recognizing the challenges of successfully deploying an ATC service, other MSS companies have not shown interest in providing terrestrial service and have never sought ATC approval, including L-Band operators Iridium and Inmarsat. When half the ATC applicants have abandoned the ATC rules entirely and the remaining two have sought waiver of at least sixty percent of the core ATC rules and significant technical rules – and ATC services have still never been deployed – the rules need to be reassessed.

In eliminating the ATC rules for the 2 GHz band, the Commission stated its intention to address issues pertaining to the ATC rules for the L-band and the Big LEO band in separate proceedings at a later date. The six intervening years have not brought ATC deployment in the L or Big LEO bands – instead the rules have only facilitated countless hours of government and commercial lawyers and engineers assessing applications from MSS operators to provide terrestrial operations in MSS bands that bear no resemblance to the ATC rules. Consistent with the Commission’s recognition in the 2 GHz MSS band that ATC regulations are not the best framework for developing and deploying terrestrial broadband operations, the Commission should commence a proceeding to also consider eliminating the ATC rules in the L and Big LEO bands.

The Regulatory Flexibility Act proceeding seeks comment on whether rules adopted by the Commission in calendar years 2005 – 2006 should be continued without change, or should be amended or rescinded. Among the rules under review are the ATC rules found in Part 25 at 47 C.F.R §§ 25.149, 25.253-255. Given that: (1) there is no continued need for the rule since it has been demonstrated that the rules do not work; (2) the rules have resulted in countless complaints over harmful interference from proposals that seek to skirt the rules creating a substantial burden for the Commission, other federal agencies, and numerous companies impacted by such proposals; (3) the rules are extremely complex, yet apply to no one; and (4) the fact that rules were adopted fifteen years ago (and revised in 2005) without being revisited despite a record of failure to deploy a single ATC service, pursuant to the Regulatory Flexibility Act, the Commission should commence a proceeding to eliminate the ATC provisions from Part 25 and Part 2 of the Commission's rules. Further, the 2016 Biennial Review proceeding also seeks comment on rules that should be modified or repealed if they are no longer necessary or in the public interest. If the Commission prefers not to address the elimination of the rules in either of the above-captioned proceedings, then the Commission should initiate a new rulemaking proceeding seeking comment on the elimination of the ATC provisions in Parts 2 and 25 of the Commission's rules consistent with these comments.

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COMMENTS OF IRIDIUM

I. INTRODUCTION

Iridium Communications Inc. (“Iridium”) hereby submits these comments in response to the Federal Communications Commission’s Public Notice (“Notice”) in the above-captioned proceeding seeking comment on rules adopted by the Commission in calendar years 2005-2006.¹ Specifically, the Commission asks whether identified rules should be continued without change, or should be amended or rescinded, consistent with the stated objective of the Regulatory Flexibility Act (“RFA”).²

¹ *FCC Seeks Comment Regarding Possible Revision or Elimination of Rules Under the Regulatory Flexibility Act, 5 U.S.C. Section 610*, Public Notice, DA 18-115 (rel. Apr. 6, 2018), published in 83 Fed. Reg. 36848 (July 31, 2018); *See also Commission Seeks Public Comment in 2016 Biennial Review of Telecommunications Regulations*, Public Notice, 31 FCC Rcd 12166 (2016) (“2016 Biennial Review Notice”) (seeking comment on rules that should be modified or repealed if they are no longer necessary or in the public interest).

² 5 U.S.C. § 610(a).

Among the rules identified in the Notice are the Ancillary Terrestrial Component rules.³ The ATC rules were created in 2003 and modified in 2005, allowing Mobile Satellite Service operators to seek authority to integrate an ancillary terrestrial component into their operations. The Commission envisioned the ATC rules as a means of enabling MSS operators to “enhance[] their ability to offer high-quality, affordable mobile services on land, in the air and over the oceans without using any additional spectrum resources beyond spectrum already allocated and authorized by the Commission for MSS in these bands.”⁴ The ATC rules were intended to enable MSS operators to provide better coverage in areas they could not otherwise serve via satellite, particularly in urban areas and inside buildings, without causing interference to incumbent MSS operators. Unfortunately, the Commission’s objectives have not come anywhere close to being realized.

When the rules were established one Commissioner accurately noted that creating the opportunity for terrestrial use of MSS spectrum “raises the possibility of unintended consequences – our decision should not allow a Mobile Satellite Services (MSS) system with an ancillary terrestrial component to evolve into a terrestrial system with an ancillary mobile satellite component.”⁵ Commissioner Adelstein’s fears have become reality – rather than deploying ancillary terrestrial systems that supplement MSS services, over the past fifteen years multiple MSS/ATC operators have sought increasingly greater terrestrial flexibility in the MSS bands to the point that the “ancillary” focus of the rules has been completely lost. These efforts have resulted in a string of waivers of the ATC rules and authorizations (not to mention a string

³ 47 C.F.R §§ 25.149, 25.253-255.

⁴ *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, 1964, ¶ 1 (2003) (“ATC Order”).

⁵ *Id.* at 2222 (Statement of Commissioner Jonathan Adelstein).

of bankruptcies and constantly changing business plans). The reality is that as ATC applicants have pushed to remove the “ancillary” nature of their proposed services, the likelihood of substantial interference to their spectrum neighbors, and their own MSS operations, has dramatically increased. Ultimately, the flexibility sought by ATC applicants has changed the nature of ATC such that the only way for the terrestrial component to work is if satellite service becomes ancillary to the terrestrial component. This is specifically what the Commission sought to avoid when it established the rules.

The Commission should end the fiction that ATC is a viable framework and eliminate the ATC rules. Such action is appropriate given (1) the rules as written have not been utilized by a single company to deploy ATC; (2) the virtual certainty that the rules will continue to fail to yield successful deployment of ancillary terrestrial systems, and (3) the substantial resources the government and private parties have expended in response to the various contortions of the ATC rules.⁶ Specifically, the Commission should seek comment on removing the ATC rules in the portions of the L-band (1525-1544, 1545-1559 MHz; 1626.5-1645.5, 1646.5-1660.5 MHz) and Big LEO band (1610-1626.5 MHz; 2483.5-2500 MHz) that are allocated for MSS. The Commission should acknowledge that the ATC rules have not provided the intended benefits, and it should propose to maintain certain bands for MSS-only service as they were prior to the 2003 ATC Order.⁷

⁶ The Presidential Executive Order on Reducing Regulation and Controlling Regulatory Costs states that “[i]t is the policy of the executive branch to be prudent and financially responsible in the expenditure of funds, from both public and private sources. In addition to the management of the direct expenditure of taxpayer dollars through the budgeting process, it is essential to manage the costs associated with the governmental imposition of private expenditures required to comply with Federal regulations.” See Presidential Executive Order on Reducing Regulation and Controlling Regulatory Costs Executive Order No. 13771, 82 Fed. Reg. 9339, 9339 (Fed. 3, 2017).

⁷ Nothing in this filing is intended to impact Globalstar’s terrestrial service authorization. See *Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks; Amendments to Rules for*

To the extent that the FCC is interested in terrestrial flexibility, each band requires a unique assessment tailored to the conditions in a given band. As described below, the Commission has already granted such flexibility in the 2 GHz MSS band where operating conditions made full terrestrial operations viable consistent with the public interest (and facilitated elimination of the ATC rules for that band). At the same time, the Commission must balance the desire for additional terrestrial spectrum with the need to support existing critical satellite services and new satellite opportunities on the horizon. As Vice President Mike Pence recently noted, the Administration “knows that a stable and orderly space environment is critical to the strength of our economy and resilience of our national security systems.”⁸ Chairman Pai has also observed that “we now stand at a moment of tremendous promise for [the satellite] industry – and ultimately for American consumers, who stand to benefit from [industry] efforts,” and committed to help satellite companies seize these opportunities.⁹

Eliminating the ATC rules is also fully consistent with the Commission’s goal of eliminating outdated rules. For example, in addition to the Notice, the FCC’s Office of Engineering and Technology also announced that the Technological Advisory Council is seeking

the Ancillary Terrestrial Component of Mobile Satellite Service Systems, Report and Order, 31 FCC Rcd 13801 (2016); *see also* IBFS File Nos. SAT-MOD-20170411-00061 and SES-MOD-20170412-00422 (granted Aug. 8, 2017 & Aug. 14, 2017, respectively). If the rules are eliminated or modified as proposed, the Commission should do so in a manner that maintains the existing flexibility to offer terrestrial service that has already been granted to Globalstar.

⁸ *See* Michael Pence, Vice President, Remarks at 34th Space Symposium (Apr. 16, 2018), <https://www.whitehouse.gov/briefings-statements/remarks-vice-president-pence-34th-space-symposium-colorado-springs-co/>; *see also* Michael Pence, Vice President, Remarks on the Future of the U.S. Military in Space (Aug. 9, 2018), <https://www.whitehouse.gov/briefings-statements/remarks-vice-president-pence-future-u-s-military-space> (offering the Administration’s promise to “unleash America’s burgeoning commercial space companies.”).

⁹ *See* Ajit Pai, Chairman, FCC, Remarks at the Satellite Industry Association’s 21st Annual Leadership Dinner, Washington, DC (Mar. 12, 2018), <https://docs.fcc.gov/public/attachments/DOC-349676A1.pdf>.

comment on reforming technical regulations, including the elimination of outdated rules.¹⁰ The Commission is also in the process of reviewing outdated rules in its 2016 Biennial Review proceeding.¹¹ Further, the Commission already eliminated the ATC rules for MSS operators in the 2 GHz band in the AWS-4 Order and replaced them with service, technical and licensing rules to provide for full flexible use terrestrial authority under Part 27.¹² When eliminating the ATC rules for 2 GHz MSS operators in the AWS-4 Order, the Commission expressed its intent to address the ATC rules for L-Band and Big LEO Band MSS operators at a later date.¹³

Now is the time to address the ATC rules. These rules have never been utilized by an MSS operator. Instead they have been contorted through waivers and exceptions and an endless parade of proceedings. To the extent the Commission wants to grant flexible rights, that decision should be on the basis of the specific facts of a given case, not jerry-rigged on top of these flawed rules. If the Commission prefers not to address the elimination of the rules in the above-captioned proceedings, then the Commission should initiate a new rulemaking proceeding seeking comment on the elimination of the ATC provisions in Parts 2 and 25 of the Commission's rules consistent with these comments.

II. THE ATC RULES SHOULD BE ELIMINATED BECAUSE THEY HAVE CREATED SUBSTANTIAL BURDENS FOR ALL STAKEHOLDERS WITH NO COUNTERVAILING BENEFITS

As initially envisioned, the ATC rules held the promise to revolutionize the market for MSS services by allowing MSS operators to deploy terrestrial services to expand the reach of

¹⁰ *Office of Engineering and Technology Announces Technological Advisory Council (TAC) Technical Inquiry into Reforming Technical Regulations*, Public Notice, 32 FCC Rcd 6672, 6673 (2017).

¹¹ *See 2016 Biennial Review Notice*, 31 FCC Rcd 12166.

¹² *Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, Report and Order and Order of Proposed Modification, 27 FCC Rcd 16102 (2012) (“AWS-4 Order”).

¹³ *Id.* at 16220 ¶ 318.

their networks. Yet, nearly two decades later, no entity has successfully deployed an ATC service. Instead, the ATC rules have been the subject of an endless string of license modification applications, requests for rule modifications and waiver proceedings that have fundamentally altered the ancillary nature of this service and created substantial burdens for all stakeholders.¹⁴ What follows is an overview of the purpose and envisioned benefits of the ATC rules and the limitations adopted in the rules to protect incumbent MSS operations, contrasted with the actual policy outcomes of the relevant proceedings.

¹⁴ *Mobile Satellite Ventures Subsidiary LLC*, Order and Authorization, 19 FCC Rcd 22144 (IB 2004) (“*MSV ATC License Order*”); *Mobile Satellite Ventures Subsidiary LLC*, Memorandum Opinion and Order, 22 FCC Rcd 20548 (IB 2007) (“*MSV MO&O*”); *SkyTerra Subsidiary LLC* formerly *Mobile Satellite Ventures Subsidiary LLC* Application for Minor Modification of Space Station License (AMSC-1) Modification and Request for Expedited Consideration, IBFS File No. SAT-MOD-20090429-00047 (Apr. 29, 2009) (“*SkyTerra Modification*”); *See SkyTerra Subsidiary LLC*, Order and Authorization, 25 FCC Rcd 3043 (IB 2010) (“*SkyTerra ATC License Order*”); *LightSquared Subsidiary LLC*, Order and Authorization, 26 FCC Rcd 566 (IB 2011) (“*Conditional Waiver Order*”); Applications of *LightSquared Subsidiary LLC*, Narrative, IBFS File Nos. SAT-MOD-20151231-00090, SAT-MOD-20151231-00091, & SES-MOD-20151231-00981 (filed Dec. 31, 2015) (“*Ligado 2015 Modification Application*”); *Ligado Networks LLC*, Amendment to License Modification Applications, IBFS File Nos. SES-AMD-20180531-00856, SAT-AMD-20180531-00044, SAT-AMD-20180531-00045, SES-MOD-20151231-00981, SAT-MOD-20151231-00090, & SAT-MOD-20151231-00091, IB Docket No. 11-109 (filed May 31, 2018) (“*Ligado 2018 Amendment Application*”); *Globalstar Licensee LLC*, Order and Authorization, 23 FCC Rcd 15975 (2008) (“*Globalstar ATC License Order*”); *Globalstar Licensee LLC*, Order, 25 FCC Rcd 13114 (IB, WTB & OET 2010) (“*Globalstar Order*”); *Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks; Amendments to Rules for the Ancillary Terrestrial Component of Mobile Satellite Service Systems*, Report and Order, 31 FCC Rcd 13801 (2016) (“*TLPS Order*”); *New DBSD Satellite Service G.P., Debtor-in-Possession, and TerreStar Licensee Inc., Debtor-In-Possession, Request for Rule Waivers and Modified Ancillary Terrestrial Component Authority*, Public Notice, 26 FCC Rcd 13011 (2011) (“*DBSD Satellite Public Notice*”); *see DBSD North America, Inc. Debtor-in-Possession; New DBSD Satellite Services G.P., Debtor-in-Possession; Pendrell Corporation, Transferor; and TerreStar License Inc., Debtor-in-Possession*, Order, 27 FCC Rcd 2250 (IB 2012) (“*DBSD Satellite Order*”); *AWS-4 Order*, 27 FCC Rcd 16102.

A. HISTORY OF THE ATC RULES – OBJECTIVES VERSUS REALITY

1. THE INITIAL PROMISE OF ATC: ANCILLARY TERRESTRIAL SERVICE TO ENHANCE MSS SERVICES

In March of 2001, the Commission received two separate proposals that held the potential to dramatically alter the course of the MSS industry.¹⁵ The proposals, filed by New ICO Global Communications (Holdings) Ltd. (“ICO”) and Mobile Satellite Ventures Subsidiary LLC (“MSV”), both of whom were MSS providers at the time, sought greater flexibility in the delivery of communications by MSS providers.¹⁶ Each proposal requested that the Commission allow MSS providers the flexibility to integrate ancillary terrestrial components into their satellite networks by re-using their assigned MSS frequencies.¹⁷

At their core, the proposals were aimed at providing better coverage in areas that MSS providers could not otherwise serve.¹⁸ These issues were especially pertinent in urban areas and inside buildings.¹⁹ Although MSS systems offered, and continue to offer, a number of advantages over terrestrial services, one disadvantage of MSS technology was its susceptibility

¹⁵ Letter from Lawrence H. Williams and Suzanne Hutchings, New ICO Global Communications (Holdings) Ltd., to Michael K. Powell, Chairman, FCC, IB Docket No. 99-81 (Mar. 8, 2001) (“ICO Letter”); Application filed by Motient Services Inc. and 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) (“MSV Application”).

¹⁶ *Supra* note 15.

¹⁷ *Supra* note 15.

¹⁸ *Supra* note 15, *see also, e.g., 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*, Notice of Proposed Rulemaking, 16 FCC Rcd 15532, 15532-33 ¶ 1 (2001) (“*Flexibility Notice*”) (“two MSS operators have made proposals to the Commission to integrate terrestrial services with their networks, using assigned MSS frequencies to augment signals in areas where the satellite signal is attenuated, particularly in urban areas and inside buildings.”).

¹⁹ *See, e.g., Flexibility Notice*, 16 FCC Rcd at 15532-33 ¶ 1.

to blocking in urban areas and inside buildings.²⁰ According to MSV and ICO, permitting MSS providers to integrate terrestrial services into their MSS networks would enable MSS providers to overcome these technical difficulties and serve broader populations.²¹

Less than two years after receiving these proposals, the Commission adopted the *ATC Order* permitting MSS operators to integrate ATC into their MSS systems.²² In adopting the new rules, the Commission cited a long list of public interest benefits that would hopefully be realized by the integration of ATC into MSS networks.²³ These potential benefits included not only increased coverage, but also increased network capacity, more efficient use of spectrum, improved emergency communications, enhanced competition, and economies of scale in the deployment of MSS systems.²⁴

Noting the important role of satellite service, the Commission also took steps to ensure that ATC would remain ancillary to the provision of MSS.²⁵ To accomplish this, the Commission adopted five “gating criteria” that an ATC applicant must meet prior to implementing an ATC offering. Those gating criteria included maintaining: (1) MSS coverage; (2) a ground spare satellite within one year of commencing ATC operations; (3) commercial availability of MSS service; (4) operation of ATC in the same band as the applicant’s MSS operations; and (5) an integrated MSS/ATC service offering, which could be met through a safe

²⁰ See, e.g., *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*, Memorandum Opinion and Order and Second Order on Reconsideration, 20 FCC Rcd 4616, 4618 ¶ 7 (2005) (“*2005 ATC Second Reconsideration Order*”) (“A disadvantage of MSS is the fact that the satellite link is susceptible to blocking by structural attenuation, particularly in urban areas and inside buildings.”) (citation omitted).

²¹ ICO Letter; MSV Application.

²² See *ATC Order*, 18 FCC Rcd 1962.

²³ *Id.* at 1972-73 ¶ 18.

²⁴ *Id.* at 1965 ¶ 2, 1973-89 ¶¶ 20-45, 2064-65 ¶¶ 210-211.

²⁵ See *id.* at 1999-2012 ¶¶ 66-93.

harbor showing that all handsets offered by the operator were dual-mode (MSS and ATC).²⁶ The Commission stressed the importance of satisfying each of these criteria, noting that it viewed “full and complete compliance with each of these requirements as essential to the integrity of our ‘ancillary’ licensing regime.”²⁷

From the outset, skepticism about the ancillary nature of ATC services abounded. For example, prior to the adoption of the *ATC Order*, Iridium accurately warned the FCC that while “[t]here is no question that terrestrial operations in the MSS bands – coordinated with satellite operations – are technically feasible; the issue is whether they can be conducted on an economically viable basis without threatening, through interference, the viability of the satellite services.”²⁸ Similarly, in its comments to the *Flexibility Notice*, AT&T Wireless suggested that the new proposed ATC rules would provide incentives for MSS operators “to supplant MSS with terrestrial service as their primary or even sole service.”²⁹ Further, Cingular Wireless and CTIA filed petitions for reconsideration of the 2003 *ATC Order* seeking revisions to various gating criteria to ensure that ATC remain truly ancillary to MSS service.³⁰ Addressing these concerns, the Commission concluded in the 2005 *ATC Second Reconsideration Order* that “[t]he purpose

²⁶ 47 C.F.R. §25.149(b)(1)-(5).

²⁷ *ATC Order*, 18 FCC Rcd at 1999 ¶ 66.

²⁸ Comments of Iridium Satellite LLC in Response to Public Notice of March 6, 2002, IB Docket No. 01-185, ET Docket No. 95-18, at 2 (filed Mar. 22, 2002).

²⁹ Comments of AT&T Wireless, IB Docket No. 01-185, ET Docket No. 95-18 at 5 (filed Oct. 22, 2001); Reply Comments of AT&T Wireless, IB Docket No. 01-185, ET Docket No. 95-18, at 5-8 (filed Nov. 13, 2001).

³⁰ See, e.g., Petition of Cingular Wireless LLC for Reconsideration, IB Docket Nos. 01-185 & 02-364, at 3 (filed July 7, 2003) (seeking requirements for MSS/ATC operators to dedicate a certain amount of capacity exclusively for MSS), 10-11 (seeking requirements for MSS/ATC handsets to always attempt to communicate via the satellite first); and 11 (seeking requirements that all MSS/ATC handsets must be dual-mode to qualify for the safe harbor demonstration of integrated MSS/ATC service); Petition of Cellular Telecommunications & Internet Association (“CTIA”) for Reconsideration, IB Docket Nos. 01-185 & 02-364 at 3-4 (filed July 7, 2003) (seeking requirements for MSS/ATC operators to dedicate a certain amount of capacity exclusively for MSS).

of ATC is to enhance MSS coverage, enabling MSS operators to extend service into areas that they were previously unable to serve, such as the interiors of buildings and high-traffic density urban areas. *We will not permit MSS/ATC operators to offer ATC-only subscriptions, because ATC systems would then be terrestrial mobile systems separate from their MSS systems.*”³¹

In addition to the gating criteria, the Commission also adopted technical rules to mitigate the potential for harmful interference resulting from ATC operations.³² The Commission expressed confidence that the rules, which were “designed to protect adjacent and in-band operations from interference from ATC,” would be “sufficient” for preventing such interference.³³ However, “in the unlikely event” of “harmful interference from ATC operations,” the Commission placed the onus squarely on the ATC operator to “resolve such interference.”³⁴ The Commission codified this protection in its rules,³⁵ and explained later that the rule imposes an “absolute obligation on the MSS/ATC operator to resolve any harmful interference to other services.”³⁶

2. THE REALITY OF ATC: NOT A SINGLE MSS PROVIDER HAS DEPLOYED ATC

Despite the Commission’s best intentions, ATC has never been successfully deployed. And as a result, the corresponding public interest benefits envisioned by the Commission have

³¹ *2005 ATC Second Reconsideration Order*, 20 FCC Rcd at 4628 ¶ 33 (emphasis added).

³² *See, e.g., ATC Order*, 18 FCC Rcd at 2017 ¶ 104 (“We adopt technical parameters for ATC operations in each of the bands at issue designed to protect adjacent and in-band operations from interference from ATC.”) (citation omitted).

³³ *Id.*

³⁴ *Id.*

³⁵ *See* 47 C.F.R. § 25.255.

³⁶ *Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands*, Report and Order and Order Proposing Modification, 23 FCC Rcd 7210, 7223 ¶ 35 (2008) (citation omitted).

never been realized. Since the adoption of the 2003 *ATC Order*, four MSS operators have been granted ATC authority. In each case, these MSS operators have sought greater and greater terrestrial flexibility for their terrestrial operations – so altering their plans that ATC rules have become irrelevant. We examine below previous ATC activities in the L, Big LEO and 2 GH bands.

a. LIGHTSQUARED/LIGADO

Ten months after the adoption of the *ATC Order*, MSV, one of the predecessors-in-interest to Ligado Networks Subsidiary LLC (“Ligado”),³⁷ became the first MSS operator to apply for ATC authority.³⁸ In what would become a familiar pattern, Ligado’s applications included requests for waivers of various ATC gating criteria and technical rules.³⁹ The proposal drew opposition from Inmarsat who argued that most of MSV’s requested waivers would cause harmful interference to Inmarsat’s MSS system and that MSV’s waiver requests, taken as a whole, effectively proposed operation of a primarily terrestrial network.⁴⁰

In November 2004, the International Bureau (“Bureau”) granted Ligado’s request for ATC authority.⁴¹ While the Bureau denied Ligado’s request for waiver of the “spare satellite”

³⁷ MSV is the predecessor-in-interest to SkyTerra Subsidiary LLC, who in turn is the predecessor-in-interest to LightSquared Subsidiary LLC, who in turn is the predecessor-in-interest to Ligado. These comments use “Ligado” to refer Ligado Networks Subsidiary LLC and its predecessors-in-interest.

³⁸ MSV Application for Minor Modification and Amendment, IBFS File Nos. SAT-MOD-20031118-00333, SAT-MOD-20031118-00332, SES-MOD-20031118-01879 at 1-2 (filed Nov. 18, 2003) (“MSV ATC Application”).

³⁹ See, e.g., *MSV ATC License Order*, 19 FCC Rcd at 22146 ¶ 7 (“MSV requested waiver of many of the Commission’s technical rules....”).

⁴⁰ Opposition of Inmarsat Ventures Ltd, IBFS File Nos. SAT-MOD-20031118-00333, SAT-MOD-20031118-00332, SES-MOD-20031118-01879 (filed Mar. 25, 2004).

⁴¹ *MSV ATC License Order*, 19 FCC Rcd at 22144.

gating criterion,⁴² Ligado renewed this request in 2007, and the waiver subsequently was granted later that year.⁴³

In 2009, Ligado filed another application seeking additional waivers of technical rules governing its ATC authority.⁴⁴ These waiver requests sought permission for Ligado “to deploy an integrated terrestrial component that [was] more robust and ha[d] greater capacity than [was] permitted by the existing interference-related technical rules.”⁴⁵ In response to this application, the GPS community raised concerns about the potential for harmful interference.⁴⁶ Ligado was forced to modify its waiver requests, and in March of 2010, the Bureau adopted an order granting the substantial majority of Ligado’s requested technical modifications.⁴⁷

In November 2010, Ligado submitted yet another filing regarding the Commission’s “integrated service” gating criteria.⁴⁸ In this filing, Ligado notified the Commission that its business plans had “evolved” and that it now planned to offer terrestrial-only handsets.⁴⁹ Nonetheless, Ligado asserted that its planned offering still satisfied the “integrated service” gating criterion because its “network is integrated,” its “pricing is integrated,” and it is capable of offering “dual-mode devices.”⁵⁰

⁴² *Id.* at 22153 ¶ 24.

⁴³ *MSV MO&O*, 22 FCC Rcd 20548.

⁴⁴ SkyTerra Modification, *supra* note 14.

⁴⁵ *Id.* at 2.

⁴⁶ See e.g. Comments of the U.S. GPS Industry Council, IBFS File Nos. SAT-MOD-20090429-00047, SAT-MOD-20090429-00046, SES-SAT-20090429-00536 (filed July 10, 2009).

⁴⁷ See *SkyTerra ATC License Order*, 25 FCC Rcd 3043.

⁴⁸ See Letter Narrative from Jeffrey J. Carlisle, Executive Vice President for Regulatory Affairs & Public Policy, LightSquared, to Marlene H. Dortch, Secretary, FCC, SAT-MOD-20101118-00239 (filed Nov. 18, 2010), https://licensing.fcc.gov/myibfs/download.do?attachment_key=852869.

⁴⁹ *Id.* at 2.

⁵⁰ *Id.* at 10.

In January 2011, the Bureau concluded that Ligado did not satisfy the “integrated service” criterion, but found good cause for the grant of a conditional waiver.⁵¹ However, Ligado was required to resolve new harmful interference concerns raised by federal and non-federal users of GPS devices, including NTIA.⁵² To satisfactorily resolve this interference, the *Conditional Waiver Order* established a multi-stakeholder working group to fully study the potential for interference to GPS devices.⁵³

Upon completion of testing, which identified the existence of harmful interference, Ligado submitted recommendations to address those interference concerns.”⁵⁴ Consequently, a second round of testing was conducted that also prompted harmful interference concerns,⁵⁵ and NTIA sent another letter to the FCC in February 2012 concluding that “there [was] no practical way to mitigate the potential interference” posed by Ligado’s proposed network.⁵⁶ The following day the FCC’s International Bureau issued a Public Notice seeking comment on,

⁵¹ *Conditional Waiver Order*, 26 FCC Rcd 566.

⁵² *Id.*; see also Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, U.S. Department of Commerce, to Julius Genachowski, Chairman, FCC, IBFS File No. SAT-MOD-20101118-00239 (filed Jan. 12, 2011).

⁵³ *Conditional Waiver Order*, 26 FCC Rcd at 586 ¶ 41 (“we believe that establishing a working group that brings LightSquared and the GPS community together to address these interference issues expeditiously would serve the public interest.”).

⁵⁴ See Letter from Henry Goldberg, Counsel for LightSquared Subsidiary LLC, to Marlene H. Dortch, Secretary, FCC, IBFS File No. SAT-MOD-20101118-00239 (June 30, 2011); see also Technical Working Group Report, Final Report, IBFS File No. SAT-MOD-20101118-00239 (filed June 30, 2011), attached to LightSquared June 30th Letter.

⁵⁵ Letter from Ashton B. Carter, PNT ExCom Co-Chair, Deputy Secretary, U.S. Department of Defense, to Lawrence E. Strickling, Assistant Secretary for Communications and Information, U.S. Department of Commerce (Jan. 13, 2012) (“It was the unanimous conclusion of the test findings . . . that both LightSquared’s original and modified plans for its proposed mobile network would cause harmful interference to many GPS receivers.”), <https://www.gps.gov/-news/2012/01/lightsquared/2012-01-13-LightSquared-letter-to-NTIA.pdf>.

⁵⁶ Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, U.S. Department of Commerce, to Julius Genachowski, Chairman, FCC (Feb. 14, 2012), https://www.ntia.doc.gov/files/ntia/publications/lightsquared_letter_to_chairman_genachowski_-_feb_14_2012.pdf.

among other things, whether it should “suspend indefinitely [Ligado’s] underlying ATC authorization....”⁵⁷ Later that spring, the company filed for bankruptcy protection.

Post-bankruptcy and apparently undeterred by its past experiences, Ligado immediately filed applications for yet another set of technical modifications that it again claims will allow ATC operations free from harmful interference to operations in adjacent bands.⁵⁸ Ligado has since modified its proposal seeking to address aviation industry interference concerns.⁵⁹ However, multiple operators and entities that benefit from satellite operations in bands adjacent to Ligado’s proposed ATC operations have raised, and continue to raise, serious concerns about the potential for harmful interference.⁶⁰ Ligado’s applications remain pending but it bears

⁵⁷ See *International Bureau Invites Comments on NTIA Letter Regarding LightSquared Conditional Waiver*, Public Notice, 27 FCC Rcd 1596, 1599 (2012).

⁵⁸ Letter from Gerard J. Waldron, Counsel to New LightSquared LLC, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 12-340 & 11-109; IBFS File Nos. SAT-MOD-20120928-00160, SAT-MOD-20120928-00161, and SES-MOD-20121001-00872, at 1 (filed Dec. 31, 2015); *Ligado 2015 Modification Application*.

⁵⁹ See *Ligado 2018 Amendment Application*.

⁶⁰ See, e.g., Comments of Airlines for America, IB Docket Nos. 11-109 & 12-340, at 2 (filed May 23, 2016) (“we urge the [FCC] to delay action on the Ligado proposals because serious safety questions must first be resolved.”); Comments of Aircraft Owners and Pilots Association et al., IB Docket Nos. 11-109 & 12-340, at i (filed May 23, 2016) (“There remain too many unresolved issues to alleviate the aviation sector’s concerns that Ligado’s proposed operations will present an unacceptable threat of harmful interference to the aviation GPS receivers.”); Letter from Dr. M. Meghan Miller, President, UNAVCO, to Tom Wheeler, Chairman, FCC, IB Docket No. 12-340 (filed May 23, 2016) (“UNAVCO opposes Ligado’s proposed use of the L-band MSS spectrum for a commercial terrestrial broadband network.”); Letter from Bryan N. Tramont, Counsel for Iridium Communications Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, & SAT-MOD-20151231-00091, Attachment (filed Sept. 2, 2016); Letter from Bryan N. Tramont & Patrick R. Halley, Counsel for Iridium Communications, Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, & SAT-MOD-20151231-00091, Attachment at 10 (filed Dec. 14, 2016); Letter from Bryan N. Tramont & Patrick R. Halley, Counsel for Iridium, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, & SAT-MOD-20151231-00091, at 10 (filed Mar. 27, 2017); Letter from Dr. Joel N. Myers, Founder, President & Chairman, AccuWeather et al., to Ajit Pai, Chairman, FCC, IB Docket No. 11-109 et al., IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, & SAT-MOD-20151231-00091 (filed June 27, 2017) (filed as Coalition of Aviation, SATCOM, and Weather

virtually no resemblance to the reality or the theory of the ATC rules. Unsurprisingly no ATC service has ever been offered.

b. GLOBALSTAR

In 2006, the predecessor-in-interest to Globalstar Licensee LLC (“Globalstar”) became the second MSS operator to receive ATC authority.⁶¹ Two years later, having failed to launch an ATC service itself, Globalstar requested modification of its ATC license to permit implementation of an agreement it had reached with Open Range Communications, Inc. (“Open

Information Users); Letter from Bryan N. Tramont & Patrick R. Halley, Counsel for Iridium Communications, Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, & SAT-MOD-20151231-00091, at 10 (filed Aug. 3, 2017); Letter from Capt. Tim Canoll, President, Air Line Pilots Association, International et al., to Daniel K. Elwell, Acting Administrator, Federal Aviation Administration, IB Docket Nos. 11-109 & 12-340 (filed June 18, 2018) (filed as Joint Aviation Associations); Letter from John Stenbit, Chair, National Space-based PNT Advisory Board, to Robert O. Work, Deputy Secretary, Department of Defense et al., at 1-2 (July 5, 2017), <https://www.gps.gov/governance/advisory/recommendations/2018-08-letter-to-excom.pdf>; Letter from Telford E. Forgety, III, Director of Government Affairs & Regulatory Counsel, NENA – The 911 Association, to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340 (filed Dec. 6, 2017); Letter from Members of the Hydrometeorological Community to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 12-340, 11-109; RM-11681 (filed May 1, 2018); Letter from Dr. Joel N. Myers, Founder, President & Chairman, AccuWeather, to Ajit Pai, Chairman, FCC, IB Docket No. 11-109 et al., IBFS File Nos. SES-MOD-20151231-00981, SATMOD-20151231-00090, & SAT-MOD-20151231-00091 (filed July 18, 2018) (filed as Coalition of Aviation, SATCOM, and Weather Information Users); Letter from David Silver, Vice President, Civil Aviation, Aerospace Industries Association, to Wilbur Ross, Secretary, U.S. Department of Commerce et al., at 4-8 (dated Sept. 4, 2018), <https://gama.aero/wp-content/uploads/GAMA18-55-SPD-2-letter-FINAL-9.4.18-c1.pdf>; Letter from Edward A. Yorkgitis, Counsel for Aviation Spectrum Resources, Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket Nos. 11-109 & 12-340, IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, SAT-MOD-20151231-00091, & SES-AMD-20180531-00856 (filed Sept. 24, 2018); Letter from Bradford W. Parkinson, First Vice Chair, PNT Advisory Board, to Patrick M. Shanahan, Deputy Secretary, Department of Defense et al., at 2 (dated Aug. 10, 2018), <https://www.gps.gov/governance/advisory/recommendations/2018-08-letter-to-excom.pdf> (stating that “[t]his risk is far too great, and far too many questions remain, for Ligado’s proposal to be approved.”).

⁶¹ *Globalstar LLC*, Order and Authorization, 21 FCC Rcd 398 (IB 2006).

Range”).⁶² Under the agreement, Open Range would construct a two-way ATC network. The MSS component of the network would provide one-way, transmit-only to Globalstar satellites.⁶³

In October 2008, the Commission concluded that Globalstar’s proposed modification was not compliant with three of the Commission’s ATC gating criteria.⁶⁴ Nonetheless, the Commission concluded that it would grant temporary waivers of the ATC gating criteria. The Commission granted waivers of the MSS coverage and spare satellite gating criteria through July 1, 2010, and a waiver of the integrated service gating criterion through July 1, 2011.⁶⁵

In December 2009, Globalstar filed a request seeking to extend by an additional sixteen months the waivers of the MSS coverage and spare-satellite gating criteria.⁶⁶ Concluding that Globalstar had not justified its request for a further extension of time, the Commission’s International Bureau denied Globalstar’s request and suspended its ATC authority in September of 2010.⁶⁷

In 2012, Globalstar returned to the Commission with a new proposal for ATC operations. The proposal requested a new set of modifications to the ATC technical rules and ATC gating criteria.⁶⁸ The proposal would allow Globalstar to deploy both a terrestrial low-power system in

⁶² GlobalStar Licensee LLC, Application for Modification of Authority to Operate an Ancillary Terrestrial Component and Request for Waiver of the Commission’s Rules, IBFS File No. SAT-MOD-20080516-00106 (filed May 16, 2008).

⁶³ *Id.*

⁶⁴ *Globalstar ATC License Order*, 23 FCC Rcd 15975.

⁶⁵ *Id.* at 15984 ¶ 21, 15984-85 ¶ 23.

⁶⁶ Globalstar Request for Modification of Waiver Conditions, IBFS File No. SAT-MOD- 20091214-00152 at 2-3 (Dec. 14, 2009).

⁶⁷ *Globalstar Order*, 25 FCC Rcd at 13115 ¶ 1.

⁶⁸ See Petition for Rulemaking of Globalstar, Inc., RM-11685, IB Docket 13-213, PRM12WT at 13-15 (filed Nov. 13, 2012) (“Globalstar Petition”).

the S-band and a higher power terrestrial service in both the S-band and L-band over the longer term.⁶⁹

Globalstar's proposed technical rules for the terrestrial low-power system were met with immediate opposition. Because Globalstar's terrestrial low-power system proposed ATC operations on both the 2483.5-2495 MHz band, in which Globalstar's MSS systems is licensed, and on the adjacent 2473-2483.5 MHz band, in which unlicensed equipment operates, the unlicensed community submitted numerous filings claiming interference with unlicensed operations. After years of negotiations, Globalstar eventually revised its proposal in November 2016 to specify operations in just its licensed spectrum.⁷⁰ The following month, the Commission adopted an order granting Globalstar's modified request for the exceptions to the ATC gating criteria and the modified ATC technical rules.⁷¹ On April 12, 2017, Globalstar submitted applications to modify its existing authorizations to deploy an LTE small-cell network.⁷² The Commission granted Globalstar's applications to modify its space station and earth station authorizations to provide low-power terrestrial service on August 8, 2017.⁷³ On the same day, Globalstar withdrew its petition for a separate rulemaking proceeding regarding higher powered terrestrial operations in its S- and L-band spectrum.⁷⁴ While it has been granted ATC authority,

⁶⁹ *Id.* In 2013, the Commission stated its intention to address at a later time the rulemaking request concerning the higher power terrestrial service.

⁷⁰ Letter from L. Barbee Ponder, Globalstar, Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket No. 13-213 (filed Nov. 9, 2016).

⁷¹ *TLPS Order*, 31 FCC Rcd 13801.

⁷² See Globalstar Licensee LLC, IBFS File No. SAT-MOD-20170411-00061 (filed Apr. 11, 2017) and GUSA Licensee LLC, IBFS File No. SES-MOD-20170412-00422 (filed Apr. 11, 2017).

⁷³ IBFS File Nos. SAT-MOD-20170411-00061 and SES-MOD-20170412-00422 (granted Aug. 8, 2017 & Aug. 14, 2017, respectively).

⁷⁴ Letter from L. Barbee Ponder, Globalstar, Inc., to Marlene H. Dortch, Secretary, FCC, IB Docket No. 13-213, RM-11685 (filed Aug. 8, 2017).

as Commissioner O’Rielly noted in his statement approving the *TLPS Order*, “[w]hether that network ever comes to fruition is for Globalstar and the marketplace to decide.”⁷⁵

c. DBSD & TERRESTAR

In 2009, DBSD Satellite Services G.P. (“DBSD”), an operator in the 2 GHz MSS spectrum band,⁷⁶ became the third MSS operator to receive ATC authority.⁷⁷ In 2010, TerreStar License Inc. (“TerreStar”), also an operator in the 2 GHz MSS spectrum, became the fourth MSS operator to receive ATC authority.⁷⁸ Neither ever offered an ATC service.

In 2011, DISH Network Corporation (“DISH”) filed applications with the Commission for approval to transfer control of these entities out of bankruptcy.⁷⁹ At the same time, DBSD and TerreStar filed requests to modify their respective ATC authorities, including waivers of the integrated service and spare satellite gating criteria, and of certain ATC technical rules.⁸⁰ By the end of 2012, the Commission had approved the transfer of control of both entities to DISH and adopted flexible use rules enabling the provision of stand-alone terrestrial services in what had previously been the 2 GHz MSS band, effectively eliminating the need for ATC rules in the

⁷⁵ *TLPS Order*, 31 FCC Rcd at 13839 (Statement of Commissioner Michael O’Rielly).

⁷⁶ The 2GHz MSS spectrum band was comprised of the 2000-2020 MHz and 2180-2200 MHz bands.

⁷⁷ *New ICO Satellite Services G.P.*, Order and Authorization, 24 FCC Rcd 171 (IB 2009).

⁷⁸ *TerreStar Networks Inc.*, Order and Authorization, 25 FCC Rcd 228 (IB 2010).

⁷⁹ See ICO Global Communications (Holdings) Limited; DBSD North America, Inc. Debtor-in-Possession; New DBSD Satellite Services G.P. Debtor-in-Possession, Transferors, and DISH Network Corporation, Transferee, Consolidated Application for Authority to Transfer Control, IBFS File Nos. SES-T/C-20110408-00424 & -00425 (filed Apr. 8, 2011); TerreStar Networks Inc., Debtor-in-Possession; and TerreStar Licensee Inc., Debtor-in-Possession, Transferors, and DISH Network Corporation and Gamma Acquisition L.L.C., Transferees, Consolidated Application for Transfer of Authorizations, IBFS File Nos. SES-ASG-20110822-00992, -00993, -00994, & ITC-ASG-20110822-00279 (filed Aug. 22, 2011).

⁸⁰ *DBSD Satellite Public Notice*, 26 FCC Rcd 13011.

band.⁸¹ The Commission “eliminate[d] the ATC rules for the 2 GHz band” after concluding that “the changing circumstances in the 2 GHz MSS band demonstrate that ATC regulations are no longer the best framework for developing and deploying terrestrial broadband operations in the band.”⁸²

* * *

In summary, every grant of ATC authority to date has required waivers of more than half of the core ATC rules. Yet, to date, not a single customer has received ATC service. And in the case of the 2 GHz band, the Commission eliminated the ATC rules after recognizing they no longer made sense in a band the Commission determined was best suited for terrestrial service. This history stands in stark contrast to the original purpose of ATC almost twenty years ago. The experiences of Ligado, Globalstar, DBSD, and TerreStar make clear that integrated MSS/ATC service remains a mirage. Therefore, the Commission should eliminate the ATC rules, maintain spectrum bands for satellite use, and where appropriate adopt band-specific rules for any additional spectrum use.

B. RATHER THAN PRODUCE ATC DEPLOYMENT, THE COMPLEXITY OF THE ATC RULES AND THEIR INCOSISTENCY WITH ECONOMIC REALITY HAS UNDERMINED THE INTEGRITY OF SATELLITE OPERATIONS

As a result of the ongoing efforts to contort the ATC rules to fit various business plans, substantial resources from incumbent MSS providers and ATC operators, and the government, have been spent fighting over whether or not interference will occur, and if so, what steps can be taken to address such interference. In the 2003 *ATC Order*, the Commission noted that “the potential for interference between MSS and terrestrial mobile systems is, in fact, so great that we

⁸¹ See *DBSD Satellite Order*, 27 FCC Rcd 2250; *AWS-4 Order*, 27 FCC Rcd 16102.

⁸² *AWS-4 Order*, 27 FCC Rcd at 16220 ¶ 318 (citation omitted).

believe only a single type of operator – in this case, the incumbent MSS licensees – would possess both the ability and incentive to coordinate operations in a manner that avoids interference.”⁸³ While that may have been true at the time, the reality of ATC is that some who have applied for ATC authority have turned into spectrum speculators, undermining the integrity of satellite operations in their own and adjacent bands.

As the Commission stated in the 2003 *ATC Order*, “sharing between MSS and terrestrial mobile services is neither advisable, nor practical.”⁸⁴ However, the Commission believed that it faced a choice “between quickly achieving the public-interest benefits of improved spectrum efficiency, reduced costs, and increased competition at the price of giving MSS licensees more than they had originally sought, or giving MSS licensees only what they [had] originally received at the price of the public-interest benefits that MSS ATC promises.”⁸⁵ Two years later, the Commission affirmed that “[t]o the extent we receive specific complaints about a particular system, we will examine the totality of the services being offered *to ensure that the terrestrial service is in fact ancillary to the satellite service.*”⁸⁶

Yet, it remains clear that sharing between MSS and terrestrial systems is “neither advisable, nor practical,” because none of those operators has even tried to build out an integrated ATC network as envisioned in the rules. The Commission noted that a shared approach between a terrestrial operator and a MSS provider would require extremely difficult coordination plans, and would require the Commission’s active and continued oversight over

⁸³ *ATC Order*, 18 FCC Rcd at 1996-97 ¶ 60 (citation omitted).

⁸⁴ *Id.* at 1999 ¶ 65.

⁸⁵ *Id.*

⁸⁶ *2005 ATC Second Reconsideration Order*, 20 FCC Rcd at 4625 ¶ 23 (emphasis added).

many years and still may not prove successful.⁸⁷ The Commission was right, because this is the exact scenario that has transpired. Operators have not been technically or economically able to implement ATC in a way that allows a fully operational space-based MSS system to incorporate ancillary terrestrial components into their networks “for the purpose of enhancing their ability to offer high-quality, affordable mobile services ... subject to conditions that ensure that the added terrestrial component remains ancillary to the *principal* MSS offering.”⁸⁸

MSS licensees have consistently come to the realization that operating both MSS and ATC service in the same geographical area under the FCC’s ATC rules is too difficult and too costly. Under the rules, in each geographic area, the MSS licensee would have to choose which service it is going to provide. To simultaneously serve terrestrial and satellite customers, a provider offering both MSS and ATC must either take spectrum away from prospective use by its satellite customers, thus limiting the customer’s growth potential or jeopardize its own satellite operations by simultaneously operating a terrestrial service in the same area.

There are four self-interference scenarios for combined MSS/ATC operations: (1) terrestrial handset into MSS satellite, (2) MSS handset into terrestrial base station, (3) MSS satellite into terrestrial handset, and (4) terrestrial base station into MSS handset. Scenario 1 likely does not pose a large concern (although there could be many thousands of terrestrial terminals within a satellite beam) and scenario 3 is also not likely to be a significant issue. Scenarios 2 and 4, however, will cause interference to the terrestrial base station or the MSS

⁸⁷ *ATC Order*, 18 FCC Rcd at 1994 ¶ 54 (“Same-band satellite and terrestrial operations have created technical problems in other bands. While these technical problems have not always proved insurmountable, particularly where only stationary deployments are involved, the problems grow more complex where, as here, both the proposed satellite service and the proposed terrestrial service are planned as *mobile* services with widespread deployments”) (citations omitted).

⁸⁸ *Id.* at ¶ 1 (emphasis added).

terminal respectively. Interference into the terrestrial base station is practically assured due to the significantly higher power transmitted by the MSS terminal. Interference into the MSS handset is just as likely because the MSS terminals are designed to receive very low level satellite signals and are thus very susceptible to higher level interfering signals. Conceivably, no MSS terminal would be able to work within miles of a base station, *i.e.*, no MSS operations would be possible wherever there is contiguous terrestrial base station coverage.

In order to provide viable ancillary terrestrial component operations, MSS operators will be forced to limit the frequencies available to satellite customers, and the potential growth of any terrestrial service will be necessarily at the expense of the satellite service and vice-versa. Thus, conformance with the rules has not been shown to be economically viable which has led to the onslaught of waivers and the total undermining of the ATC rules. Given this reality, and based on the history of failed ATC attempts, rather than continuing down the path of endless waivers and interference debates, the Commission should eliminate the ATC rules.

III. CONCLUSION

The ATC rules have not provided the anticipated opportunity for MSS operators to deploy terrestrial service in the L-band and Big LEO band. Not a single customer has received ATC service to date. No prospective ATC operator has attempted to deploy ATC in a manner consistent with the FCC's rules. Instead they have all filed multiple waivers to operate a terrestrial service that would make satellite service ancillary to the terrestrial service, the exact opposite of what the Commission intended. The result has been a substantial waste of FCC and federal government resources that could have been, and can be, better spent on more productive endeavors. Thus, in order to protect MSS operations while continuing to explore opportunities for potential terrestrial deployment, the Commission should pursue the elimination of the ATC rules from Parts 2 and 25 of the Commission's rules. If the Commission prefers not to address

the elimination of the rules in either of the above-captioned proceedings, then the Commission should initiate a new rulemaking proceeding seeking comment on the elimination of the ATC provisions in Parts 2 and 25 of the Commission's rules consistent with these comments.

Respectfully submitted,

Iridium Communications Inc.

By: /s/ Bryan N. Tramont

Bryan N. Tramont
Patrick R. Halley
Wilkinson Barker Knauer, LLP
1800 M Street, NW Suite 800N
Washington, DC 20036
202.783.4141

Its Attorneys

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APPENDIX

PROPOSED PART 2 AND PART 25 RULES TO BE DELETED

Part 2 – Frequency Allocations and Radio Treaty Matters; General Rules and Regulations

Section 2.106 – delete footnote US380, add Fixed and Mobile allocation on a secondary basis to 2483.5-2500 MHz.

Part 25 – Satellite Communications

Section 25.103 – remove definitions of: Ancillary Terrestrial Component, Ancillary Terrestrial Component base station, and Ancillary Terrestrial Component mobile terminal.

Section 25.113(b) – delete

Section 25.117(e)(2) – delete

Section 25.149 – delete

Section 25.253 – delete

Section 24.254 – delete

Section 25.255 – delete