

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

In the Matter of	)	
	)	
Inmarsat Hawaii Inc.	)	File Nos. SES-LIC-20120426-00397;
	)	SES-AMD-20120823-00781
Application to Operate an FSS Gateway	)	Call Sign E120072
Earth Station Facility in Lino Lakes,	)	
Minnesota with the Inmarsat-5 F2 Satellite	)	
to be Located at 55° W.L.	)	
	)	

**OPPOSITION TO PETITION TO DENY OF IRIDIUM SATELLITE LLC**

Inmarsat Hawaii Inc. (“Inmarsat”) opposes the petition to deny (“Petition”) of Iridium Satellite LLC in the above-captioned application (“Application”) for authority to operate a gateway earth station at Lino Lakes, Minnesota (the “Lino Lakes Gateway”), communicating with the GSO FSS Inmarsat-5 F2 spacecraft (“I5F2”), which will operate at the nominal 55° W.L. orbital location in the Ka band.

**I. INTRODUCTION**

The record in this proceeding reflects wide-ranging support for granting the requested authority to operate the Lino Lakes Gateway, which is the first step in bringing to the United States the broadband satellite service that will be enabled by Inmarsat’s Global Xpress system. A wide variety of companies who will use Global Xpress to serve U.S. consumers, or who will supply components of the Global Xpress system, have affirmed the important public interest benefits that will flow from this system,<sup>1</sup> including stimulating the U.S. economy and creating high-tech jobs.<sup>2</sup>

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<sup>1</sup> See, e.g., Comments of ARINC Incorporated (filed Sept. 28, 2012) (“ARINC Comments”); Comments of The Boeing Company (filed Sept. 28, 2012) (“Boeing

Only one party, Iridium Satellite LLC (“Iridium”), has raised any concerns about the Application. Significantly, Iridium does not specifically assert that use of the Lino Lakes Gateway would cause harmful interference into Iridium’s MSS feeder link operations in the 29.1-29.3 GHz or 19.4-19.6 GHz bands. In fact, Iridium does not even address the detailed technical analysis contained in Inmarsat’s Application that explains how the Lino Lakes Gateway operations will successfully coexist with Iridium’s use of these same frequencies at geographically-remote locations. Rather, Iridium’s primary concerns relate to the 29.1-29.25 GHz and 19.4-19.6 GHz band segments, and focus on the potential operation of *third-party satellite systems* and of *user terminals* in these band segments, neither of which is the subject of the Application. Inmarsat’s Application is fully consistent with the Commission’s longstanding Ka band policies and a long line of precedent granting GSO FSS systems authority to operate across large portions of the Ka band on a non-interference basis, where such spectrum sharing promotes the efficient use of scarce spectrum resources. For these reasons, the Commission should deny the Petition and promptly grant the Application.<sup>3</sup>

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Comments”); Comments of Encompass Digital Media (filed Sept. 26, 2012) (“Encompass Comments”); Comments of VT iDirect, Inc. (filed Sept. 27, 2012) (“iDirect Comments”); Comments of Gogo LLC (filed Sept. 28, 2012) (“Gogo Comments”); Comments of Honeywell (filed Sept. 27, 2012) (“Honeywell Comments”); Comments of American Airlines (filed Oct. 1, 2012) (“American Airlines Comments”); Comments of Skyware Global (filed Sept. 28, 2012) (“Skyware Global Comments”); Comments of Globe Wireless LLC (filed Sept. 28, 2012) (“Globe Wireless Comments”); Comments of TracStar Systems Inc. (filed Sept. 28, 2012) (“TracStar Comments”).

<sup>2</sup> See, e.g., Boeing Comments at 3; Encompass Comments at 2; iDirect Comments at 2.

<sup>3</sup> As a procedural matter, Iridium has failed to satisfy the requirements in the Commission’s rules for a petition to deny. A petition to deny not relying on public information must contain specific allegations of fact to support the specific relief requested “which shall be supported by affidavit of a person or persons with personal knowledge thereof.” 47 C.F.R. § 25.154(a)(4). Iridium provides no such affidavit, and as discussed in more detail below, does not rebut Inmarsat’s technical demonstration that its proposed gateway operations are compatible with Iridium’s operations.

## II. THE RECORD CONFIRMS THE PUBLIC INTEREST BENEFITS OF INMARSAT'S GLOBAL XPRESS SYSTEM

The record in this proceeding confirms the significant public interest benefits identified in the Application that the Global Xpress system will provide and the positive impact this system will have on the U.S. economy. Commenters acknowledge the critical market need for the high-bandwidth, cost-effective communications capabilities that Global Xpress will provide,<sup>4</sup> and how this system will provide a competitive option for service providers and distributors that are seeking to provide this high-speed mobile broadband connectivity to end users.<sup>5</sup> Commenters recognize the reliability and ubiquitous nature of the Global Xpress service, which will be suited for government users, emergency responders, utilities, maritime and aeronautical users, and a wide range of other industries.<sup>6</sup>

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Inmarsat supports Iridium's request for "permit but disclose" status in light of the significant public interest benefits that will come from allowing the parties to discuss the issues presented in the Application with Commission staff. Such a free exchange of views will allow for a more complete record.

<sup>4</sup> American Airlines Comments at 1; ARINC Comments at 2 (Global Xpress would give providers such as ARINC additional options to satisfy evolving customer demand for increased capabilities); iDirect Comments at 2 (citing "exponentially increasing demand" for satellite-delivered broadband high-speed data services).

<sup>5</sup> Gogo Comments at 2 (the launch of Global Xpress will increase the competitive options available to Gogo and other broadband service providers); American Airlines Comments at 1 (introduction of Global Xpress will enable aeronautical broadband providers to satisfy demand by end users by offering better service offerings at affordable prices); Globe Wireless Comments at 2 (Inmarsat's Ka band solution will provide additional competitive choices for growing maritime customer base); ARINC Comments at 2 (launch of Global Xpress would enhance competition in aviation and commercial air transport sectors).

<sup>6</sup> Boeing Comments at 2-3 (next-generation satellite service is essential to providing broadband connectivity in remote and hard-to-reach areas and in flight or at sea); Honeywell Comments at 1 (Global Xpress will provide increased flexibility and reliability in communications for government, media, enterprise and other end users, and will facilitate applications related to critical infrastructure, disaster communications, telemedicine, e-learning and media coverage, among others); TracStar Comments at 1 (citing applications supporting disaster and critical communications, infrastructure

Furthermore, supporting commenters detail the significant benefits to the U.S. economy that will result from the deployment of the Global Xpress system. The amount of investment and the jobs created by this program, which are detailed in comments by some of Inmarsat's project partners, demonstrate concretely the way in which the Global Xpress stimulates growth and strengthens the U.S. economy.<sup>7</sup> Inmarsat's nationwide investment not only increases employment, but also supports continued development of a larger high tech workforce and manufacturing base.<sup>8</sup> Thus the benefits of the proposed service reach far beyond the investment amounts estimated by the commenters. Several commenters also recognize that the Global Xpress system will allow U.S. companies to compete more effectively in the global marketplace against foreign competitors and to obtain contracts in international markets.<sup>9</sup>

Notably, the abundance of these significant benefits is in contrast to the lack of specific harms identified in the record, as discussed in detail below. Thus, the overwhelming net benefits of the proposed system support the grant of the Application.

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restoration and other remote communications, as well as suitability for military and government agencies, utility companies, telehealth providers, aid organizations and media outlets).

<sup>7</sup> Boeing Comments at 3 (“Inmarsat is investing over \$1.2 billion dollars in the launch of the Global Xpress service, including satellite manufacturing, launch services, and ground network infrastructure from California to Virginia”); Encompass Comments at 2 (Inmarsat's contract with the primary teleport provider for the Global Xpress program will bring over \$7 million to the local economy and will create critical technical jobs); Honeywell Comments at 1 (estimating Honeywell's investment to be in the order of \$2.8 billion over ten years); iDirect Comments at 2 (development of ground segment infrastructure and technology has created over 75 new engineering positions in the U.S. over the last 18 months); TracStar Comments at 1 (investment of approximately \$1.5 million is being made in connection with ground stations for the system).

<sup>8</sup> Boeing Comments at 3.

<sup>9</sup> *See, e.g.*, Gogo Comments at 2-3 (indicating that Inmarsat's proposed service will provide Gogo the opportunity to compete more effectively for airline service contracts against foreign competitors and to obtain contracts in international markets); *see also* Boeing Comments at 3; Honeywell Comments at 1; iDirect Comments at 2; Skyware Global Comments at 2.

### **III. IRIDIUM DOES NOT DISPUTE THAT INMARSAT'S SINGLE PROPOSED GATEWAY IS COMPATIBLE WITH THE IRIDIUM SYSTEM**

In the Application, Inmarsat seeks authority to deploy a single gateway earth station located in Lino Lakes, Minnesota, which would share access to the 29.1-29.3 GHz and 19.4-19.6 GHz band segments that Iridium uses for its MSS feeder link operations. In connection with this request, Inmarsat provided a detailed technical demonstration that its proposed operations are fully compatible with Iridium's MSS feeder link operations. Iridium does not raise any issue with Inmarsat's technique for ensuring successful non-interfering operations in these band segments.

Inmarsat's spectrum sharing technique in the 29.1-29.3 GHz and 19.4-19.6 GHz band segments is based on the same approach endorsed in the Commission's rules for achieving successful spectrum sharing between NGSO MSS feeder link operations and GSO FSS operations in the 29.25-29.5 GHz band segment.<sup>10</sup> Specifically, Inmarsat demonstrates in the Application that the carefully selected geographic location of Lino Lakes far away from Iridium's gateway locations provides adequate spatial isolation of gateway and satellite beams to allow co-frequency reuse without any risk of harmful interference to Iridium. In addition, Inmarsat has been coordinating with Iridium regarding these proposed operations, consistent with Commission's rules.<sup>11</sup>

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<sup>10</sup> See 47 C.F.R. § 25.258.

<sup>11</sup> See *id.* §§ 25.203(k), 25.258. It is well established in the Commission's rules and precedent that mechanisms exist to allow GSO FSS operations (including widely-deployed VSAT terminals) to coordinate with NGSO FSS feeder links. *Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use*, Second Order on Reconsideration, 17 FCC Rcd 24248 ¶ 24 (2002) (citing 25.258(a)-(d)).

In this respect, it is significant that Iridium has no objection to Inmarsat's proposed use of the 29.25-29.3 GHz band segment, subject to coordination.<sup>12</sup> The same sharing techniques applicable in the 29.25-29.3 GHz band segment should also protect NGSO MSS feeder link operations in the 29.1-29.25 GHz and 19.4-19.6 GHz band segments. With respect to Iridium's concern with the 29.1-29.25 GHz and 19.4-19.6 GHz band segments, it bears emphasis that those concerns focus on operations that *expressly are not the subject of Inmarsat's Application*.

Iridium's concerns with respect to the 29.1-29.25 GHz and 19.4-19.6 GHz band segments primarily involve third party-operated GSO FSS systems that have either (i) large numbers of ubiquitously deployed VSATs, or (ii) satellites with global or wide-area downlink beams, or (iii) beams that are steerable but not steered in a manner that provides adequate isolation from Iridium's use of the 19.4-19.6 GHz downlink band segment.<sup>13</sup> Such third-party systems need not, and in fact should not, be evaluated in this proceeding, as they have no bearing on the single gateway earth station proposed in the Application. In addition, the technical analyses to which Iridium cites in the Petition regarding Hughes' plans to deploy ubiquitously millions of VSATs and over a dozen gateways in the 29.25-29.3 GHz band simply are inapplicable to this Application.<sup>14</sup>

Nor is the analysis above affected by Iridium's observation that Inmarsat may in the future seek authority for user terminals in these band segments.<sup>15</sup> To the extent Inmarsat seeks authority for user terminals in this band in the future, Iridium will be free at that time to

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<sup>12</sup> See Petition at 1.

<sup>13</sup> *Id.* at 5-7.

<sup>14</sup> See *id.* at 6, n.1.

<sup>15</sup> See *id.* at 5.

address any concerns it may have and is also encouraged to do so in the context of coordination, where the practical circumstances of Inmarsat’s user terminal deployments can be considered in detail. But Iridium’s speculative concerns about user terminals should not have any bearing on this Application for a single gateway facility.<sup>16</sup>

Contrary to what Iridium suggests, Inmarsat does not seek to “revisit” the band plan for the Ka band.<sup>17</sup> Rather, Inmarsat merely seeks to follow a long line of Commission decisions that have enabled uses of segments of the Ka band on a non-interference basis that were not expressly allocated or designated for that use based on the state of technology seventeen years ago.<sup>18</sup> In fact, Inmarsat’s request to operate a gateway terminal in the 29.1-

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<sup>16</sup> See, e.g., *Teledesic LLC*, Opinion, 14 FCC Rcd 2261 ¶ 19 (1999) (in granting space station authority on a non-interference basis, the Commission indicated that concerns regarding how separately licensed earth stations could successfully operate on a non-interference basis should be resolved as a part of future earth station applications).

<sup>17</sup> See Petition at 5, 7.

<sup>18</sup> See, e.g., *O3b Limited*, File No. SES-LIC-20100723-00952, Call Sign E100088 (granted Sept. 25, 2012) (allowing NGSO FSS earth station operations on a non-interference basis in the 17.8-18.3 GHz band, which is allocated only to terrestrial fixed services, and in the 18.3-18.6 GHz band, which is designated on a primary basis to GSO FSS) (“O3b Authorization”); *Hughes Network Systems, LLC*, File No. SAT-LOA-20111223-00248 (granted Aug. 3, 2012) (allowing GSO FSS operations in the 18.8-19.3 GHz band, which is allocated only for the NGSO FSS) (“Hughes Authorization”); *ViaSat, Inc.*, File No. SAT-LOI-20080107-00006, as amended (granted Aug. 18, 2009) (allowing GSO FSS operations in the 18.8-19.3 GHz band, which is allocated only for the NGSO FSS) (“ViaSat Authorization”); *Northrop Grumman Space & Missions Systems Corp.*, 24 FCC Rcd 2330 ¶¶ 74-75, 90 (2009) (allowing NGSO FSS operations in the 19.7-20.2 GHz band in which GSO FSS is designated primary, and allowing GSO FSS operations in the 18.8-19.3 GHz band, which is allocated only for NGSO FSS); *contactMEO Communications, LLC*, 21 FCC Rcd 4035 ¶¶ 25-26, 34 (2006) (allowing NGSO FSS operations in the 19.7-20.2 GHz band in which GSO FSS is designated primary, and allowing GSO FSS operations in the 18.8-19.3 GHz band, which is allocated only for NGSO FSS). The Commission has granted authority for secondary operations in frequencies designated on a primary basis for other uses on a case-by-case showing of non-interference. See, e.g., *O3b Authorization* (allowing NGSO FSS operations in bands where GSO FSS and LMDS are primary); *Hughes Authorization* (allowing GSO FSS

29.25 GHz and 19.4-19.6 GHz band segments on a non-interference basis is consistent with the Commission policies that have developed in the intervening years to facilitate more efficient shared use of spectrum where technically possible.

As a general matter, the Commission has expressed the imperative for more efficient use of spectrum given the shortage of spectrum available for highly demanded broadband services.<sup>19</sup> Inmarsat's Application promotes the Commission's policy of expanding the shared use of spectrum in ways that will not harm incumbent spectrum users and that will make productive use of underutilized spectrum.<sup>20</sup> Notably, the original band plan for the Ka band contemplated multiple satellite operators using the 29.1-29.5 GHz and 19.4-19.6 GHz band segments for gateway facilities on a shared basis.<sup>21</sup> The Commission never intended for Iridium to have exclusive access to these band segments. To the contrary, Inmarsat's proposed gateway operations are entirely consistent with the Commission's long-stated expectation that access to these band segments would remain shared.

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operations in bands where NGSO FSS and LMDS are primary); ViaSat Authorization (allowing GSO FSS operations in bands where NGSO FSS and LMDS are primary).

<sup>19</sup> See, e.g., Federal Communications Commission, *Connecting America: National Broadband Plan* at 79 (2010) ("Creating ways to access spectrum under a variety of new models, including unlicensed uses, shared uses and opportunistic uses, increases opportunity for entrepreneurs and other new market entrants to develop wireless innovations that may not have otherwise been possible under licensed spectrum models."); *Unlicensed Operation in the TV Broadcast Bands*, 23 FCC Rcd 16807 ¶ 32 (2008) (authorizing the operation of unlicensed radio transmitters to operate in broadcast spectrum "white spaces" to more fully utilize the spectrum); *The Boeing Company*, 16 FCC Rcd 22645 ¶ 10 (2001) (authorizing deployment of aeronautical mobile terminals in the Ku band over three years before commencing a proceeding to create an allocation for aeronautical mobile satellite service earth stations in the band).

<sup>20</sup> See Boeing Comments at 2 ("intensive, efficient, and cooperative use of the Ka-band will facilitate the expansion of the satellite industry, which in turn will serve the public interest").

<sup>21</sup> *28 GHz First Report and Order* at ¶ 66 (contemplating use of these band segments for gateways by three satellite systems).



#### IV. CONCLUSION

Inmarsat's Application provides a robust technical demonstration of how Inmarsat can operate the Lino Lakes Gateway and the I5F2 satellite in a manner compatible with Iridium's operations. Iridium does not dispute that technical showing, and the spectrum uses proposed in the Application are consistent with a long line of Commission precedent allowing operations across the Ka band on a non-interference basis in order to promote the efficient shared use of underutilized spectrum resources. Finally, many important public interest benefits will flow from Inmarsat's proposed operations—including improved access to broadband services, job creation, and stimulation of the economy. For these reasons, Inmarsat respectfully requests that the Commission dismiss Iridium's Petition and promptly grant the Application.

Respectfully submitted,

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*Counsel to Inmarsat Hawaii Inc.*

October 9, 2012

## CERTIFICATE OF SERVICE

I, Elizabeth R. Park, hereby certify that on this 9<sup>th</sup> day of October 2012, I served a true copy of the foregoing Opposition to Petition to Deny of Iridium Satellite LLC by hand delivery upon the following, except for parties marked with an asterisk (\*) that have consented to service via electronic mail:

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