

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Globalstar, Inc. Petition for Rulemaking to)
Reform the Commission's Regulatory)
Framework for Terrestrial Use of the Big)
LEO MSS Band)

RM-11685

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OPPOSITION OF IRIDIUM CONSTELLATION LLC

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OPPOSITION OF IRIDIUM CONSTELLATION LLC

Iridium Constellation LLC (“Iridium”) hereby submits its opposition to the Petition for Rulemaking in the above-captioned proceeding (the “Petition”) filed by Globalstar, Inc. (“Globalstar”).¹ Iridium is a Mobile Satellite Services (“MSS”) provider that delivers uniquely critical communication services to first responders, the U.S. military, and the U.S. government. Iridium’s use of Big LEO spectrum is irreplaceable during national and international emergencies.

As a threshold matter, Iridium notes that the Petition is the latest in a series of Globalstar efforts to pursue a terrestrial wireless spectrum play at the expense of preserving Big LEO spectrum for important MSS. Not surprisingly, the Petition omits acknowledging that Globalstar previously held a waiver of gating criteria for ancillary terrestrial component (“ATC”) use of MSS spectrum that was rescinded for non-compliance;² Globalstar was the subject of an

¹ See Petition for Rulemaking Filed, Public Notice, Report No. 2971 (Nov. 30, 2012); Globalstar Inc., Petition for Rulemaking to Reform the Commission’s Regulatory Framework for Terrestrial Use of the Big LEO MSS Band, RM-11685 (filed Nov. 13, 2012) (“Petition”).

² *Globalstar Licensee LLC Application for Modification of License to Extend Dates for Coming into Compliance with Ancillary Terrestrial Component Rules*, 25 FCC Rcd 13114, ¶ 41 (2010) (“*Globalstar ATC Suspension Order*”).

enforcement action resulting in a consent decree due to its conduct in connection with the prior ATC waiver;³ and, Globalstar today suffers from system anomalies that result in either no MSS or limited MSS capabilities.⁴

Globalstar's solution to its past and present MSS problems is to propose three new paths for pursuing its terrestrial ambitions. The first path is simply to remove any obligation for Big LEO MSS licensees to provide satellite service by eliminating from the Commission's rules the ATC requirements to provide substantial satellite service, to have a spare satellite, and to limit terrestrial services to where MSS are provided. The second path—called the short-term plan—is to cobble together Globalstar's 2.4 GHz Big LEO spectrum with adjoining industrial, scientific, and medical ("ISM") spectrum to form a 22 MHz home for Wi-Fi uses that would be under Globalstar's control and dubbed the "Terrestrial Low Power Service" ("TLPS"). The third path—characterized as the long-term plan—involves some notion of Long Term Evolution ("LTE") services supplanting short-term TLPS (in the 2.4 GHz Big LEO band) and existing MSS (in both the 2.4 GHz Big LEO band as well as the 1.6 GHz Big LEO band).

Iridium, as a Big LEO band MSS operator relied upon to provide lifesaving communications by first responders, the U.S. military, and the U.S. government, would be

³ *Globalstar Licensee, LLC and GUSA Licensee, LLC*, Order and Consent Decree, 25 FCC Rcd 13961 (2010).

⁴ In 2007, Globalstar's first-generation constellation "experienced serious degradation of the satellites' S-band antenna subsystems, which caused the downlink from the satellites to the subscribers' terminals to become intermittent and unreliable" and making it "unable to provide consistently reliable voice and duplex data services." Comments of Globalstar Licensee, LLC, IB Docket No. 10-99, at 2-3 (filed Aug. 23, 2010). The FCC conditioned authorization for Globalstar to operate U.S. earth stations with its second-generation system upon successful completion by Globalstar of the French authorization process. See *Globalstar Licensee LLC, Application for Modification of Non-geostationary Mobile Satellite Service Space Station License*, 26 FCC Rcd 3948, ¶ 32 (2011). On August 29, 2011, Globalstar provided the FCC notice of such authorization. See *Govt. of France Satellite Authorization*, IBFS File No. SAT-AMD-20091221-00147 (filed Aug. 29, 2011).

directly and adversely affected by Globalstar's proposals that would impinge on the future availability of spectrum expressly allocated and authorized for MSS. Iridium is a fully operational and successful provider of the very types of MSS that the Commission envisioned in establishing the Big LEO MSS allocations and authorizations. In contrast to Globalstar, Iridium's sole focus and purpose is to provide its critical satellite capabilities to the U.S. and the world. Iridium is not pursuing plans to commoditize or repurpose MSS spectrum for terrestrial uses. Iridium is not seeking ATC authorizations. Iridium has been and will be using its spectrum for the purpose described in its license—Big LEO MSS. And in contrast to Globalstar, which has more than 25 MHz of paired spectrum already and seeks another 11 MHz in its Petition, Iridium today is constrained to just 8.725 MHz of unpaired spectrum, 0.95 MHz of which is shared with Globalstar.

In its National Broadband Plan ("NBP"), the Commission recognized that allowing terrestrial uses of certain MSS spectrum blocks could help address terrestrial wireless broadband needs. In subsequent MSS proceedings, the Commission differentiated between spectrum blocks in which there was little or no MSS being provided to the public and the Big LEO MSS band, where there are functioning service providers delivering critical communications to first responders, the U.S. military, and the U.S. government. Globalstar, however, misreads the NBP and subsequent MSS notices and orders as presaging an abandonment of MSS generally and greenlighting a transformation of the Big LEO band into a zone where terrestrial supersedes satellite services.

Against this backdrop, Iridium urges the Commission to reaffirm that a line has been drawn to guard against actions that undermine the existing and future availability of Big LEO spectrum to meet MSS needs. The Big LEO spectrum allocation is one of the last true homes for

critically important satellite services. Continued access to this spectrum is essential for public safety and national defense during domestic and international emergencies as well as for consumers, businesses, health providers, and aviation and maritime users. Accordingly, the FCC should reject summarily Globalstar proposals that are inconsistent with these overarching public interest considerations.

I. EXECUTIVE SUMMARY.

Iridium submits that the public interest clearly would be disserved by the rule changes sought by Globalstar, and the Commission should reject the Petition for the following reasons:

Globalstar's proposal to eliminate the ATC rules is inconsistent with the core purposes of the Commission's allocation of spectrum for Big LEO MSS. The Petition would invert the Commission's public policy objective of ensuring that terrestrial services remain ancillary to satellite services in the Big LEO band. Globalstar not only asks for its terrestrial services to be independent from its satellite services, but goes on to request that the core obligation to provide meaningful MSS should be eliminated as well. Specifically, the Petition would remove the substantial satellite service requirement, the backup spare satellite requirement, the limitation that terrestrial services must be within satellite coverage areas, and the integrated service requirement. In short, if its proposals were adopted, Globalstar would have no incentive to continue operating its Big LEO MSS while running off to pursue its terrestrial wireless plans.

The Commission has recognized the importance of Big LEO MSS and its irreplaceable contributions to vital U.S. and global communications capabilities. While MSS spectrum in other bands has been granted expanded terrestrial rights, the Commission has been careful to differentiate between those MSS bands where no users were being served and the Big LEO bands where MSS providers have developed significant customer bases and are in the process of deploying next-generation satellite systems. Indeed, even where some of the ATC requirements

have been relaxed, in bands with active commercial MSS operations, the Commission remained firm about the need to provide substantial satellite services in addition to the expanded terrestrial authority.⁵ Given the indispensable communications needs served by Big LEO MSS providers, there is no public interest basis for reversing the well-founded requirement that terrestrial services remain ancillary to Big LEO MSS.

Globalstar’s “long-term plan” to deploy LTE in the Big LEO bands is not fully formed, would have an adverse impact on MSS, and should be dismissed. While the FCC’s rules and policies are not unduly rigorous about the level of detail required for petitions for rulemaking, the Petition’s “long-term plan” would fail any reasonable test—generally observing that Globalstar someday hopes to provide LTE does not warrant extensive inquiry by the Commission. Globalstar does not provide any proposed rules related to the deployment of LTE mobile devices in the 1.6 GHz Big LEO band and certainly does not provide any interference studies or other data relevant to the adverse impact on MSS. Indeed, without this necessary analysis, the Petition seems to relegate the LTE proposal to some vague goal that Globalstar—in the future—might flesh out for group discussion purposes. With key aspects left to conjecture and speculation, consideration of Globalstar’s “long-term plan” would waste precious Commission’s resources and should be dismissed.

If and when Globalstar files a fully developed petition for its long-term plan, there are several high hurdles to overcome. For starters, Globalstar would need to provide detailed technical studies showing non-interference to its own MSS operations, other users in its bands, and the MSS system of Iridium in the 1.6 GHz Big LEO band. In addition, Globalstar would

⁵ See *LightSquared Subsidiary LLC*, Order and Authorization, 26 FCC Rcd 566, ¶¶ 29-30 (2011); *Globalstar Licensee LLC*, Order and Authorization, 23 FCC Rcd 15975 (2008) (granting Globalstar a limited 16-month waiver of the substantial service requirement); *Globalstar ATC Suspension Order*.

need to address why the Big LEO 1.6 GHz band should not be reserved exclusively for MSS to meet existing and future growth needs of critical and innovative services that Iridium, if not Globalstar, offers.

Finally, assuming Globalstar's continued compliance with existing ATC requirements, Iridium takes no position at this time on the proposal for TLPS in the 2.4 GHz Big LEO spectrum. Iridium does not operate in that spectrum block, and therefore there is no direct interference threat to Iridium if Globalstar's terrestrial proposal is restricted to that band. However, Iridium notes that the creation of such a new TLPS would appear to provide an added reason for rejecting Globalstar's so called "long-term" plan to deploy an LTE terrestrial service. The obvious question is why should 22 MHz of spectrum from the ISM band and the Big LEO band be used to develop a new Internet access service if, at some unspecified future date, a Globalstar LTE service supplants or supersedes such services—services that Globalstar characterizes as extremely important to meet wireless broadband needs? Indeed, if the Commission decides to let Globalstar proceed with the TLPS proposal, it should review the rules proposed by Globalstar to ensure that they are appropriately crafted to suit a low-power service and do not instead promote high-power terrestrial base station and mobile operations.

II. THE PRESERVATION OF BIG LEO MSS SPECTRUM IS ESSENTIAL FOR MEETING CRITICAL COMMUNICATIONS NEEDS FOR OUR COUNTRY AND THE WORLD.

As the Commission has long recognized, MSS provides important public interest benefits that cannot be achieved by any other form of communication, particularly for first responders, the U.S. military, and the U.S. government during natural or man-made emergencies and disasters. The Big LEO MSS band, at this point, is one of the last remaining exclusive homes for

robust, nationwide MSS, such as provided by Iridium.⁶ As discussed below, Globalstar’s proposal to repurpose Big LEO spectrum for terrestrial use would remove this last bastion of true MSS and threaten the public’s ability to receive lifesaving and innovative satellite services in the future. Accordingly, the Commission should reject any Globalstar proposal that would exchange “greater flexibility for terrestrial use” for the continued and future vitality of Big LEO MSS offerings.⁷

A. MSS Provides Important Public Benefits.

The public interest necessity of mobile satellite services is well established. In a 2010 NPRM and NOI regarding MSS spectrum, the FCC recognized “the importance of maintaining MSS to provide services, for example, to public safety and Federal government agencies, to rural areas, and during natural disasters.”⁸ MSS “serve[s] important needs,” and the agency correctly noted that “MSS systems can provide communications in areas where it is difficult or impossible to provide communications coverage via terrestrial base stations, such as remote or rural areas and non-coastal maritime regions, and at times when coverage may be unavailable from terrestrial-based networks, such as during natural disasters.”⁹ Indeed, the National Telecommunications and Information Administration (“NTIA”) recently recognized as part of its proposed network architecture for the FirstNet Nationwide Network (“FNN”) that it should

⁶ Inmarsat continues to provide MSS in portions of the L-band not provided to Lightsquared in the Cooperation Agreement. *See Third Report and Analysis of Competitive Market Conditions with Respect to Domestic and International Satellite Communications Services*, 26 FCC Rcd 17284, ¶¶ 45-46 (2011) (“*Third Satellite Competition Report*”).

⁷ *See* Petition, at 3.

⁸ *See Fixed and Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, Notice of Proposed Rulemaking and Notice of Inquiry, 25 FCC Rcd 9481, ¶ 4 (2010) (“*MSS NPRM and NOI*”).

⁹ *Id.*, ¶¶ 3, 33.

leverage the reliability, redundancy, and ubiquity of MSS to ensure maximum network resiliency during times of emergency.¹⁰

B. The Big LEO Band Is One Of The Last Remaining MSS Bands Used Solely For Robust Satellite Operations.

Today, the Big LEO band spectrum is one of the last remaining bands being used exclusively for robust, global MSS operations. The Commission recently adopted a *Report and Order and Order of Proposed Modification* (the “AWS-4 Order”) allowing DISH Network Corporation (“DISH”) flexible, terrestrial use of 2 GHz spectrum previously assigned for MSS use.¹¹ In the L-band, LightSquared Subsidiary LLC (“LightSquared”) again seeks to modify its ATC authorization to facilitate deployment of a terrestrial broadband network.¹² The shrinking amount of spectrum dedicated to mobile satellite services highlights the necessity of safeguarding MSS use of the 1.6 GHz Big LEO band. Indeed, with other MSS providers shifting to terrestrial services, it is now more important than ever for the Commission to support Iridium’s robust, global MSS operations described below.

C. Iridium Offers A Thriving MSS In The 1.6 GHz Big LEO Band.

Iridium operates the world’s largest commercial satellite constellation, which consists of sixty-six low-Earth orbiting, cross-linked satellites operating as a fully meshed network and supported by in-orbit spares. By covering the 90 percent of the planet that cellular and terrestrial

¹⁰ See F. Craig Farrill, First Responders Network Authority Presentation to the Board (Sept. 25, 2012), *available at* http://www.ntia.doc.gov/files/ntia/publications/firstnet_fnn_presentation_09-25-2012_final.pdf.

¹¹ *Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-220 MHz Bands*, Report and Order and Order of Proposed Modification, FCC 12-151, ¶ 318 (rel. Dec. 17, 2012) (“AWS-4 R&O and Order”).

¹² *Federal Communications Commission Invites Comment on LightSquared Request to Modify its ATC Authorization*, Public Notice, DA 12-1863, IB Docket No. 12-340 (rel. Nov. 16, 2012).

networks don't cover, Iridium is the only mobile satellite communications provider capable of providing truly global service.¹³ Iridium's robust MSS system provides critical communications services to first responders, the Federal Government, aid organizations, medical care providers, and private users. In addition, Iridium's unique MSS system provides indispensable communications to the U.S. military and other federal agencies both at home and abroad, and demand for Iridium's MSS capabilities will only continue to grow with increased need for connectivity beyond areas served by terrestrial systems.

Some examples of Iridium capabilities and services are as follows:

- ***Military and U.S. Government Use.*** Iridium provides vital services to the Department of Defense and many federal U.S. bureaus, agencies and departments, including serving the critical and secure needs of U.S. and Coalition Forces throughout the Middle East region. Iridium's voice and data solutions improve situational awareness for military personnel and track critical assets in tough environments around the globe, providing a unique value proposition that is not easily duplicated. The Company has a strategic relationship with its U.S. Government customers supported by differentiated and robust product offerings.¹⁴ For example, the U.S. Drug Enforcement Administration and U.S. Border Patrol rely on Iridium's communication capabilities for critical national security needs.
- ***Tsunami Warning.*** Iridium's services have also played a vital role in preparing for domestic emergencies. For instance, since 2003, the U.S. National Oceanic and Atmospheric Administration ("NOAA") has depended on Iridium's services to operate its tsunami warning system, which utilizes satellite data links to transmit real-time data from deep ocean buoys. This warning system allowed NOAA to monitor the tsunami heading towards Hawaii after the Chilean earthquake as well as the aftereffects of the Japanese earthquake.
- ***Hurricane Relief.*** In the aftermath of Hurricane Katrina, Iridium worked quickly to get mobile satellite communications equipment into the hands of first responders at the federal, state, and local levels. To meet the skyrocketing demand and ensure that equipment was delivered to critical service providers in a timely fashion, Iridium

¹³ Press Release, Iridium, *Iridium NEXT Constellation Passes Critical Milestones; On Schedule for Planned Launch in 2015* (Mar. 12, 2012), available at <http://investor.iridium.com/releasedetail.cfm?ReleaseID=656450>.

¹⁴ Press Release, Iridium, *Iridium Announces Third-Quarter 2012 Results* (Nov. 1, 2012), available at <http://investor.iridium.com/releasedetail.cfm?ReleaseID=717765> ("Iridium 3Q 2012 Results").

immediately adopted an around-the-clock manufacturing schedule. Within the first seventy-two (72) hours of the disaster, Iridium traffic in the affected region increased more than 3,000 percent, while the number of Iridium subscribers increased more than 500 percent. Brigadier General Mark A. Graham recognized the critical importance of Iridium satellite communications when he noted that in the aftermath of Katrina, “All of our command and control nodes were used to coordinate and synchronize our 24-hour evacuation operations. We provided our own communications using Iridium satellite phones and intermittent Blackberry coverage. During the evening of Thursday, September 1, the OCP was augmented with an additional 28 soldiers and Department of the Army civilians from Fifth U.S. Army. This allowed us to better maintain 24-hour operations. Utilizing this network, by the end of the day on September 1, we had evacuated approximately 15,000 displaced persons out of the City of New Orleans.”¹⁵

- ***Gulf Cleanup.*** Iridium’s satellite communications network was also deployed in innovative ways to assist in the cleanup and recovery effort after the April 2010 explosion of the Deepwater Horizon oil rig and the subsequent oil spill in the Gulf of Mexico. By incorporating Iridium satellite transceivers into robots and buoys that can be deployed on site, researchers and other relief workers were able to monitor and track the movements of the oil spill in real time, greatly improving the efficiency of cleanup efforts.
- ***Earthquakes.*** On the international stage, after the devastating earthquake in Haiti, Iridium and its partners delivered communications services critical to the coordination of relief and rescue efforts. Relief organizations—including United Nations agencies, the American Red Cross, FEMA, the U.S. Department of Defense, the U.S. State Department, the Mexican Red Cross and others—relied on Iridium handsets and equipment for their communications needs in Haiti. Similarly, in the aftermath of the earthquake in Chile in February 2010, Iridium’s services proved to be essential. Indeed, Secretary of State Hillary Clinton personally delivered twenty (20) satellite phones to Chile within days of the earthquake.¹⁶ Iridium also assisted in reestablishing domestic and international communications in Japan following the devastating earthquake and tsunami in March 2011. To ensure that Iridium services reached critical government, military, and first responder users as quickly as possible, Iridium worked directly with major Japanese telecom company KDDI to ship thousands of new handsets to appropriate personnel and ensure accelerated activation of those Iridium systems.

¹⁵ *Hurricane Katrina: Managing the Crisis and Evacuating New Orleans: Hearing Before the United States Senate Committee on Homeland Security and Government Affairs*, Testimony of Brigadier General Mark A. Graham, 109th Congress (February 1, 2006).

¹⁶ See Sarah Miller Llana, *Chile Earthquake: Hillary Clinton Arrives With Satellite Phones*, The Christian Science Monitor, March 2, 2010, available at <http://www.csmonitor.com/World/Americas/2010/0302/Chile-earthquake-Hillary-Clinton-arrives-with-satellite-phones>.

- **MedSTAR Services.** Iridium’s emphasis on innovation ensures subscribers have the latest cutting-edge technology in emergency response. Iridium currently provides critical backup and support services to MedSTAR Health with satellite phones and airtime for MedSTAR Health’s facilities in the Washington, DC region, enabling existing systems to be used even when traditional phone service is unavailable. Iridium’s automated tracking and voice services were also installed in MedSTAR Health’s transport helicopter fleet, enabling MedSTAR Health to view the location and status of its fleet and allowing its helicopters to communicate with hospitals.
- **Truly Global Coverage.** The distinctive architecture of Iridium’s system allows it to serve remote domestic and international areas that other telecommunications operators are unable to reach. Nearly 600,000 worldwide customers utilize Iridium’s Big LEO MSS.¹⁷ Additionally, Iridium is the only provider of critical flight, maritime, and worker safety applications in the polar regions, including Alaska.
- **Diverse Commercial Use.** Iridium’s diverse commercial customer base, which includes markets such as oil and gas, mining, recreation, forestry, construction, transportation, and emergency services, rely on Iridium’s products and services as critical to their daily operations.¹⁸ For example, Iridium OpenPort[®] service offers a suite of high-speed capabilities for maritime vessel telecommunications optimization and is engineered for enhanced durability to withstand the harshest maritime conditions.¹⁹

D. 1.6 GHz Big LEO Spectrum Should Be Preserved For Meeting Growing MSS Demand.

The importance of preserving the 1.6 GHz Big LEO band to meet MSS demand is demonstrated by Iridium’s growing subscribership: demand for Iridium’s service has increased and will continue to grow. In 2012, Iridium surpassed 595,000 subscribers worldwide, and its third-quarter 2012 results affirmed its outlook for continued growth, with subscribership up by 17 percent driven by the strength of machine-to-machine and commercial voice customers.²⁰

¹⁷ Iridium 3Q 2012 Results; Petition, at 2.

¹⁸ Iridium 3Q 2012 Results.

¹⁹ Press Release, Iridium, *Another Major Shipping Company, Reederei Werner Bockstiegel, Upgrades to Iridium Pilot™ and se@COMM Data Package* (June 6, 2012), available at <http://investor.iridium.com/releasedetail.cfm?ReleaseID=680578>.

²⁰ Iridium 3Q 2012 Results.

Prospects for sustained growth are healthy. In addition, the Iridium Force[®] initiative is spurring increased innovation and spectrum use through the partnering and licensing of Iridium's core technologies and network.²¹ Moreover, Iridium's next-generation constellation scheduled for launch in 2015, Iridium NEXT, will bring the potential for new, greater-bandwidth advanced services that are eagerly anticipated by Iridium's customers.²² And, during natural and man-made disasters, the Commission consistently recognizes that Iridium is spectrum-constrained and expands Iridium's access to spectrum to handle critical emergency and disaster communications.²³ As such, it is essential that the Commission take all necessary steps to protect the continued availability of Big LEO spectrum to meet Iridium's growing MSS demand.

III. MAINTAINING THE ATC GATING CRITERIA IS ESSENTIAL TO PRESERVE THE BIG LEO SPECTRUM FOR MSS.

In its Petition, Globalstar asks the Commission to eliminate all of the current ATC requirements to allow it authority to offer terrestrial services.²⁴ However, the Commission's

²¹ Under Iridium Force, Iridium has opened and licensed its core technologies and network to extend its communications reach. In addition, Wi-Fi products and services allow Blackberry, Android, iPhone, iPad and laptop users to connect their devices to the Iridium network when using particular models of Iridium handsets. Press Release, Iridium, *Iridium Force - A New Vision for Global Communications - Designed to Enhance and Expand the Way People and Organizations Connect Everywhere* (Sept. 7, 2011), <http://investor.iridium.com/releasedetail.cfm?releaseid=609735>.

²² Anticipated to launch in 2015, Iridium NEXT builds on Iridium's existing constellation architecture to enhance and extend mobile communication services. Press Release, Iridium, *Iridium NEXT Constellation Passes Critical Milestones; On Schedule for Planned Launch in 2015* (Mar. 12, 2012), <http://investor.iridium.com/releasedetail.cfm?releaseid=656450>.

²³ See, e.g., SAT-STA-20030425-00074 (granting Iridium STA for additional spectrum in the Middle East for U.S. Department of Defense use); SAT-STA-20050901-00171 (granting Iridium STA for additional spectrum following Hurricane Katrina); SAT-STA-20050923-00180 (granting Iridium STA for additional spectrum following Hurricane Rita); SAT-STA-20100115-00011 (granting Iridium STA for additional spectrum following the earthquake in Haiti); SAT-STA-20110311-00052 (granting Iridium STA for additional spectrum following the earthquake in Japan).

²⁴ Petition, at 30-32.

ATC service rules remain more vital than ever in the Big LEO band to ensure “that the terrestrial component remains ancillary to the primary purpose of the MSS system.”²⁵ Indeed, all of the ATC gating requirements are important to maintaining the availability of spectrum for the Big LEO MSS provided by Big LEO providers to public safety, government, and commercial personnel.

Moreover, contrary to Globalstar’s claims, the Commission’s elimination of the ATC gating requirements in the MSS-barren 2 GHz band is not precedent for taking similar or more extreme actions for the Big LEO spectrum—a point the Commission has consistently underscored. Indeed, the Commission has been clear about cabining off those decisions from the different Big LEO considerations.

A. Commission Rules And Precedent Unambiguously Establish That Any Terrestrial Authority For MSS Systems Must Remain Ancillary To Providing Satellite Service.

“[B]ased upon the premise that ATC remains ‘ancillary’ to a fully operational space-based MSS system,”²⁶ the Commission designed the ATC rules “to enhance MSS coverage and to enable MSS operators to extend service into areas that they were previously unable to serve.”²⁷ In that regard, and to “ensure that MSS remains first and foremost a satellite service,” the Commission established clear gating criteria that MSS providers must meet before offering ATC.²⁸ First, MSS operators must provide “substantial satellite service to the public.”²⁹

²⁵ 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, ¶ 3 (2003) (“*MSS ATC Order*”).

²⁶ *Id.*, ¶ 67.

²⁷ *Globalstar ATC Suspension Order*, ¶ 41.

²⁸ *MSS ATC Order*, ¶ 88.

²⁹ *Id.*, ¶ 3.

Specifically, the operator must provide continuous satellite service over the entire geographic area of satellite coverage required in the FCC's rules, maintain a spare satellite, and make MSS commercially available throughout the required coverage area.³⁰ Second, the offer of MSS and ATC services must be "integrated," which may be demonstrated through a safe-harbor showing of a dual-mode handset.³¹ Finally, MSS operators may only offer ATC in the frequency bands in which they are authorized to provide MSS.³²

These carefully delineated rules make certain that MSS licensees remain faithful to their MSS responsibilities by "ensur[ing] that the added terrestrial component remains *ancillary* to the principal MSS offering."³³ Indeed, the FCC left no doubt when it emphatically stated that "[w]e do not intend, nor will we permit, the terrestrial component to become a stand-alone service."³⁴

As recently as 2010, in rescinding Globalstar's ATC waiver for non-compliance, the Commission restated the importance of the ATC requirements for the Big LEO band, holding that "[g]iven the purposes of the ATC rules, we cannot conclude that, on balance, the public interest would be served by an extended period of non-compliance."³⁵ Now, just as then and when the FCC implemented the rules, these ATC protections are required to ensure that the Big LEO band continues to provide critical communications for public safety, government,

³⁰ 47 C.F.R. § 25.149(b)(1)-(3).

³¹ 47 C.F.R. § 25.149(b)(4).

³² 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*, Memorandum Opinion & Order and Second Order on Reconsideration, 20 FCC Rcd. 4616, ¶19 (2005) ("*MSS ATC Second Reconsideration Order*").

³³ *MSS ATC Order*, ¶ 1.

³⁴ *Id.*

³⁵ *Globalstar ATC Suspension Order*, ¶ 41.

commercial, and other entities, without suffering from potential harmful interference caused by terrestrial operations.

B. Globalstar Provides No Valid Basis For Removing The ATC Gating Requirements In The Big LEO Band.

Globalstar provides no compelling justification for elimination of the ATC gating criteria, nor does it address why the continued vitality of MSS would not be undermined by its proposals. Iridium’s MSS offerings have thrived in the Big LEO MSS band without an ancillary terrestrial component and are relied upon to provide critical public safety, governmental, and commercial communications worldwide. Moreover, the FCC adopted the ATC protections “to ensure that ATC remains ancillary to MSS rather than as a stand-alone terrestrial service that operates separately from MSS.”³⁶

Without the protections afforded by the ATC gating requirements, Big LEO MSS providers would have no requirement to provide *any* satellite service, let alone satellite service through an integrated handset. Removing the ATC gating criteria in the Big LEO band would elevate terrestrial use above the robust MSS deployment in the band, increase the threat of harmful interference from terrestrial operations to MSS, chill MSS investment and innovation, and create uncertainty for the many users who rely upon essential MSS communications.

Nowhere in the Petition does Globalstar address any of these important public policy and public interest questions. Indeed, nowhere in its Petition does Globalstar provide any public interest justification for gutting the ATC protections beyond vague promises of increased “terrestrial operators’ interest” and unpersuasive, apples-to-oranges analogies to the 2 GHz band.³⁷ Consequently, the Petition should be rejected for the following basic reasons:

³⁶ *Id.*, ¶ 5.

³⁷ Petition, at 30.

First, there are substantial differences between the 2 GHz band and the Big LEO band that give the Commission’s decision to forego the gating requirements in the 2 GHz band little relevance to operations in the Big LEO Band. In addition to the MSS bands’ distinctive spectral positions and band configurations, Iridium’s robust, innovative, and expanding use of the Big LEO band to provide crucial communication capability to first responders, the U.S. military, and the U.S. government stands in stark contrast to the “virtually non-existent”³⁸ 2 GHz band MSS operations and subscriber base.³⁹ Moreover, the Commission has clearly nullified the precedential value of any decision in the 2 GHz band. In the *AWS-4 NPRM*, the Commission stated that “each MSS band is differently situated and therefore merits a band-specific approach to the expansion of terrestrial use.”⁴⁰ And in the *AWS-4 Order*, the Commission confirmed that “[i]n eliminating the ATC rules for the 2 GHz MSS band, we emphasize that our action does not result in changes to the ATC rules for either the L-band or the Big LEO band.”⁴¹ Indeed, the Commission rebuked Globalstar’s prior attempt to use LightSquared’s ATC waiver in the L-Band as precedent for a similar waiver in the Big LEO band.⁴² The FCC stated that Globalstar’s

³⁸ *AWS-4 R&O and Order*, ¶ 177.

³⁹ As the Commission has recognized, “[d]espite the efforts of the Commission to promote MSS[,] . . . [t]o date there remains little commercial use of this spectrum for MSS and none for terrestrial (ATC) service.” *Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, Notice of Proposed Rulemaking and Notice of Inquiry, 27 FCC Rcd 3561, ¶¶ 7-8 (2012) (“*AWS NPRM and NOI*”).

⁴⁰ *AWS NPRM and NOI*, ¶¶ 7-8.

⁴¹ *AWS-4 R&O and Order*, ¶ 318.

⁴² *LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component*, Order and Authorization, 26 FCC Rcd 566, ¶ 37 n.133 (2011) (“*LightSquared Waiver Order*”).

request was “irrelevant” and limited the scope of LightSquared’s L-band waiver as “predicated on the specific combination of facts and circumstances before us.”⁴³

Second, Globalstar’s claim that “perpetuation of the substantial satellite service gating requirement is not necessary to ensure Globalstar’s provision of robust MSS offerings”⁴⁴ seems particularly suspect since, as described below, Globalstar was previously faulted for its failure to comply with a prior ATC waiver and its system, for several years, has been limited in capabilities and coverage. Moreover, the Petition’s assertion that the integrated services requirement has “discourage[d] the development of terrestrial operations in the MSS bands” ignores the stated purpose of the ATC rules.⁴⁵ The Commission adopted ATC rules “in an effort to provide MSS providers with greater flexibility in the delivery of their services by enabling them to *integrate* ATC into their MSS networks.”⁴⁶ Demanding more than a hollow promise of continuation of critical MSS, the Commission’s ATC gating criteria “ensure that MSS remains first and foremost a satellite service” and protect against the transfer of scarce MSS spectrum to terrestrial-only use.⁴⁷ Put another way, the substantial satellite service gating requirements make certain that MSS providers continue to invest in their satellite infrastructure and ensure continuous coverage of MSS.⁴⁸

⁴³ *Id.* at ¶ 37, ¶ 37 n.133.

⁴⁴ Petition, at 31.

⁴⁵ *See id.*, at 32.

⁴⁶ *Third Satellite Competition Report*, ¶ 49 (emphasis added).

⁴⁷ *MSS ATC Order*, ¶ 3.

⁴⁸ *See id.*, ¶ 81.

Third, it should be noted that Globalstar previously held an ATC waiver and that authority was rescinded for non-compliance.⁴⁹ In effect, because the Commission has previously stated “that a stand-alone terrestrial service would not serve the purposes of the ATC rules,”⁵⁰ Globalstar now seeks an end-run around these vital protections. Globalstar previously received conditional waivers of the ATC gating criteria requirements to provide continuously available satellite service throughout its geographic service area, to maintain spare satellites, and to provide an integrated MSS and ATC.⁵¹ However, Globalstar failed to meet the conditions of its waiver and the Commission suspended its ATC authority.⁵² At that time, the Commission indicated that Globalstar could only resume ATC operations if it came into compliance with the Commission’s rules. Globalstar has not begun to make the necessary showings to support a reinstatement of its ATC authority, let alone the justification needed to eliminate the ATC protections in the Big LEO band.

In sum, there is no public interest basis to support Globalstar’s proposal to eliminate the ATC gating criteria for the Big LEO band. As the Commission has recognized repeatedly, Big LEO MSS remains critically important, and spectrum devoted to MSS is more important than ever given the terrestrial direction of other satellite bands and the essential role and unique capabilities of Big LEO service providers and systems. Indeed, with Iridium actively and effectively utilizing Big LEO spectrum to deliver critical MSS communications to first responders, the U.S. military, and the U.S. government, this is the very time that the Commission

⁴⁹ See *Globalstar ATC Suspension Order*.

⁵⁰ See *id.*, ¶ 5.

⁵¹ See *Globalstar Licensee LLC, Application for Modification of License for Operation of Ancillary Terrestrial Component Facilities*, Order and Authorization, 23 FCC Rcd 15975 (2008).

⁵² See *Globalstar ATC Suspension Order*, ¶ 50.

should ensure access to sufficient spectrum for companies such as Iridium that are exclusively focused on providing essential satellite services now and in the future.

IV. THE COMMISSION SHOULD SUMMARILY DISMISS GLOBALSTAR'S LTE PROPOSAL AS INSUFFICIENT TO PERMIT INFORMED COMMENT AND PROPOSING A RULE CHANGE THAT WOULD GIVE RISE TO HARMS TO BIG LEO MSS.

A. Globalstar's Long-Term Plan To Deploy LTE Is So Vague As To Warrant Summary Dismissal.

In the Petition, Globalstar proposes to bifurcate its plans into a near-term request for a TLPS and a "long-term plan" to deploy LTE. While Globalstar offers a detailed description and some supportive interference analysis for the TLPS, no such detail or analysis is provided for its LTE plan, and no proposed rules at all are provided for LTE mobile operations in the 1.6 GHz Big LEO band. Indeed, the Petition does little more than speculate that some day Globalstar wants to deploy LTE in the Big LEO bands.

The Petition does not describe in detail the proposed service. The Petition does not set forth proposed rules for the 1.6 GHz Big LEO band. The Petition does not include technical showings. And the Petition most certainly does not provide any showings whatsoever as to how the terrestrial LTE service could be deployed without causing interference to the MSS of Globalstar itself, interference to Iridium MSS, or interference to the proposed TLPS.

The Commission is not unduly rigorous in requiring that petitioners set forth exhaustive details concerning proposed rule changes. However, in this case, Globalstar has left the Commission, potentially interested industry parties, and the general public with insufficient information to enable informed comment. The Globalstar LTE plan is described in the vaguest

of terms, and the Petition gives no indication of when its “long-term plan” will actually be deployed.⁵³

Under Commission rules and precedent, a petition must “set forth the text or substance of the proposed rule, amendment, or rule to be repealed, together with all facts, views, arguments and data deemed to support the action requested”⁵⁴ and include more than “conjecture or mere general observation.”⁵⁵ As a result, the Commission will deny or dismiss Petitions with “a total lack of substantive material” and “bare assertion[s]”⁵⁶ or those which are “frivolous,” “premature,” or “which plainly do not warrant consideration.”⁵⁷ Accordingly, Globalstar’s long-term proposal to deploy LTE should be summarily dismissed.

B. The LTE Proposal Raises Serious Concerns About Harms To Big LEO Services On Its Face And Warrants Rejection.

As previously discussed, the public interest dictates that the Commission must preserve the Big LEO band for MSS. Here, the Commission clearly would have to reject Globalstar’s

⁵³ Petition at ii, 3 (“Globalstar proposes . . . a long-term plan to utilize its full Big LEO spectrum allocation for a[n] [FDD] LTE-based mobile broadband network.”); Petition at 13 (“Globalstar’s business plan includes the deployment of robust terrestrial wireless services throughout the Big LEO band.”); Petition at 14 (“Under its long-term plan for its licensed Big LEO spectrum, Globalstar in conjunction with future terrestrial wireless partners will deploy FDD LTE terrestrial wireless facilities in the paired Lower and Upper Big LEO bands on a widespread basis.”); Petition at 15 (“[T]he deployment of an FDD LTE network in the Big LEO band represents a long-term goal rather than a short-term operational plan”); Petition at 18 (“While Globalstar’s long-term vision for terrestrial use of the Big LEO band is focused on using FDD LTE technology”); Petition, at 44 (“Under its long-term plan for terrestrial operations, Globalstar . . . will deploy an FDD LTE terrestrial wireless network in the Big LEO band.”).

⁵⁴ 47 C.F.R. § 1.401(c).

⁵⁵ *Newark, NJ*, 29 RR 2d 1473 (1974).

⁵⁶ *Id.*; see also *James J. Flyzik, Federal Law Enforcement Wireless Users Group*, 19 FCC Rcd 11500 (2004) (“Without concrete proposals regarding the definition and implementation of an ICS, and based on the record before us, we believe it would be imprudent to pursue this matter further at this time.”); *Dale E. Reich*, 19 FCC Rcd 23216, ¶ 5 (2004) (dismissing a petition for rulemaking when changes requested were “not consistently or clearly stated”).

⁵⁷ 47 C.F.R. § 1.401(e).

proposal to introduce LTE mobile broadband operations to the 1.6 GHz Big LEO band that is sole home for Iridium's Big LEO MSS. Instead of "maximiz[ing] public benefits" as claimed in the Petition,⁵⁸ Globalstar's proposal actually would undermine the goals of creating, maintaining, and improving Big LEO MSS.

Contrary to Globalstar's suggestion,⁵⁹ terrestrial use of the Big LEO band is not required to ensure funding for next generation MSS. Iridium already uses the 1.6 GHz Big LEO Band spectrum to provide vital services worldwide without the need for subsidization by terrestrial use, and both Iridium and Globalstar are poised to launch second-generation satellites. In fact, Globalstar plans to complete the launch of its second-generation MSS constellation by mid-2013.⁶⁰ Iridium will commence launching its next generation satellites in 2015. Simply put, Globalstar's suggestion that terrestrial expansion is necessary to "ensure the viability of [its] MSS network" lacks credibility.⁶¹ More likely, Globalstar's proposal may restrict some future investment in its MSS network in favor of its terrestrial deployment.

As Globalstar correctly notes in the Petition, the 1.6 GHz Big LEO band benefits from "unusually low interference and noise levels as well as highly favorable propagation characteristics."⁶² As conducive as these characteristics would be for terrestrial operations, they are essential to the band's vitality as a home for MSS, which depends upon reliable communications to distant satellites. Introducing LTE terrestrial operations to a heavily-populated satellite band would put MSS operations at risk of harmful interference and jeopardize

⁵⁸ Petition, at 3.

⁵⁹ *Id.*, at 7.

⁶⁰ *Id.*, at 12.

⁶¹ *Id.*, at 23.

⁶² *Id.*, at 14.

the existing and future ability of Big LEO providers to serve first responders, public safety users, and other subscribers. The Commission reiterated its finding that same-band sharing between terrestrial and satellite operations presents significant technical challenges in the recent *AWS-4 Order*,⁶³ in which it adopted a rule requiring that new terrestrial operations protect incumbent MSS operations and accept any interference from MSS.⁶⁴

Similar concerns regarding harmful interference would exist with terrestrial mobile broadband deployment in the 1.6 GHz Big LEO band. Spectrum exclusively licensed to Iridium (1618.725-1626.5 MHz) and spectrum shared with Globalstar (1617.775-1618.725 MHz) would need to be protected from interference caused by the proposed LTE deployment, and the Petition provides no technical support that this would occur. In fact, while the Petition explicitly recognizes that there are various interference concerns that the Commission must address before Globalstar's LTE service can be deployed in the 1.6 GHz Big LEO band, it provides no starting point from which to address these concerns.⁶⁵

Given the important public safety, government, commercial, and other critical functions dependent on Big LEO spectrum—as well as the anticipated growth in demand for Big LEO MSS—the Commission should ensure that the 1.6 GHz Big LEO MSS band is preserved for satellite operations. Because of the significant risk of harmful interference posed to Big LEO MSS operations, the Commission should reject that portion of Globalstar's Petition as facially inconsistent with the public interest.

⁶³ *AWS-4 R&O and Order*, ¶ 181.

⁶⁴ *Id.*, ¶ 160.

⁶⁵ Petition, at 15.

V. ASSUMING COMPLIANCE WITH EXISTING ATC REQUIREMENTS, IRIDIUM TAKES NO POSITION AT THIS TIME ON GLOBALSTAR'S "SHORT-TERM" PROPOSAL TO USE THE 2.4 GHZ BIG LEO SPECTRUM FOR A TERRESTRIAL LOW POWER SERVICE.

Globalstar proposes near-term rule changes to allow it to combine its 2.4 GHz Big LEO Band spectrum at 2483.5 – 2495 MHz with adjacent, unlicensed ISM spectrum at 2473 – 2483.5 MHz, giving it access to 22 MHz of 2.4 GHz spectrum in which to deploy a TLPS to deliver Wi-Fi-type “hotspot” wireless broadband Internet access using technology based on IEEE 802.11 specifications.⁶⁶ As Iridium does not operate in the 2.4 GHz Big LEO Band, Globalstar is the only Big LEO MSS provider in this spectrum.⁶⁷ Therefore, provided that Globalstar complies with existing ATC requirements, Iridium takes no position at this time on Globalstar’s TLPS proposal.

The Petition identifies an opportunity to meet the need for additional spectrum for Internet access services. Globalstar notes that its TLPS will help “alleviate the congestion – and frustration – currently experienced by many Wi-Fi users at high-traffic ‘hotspots’ in dense metropolitan areas.”⁶⁸ Globalstar asserts that by leveraging existing devices and technology, the service will “provide consumers with improved wireless broadband service, including faster data speeds and better Voice over Internet Protocol (“VoIP”) functionality.”⁶⁹

Unlike the 1.6 GHz Big LEO Band, the 2.4 GHz Big LEO Band possesses some characteristics that make it more suitable for a low-power terrestrial deployment. First, while the 2.4 GHz Big LEO band spectrum “is already allocated internationally for Fixed and Mobile

⁶⁶ *Id.*, at 15-16.

⁶⁷ *Third Satellite Competition Report*, ¶ 65.

⁶⁸ Petition, at 4.

⁶⁹ *Id.*, at 22.

services,”⁷⁰ the 1.6 GHz Big LEO band is not, and is widely used for satellite services around the globe. Second, whereas the 2.4 GHz Big LEO Band spectrum is uniquely located adjacent to the ISM band below 2483.5 MHz, facilitating Globalstar’s proposal to combine MSS and ISM spectrum into a 22 MHz block, the 1.6 GHz Big LEO band has no such spectral efficiencies favoring terrestrial use. Finally, while Globalstar is the only provider in the 2.4 GHz Big LEO Band, spectrum in the 1.6 GHz Big LEO Band is licensed to both Iridium and Globalstar, including some spectrum sharing at 1617.775 – 1618.725 MHz, which would present significant technical and coordination challenges, as discussed above.

However, from a public interest perspective, TLPS appears to be better suited to be a long-term solution, rather than the interim deployment contemplated by Globalstar. The need for stable, reliable wireless Internet access services identified by Globalstar is not likely to subside. As such, the Commission should think carefully before permitting future disruption or displacement of TLPS by LTE services as proposed by Globalstar. Globalstar itself touts that “TLPS-based public interest benefits will be long lasting,”⁷¹ but the Petition provides no specific details of what is to happen to TLPS and its users under the long-term proposal to deploy LTE in the 2.4 GHz Big LEO band.

Additionally, the rules proposed for the 2.4 GHz Big LEO band discuss the creation of a new Part 27 AWS-5 service with full flexibility of use, high-power base and mobile operations, and other technical characteristics comparable to those applied to the AWS-1 band and other commercial mobile allocations. These rules would permit operations far different from those contemplated in the only technical analysis of the TLPS included with the Petition. Rather than

⁷⁰ *Id.*, at 14.

⁷¹ *Id.*, at 4.

creating a new Wi-Fi service, these rules clearly are modeled on those used to support robust 3G and 4G mobile broadband services. It is therefore unclear if the TLPS will be operated in full compliance with the existing Part 15 rules or if Globalstar intends to operate its TLPS in accordance with these much higher power limits that it proposes for adoption under Part 27. Globalstar should, at a minimum, clarify its operational parameters for the TLPS to afford interested parties the ability to provide meaningful comment on the technical effects of the proposal.

To avoid stifling investment in TLPS as well as potentially stranding substantial consumer investment in TLPS-enabled devices—the Commission should make clear that TLPS is intended to be more than a short-term solution. As such, the Commission should review carefully the technical rules proposed by Globalstar to ensure that the power levels, emissions limits, and other specifications are appropriate for TLPS operations, as opposed to high-power mobile broadband applications. Any rules adopted by the Commission should be carefully tailored to support the establishment of a TLPS that can coexist with adjacent services. The rules should not create confusion about the scope of permissible operations by granting greater flexibility than is necessary or can be supported in the band.

In addition, the Globalstar Petition raises several questions about the practical implications of the proposed TLPS deployment:

- In the Petition, Globalstar repeatedly asserts that it will manage TLPS operations.⁷² However, this seemingly does not adequately account for the management of the half of the spectrum that would come from ISM users.
- The Globalstar TLPS proposal provides no spectrum guard band between its operation and the final WiFi channel, yet WiFi operations typically have several megahertz of spectrum separation between each channel. Globalstar should provide

⁷² See, e.g., Petition, at 16.

documented technical evidence that the reduction in spectrum separation will not cause harmful interference to existing WiFi devices.

- The Petition does not specify whether TLPS will be licensed or unlicensed. Globalstar should provide information on the legal status of TLPS.
- Globalstar should clarify whether the TLPS proposal contemplates allowing it to deploy devices before devices can be deployed by others.

The Commission should carefully consider these issues prior to providing Globalstar relief to deploy TLPS in the 2.4 GHz Big LEO Band.

VI. CONCLUSION.

In view of the foregoing, the Commission should summarily reject Globalstar's Petition to eliminate the ATC rules applicable to Big LEO MSS providers as contrary to the public interest. In addition, Globalstar's purported "long-term plan" to provide LTE in the Big LEO bands should be dismissed for lack of sufficient information to permit informed comment and ultimately denied in any event given the inherent threat to existing and future Big LEO MSS operations as well as the new TLPS proposed by Globalstar. Finally, Iridium takes no position at this time on Globalstar's request to establish a TLPS in the 2.4 GHz Big LEO band assuming existing ATC rules and safeguards are retained.

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January 14, 2013

CERTIFICATE OF SERVICE

I, Jackie Martin, do hereby certify that on this 14th day of January 2013, I caused copies of the foregoing "Comments of Iridium Constellation LLC" to be delivered to the following via First Class U.S. mail:

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