

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Iridium Constellation LLC Petition for	)	RM-11697
Rulemaking to Promote Expanded Mobile	)	
Satellite Service in the Big LEO MSS Band	)	

**OPPOSITION OF GLOBALSTAR, INC. TO PETITION FOR RULEMAKING**

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## **Executive Summary**

Globalstar, Inc. (“Globalstar”) hereby opposes the above-captioned Petition for Rulemaking of Iridium Constellation LLC (“Iridium”), which seeks to take three megahertz of Globalstar’s licensed mobile satellite service (“MSS”) spectrum. The reassignment of this Big LEO spectrum would have a disastrous effect on Globalstar’s global MSS operations and cause significant harm to the customers who rely on Globalstar’s services. With its Petition, Iridium pursues the very frequencies that Globalstar uses to provide its commercially successful SPOT services to adventurers and other individuals in life-threatening situations all over the world, resulting in over 2,700 rescues to date. Iridium’s spectrum grab would also degrade or prevent Globalstar’s service to citizens, first responders, and other public safety personnel in disaster areas where terrestrial networks are unavailable. In addition, the loss of this spectrum would prohibit a Globalstar service that would extend the range and capability of next-generation air traffic management technology for tracking and controlling aircraft worldwide, an offering that would benefit the commercial airlines, passengers, and public safety (but not Iridium’s own competing service).

Iridium claims that Globalstar is no longer interested in providing satellite service, but as the Commission recently acknowledged, Globalstar is committed to its MSS business. Having completed deployment of its second-generation MSS constellation and restored its two-way services, Globalstar is moving aggressively to compete again with Iridium across the MSS marketplace. Iridium brazenly attempts to use the Commission’s regulatory process to stifle this competition, but it provides no legitimate basis for taking additional spectrum from Globalstar after the Commission’s 2007 order re-setting the Big LEO band plan. Accordingly, the Commission should deny Iridium’s Petition.

**Table of Contents**

**EXECUTIVE SUMMARY ..... i**

**I. AS THE COMMISSION RECENTLY CONCLUDED, GLOBALSTAR REMAINS COMMITTED TO THE SUCCESSFUL DEVELOPMENT AND FUTURE GROWTH OF ITS MSS BUSINESS .....2**

**II. IN 2007, THE COMMISSION RE-BALANCED THE BIG LEO BAND TO ENSURE LONG-TERM CERTAINTY AND STABILITY .....11**

**III. THE LOSS OF ITS LOWER BIG LEO BAND SPECTRUM ABOVE 1616 MHz WOULD CAUSE SEVERE HARM TO GLOBALSTAR’S MSS BUSINESS, ITS CUSTOMERS, AND PUBLIC SAFETY .....12**

**A. Globalstar’s Channel Plan in the Lower Big LEO Band .....13**

**B. Impact on Globalstar Service in the United States Due to Radio Astronomy Restrictions in Big LEO Spectrum Below 1616 MHz .....15**

**C. Impact on Service Outside the United States and the Viability of Globalstar’s First-Generation Satellites .....20**

**D. Impact on Globalstar Aviation Services .....21**

**E. The Loss of Its Lower Big LEO Spectrum Below 1616 MHz Would Increase Interference and Degrade the Quality of Globalstar’s Service in the United States .....23**

**1. Impact from limitation on frequency reuse by North American gateways .....24**

**2. Impact on user capacity during periods of peak usage, such as following a natural or manmade disaster .....25**

**3. Impact from greater use of duplex Channel 1 .....26**

**F. Impact on High Data Rate Services in the United States from Globalstar’s Second-Generation Constellation and Ground Network .....27**

**IV. IF THE COMMISSION INITIATES A RULEMAKING, IT IS MORE LIKELY TO RETURN SPECTRUM TO GLOBALSTAR THAN GIVE ADDITIONAL LOWER BIG LEO BAND FREQUENCIES TO IRIDIUM .....28**

**V. CONCLUSION .....30**

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**OPPOSITION OF GLOBALSTAR, INC. TO PETITION FOR RULEMAKING**

Globalstar, Inc. (“Globalstar”) hereby opposes the above-captioned Petition for Rulemaking of Iridium Constellation LLC (“Iridium”), which seeks to take three megahertz of Globalstar’s licensed mobile satellite service (“MSS”) spectrum. The reassignment of this Big LEO spectrum would have a disastrous effect on Globalstar’s global MSS operations and cause significant harm to the customers who rely on Globalstar’s services. With its Petition, Iridium pursues the very frequencies that it knows full well Globalstar uses to provide its commercially successful SPOT services to adventurers and other individuals in life-threatening situations all over the world, resulting in over 2,700 rescues to date. Iridium’s spectrum grab would also degrade or prevent Globalstar’s service to citizens, first responders, and other public safety personnel in disaster areas where terrestrial networks are unavailable. In addition, the loss of this spectrum would prohibit a Globalstar service that would extend the range and capability of next-generation air traffic management technology for tracking and controlling aircraft worldwide, an offering that would benefit the commercial airlines, passengers, and public safety (but not Iridium’s own competing service).

Iridium claims that Globalstar is no longer interested in providing satellite service, yet just last month the Commission itself acknowledged that Globalstar *is* committed to its MSS

business. Having completed deployment of its second-generation MSS constellation and restored its two-way services, Globalstar is moving aggressively to compete again with Iridium across the MSS marketplace. Iridium brazenly attempts to use the Commission’s regulatory process to stifle this competition, but it provides no legitimate basis for taking additional spectrum from Globalstar after the Commission’s 2007 order re-setting the Big LEO band plan. Accordingly, the Commission should deny Iridium’s Petition.

**I. AS THE COMMISSION RECENTLY CONCLUDED, GLOBALSTAR REMAINS COMMITTED TO THE SUCCESSFUL DEVELOPMENT AND FUTURE GROWTH OF ITS MSS BUSINESS**

Iridium’s Petition is predicated on the false idea that Globalstar is no longer committed to its MSS operations. The Commission itself refutes this claim in its recent Notice of Proposed Rulemaking on Globalstar’s proposed provision of Terrestrial Low Power Service at 2473-2495 MHz.<sup>1</sup> The Commission recognized that “Globalstar is continuing to develop and pursue MSS operations in the portion of the Big LEO spectrum designated for its use,” and stated that “[w]e believe that Globalstar continues to be invested in the provision of MSS.”<sup>2</sup> Indeed, the Commission’s conclusion that Globalstar is committed to its MSS business provides the very foundation on which it proposed new rules to permit Globalstar to offer terrestrial mobile broadband services that are “ancillary” to its satellite operations.<sup>3</sup>

With over \$5 billion invested in its global non-geostationary (“NGSO”) MSS network, Globalstar is fully committed to the continued development and future success of its satellite

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<sup>1</sup> *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*, IB Docket No. 13-213; RM-11685, Notice of Proposed Rulemaking, FCC 13-147, ¶ 26 (rel. Nov. 1, 2013).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

business. Licensed in 1995 to operate in the Big LEO band,<sup>4</sup> Globalstar today uses its constellation of satellites and ground stations on six continents to provide affordable, high-quality MSS to more than 550,000 customers, including approximately 100,000 duplex (voice) customers, in over 120 countries around the world. Globalstar is licensed for uplink transmissions (mobile earth stations to satellites) at 1610-1618.725 MHz (the “Lower Big LEO band”), and for downlink transmissions (satellites to mobile earth stations) at 2483.5-2500 MHz (the “Upper Big LEO band”).<sup>5</sup>

Globalstar initiated commercial service in 2000, and, based primarily on its duplex voice and data offerings, it enjoyed an approximately 30% annual growth in subscribership and revenues from 2003 to 2006. In early 2007, Globalstar’s first-generation constellation suffered an unanticipated degradation of its S-band capability that temporarily precluded consistently reliable duplex voice and data services. In response, Globalstar refocused its energies on affordable consumer-based simplex products and services while continuing the design, manufacture and launch of a second-generation constellation of more capable satellites. Even prior to the completion of its second-generation satellite deployment, Globalstar enjoyed improved financial and operating performance.<sup>6</sup> Now, with its second-generation constellation

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<sup>4</sup> *Application of Loral/Qualcomm Partnership, L.P. For Authority to Construct, Launch, and Operate Globalstar, a Low Earth Orbit Satellite System to Provide Mobile Satellite Services in the 1610-1626.5 MHz/2483.5-2500 MHz Bands*, Order and Authorization, 10 FCC Rcd 2333 (IB 1995); see also *Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Second Order on Reconsideration, Second Report and Order, and Notice of Proposed Rulemaking, 22 FCC Rcd 19733, ¶¶ 8, 18-20 (2007) (“2007 Big LEO Spectrum Sharing Order”).

<sup>5</sup> Iridium is authorized to share spectrum with Globalstar at 1617.775-1618.725 MHz.

<sup>6</sup> Last year, before its fourth successful launch of second-generation satellites in February 2013, Globalstar reported positive annual Adjusted EBITDA of \$9.8 million, a \$16.2 million increase over the prior year period and a \$24.0 million improvement compared to its historic low in 2008 during the pre-launch construction period.

in place and full duplex service restored, Globalstar is experiencing accelerated growth across its various business lines, with greater minutes of use, rising average revenue per user, increased subscriber additions, and expanding equipment sales. Globalstar's growth over the past two years stands in stark contrast to the financial performance of the MSS sector (including Iridium), which has experienced stagnant revenues over this period.<sup>7</sup>

*Provision of mission-critical public safety services.* Since initiating commercial MSS, Globalstar has been dedicated to providing mission-critical, emergency, and safety-of-life services to commercial, recreational, and government customers in remote, unserved, and underserved areas not reached by terrestrial deployments.<sup>8</sup> In populated areas, Globalstar's MSS network provides critical back-up capabilities for public safety personnel during disasters when terrestrial facilities can be rendered unavailable. Public safety entities involved in relief efforts in the United States and around the world have relied on Globalstar's satellite services after earthquakes, hurricanes, and other disasters.

In the United States, Globalstar's MSS network played a vital role during and after the devastating Hurricanes Sandy and Katrina. Following Hurricane Sandy in the fall of 2012,

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<sup>7</sup> Globalstar reported revenues of \$22.5 million for the three months ending on September 30, 2013, compared to \$20.5 million for the three months ending on September 30, 2012. Globalstar also reported substantial increases in duplex ARPU and equipment revenue. See Globalstar Press Release, *Globalstar Announces Third Quarter 2013 Results* (Nov. 13, 2013), <http://www.globalstar.com/en/index.php?cid=7010&pressId=800>.

<sup>8</sup> In addition to individual consumers, Globalstar's customers include entities in government, the military, emergency preparedness, transportation, heavy construction, oil and gas, mining, forestry, and commercial fishing. For these government and business customers, Globalstar's data solutions are ideal for asset and personal tracking, data monitoring, and supervisory control and data acquisition ("SCADA") applications. In particular, Globalstar's commercial simplex service enables subscribers to track cargo containers and rail cars and to monitor utility meters, as well as a host of other applications. Globalstar's services are available in all areas of the world, except in central and southern Africa, Southeast Asia, the Indian subcontinent, and oceanic and polar regions. Globalstar is working diligently to expand coverage in many of these areas.

Globalstar's network provided seamless communications in the Mid-Atlantic and Northeast regions of the United States in areas where terrestrial communications systems were damaged and rendered unavailable. For instance, New York Power Authority ("NYPA") employees at the Flynn Power Plant in Holtsville, New York relied exclusively on Globalstar MSS devices for their communications during the three-day period that terrestrial telephone and wireless systems were out of service. NYPA has stated that "during and immediately after Hurricane Sandy, our only means of communication into or out of our facilities located on Long Island was via satellite, over Globalstar's network."<sup>9</sup> Other agencies and organizations in the storm-affected area that utilized Globalstar's MSS products and services included the New York Police Department, Federal Emergency Management Agency, Metropolitan Transit Authority, the New York State Department of Environmental Protection, the Port Authority, Con Edison, and numerous hospitals. Overall, during and after the storm, Globalstar experienced a greater than 50% increase in duplex traffic throughout New York, New Jersey, and Connecticut, with the highest concentration of calls occurring in New York City. Existing customers increased their MSS usage, and significant numbers of Globalstar phones were activated by new users during this period.

Similarly, Globalstar's efforts and capabilities in the aftermath of Hurricane Katrina in 2005 have been acknowledged by numerous observers. Senator Mary Landrieu earlier this year stated that following Katrina, "[s]atellite-based communications were vitally important when terrestrial communications networks became overloaded and failed after this disaster. After Katrina, Globalstar had over ten thousand satellite phones operating in the Gulf Coast region. As a result, I believe that allowing Globalstar the ability to continue providing these services well

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<sup>9</sup> Letter from Frank A. Miller, New York Power Authority, to Acting Chairwoman Mignon Clyburn, FCC, RM-11685, at 1 (May 20, 2013, filed May 23, 2013).

into the future will provide additional coverage and capacity in such post-disaster situations.”<sup>10</sup> Congressman Cedric Richmond echoed this view, saying that “[m]y constituents and I experienced the effects of Hurricane Katrina first hand when satellite-based communications were so integral in performing safety of life services and response. . . . We need to ensure that Globalstar has the ability to continue providing these unique services well into the future.”<sup>11</sup> In the months following Katrina, Globalstar’s post-disaster contributions were recognized by such public officials as President George Bush and Mississippi Governor Haley Barbour.<sup>12</sup>

In recent years, Globalstar has also focused on developing affordable, consumer-oriented devices and services with significant public safety benefits. In particular, Globalstar has developed an innovative, hand-held personal tracking and emergency messaging product category by combining a GPS receiver with a multi-featured MSS L-band transmitter. Globalstar’s innovative, consumer-oriented “SPOT” family of MSS devices has played a critical role in the provision of emergency and safety-of-life services to individual consumers beyond terrestrial wireless reach. From any location in Globalstar’s global MSS footprint, SPOT devices

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<sup>10</sup> Letter from Senator Mary L. Landrieu, United States Senate, to Acting Chairwoman Mignon Clyburn, FCC, RM-11685 (July 23, 2013, filed July 24, 2013).

<sup>11</sup> Letter from Congressman Cedric L. Richmond, United States House of Representatives, to Chairwoman Mignon Clyburn, FCC, RM-11685, at 1 (June 24, 2013, filed July 1, 2013).

<sup>12</sup> See Letter from President George W. Bush to Globalstar (Nov. 21, 2005); Letter to Kevin J. Martin, FCC Chairman, from Haley Barbour, Governor of Mississippi (Dec. 21, 2005). See also Peter J. Brown, *Crisis on the Gulf Coast: When Satellite Was the Only Game in Town*, VIA SATELLITE, Jan. 2, 2006 (“Globalstar doubled its capacity to make calls to landline phones, increased its active spectrum allocation via special temporary authorities granted by the U.S. Federal Communications Commission (FCC), and allocated gateway coverage footprints to increase capacity in the affected area to manage the unprecedented surge in users.”); Paul Davidson, *Satellite Phones Provide Critical Link to Outside World*, USA TODAY, Sept. 6, 2005 (noting that Globalstar “sold more than 11,000 phones and leased 1,000 more” immediately following Hurricane Katrina); *Satellite Phones Critical to Katrina Relief Efforts*, COMMUNICATIONS DAILY, Sept. 1, 2005 (noting that Globalstar saw “increased usage . . . from response agencies at all levels” in the aftermath of the Gulf Coast hurricane).

can transmit a user's GPS coordinates and status updates to any e-mail, handheld device, or smartphone address in the world.<sup>13</sup> As of November 25, 2013, the family of SPOT devices has been used to achieve 2,791 emergency rescues, often life-saving, in seventy-five countries and at sea. During 2013 alone, SPOT products have been used to achieve 597 rescues, an average of nearly two per day.<sup>14</sup>

*Second-generation MSS network.* In August 2013, Globalstar became the first global Big LEO MSS voice and data provider to complete the deployment of a state-of-the-art, second-generation MSS constellation that enables its subscribers to stay connected beyond the reach of traditional terrestrial wireless networks. Pursuant to satellite construction and launch contracts, Globalstar spent more than \$1 billion designing, manufacturing, delivering, insuring, and launching its second-generation MSS constellation and attendant ground infrastructure. With a fifteen-year design life, Globalstar's second-generation MSS system is supporting highly reliable, crystal-clear CDMA-quality voice and data satellite services to the billions of consumers, public safety personnel, and other potential customers within its global footprint, and will do so beyond 2025.<sup>15</sup> Globalstar has also continued to develop its next-generation ground

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<sup>13</sup> In June 2012, the United States Forest Service purchased 6,000 SPOT Satellite GPS Messenger devices in order to enhance employee safety. See Globalstar Press Release, *U.S. Forest Service Purchases 6,000 SPOT Devices* (June 27, 2012), <http://www.globalstar.com/en/index.php?cid=7010&pressId=731>.

<sup>14</sup> SPOT users receiving assistance have included hikers, boaters, pilots, and remote workers, among others. Specific examples include a Boy Scout troop leader who was seriously injured in an accident involving a horse in Mount Hood National Forest and airlifted to safety by the National Guard, a backcountry skier in Norway who was located and rescued after being trapped at high elevation during a severe winter storm, and an Arkansas photographer who was rescued from a steep ravine after falling 30 feet in the Ozark National Forest.

<sup>15</sup> Globalstar's second generation satellites are licensed for operation and registered with the United Nations by the Republic of France. In March 2011, the Commission modified fixed and mobile earth station licenses held by GUSA Licensee LLC to permit those earth station facilities to communicate with Globalstar's French-licensed second-generation Big LEO satellite system.

infrastructure. Globalstar has contracted with Hughes Network Systems to deliver next-generation ground network equipment, software upgrades, and satellite handset chipsets, and it expects these ground facilities to be complete in 2015. Offering an array of services to customers throughout the world, Globalstar's second-generation MSS network will provide the highest voice quality, fastest truly mobile data speeds, and most affordable service in the MSS industry.

*New and Future MSS Product Offerings.* With its second-generation MSS constellation in place, existing customers are increasing their use of Globalstar's services, and Globalstar expects to gain additional customers during 2014. To this end, Globalstar is the only MSS company that specifically targets the consumer mass market with innovative, inexpensive, easy-to-use satellite-based communications products and services. In 2013 alone Globalstar introduced three new MSS products, and is working to bring additional devices and services to the marketplace in the near future.

In May 2013, Globalstar introduced the SPOT Global Phone to the consumer mass market, allowing subscribers to make crystal-clear calls from some of the most remote locations in the United States and around the globe for business, recreational use, or in times of distress. With the most affordable MSS pricing plans available, data connectivity, and a long-life lithium ion battery, SPOT Global Phone users will be able to stay connected when they are outside of terrestrial wireless coverage. The SPOT Global Phone is available for sale directly to

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*See Globalstar Licensee LLC; Application for Modification of Non-geostationary Mobile Satellite Service Space Station License, Order, 26 FCC Rcd 3948 (IB 2011).*

consumers at major retailers around the United States,<sup>16</sup> and consumers can purchase service themselves via Globalstar's findmespot.com website.

In July 2013, Globalstar released its third generation of the award winning SPOT personal tracking device, SPOT Gen3™ ("SPOT 3"), providing a critical line of communication at the push of a button, regardless of terrestrial wireless coverage. The SPOT 3 offers the same S.O.S., tracking, and custom messaging functionalities as previous generations of this device, with approximately twice the battery life of its predecessor and new custom tracking options. Globalstar is unaware of any other satellite-based product that has achieved the remarkable life-saving record of the SPOT family of devices. Just last month, Globalstar also introduced the SPOT Trace™, the first satellite-based asset tracking and theft prevention product specifically targeted to the consumer mass market. Subscribers will use SPOT Trace to track anything, anytime, anywhere, providing advanced theft-alert tracking for their most important assets. SPOT Trace users will instantly receive a text or email when their assets move, and will be able to follow them online anytime via Google Maps.

Globalstar continues to develop and release new products for use over its new constellation, some of which will integrate its satellite services seamlessly into consumers' existing communications devices. Globalstar is also working with a technology partner, ADS-B Technologies, LLC, on the development of a space-based air traffic management solution. Globalstar's MSS network would support a proposed ADS-B Link Augmentation System ("ALAS"), which would provide extraordinary benefits both to the aviation industry and to public safety. ADS-B (Automatic dependent surveillance-broadcast) is an air traffic management technology used to track and control aircraft worldwide, and is one of the

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<sup>16</sup> Retailers offering the SPOT Global Phone include Sports Authority, REI, Cabela's, Bass Pro Shops, and many others.

technologies selected as part of the U.S. Next Generation Transportation System as well as the European Cascade program.<sup>17</sup> ADS-B enhances safety by making an aircraft visible in real time to air traffic controllers and to other appropriately equipped ADS-B aircraft, with position and velocity data transmitted every second.

ALAS would dramatically increase the range and capability of ADS-B systems. In rugged and remote areas lacking ground-system coverage, an aircraft's ALAS equipment would use Globalstar's satellites and ground facilities to transmit relevant aircraft data to the air traffic control system and receive ADS-B data from other aircraft. With the deployment of its second generation satellites and ground segment, Globalstar expects that it would be able to serve more than 8,000 aircraft over North America, and that it would be able to meet the growing needs of civil and commercial aviation well into the future.

\* \* \*

Globalstar's overall investment of more than \$5 billion, its dogged and prolonged determination to overcome the technical problems that restricted its services, the recent, substantial funding of its second-generation campaign, its status as the first LEO provider to deploy a second-generation constellation, and its development of innovative new MSS applications all demonstrate its continuing commitment to a vibrant, successful satellite business. With Iridium's Petition entirely dependent on its unfounded claim that Globalstar is no longer committed to providing satellite services, the Commission should deny the Petition on this basis alone.

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<sup>17</sup> See, e.g., Federal Aviation Administration, *NextGen Implementation Plan* (June 2013), at 4, [http://www.faa.gov/nextgen/implementation/media/NextGen\\_Implementation\\_Plan\\_2013.pdf](http://www.faa.gov/nextgen/implementation/media/NextGen_Implementation_Plan_2013.pdf); *CASCADE*, EUROCONTROL (July 9, 2013), <http://www.eurocontrol.int/surveillance/cascade>.

## II. IN 2007, THE COMMISSION RE-BALANCED THE BIG LEO BAND TO ENSURE LONG-TERM CERTAINTY AND STABILITY

After a four-year long proceeding, the Commission “re-balanced” the Lower Big LEO band (1610-1626.5 MHz) in 2007, when it re-assigned more than three megahertz of Globalstar’s licensed spectrum to Iridium.<sup>18</sup> As a result of the Commission’s 2007 order, Globalstar’s licensed MSS system now has an exclusive assignment of 7.775 megahertz of Lower Big LEO spectrum in the United States (1610-1617.775 MHz), while Iridium’s MSS system likewise enjoys an exclusive assignment of 7.775 megahertz of Lower Big LEO spectrum (1618.725-1626.5 MHz). As indicated above, Globalstar and Iridium also share a small segment of Lower Big LEO spectrum (0.95 megahertz) at 1617.775 MHz-1618.725 MHz.<sup>19</sup> In its 2007 decision, the Commission stated that the new band plan “improves spectrum efficiency” and “provides an equitable distribution of the spectrum between” the two MSS licensees in the band.<sup>20</sup> The Commission found that the equal division of Lower Big LEO band spectrum between Globalstar and Iridium would “provide long-term certainty and stability in the Big LEO market.”<sup>21</sup>

With its Petition to take three megahertz of Globalstar’s licensed spectrum, Iridium threatens to undercut this long-term certainty and stability in the Big LEO band. Certainly, Iridium’s claim that the Commission should now “take a fresh look” at its Big LEO MSS spectrum policies is without merit. With a focus on the Commission’s 2007 revised band plan, Globalstar has invested over \$1 billion and six years of effort to design, build, and launch a second-generation MSS constellation with a 15-year design life, and Globalstar’s bank group has

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<sup>18</sup> See *2007 Big LEO Spectrum Sharing Order*, *supra* note 2.

<sup>19</sup> *Id.* ¶ 8. The Commission’s order shifting Big LEO spectrum to Iridium was affirmed by the United States Court of Appeals for the District of Columbia Circuit in 2009. *Globalstar, Inc. v. FCC*, 564 F.3d 476 (D.C. Cir. 2009).

<sup>20</sup> *2007 Big LEO Spectrum Sharing Order* ¶ 1.

<sup>21</sup> *Id.* ¶ 17.

lent it almost \$600 million toward the completion of its second-generation campaign. The Commission should not undermine the prior investment decisions of Globalstar's lenders and financial backers by revisiting the framework of the Lower Big LEO band now. Iridium fails to show that the current division of spectrum is inequitable or to identify any other genuine public interest rationale for revisiting the Commission's 2007 decision. Iridium's Petition is effectively a tardy request for reconsideration of that order, and this baseless, repetitive request "plainly do[es] not warrant consideration by the Commission."<sup>22</sup>

### **III. THE LOSS OF ITS LOWER BIG LEO BAND SPECTRUM ABOVE 1616 MHz WOULD CAUSE SEVERE HARM TO GLOBALSTAR'S MSS BUSINESS, ITS CUSTOMERS, AND PUBLIC SAFETY**

Iridium's proposed taking of Globalstar's licensed spectrum above 1616 MHz would have a disastrous effect on Globalstar's global MSS business and cause substantial harm to consumers, public safety personnel, and other customers located in rural and remote areas outside terrestrial network coverage. If the spectrum above 1616 MHz is taken from Globalstar and handed to its competitor, Globalstar would lack the spectrum resources necessary to operate a competitive, viable MSS network. Iridium claims that "Globalstar will still have more than sufficient spectrum to operate its current and future Big LEO MSS system,"<sup>23</sup> but it surely knows better. Iridium is attempting to abuse the Commission's regulatory process to hobble its closest competitor, and the Commission should have no tolerance for these anti-competitive tactics.

As Iridium is aware, not all spectrum in the Lower Big LEO band has equal value. The Lower Big LEO band spectrum below 1616 MHz is significantly encumbered for the provision of satellite services, and this reality is highly unlikely to change. Specifically, the Commission and other national administrations have imposed various restrictions on the use of the

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<sup>22</sup> See 47 C.F.R. 1.401(e).

<sup>23</sup> Petition for Rulemaking of Iridium Constellation LLC, RM-11697, at 17 (Feb. 11, 2013).

frequencies below 1616 MHz, primarily to protect the Radio Astronomy Service (“RAS”) at 1610.6-1613.8 MHz and the GPS and GLONASS systems below 1610 MHz. Globalstar has designed its global MSS network to work around these restrictions and make the most efficient use of its Lower Big LEO band spectrum, given the options available to it under the existing Big LEO band plans in the United States and elsewhere. As described below, if the Commission departs from its 2007 Big LEO decision and takes away Globalstar’s channels above 1616 MHz, it would create substantial gaps in Globalstar’s global service footprint, degrade the quality of its services in the United States and elsewhere, compromise the management of its satellite constellation, and stunt its development and future growth just as Globalstar has restored its full MSS capabilities with the deployment of its second-generation space segment. The Commission should avoid these extensive harms by expeditiously denying Iridium’s Petition.

**A. Globalstar’s Channel Plan in the Lower Big LEO Band**

To understand the extent of the harm to Globalstar’s MSS business, it is necessary to describe Globalstar’s current use of its licensed Lower Big LEO band spectrum at 1610-1618.725 MHz. This band is used for the “return” link between Globalstar customers’ mobile terminals and Globalstar’s satellites. The frequency and channel plan for this Lower Big LEO spectrum in the United States is shown below in Figure 1. Globalstar’s duplex mobile terminals transmit on seven 1.23 MHz channels between 1610 MHz and 1618.725 MHz.<sup>24</sup> As shown in Figure 1, these channels are numbered from Channel 1 to Channel 7. Globalstar’s simplex

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<sup>24</sup> Globalstar’s mobile terminals are designed to operate from 1610 to 1621.35 MHz, where Globalstar was originally licensed to operate in 1995. In its 2008 license modification order, the Commission limited Globalstar’s U.S.-licensed first-generation satellites to operations on the 1610-1618.725 MHz band segment. *Globalstar Licensee LLC, GUSA Licensee LLC and Iridium Constellation LLC, Iridium Satellite LLC, Iridium Carrier Services LLC; Modification of Authority to Operate a Mobile Satellite System in the 1.6 GHz Frequency Band, Order of Modifications*, 23 FCC Rcd 15207 (2008) (“*Globalstar Big LEO Modification Order*”).

terminals, including the SPOT family of devices, transmit on three 2.5 MHz channels, identified as channels A, B, and C (as shown in Figure 1). Globalstar currently uses simplex channel A in North America, while it uses simplex channel C outside North American and within North America when simplex terminals are located near Radio Astronomy sites.

If the Commission limits Globalstar to the Lower Big LEO spectrum below 1616 MHz, it would effectively take away Globalstar’s spectrum down to 1615.04 MHz, since duplex Channel 5 and simplex Channel C both include spectrum above 1616 MHz and would no longer be usable. In the United States, Globalstar’s duplex services would be limited to duplex channels 1 to 4, while Globalstar’s simplex and SPOT services would be limited to simplex Channels A and B.

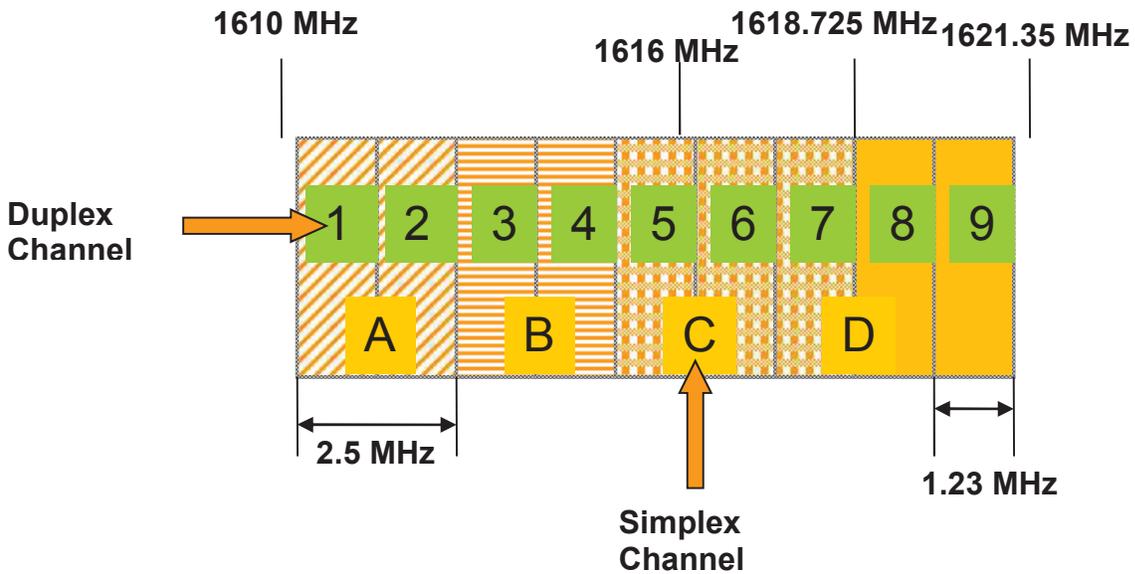


Figure 1 Globalstar L-band Return Link Frequency Plan

**B. Impact on Globalstar Service in United States Due to Radio Astronomy Restrictions in Big LEO Spectrum Below 1616 MHz**

As indicated above, Globalstar's Lower Big LEO band spectrum is already significantly encumbered by the presence of RAS at 1610.6-1613.8 MHz at the lower band edge. If the Commission now takes away Globalstar's "cleaner" spectrum at the top portion of the band, it would cause severe harm to Globalstar and its simplex and duplex customers in the United States, even jeopardizing Globalstar's ability to provide duplex service in this country. In this scenario, to comply with the Commission's rules protecting RAS from interference, Globalstar would have to terminate its provision of duplex services in most of the United States.

Globalstar shares its Lower Big LEO spectrum at 1610-1613.8 MHz with RAS, which overlaps with Globalstar's Channels 1-3 and affects Globalstar's use of Channel 4. RAS is a Commission-allocated service involving the use of radio astronomy, which is the study of celestial objects that emit radio waves. Through radio astronomy, scientists can study astronomical phenomena that are often invisible in other portions of the electromagnetic spectrum, enabling them, for instance, to observe Cosmic Microwave Background Radiation, which is the remnant signal of the Big Bang. Section 25.213 of the Commission's rules imposes strict operational requirements on Globalstar related to the protection of RAS from harmful interference.<sup>25</sup> Specifically, Globalstar is prohibited from operating co-channel with RAS at 1610.6-1613.8 MHz within 160 km of several geographic "protection zones," meaning that any Globalstar devices operating in those protection zones must use the non-overlapping Channels

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<sup>25</sup> 47 C.F.R. § 25.213.

5-7. Globalstar cannot operate co-channel with RAS within 50 km of a number of other RAS sites in the United States.<sup>26</sup>

To comply with the Commission's RAS protection rule and prevent interference to RAS observations, Globalstar permits only the use of its higher-band, non-overlapping channels (Channels 5 through 7) within the RAS protection zones. If the Commission reassigned Globalstar's spectrum above 1616 MHz to Iridium, these channels would be unavailable and Globalstar would be unable to provide *any* service to customers located within these protection zones. RAS protection zones constitute approximately 15.67% of the total area of the continental United States ("CONUS") and include many rural and remote areas beyond terrestrial coverage where Globalstar's satellite service is needed most.

Reassignment of Globalstar's spectrum above 1616 MHz would have severe implications for Globalstar's SPOT service. Like its other offerings, Globalstar's SPOT services would be unavailable to individuals who find themselves in life-threatening situations in these RAS protection zones with no other means of communication. The exclusion of these areas from the SPOT footprint would make it much more difficult, obviously, to market and sell this emergency communications product. In addition, due to the loss of Channels 5-7, Globalstar would have to undertake an extraordinarily expensive SPOT recall. Today, to protect RAS, SPOT devices automatically transmit on simplex Channel C above 1616 MHz when they are in the vicinity of RAS protection zones. SPOT devices have GPS capability and are "hardwired" to operate on Channel C whenever they determine that they are near an RAS protection zone (or located outside the United States. If the Commission approved Iridium's spectrum grab, SPOT

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<sup>26</sup> 47 C.F.R. § 25.213(a)(1)(i), (ii). Section 25.213 also places limits on the power flux density that Globalstar mobile terminals can produce within the 1610.6-1613.8 MHz RAS band at the RAS sites identified in this rule, and imposes certain separation requirements for Globalstar's airborne mobile terminals.

transmissions on Channel C in the United States would violate the Commission's new rules. Since Globalstar cannot prevent any SPOT subscriber from using his or her device in the United States, Globalstar would have to recall, modify, and return to its subscribers *all* SPOT devices now in the field worldwide. With hundreds of thousands of SPOT units already in the hands of Globalstar's subscribers, the cost of such a recall would be prohibitive. A recall could also result in the loss of SPOT customers, who might be frustrated by this inconvenience and view Globalstar as unreliable.

The loss of Globalstar's spectrum above 1616 MHz would potentially cause even greater harm to Globalstar's duplex operations and its growing base of duplex customers in the United States. As with Globalstar's SPOT service, this harm would go well beyond an inability to operate within the RAS protection zones; here, Globalstar might be left unable to provide duplex service throughout most of CONUS.

Key to this harm is the distinction between a duplex mobile terminal's initial "access" transmission that connects a user with Globalstar's MSS network, and the mobile terminal's subsequent transmissions once a call has been received. Due to the size, configuration, and movement of its Lower Big LEO satellite beams across the United States (shown below in Figures 2 and 3), Globalstar's MSS network has only limited information about the geographic location of a duplex terminal until a user's call has been received by the Globalstar gateway earth station. As a result, except in a few limited geographic areas, Globalstar has no practical way to distinguish between "access" calls that occur within or near a U.S. RAS protected zone, and those that originate a sufficient distance from an RAS zone. Today, to ensure compliance with the RAS rules, all initial access calls on Globalstar's network in North America occur on Channels 5-7, above 1616 MHz. If Globalstar loses its frequencies above 1616 MHz, however,

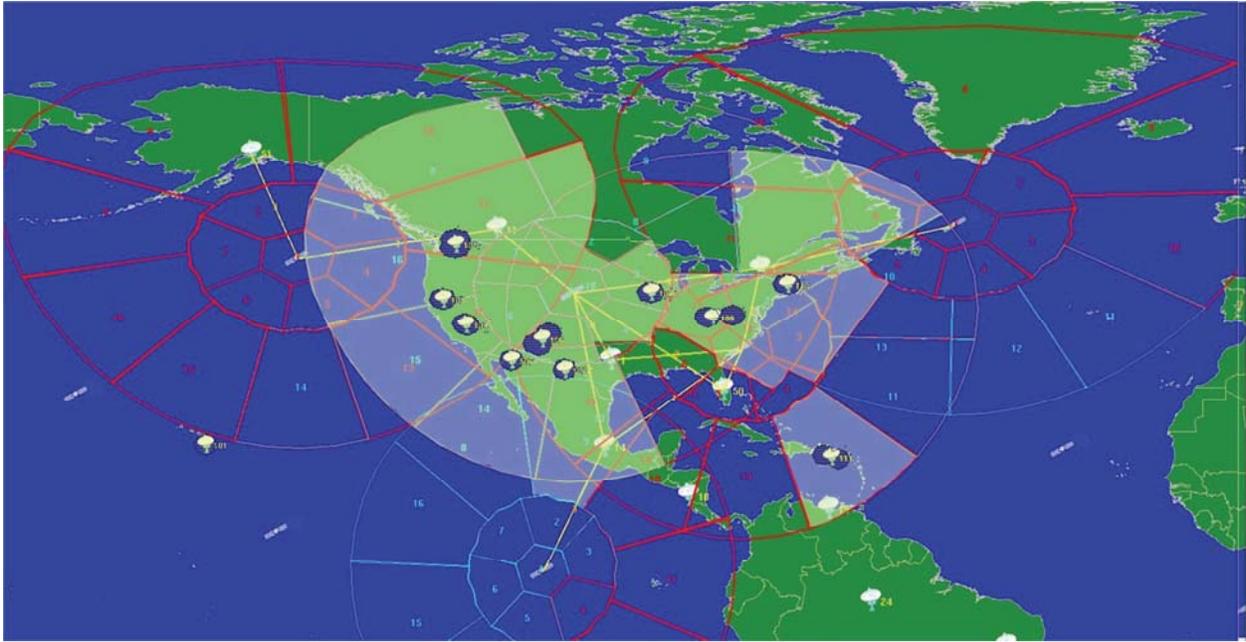
all initial access transmissions would be shifted to Channels 1-4, and Globalstar would have no way of knowing when these transmissions occur in an RAS protection zone in violation of the Commission's rules.<sup>27</sup>

In this scenario, to comply with the RAS protection requirements, Globalstar would have to curtail access transmissions from connecting with its MSS network in most areas of the country. This would effectively terminate Globalstar's duplex service in the United States and cause devastating harm to Globalstar's MSS business, given that 50% of Globalstar's growing duplex revenue is generated by service to end users located in the United States.<sup>28</sup> Notably, the United States government is Globalstar's single largest customer, with numerous federal agencies utilizing a variety of Globalstar's simplex and duplex services with some applications integral to U.S. national security. The Commission should not put Globalstar in the untenable position of cutting off duplex services to these subscribers by granting Iridium's baseless request for additional Lower Big LEO band spectrum.

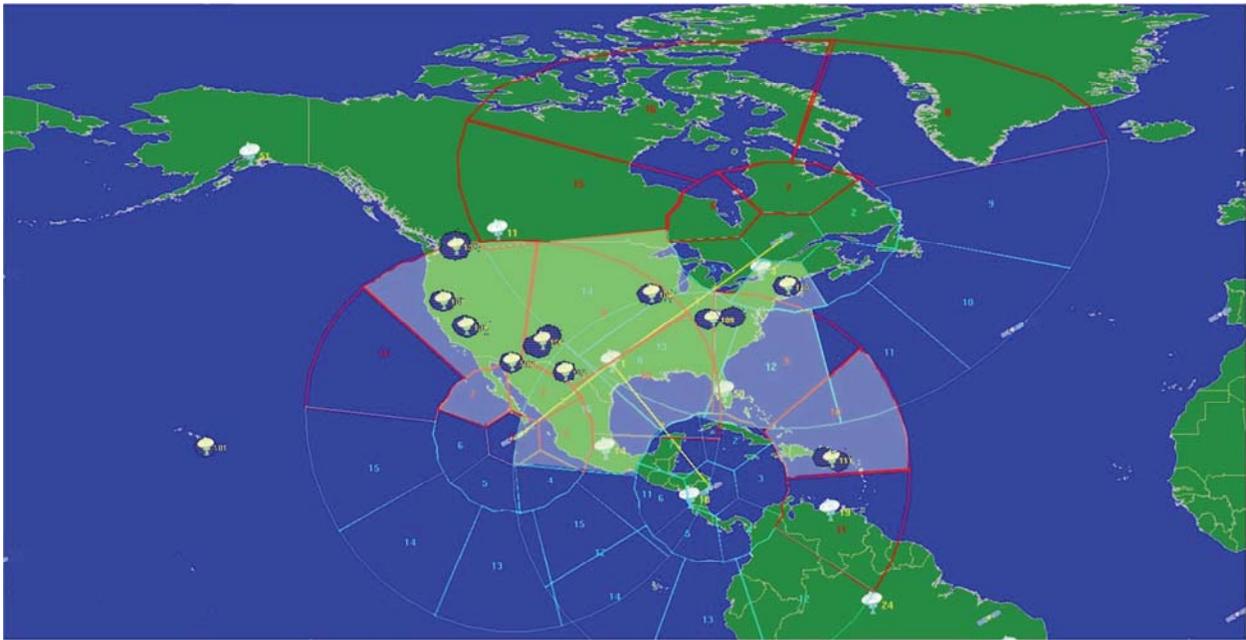
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<sup>27</sup> Once a duplex call is received, Globalstar's network has more precise information about an end user's location and can enforce its protection zone restrictions. Globalstar can thereby enable the use of duplex Channels 1-4 in areas outside these protection zones.

<sup>28</sup> For the same reasons, the loss of spectrum above 1616 MHz would greatly impair Globalstar's duplex services in Canada and Mexico. The United States has bilateral coordination agreements with Canada and Mexico that protect U.S. RAS sites close to the Canadian and Mexican borders.



**Figure 2 Globalstar beam footprint overlay over radio Astronomy exclusion zones - Example 1**



**Figure 3 Globalstar beam footprint overlay over radio Astronomy exclusion zones - Example 2**

**C. Impact on Service Outside the United States and the Viability of Globalstar's First-Generation Satellites**

If the Commission reassigns Globalstar's licensed spectrum above 1616 MHz, Globalstar would be unable to operate its U.S.-licensed first-generation satellites outside the United States on Channels 5-7.<sup>29</sup> This constraint would likely degrade Globalstar's service outside the United States and threaten the operational viability of its first-generation satellites.

First, Globalstar's first-generation satellites would be legally prohibited from providing *any* service in some countries. For instance, Russia, Ukraine, and Macedonia all prohibit MSS operations below 1616 MHz in order to protect GLONASS from harmful interference. If the Commission makes Iridium's proposed change to the U.S. band plan, Globalstar's first-generation satellites could not operate either above or below 1616 MHz in those countries. In addition, even in other countries where operations below 1616 MHz are permitted, the Commission's action would create significant operational problems. Currently, a Globalstar satellite cannot "hand off" a voice call to other satellites if those satellites cannot operate on the same channel. Accordingly, if a second-generation satellite were carrying a voice call on Channels 5-7, it would be unable to hand off a call to a first-generation satellite limited by U.S. law to Channels 1-4, and that call would be dropped. The frequency of such dropped calls could seriously degrade the quality of duplex service enjoyed by Globalstar customers outside the United States. The Commission should avoid taking action that causes such serious harm to services and customers in other countries.

Significantly, if the Commission takes away Globalstar's spectrum above 1616 MHz, the factors impairing or preventing the use of Globalstar's first-generation satellites outside the United States would jeopardize the viability of these satellites within Globalstar's global MSS

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<sup>29</sup> See generally *Globalstar Big LEO Modification Order*, *supra* note 24.

constellation. Globalstar must manage its global network as necessary to preserve quality of service and ensure compliance with applicable laws, and in this circumstance Globalstar might have to limit or eliminate the operational role of its first-generation satellites. This outcome would be contrary to the public interest. More than fifteen of Globalstar's first-generation satellites continue to operate today, and Globalstar expects that most of its first-generation satellites launched in 2007 will be able to operate years into the future.<sup>30</sup> If the Commission forces the premature decommissioning of these satellites, this early retirement would represent an inefficient waste of spectrum and orbital resources.

#### **D. Impact on Globalstar Aviation Services**

Prior to the 2007 degradation of its duplex service, Globalstar provided a number of U.S. government agencies with aviation services, and also had discussions with several international air carriers regarding these mobile satellite voice and data offerings. With its restoration of full duplex capability, Globalstar is working to reestablish its presence in the aviation marketplace, and it hopes to deliver its voice and data services to commercial airliners, military and other U.S. government aircraft, and corporate jets and smaller general aviation airplanes. If the Commission takes away Globalstar's spectrum above 1616 MHz, however, it would be unable to compete effectively in this important market segment.

Aeronautical MSS ("AMSS") is subject to particularly rigorous restrictions on channel usage in the Lower Big LEO band. Globalstar's aviation equipment must be built to meet standards set by the Federal Aviation Administration ("FAA") and RTCA, Inc., for the

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<sup>30</sup> In March 2013, Globalstar requested that the Commission modify its first-generation space station license by extending the license term for these satellites to October 4, 2024. *See* Application of Globalstar Licensee LLC to Modify Authorization to Extend the License Term of NGSO Space Station License, Call Sign 2115, IBFS File No. SAT-MOD-20130314-00030 (Mar. 14, 2013).

protection of RAS at 1610.6-1613.8 MHz and GPS and GLONASS at 1574-1610 MHz. To meet these FAA/RTCA standards and be commercially marketable in terms of size, weight, and cost, Globalstar's aviation terminals can only operate above 1616 MHz on Channels 5-7. Globalstar AMSS terminals contain state-of-the-art filter technology with severe roll-off characteristics in order to meet the FAA/RTCA standards. These filters are already large and expensive, and they cannot be upgraded to permit operations below Channel 5 and remain commercially viable.

Given the requirements for AMSS, Globalstar would be prohibited from providing AMSS in the United States if the Commission reassigned its Lower Big LEO frequencies above 1616 MHz.<sup>31</sup> While only its first-generation satellites would be precluded from providing AMSS *outside* the United States, Globalstar's international capabilities would be insufficient to support a competitive aviation service. The U.S. market is critically important to the commercial airline industry as well as other civil and government aviation interests, and a substantial percentage of commercial aircraft operate at least a portion of the time in the United States.<sup>32</sup> Barred from the

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<sup>31</sup> Even if Globalstar's AMSS terminals could somehow be modified to permit operations on Lower Big LEO Channels 1-4, Globalstar would still be precluded from providing aviation voice and data services throughout most of CONUS. Under the Commission's rules protecting RAS facilities, airborne mobile terminals at an altitude of 30,000 feet would be prohibited from operating over massive RAS protection zones encompassing 93.9% of CONUS. *See* 47 C.F.R. § 25.213(a)(1)(iv).

<sup>32</sup> *See e.g.*, International Civil Aviation Organization, *Annual Report of the Council 2012: Documentation for the Session of the Assembly in 2013*, Appendix 1, Table 5 (2013), [http://www.icao.int/publications/Documents/10001\\_en.pdf](http://www.icao.int/publications/Documents/10001_en.pdf) (ranking the United States number one in 2012 for weight of total passengers, freight and mail operations performed); *id.* Appendix 1, Table 8 (listing ten United States airports, including the number one airport, among the world's 2012 top twenty-five airports as ranked by total passengers); *id.* Appendix 1, Table 4 (noting that North America has the largest percentage of aircraft departures and aircraft mileage in 2012); CAPA Centre for Aviation, *World Aviation Yearbook 2013: Global Overview*, at 4, <http://centreforaviation.com/reports/> (listing six United States airports among the world's top twenty airports by capacity offered); *id.* at 18 (ranking the United States number one for available airline seats); *id.* at 20 (noting that North America has the largest global fleet with 8466 aircraft to Europe's 6699 aircraft).

U.S. market, Globalstar would be unable to compete with Iridium and other satellite voice and data providers for aviation customers.

If the Commission accedes to Iridium's demands, Globalstar would also be precluded from deploying the innovative ALAS system (discussed *supra* at 9-10), since ALAS equipment is hardwired to use Globalstar's channels above 1616 MHz. Globalstar, its technology partner ADS-B Technologies, LLC, the commercial airlines, airline passengers, and public safety would all suffer as a result. The only beneficiary of this action would be Iridium, which this year announced an agreement to deploy an alternative ADS-B satellite delivery system that will compete directly with ALAS.<sup>33</sup> Clearly, Iridium submitted the Petition knowing that its proposed taking of spectrum from Globalstar would eliminate its only competition in this specific market segment. The effect of its proposal on ALAS is further evidence that the Petition is nothing but an attempted anti-competitive attack that is directly contrary to sound, equitable public policy.

**E. The Loss of Its Lower Big LEO Spectrum Below 1616 MHz Would Increase Interference and Degrade the Quality of Globalstar's Service in the United States**

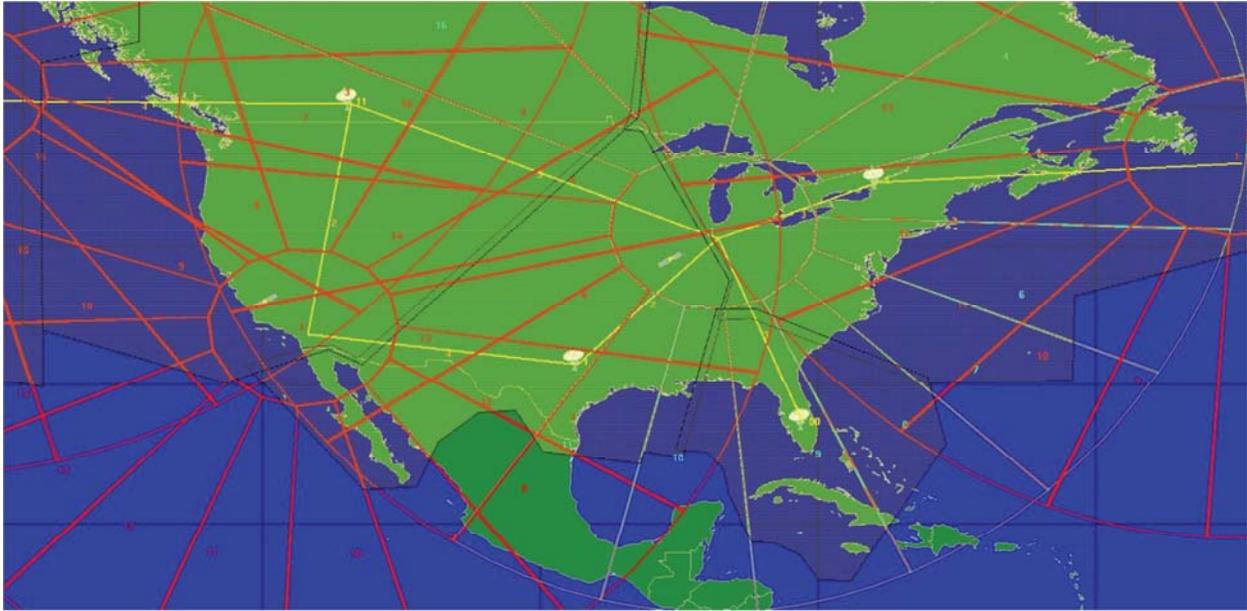
Even if RAS issues were somehow resolved and Globalstar could continue providing simplex and duplex service throughout CONUS, Globalstar's MSS operations and its customers would still suffer a serious, detrimental impact if the Commission reassigned its licensed spectrum above 1616 MHz. For multiple reasons, the loss of these channels would result in increased interference to Globalstar's services and degradation in its quality of service.

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<sup>33</sup> In April 2013, Aieron LLC, a joint venture between Iridium and NAV CANADA, announced an agreement to launch and integrate its ADS-B payloads on Iridium's next-generation satellites. Iridium Press Release, *Iridium Joint Venture, Aieron, Signs Long-Term Data Services Contract with NAV CANADA* (Apr. 29, 2013), <http://investor.iridium.com/releasedetail.cfm?ReleaseID=760199>.

## **1. Impact from limitation on frequency reuse by North American gateways**

The loss of spectrum above 1616 MHz would impair service to Globalstar customers in the United States by reducing frequency separation for key communications links within the Globalstar network. In the United States, a particular Globalstar NGSO satellite will be within view of all four Globalstar North American gateway earth stations for much of the time as it moves across the continent. (See Figure 4.) For service quality to be optimal, any gateway facility in the field of view of a satellite must be able to utilize that satellite. To permit multiple gateways to communicate simultaneously with a given satellite (again, necessary for quality of service), each gateway must be associated with a separate user “access” channel in the Lower Big LEO band. To differentiate between the users accessing the four North American gateways, at least four separate access channels must be assigned by the Globalstar system to these gateways. If Globalstar were limited to the four user channels below 1616 MHz, however, there would be no more than one frequency assigned per gateway. Due to limited frequency reuse and the lack of frequency separation for these access channels, fewer end users would be able to connect to Globalstar’s MSS network, and those able to connect would be more likely to suffer a dropped call.



**Figure 4 Globalstar Satellite with Multiple Gateways in View**

**2. Impact on user capacity during periods of peak usage, such as following a natural or manmade disaster**

If the Commission reassigns Globalstar’s spectrum below 1616 MHz, it would significantly increase the likelihood of harmful interference and service outages on the Globalstar system during periods of peak usage, such as after natural or manmade disasters when terrestrial networks are rendered unavailable. Given its use of CDMA technology, Globalstar’s MSS network experiences “inherent” intra- and inter-beam interference on the MSS uplink between end users and its satellites. When the number of users within a satellite beam is large enough, additional users are unable to connect to the network (receiving a busy signal) and the likelihood of dropped calls increases. While Globalstar’s internal reallocation of channels to affected areas can reduce congestion and improve quality of service, it would be difficult for Globalstar to utilize this approach if it loses its spectrum above 1616 MHz and has only four Lower Big LEO band channels. Following disasters such as Hurricanes Katrina and Sandy when

Globalstar's usage spikes dramatically, Globalstar's service to affected regions could be impaired just when that service is needed the most.

### **3. Impact from greater use of duplex Channel 1**

As indicated above, the Commission's Part 25 out-of-band emissions limits adopted to protect GPS and GLONASS affect Globalstar's ability to operate in the bottom portion of the Lower Big LEO band.<sup>34</sup> The closer a Globalstar MSS terminal operates to the 1610 MHz band edge, the more difficult it is for that terminal to meet these out-of-band emissions limits.

Globalstar duplex terminals operating in Channel 1 must operate with reduced transmit power and decreased equivalent isotropic radiated power ("EIRP"). These low power levels increase the frequency of busy signals and dropped calls and constrain the data rates for these MSS devices. While Globalstar currently limits the number of duplex mobile terminals operating on Channel 1, this approach would have to change if the Commission reassigns Globalstar's spectrum above 1616 MHz. If Globalstar is left with just four Lower Big LEO channels, approximately one quarter of Globalstar MSS duplex users would transmit on that channel and suffer this diminished quality of service and constrained data rates. Since Iridium operates higher in the Lower Big LEO band and further from GPS and GLONASS, it is generally unaffected by the Commission's Part 25 out-of-band emissions limits and does not bear the same compliance burden.<sup>35</sup>

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<sup>34</sup> 47 C.F.R. § 25.216.

<sup>35</sup> In addition, if Globalstar is left with only four channels in the Lower Big LEO band, its customers' simplex and SPOT transmissions would by necessity overlap with transmissions by duplex users at least some of the time. These services would interfere with one another, resulting in degraded quality of service for all users. Globalstar's customers would experience an increase in failed call attempts and dropped calls.

**F. Impact on High Data Rate Services in the United States from Globalstar's Second-Generation Constellation and Ground Network**

As described above, Globalstar's MSS constellation supports the provision of high-quality voice and duplex data services. Globalstar has contracted with Hughes Network Systems to deliver next-generation ground network equipment, software upgrades, and satellite handset chipsets, and it expects this new ground segment to be operational by 2015. Globalstar has invested approximately \$75 million to date toward this ground infrastructure. With its new constellation and ground systems in place, Globalstar should be able to provide customers with new service features including advanced (and affordable) voice, two-way data, and messaging services, with uplink and downlink data speeds of up to 256 kbps for mobile service. These data speeds should meet the needs and expectations of mobile consumers who find themselves out of range of terrestrial services.

If the Commission takes away Globalstar's spectrum above 1616 MHz and leaves it with just four Lower Big LEO channels, however, Globalstar's network capacity would be constrained and it would be unable to support these high data rate satellite services in the United States. Because the Lower Big LEO band uplink is interference limited and mobile terminals in this spectrum are subject to EIRP restrictions, there is a limit on the number of high data rate satellite users per Lower Big LEO channel. By further reducing the number of Globalstar's Lower Big LEO channels in the United States, the Commission would be limiting the number of high data rate users on Globalstar's MSS network. Limited to lower data rates, Globalstar's MSS customers in the United States would be unable to uplink any bandwidth-intensive material in a commercially acceptable fashion. Globalstar's substantial investment in its global ground network would be largely wasted, and mobile consumers in rural and remote areas of the United

States would be deprived of these high value MSS offerings. This outcome would severely damage Globalstar's efforts to compete in the MSS marketplace, to Iridium's benefit.

#### **IV. IF THE COMMISSION INITIATES A RULEMAKING, IT IS MORE LIKELY TO RETURN SPECTRUM TO GLOBALSTAR THAN GIVE ADDITIONAL LOWER BIG LEO BAND FREQUENCIES TO IRIDIUM**

In its Petition, Iridium fails to justify its proposed taking of Globalstar's Lower Big LEO band spectrum above 1616 MHz. While it once again provides a high-level review of its service and customer portfolio, Iridium has never presented any empirical data to demonstrate its spectrum needs or the harm that it will allegedly suffer under the existing band plan.<sup>36</sup> In fact, Iridium's recent financial results are at odds with its claimed need for additional spectrum. Iridium recently announced that during the third quarter of 2013, its overall revenue was approximately the same as a year ago and its net income for this period actually dropped compared to the same period in 2012. Iridium declined to provide a long-term outlook for its MSS business, stating that it "continues to evaluate the impact of lower commercial equipment sales and commercial subscriber additions on its operating plan."<sup>37</sup>

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<sup>36</sup> While Iridium claims to the Commission that it needs additional spectrum to support the future growth and development of its MSS business, Globalstar is unaware of similar communications by Iridium to the investment community. Given the fact that Iridium has received approximately \$3 billion in financing for its Iridium Next project from some of the same financial institutions that financed Globalstar's second-generation constellation, it is unlikely that these institutions have been informed or believe that Iridium's business plan is short on spectrum.

<sup>37</sup> Iridium Press Release, *Iridium Announces Third-Quarter 2013 Results* (Oct. 31, 2013), <http://investor.iridium.com/releasedetail.cfm?ReleaseID=803020>. Iridium also announced that its weak financial performance had driven a more difficult future operating plan, stating that "[o]ur plan is much tighter now due to our operating issues." Iridium projected that it will be non-compliant with its \$1.8 billion senior credit facility and indicated that "[w]ith that in mind, we've begun discussions with our credit facility lenders to discuss recent developments and start the process of modifying certain financial covenants." Transcript of Iridium Q2 2013 Earnings Call, at 7 (Aug. 1, 2013), <http://files.shareholder.com/downloads/ABEA-3ERWFI/2295593744x0x681797/7a2d1922-0a7a-4fb3-ad9e-6df4aebfa91f/IRDM.20130801.pdf>.

Given the lack of support from Iridium and the above-described harms to Globalstar, its customers, and public safety, the Commission should quickly deny the Petition. Even if the Commission initiates a new rulemaking proceeding, it is more likely to return spectrum to Globalstar than give additional Lower Big LEO Band frequencies to Iridium. Certainly, developments since the *2007 Big LEO Spectrum Sharing Order* would warrant a shift of Lower Big LEO spectrum back to Globalstar. Since that time, Globalstar has enjoyed substantial commercial success in the Lower Big LEO band with the SPOT family of MSS devices. In August, Globalstar became the first LEO licensee to successfully deploy a second-generation MSS constellation, and it expects to complete the deployment of its second-generation ground infrastructure by 2015. Globalstar's second-generation MSS network will make intensive use of every available megahertz and every single channel in the Lower Big LEO band to provide the highest voice quality, fastest truly mobile data speeds, and most affordable service in the MSS industry.

**V. CONCLUSION**

Iridium's anti-competitive spectrum grab would cause substantial harm to Globalstar's growing MSS business, its customers, and public safety. Iridium has provided no legitimate basis for taking additional spectrum from Globalstar following the Commission's 2007 order re-setting the Big LEO band plan. Accordingly, the Commission should deny Iridium's Petition.

Respectfully submitted,

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December 2, 2013

### **Declaration**

I hereby certify under penalty of perjury that the engineering statements made in the foregoing Opposition of Globalstar, Inc. to Petition for Rulemaking are true and correct to the best of my knowledge.

Dated: December 2, 2013

A handwritten signature in black ink, appearing to read "Paul A. Monte", written over a horizontal line.

Paul A. Monte  
Vice President  
Engineering & Operations  
Globalstar, Inc.

### **Certificate of Service**

I hereby certify that on this 2d day of December, 2013, I caused a true and correct copy of the foregoing Opposition of Globalstar, Inc. to Petition for Rulemaking to be mailed by first class U.S. mail to:

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*/s/ Ruth E. Holder*  
Ruth E. Holder