

## **Exhibit A**

### **Legal Narrative and Response to Questions 35: Waiver of the Rules**

ISAT US, Inc. (“ISAT US”), a subsidiary of Inmarsat Global Ltd. (“Inmarsat”), seeks blanket authority for two earth station terminal types to be mounted on aircraft to provide mobile communications services over Inmarsat’s Ka-band satellite system. The proposed earth stations will communicate with Inmarsat-5 F2, a satellite that will operate under the authority of the United Kingdom.

#### **1. Introduction and Summary**

Inmarsat is deploying its Global Xpress (“GX”) satellite network, a Ka-band geostationary orbit (“GSO”) Fixed Satellite Service (“FSS”) system that employs state-of-the-art satellite and earth station technologies that will provide seamless global coverage, providing capabilities to offer broadband communications on land, sea and in the air. The GX network was designed in response to the exponentially increasing demand for satellite-delivered broadband high-speed data services. The GX system is designed to support earth stations that operate at fixed locations and while in motion mounted on ships, airplanes or vehicles worldwide. The technology and services offered by GX will stimulate growth and strengthen the economy by enabling enterprise customers to compete more efficiently in the global market, and government customers to perform their missions with significantly enhanced communications capabilities.

Inmarsat has launched and is operating the first of the satellites in the GX system over the Indian Ocean Region, and plans to launch two additional GSO FSS satellites in the next several months, including the Inmarsat-5 F2 (“I5F2”) satellite that will operate at the 55° W.L. orbital location. Inmarsat has a pending application with the Commission seeking authority to operate a gateway earth station at Lino Lakes, Minnesota that will communicate with the I5F2 spacecraft.<sup>1</sup> The Lino Lakes application also includes a request by Inmarsat for market access to offer service to the United States from the I5F2 satellite.

This application seeks authority to operate stabilized user earth station terminals mounted on aircraft that will operate while in fixed locations and while in motion within the

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<sup>1</sup> See Inmarsat Hawaii, Inc. Application for Authority to Operate Gateway Earth Station with I5F2 Satellite at 55° W.L., IBFS File No. SES-LIC-20120426-00397, Call Sign E120072 (filed April 26, 2012) (“Lino Lakes Application”); see also Amendment to I5F2 Application, File No. SES-AMD-20120823-00781.

GX network (“GX Terminals”), using I5F2 as a point of communication.<sup>2</sup> This application includes two terminal models, the JetWave MCS-8200 (“MCS-8200”) for fuselage mount and the JetWave MCS-8000 (“MCS-8000”) for tail mounting. Both user terminals are manufactured by Honeywell, a U.S. manufacturing company and global leader in aeronautical communication equipment. These proposed user terminals are designed to transmit in the 29.5-30.0 GHz band and to receive in the 19.7-20.2 GHz band through the satellites in the GX network to provide high-speed satellite broadband service to aviation customers. The GX Terminals will communicate through one of the I5F2 satellite’s 89 contiguous fixed beams (“Global Payload Beams” or “GP Spot Beams”) as show in Figure 1. The technical description of these satellite beams is included in the Lino Lakes Application and are incorporated here by reference.

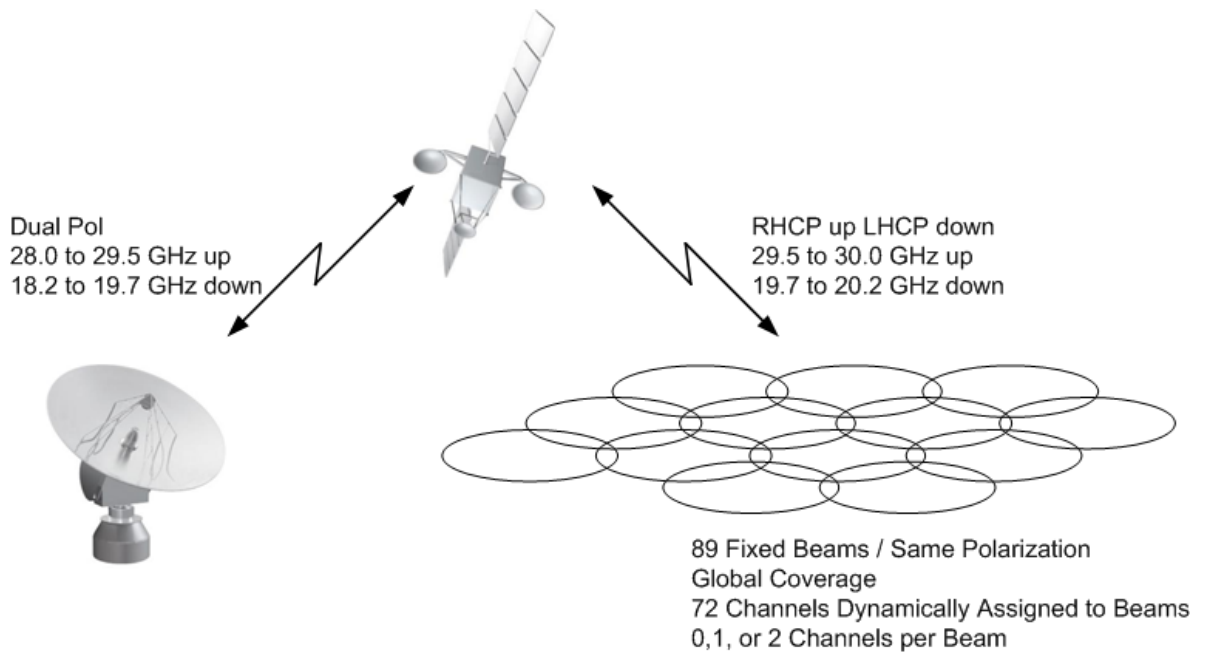


FIGURE 1

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<sup>2</sup> ISAT-US has filed applications for authority to operate earth stations aboard ships. See IBFS File Nos. SES-LIC-20140224-00098, SES-AMD-20140715-00601, Call Sign E140029.

The area of operations of the proposed blanket licensed GX Terminals will be U.S. and international airspace, as well as foreign airspace, within the coverage area of I5F2. The northern hemisphere coverage is shown in Figure 2 below, but the GX Terminals will operate in the southern hemisphere as well.

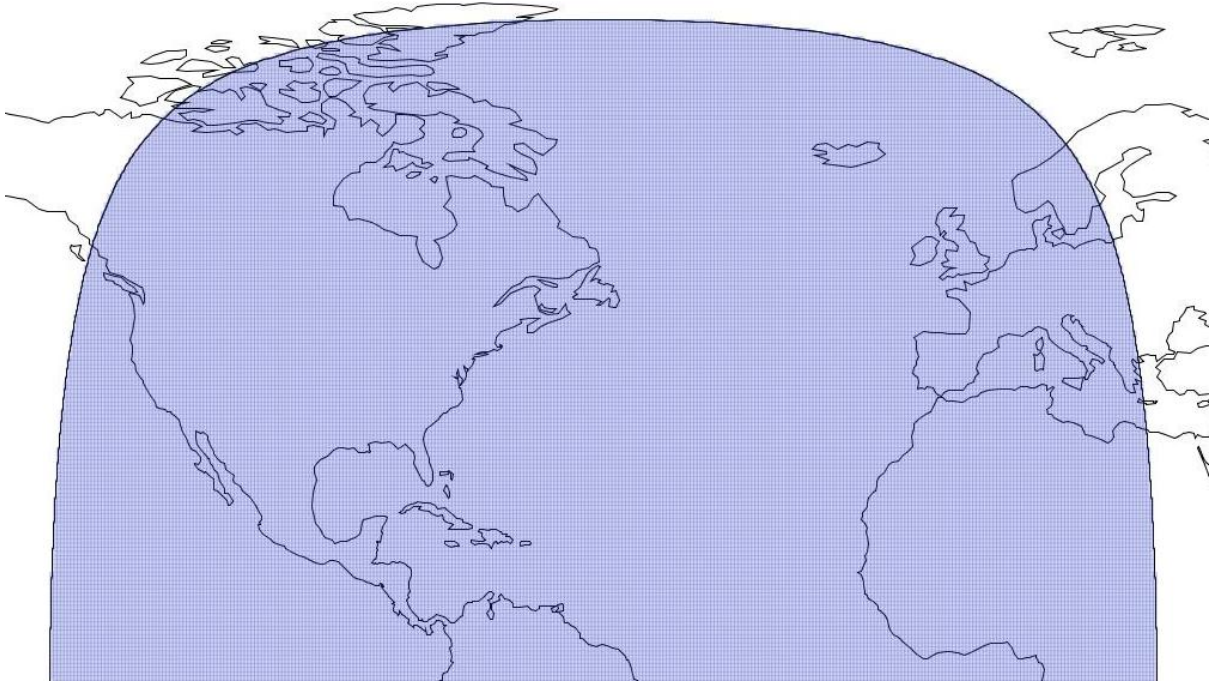


FIGURE 2

Global Xpress I5 F2 Satellite U.S. Coverage Map

When operating in U.S. airspace, the GX Terminals will operate with technical parameters consistent with those contained in this application, regardless of the country of registration of the aircraft. In non-U.S. airspace, the GX Terminals operating on U.S.-registered aircraft will operate consistent with the technical parameters of the Commission license sought in this application or the technical requirements of the relevant administration, whichever are more constraining. Over international waters, GX Terminals operating on U.S.-registered aircraft will operate within the parameters that Inmarsat has or will coordinate with other satellite networks.

Grant of this application is in the public interest. Aeronautical communications through the GX network will be a highly integrated global offering of capabilities tailored to the needs of the aviation industry. This service complements Inmarsat's longstanding commitment and experience to serving aeronautical customers on a global basis through its

existing L-band satellite fleet. The GX offerings will bring a high level of value to various constituents, including commercial air transport and business and general aviation market segments. These services will include communications with crew and non-safety aircraft related systems and in-flight entertainment and communications by travelers.

GX will change the paradigm for delivery of in-flight connectivity by providing a unique combination of speed, coverage, and price. It will be the first global high-speed broadband for the skies available from a single network. GX aviation earth stations have been developed by market leader, Honeywell, as addressed in this application. GX will allow passengers on commercial, business, and general aviation flights to connect to the Internet with their own smartphones, tablets and laptops or any other WiFi-enabled device. GX will offer the most extensive coverage of airline routes of any provider today. Therefore, as aircraft fly across multiple time zones, passengers will have a continuous, consistent quality of service as traffic is handed seamlessly across each spot beam, and from one GX satellite to another. Combined with Inmarsat's industry-leading reliability and record for innovation, GX in the air will set the standard for global in-flight communications.

## **2. U.S. Frequency Allocation and Waiver Request**

Operations in the frequency bands requested in the application are subject to the U.S. Table of Frequency Allocations in Section 2.106 of the Commission's rules ("U.S. Table") and the Ka-band plan adopted by the Commission. The FCC's Ka-band plan designates the 19.7-20.2 GHz band and the 29.5-30.0 GHz band to GSO FSS on a primary basis.<sup>3</sup> At the time the Ka-band plan was adopted, the Commission anticipated authorizing mobile satellite use of the band at such time as technology allowed both mobile satellite and fixed satellite uses to coexist in a manner consistent with the Commission's two-degree-orbital spacing policy.<sup>4</sup> Since that time, the Commission has determined that existing earth station

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<sup>3</sup> *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, First Report and Order, 11 FCC Rcd 19005 ¶¶ 42, 77 (1996) ("*28 GHz First Report and Order*").

<sup>4</sup> *Id.* at ¶ 85 (maintaining the MSS co-primary allocation in the U.S. Table when designating the 19.7-20.2 GHz and 29.5-30.0 GHz bands for GSO FSS on a primary basis, because the Commission believed "that the development of technology may enable these two different types of systems to co-exist in the same frequencies in the future").

technology allows mobile satellite uses to occur in a manner that is compatible with fixed satellite operations and has adopted rules for mobile satellite use of the C- and Ku- FSS frequency bands.<sup>5</sup> The same technology that is used in the C- and Ku-bands is being deployed in the GX Terminals under consideration in this application.<sup>6</sup> GX Terminals will operate at fixed locations, and also on platforms that are moving. When operating while on a moving platform, the GX Terminals will protect primary FSS operations consistent with the requirements of Section 25.138, just as they would if they were stationary and thus, could be treated as an application of the FSS on a primary basis. This is the approach that the European Conference of Postal and Telecommunications Administrations (CEPT) have taken after several years of study.<sup>7</sup> Additionally, the U.S. Table includes a footnote, 5.526, permitting earth station operations while moving in the bands that are the subject of this application, as long as the operations conform to FSS network parameters to ensure

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<sup>5</sup> See, e.g., *Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925-6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/11.7-12.2 GHz Bands*, 20 FCC Rcd 674 (2004); *Amendment of Parts 2 and 25 of the Commission's Rules to Allocate Spectrum and Adopt Service Rules and Procedures to Govern the Use of Vehicle-Mounted Earth Stations in Certain Frequency Bands Allocated to the Fixed-Satellite Service*, 24 FCC Rcd 10414 (2009); *Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands*, 27 FCC Rcd 16510 (2012).

<sup>6</sup> The earth stations in this application employ multi-axis directional antennas that are stabilized with the very latest technology. These antennas are typical fixed earth stations that have been mounted on platforms that can move to provide the same communications services as the public expects at fixed locations. As a technical matter, these earth stations behave as if they were fixed earth stations from an interference perspective with respect to other satellite networks. Because of network controls and monitoring, some of these earth stations may operate with greater protection to other networks than traditional fixed earth stations that can be mispointed without central network awareness.

<sup>7</sup> CEPT Electronic Communications Committee (ECC) Decision 13(01) approved 8 March 2013, "The harmonised use, free circulation and exemption from individual licensing of Earth Stations On Mobile Platforms (ESOMPs) within the frequency bands 17.3-20.2 GHz and 27.5-30.0 GHz; see also, CEPT ECC Report 184, approved February 2103; the European Telecommunications Standards Institute (ETSI) has also adopted a harmonized standard for ESOMPs, ETSI EN 303 978 v.1.1.2, adopted February 2013, "Satellite Earth Stations and Systems (SES); Harmonized EN for Earth Stations on Mobile Platforms (ESOMP) transmitting towards satellites in geostationary orbit in the 27,5 GHz to 30,0 GHz frequency bands covering the essential requirements of article 3.2 of the R&TTE Directive."

protection of adjacent FSS networks.<sup>8</sup> Moreover, the ITU Radiocommunication Bureau recently introduced a new class of earth station in the Preface for Earth stations that operate while in motion and that are associated with a space station in the FSS in the bands listed in footnote 5.526.<sup>9</sup> The associated ITU filing for the I5F2 satellite, INMARSAT-KA 55W, has received a favourable finding to operate such earth stations in Region 2 in the frequency bands, 29.5-30.0 GHz and 19.7-20.2 GHz, requested in the application.<sup>10</sup>

In the alternative, and to the extent necessary, ISAT US seeks authority to operate these GX Terminals on a non-conforming, non-interference basis subject to a waiver of the U.S. Table. The Commission has granted waivers for non-conforming spectrum uses where a

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<sup>8</sup> The issue of earth stations operating on platforms that are capable of moving is not new to the Ka band. The ITU's ORB-88 adopted Recommendation 715 which identified the desire to bring into use multi-band, multi- service satellites (*e.g.*, MSS and FSS). *See* World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It (Second Session - Geneva, 1988), Recommendation 715. WARC-92 considered proposals by several administrations, including the United States, in 19.7-20.2 GHz and 29.5-30.0 GHz, to allow flexibility in these bands for deployment of GSO satellite networks and associated earth stations that integrated a wide variety of capabilities, including fixed, mobile and point-to-multipoint services through proposals for a General Satellite-Service. A significant concern regarding allowing this flexibility, including the ability to operate on platforms capable of moving, came from existing FSS network operators who were concerned that the introduction of an MSS component (with earth stations equipped with omni-directional antennas) would require wider orbital separations than those needed between GSO networks communicating with FSS earth stations which normally employ directional antennas. Due to this concern, the Conference upgraded the MSS allocation to co-primary with FSS in all or portions of the 19.7-20.2 and 29.5-30 GHz bands depending on the Region and adopted footnotes, RR Nos. 5.525 to 5.529, to capture the proposed flexibility while protecting future FSS networks by constraining operations while in motion to FSS technical characteristics. Restriction on MSS use, through the footnotes, was necessary because of concerns about the wide variation in technical parameters which could exist between potential systems in this band. The concern was that introducing MSS could require large orbital separations thereby reducing spectrum efficiency and the total number of systems that the geostationary orbit resource could support in these bands. For many years after 1992, the flexibility provided in the 19.7-20.2 GHz and 29.5-30.0 GHz bands was not realized because of the difficulty of operating earth stations while moving within an FSS technical environment. However, in the last decade earth station technology has advanced significantly resulting in the development of innovative stabilized earth stations using multi-axis directional antennas that are capable of operating while in motion within FSS parameters, *e.g.*, being capable of operating while moving within off-axis EIRP density levels typical of other FSS applications. The FCC has incorporated the ITU Radio Regulation footnotes 5.526 and 5.529 into the U.S. Table of Frequency Allocations.

<sup>9</sup> *See* ITU BR Letter CR/358.

<sup>10</sup> *See* ITU-R Special Publication CR/C/2558 MOD-2.

demonstration is made that the non-conforming operations would not likely cause harmful interference into the services allocated in Section 2.106 and where the non-conforming operator accepts any interference from conforming spectrum users.<sup>11</sup> The Commission granted a waiver to ViaSat on this basis to operate earth stations on aircraft including the bands requested in this application.<sup>12</sup>

“Good cause” exists for the Commission to grant the requested waivers because such grant “would better serve the public interest than strict adherence to the general rule.”<sup>13</sup> In particular, the requested waivers would facilitate users’ ability to have access to new and innovative high data-rate communications services, including broadband Internet access, as well as multimedia, voice, and other data applications aboard aircraft. Grant of the requested waivers also will allow Inmarsat to introduce advanced satellite technologies consistent with the Commission’s objectives of maximizing spectrum deployment for the benefit of the public. This will facilitate the provision of service to aviation users who will benefit from global availability of the GX service, such as commercial airliners, the business jets industry and U.S. government users. At the same time, grant of the requested waivers will “not undermine the policy objective of the rule in question and would otherwise serve the public interest.”<sup>14</sup> As explained below, the operation of the GX Terminals will not cause harmful interference to other authorized operations in these bands.

### **3. Technical Compatibility with Other Users in the Bands**

The following section provides analyses and operational descriptions of the Honeywell MCS-8200 and MCS-8000 earth stations, including compliance with the Commission’s two-degree spacing policy for Ka-band GSO FSS systems. The radiation hazard analyses for these antennas are provided in Exhibit C to this application.

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<sup>11</sup> See, e.g., *Fugro-Chance, Inc.*, 10 FCC Rcd 2860 ¶ 2 (1995) (waiver of the U.S. Table of Frequency Allocations appropriate “when there is little potential for interference into any service authorized under the Table of Frequency Allocations and when the non-conforming operator accepts any interference from authorized services.”).

<sup>12</sup> See *ViaSat Ka band Aeronautical Authorization*, IBFS File No. SES-LIC-20120427-00404, Call Sign E120075 (granted July 17, 2013).

<sup>13</sup> 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969).

<sup>14</sup> *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1166 (D.C. Cir. 1990).

Figure 3 below provides a pictorial of the Honeywell aeronautical terminals that consist of the stabilized antenna and relevant electronics enclosed in a protective radome designed for operation aboard aircraft. Sections 3.1 and 3.2 provide the required technical data for the MCS-8200 Fuselage Mount and MCS-8000 Tail Mount terminals, respectively.

FIGURE 3

Class MCS-8200:



Class MCS-8000:



### 3.1 Honeywell MCS-8200 Fuselage Mount User Terminal

The Honeywell MCS-8200 terminal is a two-axis stabilized earth station employing an asymmetrical rectangular array antenna with dimensions of 65 cm by 19.5 cm. For blanket licensing of transmitting earth stations in the 29.5-30.0 GHz band, the Commission adopted off-axis EIRP spectral density levels contained in Section 25.138(a)(1) within  $\pm 3^\circ$  of the GSO arc and Section 25.138(a)(2) for all directions other than within  $\pm 3^\circ$  of the GSO arc. The MCS-8200 terminal will be operated in a manner fully compliant with the Section 25.138(a)(1) mask and thus will protect other GSO FSS networks. Because the antenna is asymmetrical, the performance of this antenna in the elevation plane (*i.e.*, in directions other than within  $\pm 3^\circ$  of the GSO arc) exceeds the Section 25.138(a)(2) off-axis EIRP spectral density mask in limited circumstances when the axis of the antenna is oriented at certain skew angles in relation to the GSO plane, as discussed below in more detail. Exhibit B includes the off-axis EIRP spectral density plots in the azimuth plane, as well as plots for a



range of skew angles. There are no networks that would be potentially affected by the exceedances because they all occur outside the GSO plane and would only potentially impact NGSO networks operating in the same frequency bands. There are no such networks operating in the frequency bands covered by this application. Aside from this limited excursion from the Section 25.138(a)(2), the performance of this antenna complies with all other limits set forth in Section 25.138(a).

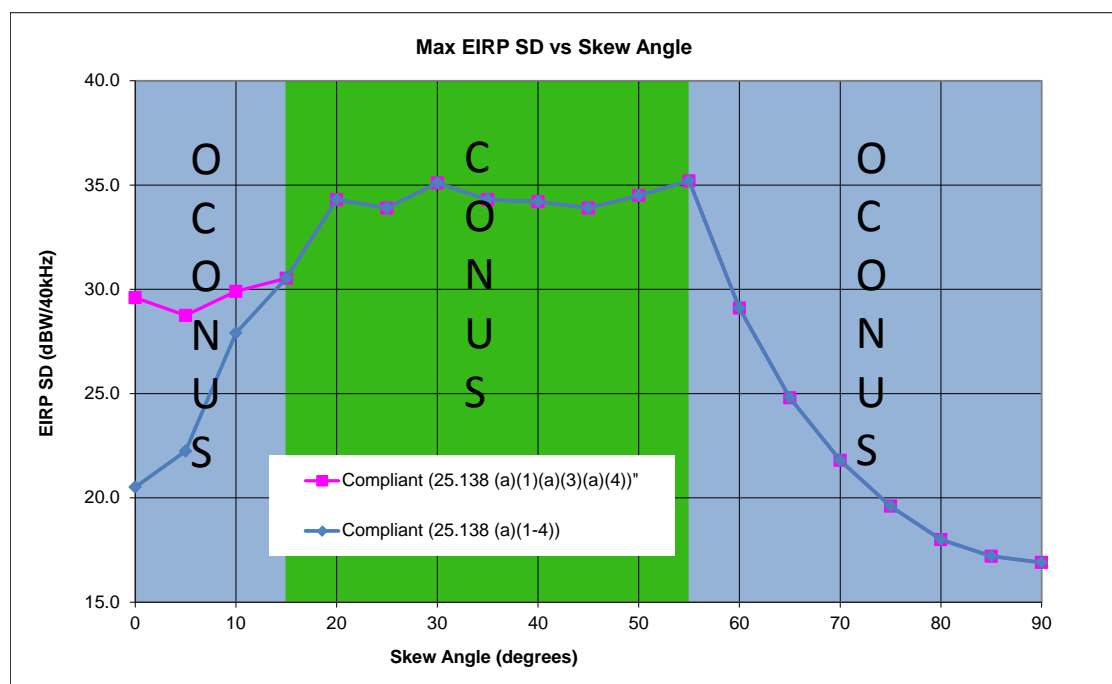
The Commission also adopted Section 25.138(e) to establish protection levels of receive earth stations in the 19.7-20.2 GHz band from adjacent satellite interference based on the pattern specified in Section 25.209(a) and (b) or the actual receiving earth station antenna performance. As shown by the receive patterns in Exhibit B, the Honeywell MCS-8200 user terminal does not meet the Section 25.209(a) and (b) antenna patterns at all off-axis angles and all skew angles. ISAT US acknowledges the exceedances in the receiver performance and agrees to accept interference by adjacent FSS satellite networks to the extent the receiving antenna performance requirements of Section 25.209 are not met.

#### *Skew Angle Measurement*

For this type of asymmetrical antenna, the off-axis antenna pattern (and therefore off-axis spectral density) varies as a function of the skew angle of the antenna in relation to the GSO plane. In general, the degree of skew is a function of the longitude of the GSO satellite, the geographical position of the antenna terminal, and the attitude of the aircraft.

Figure 4 below plots the maximum on-axis EIRP spectral density levels at skew angles from 0 to 90 degrees, as seen from the I5F2 satellite at the 55° W.L. orbital location, compared with the EIRP spectral density limits in Section 25.138(a). Note that the EIRP spectral density levels plotted in the graph in Figure 4 correspond to the levels shown in the antenna patterns provided in Exhibit B. The skew angles that occur within CONUS are shaded in green in the graph below, between approximately 15 to 55 degrees.

**Figure 4. Maximum EIRP Spectral Density versus Skew Angle**



For all skew angles, the terminals will be operated by complying with all the relevant limits within  $\pm 3$  degrees of the GSO arc through the use of dynamic power control, as discussed in more detail below. For skew angles above approximately 15 degrees, the terminal will be operated on carriers that will meet the Section 25.138(a) masks both within and outside of  $\pm 3$  degrees of the GSO. For skew angles below approximately 15 degrees, the terminal will be operated at power levels that meet the Section 25.138(a)(1) limit in the GSO plane, but will exceed the limits for the elevation plane in Section 25.138(a)(2). However, given that the Commission has no licensees or pending applications for NGSO systems that would operate in the bands requested in this application, exceeding the levels in Section 25.138(a)(2) for skew angles less than 15 degrees will not cause any potential interference to other users of the band.<sup>15</sup>

<sup>15</sup> The design of the terminal and the network is sufficiently flexible to allow operations to be adjusted in the future if the Commission licenses an entity and determines such protection is warranted.

### *Dynamic Power Control*

In order to compensate for any exceedances of the off-axis EIRP spectral density mask in the GSO plane resulting from the skew angle effect, the network employs a dynamic control mechanism of the power spectral density level radiated by the MCS-8200 terminal by varying the emission bandwidth or the power at the antenna flange or a combination of both. This dynamic control mechanism employs adaptive coding and modulation to ensure that the MCS-8200 terminal will protect adjacent networks under all operational conditions. The terminals in the network are capable of operating on a wide range of codes and modulations, and the network is designed to operate at the lowest power density modulation and code point that allows the link to close. When the modem has sufficient excess transmit capability, it will automatically switch to the next symbol rate and increase data rate, keeping the EIRP density at the minimum required level. The network employs active power control and reduces power when conditions permit. Therefore, each terminal will be programmed to operate only on the codes and modulation that would ensure that the transmissions are at or below the power spectral density limits in the GSO arc, thereby avoiding potential interference with adjacent networks.

The range of permissible carriers for each terminal will vary depending on the geographic location and position of the aircraft. The allowed operational range of skew angles is provided on an on-going basis to each terminal by the network based upon the aircraft's actual position. For example, a terminal operating on a flight from Miami to San Diego will experience nominal skew angles (level flight conditions) between 41 degrees to 54 degrees. The network will continuously monitor the position of the aircraft, and based upon the terminal location, the network will calculate nominal skew angles for the aircraft position. For this example flight, the calculation and carrier assignment process will happen several times. From each calculation, the network will determine carrier assignments for the aircraft based upon EIRP spectral density limits required by the calculated nominal skew angle. The calculation will include margin for nominal turns and turbulence expected to be experienced by the aircraft during flight. Based on these calculations, the terminal will be instructed by the network of an acceptable range of skew angles where the assigned carrier(s) can be transmitted without exceeding the EIRP spectral density limits. The terminal monitors its skew angle continuously to ensure it is operating within the range of skew angles provided by the network. If the terminal detects that its skew angle falls outside of the allowed range provided by the network, that terminal will cease transmissions within 100 msec after

detection. This is the same mechanism employed when the terminal detects mispointing that is greater than a given range, as described in more detail below.

### **3.2 Honeywell MCS-8000 User Terminal**

The Honeywell MCS-8000 user terminal is a two-axis stabilized earth station employing a 30cm diameter antenna. The design is a circular aperture with a symmetrical center-fed design. For blanket licensing of transmitting earth stations in the 29.5-30.0 GHz band, the Commission adopted off-axis EIRP spectral density levels contained in Section 25.138(a). This antenna will be operated in compliance with the limits in Section 25.138(a). As shown in the off-axis EIRP antenna patterns included in this application as Exhibit F, the Honeywell MCS-8000 user terminal will operate within these levels. Therefore, its transmissions will not cause more interference than would be caused by any fixed earth stations that meet these levels. Because the antenna complies with the limits in Section 25.138(a) and is a circular antenna, the performance of this user terminal is not affected by the skew angle resulting from aircraft position.

The Commission adopted Section 25.138(e) for protection of receive earth stations in the 19.7-20.2 GHz band from adjacent satellite interference based on the pattern specified in Sections 25.209(a) and (b) or the actual receiving earth station antenna performance. As shown by the receive patterns in Exhibit F, the Honeywell MCS-8000 user terminal does not meet the Sections 25.209(a) and (b) limits at all off-axis angles. ISAT US acknowledges the exceedances in the receiver performance and agrees to accept interference by adjacent FSS satellite networks to the extent the receiving antenna performance requirements of Section 25.209 are exceeded.

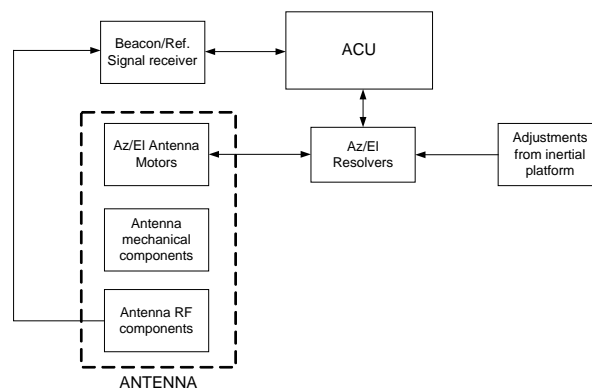
### **3.3 Additional Capabilities**

The GX Terminals have been designed to operate while stationary and in a dynamic environment, *i.e.* while in motion, and are capable of operating in a two-degree spaced GSO FSS environment as described above. The minimum elevation angle required for transmission from these user terminals is five degrees. As illustrated in the Figure 5 below, the orientation of the antenna is controlled by an Antenna Control Unit (ACU), which drives the pointing direction of the terminal based on two mechanisms. The first is a multi-stabilized platform which detects pitch, roll and yaw angles of the platform on which the

antenna is installed, and adjusts the azimuth and elevation of the antenna to cancel out the relative movement of the platform. The second is RF closed-loop tracking, which employs an algorithm that minimizes the pointing error by analysing a pre-determined signal received from the intended satellite. The RF closed-loop automatic tracking technique consists of adjusting the antenna pointing at successive steps by maximizing the strength of a reference signal or a carrier transmitted by the I5F2 satellite. This signal also ensures that the GX Terminal will not track an unintended satellite. Furthermore, these earth stations are designed to inhibit transmissions if the reference signal is not properly received and decoded.

The result of employing these mechanisms is a very high pointing accuracy in the direction of the intended satellite, which results in a 3\*sigma of the maximum pointing error of +/- 0.2 degrees for each of the Honeywell MCS-8200 and MCS-8000 terminals. As an additional layer of protection for adjacent satellite systems, these terminals are designed to inhibit any transmission when mispointed by more than +/-0.5 degrees for more than 100ms and shall not resume transmissions until the pointing error angle to the wanted satellite is less than or equal to +/- 0.2 degrees.

FIGURE 5



ISAT US will maintain a point of contact in the U.S. available on a 24/7 basis with the authority and ability to cease transmissions from the GX Terminals through a suitable gateway facility that will interface with Inmarsat’s Network Operations Center (NOC) located in London, in the United Kingdom. The NOC will monitor the GX Terminals to ensure that operations are within the prescribed operational parameters. The U.S. point of contact will be able to direct the NOC to transmit “enable transmission” or “disable transmission” commands to the gateway facility for reception by the GX Terminals. The GX

Terminals will cease transmission after reception of a “parameter change” command and will not transmit until it receives an “enable transmission” command.

For each GX Terminal, a record of the aircraft location (*i.e.*, latitude, longitude and altitude), transmit frequency, channel bandwidth and satellite used will be recorded and maintained for a period of one year. This information will be recorded at time intervals of one minute while the user terminal is transmitting. ISAT US will make this data available upon request to a potentially affected parties or the Commission within 24 hours of a request.

#### **4. National Security**

Grant of this application would be consistent with U.S. national security, law enforcement and public safety considerations. Inmarsat’s operations in the United States are subject to a network security agreement between Inmarsat on the one hand and the U.S. Department of Justice and the Department of Homeland Security on the other, dated September 23, 2008, as amended (the “Agreement”). Inmarsat has briefed the relevant law enforcement agencies on the development of the Global Xpress system and will continue those discussions following the submission of this application. Pursuant to the terms of the Agreement, any FCC authorizations granted to Inmarsat must be conditioned on compliance with the terms of the existing Agreement. ISAT US requests that the Commission, in consultation with the U.S. Department of Homeland Security and the Department of Justice adopt the following condition to the license sought by this application:

This authorization and any licenses related thereto are subject to compliance with the provisions of the Agreement between Inmarsat on the one hand and the U.S. Department of Justice (DOJ) and the Department of Homeland Security (DHS) on the other, dated September 23, 2008, as amended.

#### **5. Government Coordination**

Inmarsat has been and will continue to engage with the appropriate U.S. Government agencies and obtain the necessary coordination arrangements pursuant to applicable U.S. Table of Frequency Allocation footnotes. Specifically, Inmarsat will conduct US334 coordination with the applicable Federal users in advance of operation of the proposed Earth stations.

## **6. Conclusion**

ISAT US has demonstrated that its GX Terminals will advance the Commission's goals for wireless broadband service and will increase competition. ISAT US also has shown that its aeronautical terminals will provide appropriate interference protection for other services. Grant of this application, therefore, is in the public interest, and ISAT US urges the Commission to act promptly.