Exhibit A

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

1. Introduction and summary

Inmarsat Global Ltd., a company incorporated in the United Kingdom, ("Inmarsat") plans to launch three geostationary orbit ("GSO") Fixed Satellite Service ("FSS") satellites, including the Inmarsat-5 F2 ("I5F2") satellite that will operate at the 55º W.L. orbital location, to provide global network coverage. The first of these satellites was successfully launched on December 8, 2013 and is now at its intended orbital location. I5F2 and the third satellite will be launched in 2014.

Global Xpress ("GX"), will offer broadband communications on land, sea and in the air using state-of-the-art satellite and earth station technologies through the systems' seamless global coverage. Inmarsat, through its subsidiary, Inmarsat Hawaii, Inc., 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 ("Lino Lakes Application").[1] The Lino Lakes application also includes a request by Inmarsat for market access to offer service to the United States from the I5F2 satellite. That application, as amended, included the full technical specifications for the I5F2 satellite, which are incorporated herein by reference. Inmarsat also incorporates herein the technical waiver requests relating to the I5F2 satellite in the Lino Lakes Application, as amended.

GX is designed to respond to the exponentially increasing demand for satellite-delivered broadband high-speed data services. The GX system will support Earth stations that operate at fixed locations and Earth stations in motion mounted on ships, aircraft and vehicles worldwide. The technology and services offered by GX will stimulate growth, create jobs, and strengthen the economy by enabling companies to compete more efficiently in the global market.

In this application, Inmarsat, through its subsidiary, ISAT US, Inc. ("ISAT US"), seeks a blanket license to operate stabilized earth stations that will be mounted on ships to provide maritime communications ("GX Terminals") on U.S.-flagged ships through the GX network.

Although not the subject of this application, the GX network will also include the operation of similar mobile earth station terminals operated on foreign-flagged ships in U.S. territorial waters.[2] As the network operator, Inmarsat will ensure that the operations of such terminals on foreign-flagged

[1] *See* Inmarsat Hawaii, Inc. Application for Authority to Operate Gateway Earth Station with I5F2 Satellite at 55° W.L., 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.

[2] The Commission has acknowledged that the Communications Act specifically prohibits the Commission from licensing radio stations on vessels registered by foreign administrations. *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 ¶ 122 (2004) ("*ESV Order*"); *see also* 47 U.S.C. § 306.

ships will not cause harmful interference to U.S.-licensed stations when the foreign-flagged ships are located in U.S. territorial waters.

This application seeks authority to operate Earth stations to transmit in the 29.5-30.0 GHz band and to receive in the 19.7-20.2 GHz band through the I5F2 satellite at 55° W.L. in order to provide high speed satellite broadband service to maritime users.[3] The area of operations of the proposed blanket licensed GX Terminals will be U.S. and international waters, including inland waterways within the shaded area illustrated in Figure 1 below.

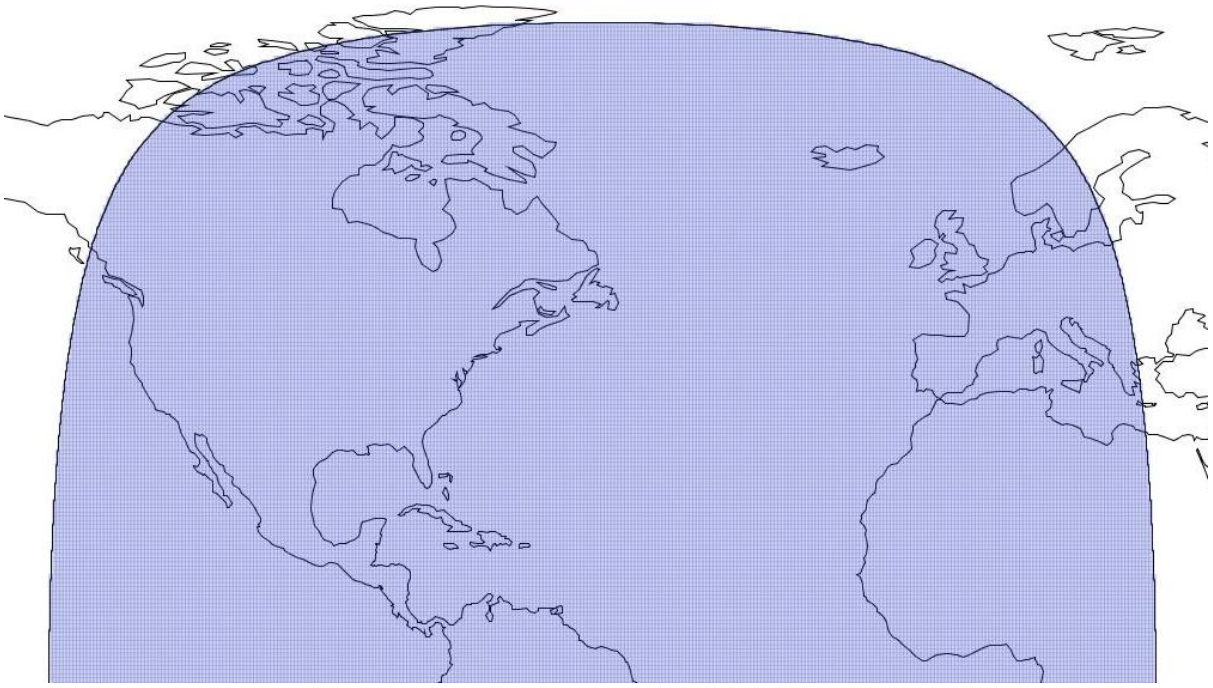

FIGURE 1

Global Xpress I5 F2 Satellite U.S. Coverage Map

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 2.The technical description of these satellite beams is included in the Lino Lakes Application. This application includes two Earth station models, the Sea Tel 4012GX – employing an antenna with a one meter diameter – and the Sea Tel GX60 – employing an antenna with a 0.65 meter diameter. Both models are manufactured by Cobham-Sea Tel, a U.S. manufacturing company and global leader in maritime communications equipment. The characteristics of these Earth stations are provided in the FCC Form 312 associated with this narrative.

[3] These earth stations are also capable of operating in the 29.0-29.5 GHz (space-to-Earth) and 19.2-19.7 GHz (space-to-Earth) bands but authority to operate in those bands is not the subject of this application.

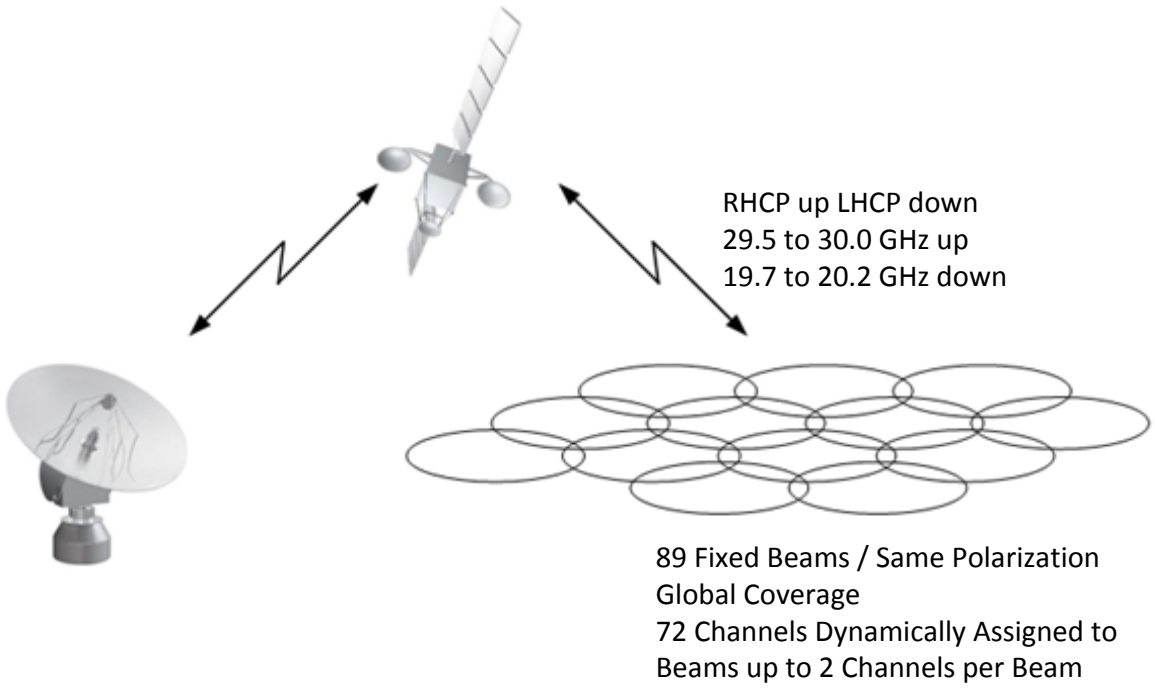

FIGURE 2

Maritime communications through the GX network will be a highly integrated global offering of capabilities tailored to the needs of maritime users. This service complements Inmarsat's longstanding commitment to and experience with servicing maritime customers on a global basis through its existing global L-band satellite network. The GX offerings will bring a high level of value to various customers, including:

- Enhanced safety, security and cost-savings features: video monitoring, access to real-time weather and updated navigation charts;
- Ship's management: extending state-of-the-art IT features and functions to ships at sea, including monitoring of cargo and mechanical functions, online access to customs and port documentation, and access to the same level of connectivity to enterprise networks as enjoyed by land-based users; and
- Crew welfare: efficient and reliable voice and Internet browsing, training, and interaction with shore facilities.

Consistent with the market access request for the I5F2 satellite, this application does not seek authority to provide direct-to-home ("DTH") video or audio services.[4]

[4] *See* Lino Lakes Application, Exhibit A at 6, n.7.

2. U.S. Frequency Allocation and Waiver Request

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.[5] While the GX Terminals will be operated at fixed locations, they will also operate on platforms that will be moving. At fixed locations, the Earth stations are consistent with the parameters of Section 25.138, as discussed in more detail below, and thus, are entitled to primary status.[6]

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.[7] Since that time, the Commission has determined that existing earth station 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- frequency bands.[8] The same technology that is used in the C- and Ku-bands is being deployed in the GX Terminals under consideration in this application.

When operating while on a moving platform, the GX Terminals will protect FSS operations of GSO satellites and NGSO systems 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.[9] The U.S. Table includes a footnote,

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[5] *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*").

[6] 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. From a technical perspective, 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 mis-pointed without central network awareness.

[7] *28 GHz First Report and Order* at ¶¶ 84-85.

[8] *See ESV Order*; *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) ("*VMES Order*"); *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) ("*ESAA Order*").

[9] 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

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 protection of adjacent FSS networks.[10]

In the alternative, and to the extent necessary, ISAT US seeks authority to operate the GX Terminals on a non-conforming, non-interference basis through waivers of the U.S. Table. The Commission grants waivers for non-conforming spectrum uses where a 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. "Good cause" exists for the Commission to grant the requested waivers. As an initial matter, such grant "would better serve the public interest than strict adherence to the general rule," in that 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 maritime vessels and in areas that are currently underserved.

(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."

[10] 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 significantly advanced resulting in a set 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 Allocations.

Recently, the Commission granted a similar waiver to ViaSat to operate an Earth station on aircraft including the bands requested in this application.[11]

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 maritime users who will benefit from global availability of the GX service, such as commercial shipping crews, cruise ship passengers, 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." 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 sections provide analysis and an operational description of the Sea Tel 4012GX and Sea Tel GX60 Earth stations, including compliance with the Commission's two-degree spacing policy for Ka-band GSO FSS systems and Section 25.138 of the Commission's rules. Exhibit B provides the antenna pattern diagrams for each of these antenna types at the top and bottom of the 29.5-30.0 GHz and 19.7-20.2 GHz bands. Although this application only covers the 29.5-30.0 GHz and 19.7-20.2 GHz bands, the proposed Earth stations are capable of transmitting in the 29.0-30.0 GHz band and receiving in the 19.2-20.2 GHz band. Therefore, the manufacturer produced antenna patterns pursuant to Section 25.138(d) taking into account the entire range of the antennas (*i.e.*, the patterns made available to Inmarsat are for the lower, middle and upper points of the 29.0-30 GHz and 19.2-20.2 GHz bands). To the extent necessary, Inmarsat requests a limited waiver of Sections 25.138(d) to permit the submission of antenna patterns at the top and bottom of the frequencies covered by this application.[12] There is good cause for the Commission to grant this waiver, and such a grant will not undermine the policy objectives of the rule in question. The patterns show little variation between the lower and upper range of the 500 megahertz covered by this application. Given the relatively narrow range of frequencies, the patterns provided in this application are sufficient for the Commission to establish conformity with the off-axis EIRP spectral density limits throughout the range of the requested spectrum.

As discussed in more detail below, the transmissions from each of the mobile Earth station terminal types will be consistent with the off-axis EIRP spectral density levels set forth in Section 25.138. In addition, the power flux-density at the earth's surface produced by emissions from the

[11] *See* ViaSat Ka band Aeronautical Authorization, IBFS File No. SES-LIC-20120427-00404, Call Sign E120075 (granted July 17, 2013).

[12] 47 C.F.R. § 25.138(d) ("The applicant shall provide for each earth station antenna type, a series of radiation patterns measured on a production antenna performed on a calibrated antenna range and, as a minimum, shall be made at the bottom, middle, and top frequencies of the 30 GHz band").

I5F2 satellite when communicating with the GX Terminals will be within the -118 dBW/m^2/MHz limit set forth in Section 25.138(a)(6).[13]

Figure 3 provides a pictorial of the Sea Tel maritime Earth station that consists of the stabilized antenna and relevant electronics enclosed in a protective radome designed for operation aboard vessels. Sections 3.1 and 3.2 provide the required technical data for the 1.0 m and 0.65 m Sea Tel Earth stations, respectively.

FIGURE 3

3.1 Sea Tel 4012GX Earth Station

The Sea Tel 4012GX Earth station is a multi-axis stabilized Earth station employing a one meter diameter antenna. 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). As shown in Exhibit B, the Sea Tel 4012GX Earth station will operate within these levels under clear sky conditions. Therefore, its transmissions will not cause any more interference than any other Earth stations that meet these levels.

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. The Sea Tel 4012GX Earth station meets the Section 25.209(a) and (b) antenna patterns.

3.2 Sea Tel GX60 Earth Station

The Sea Tel GX60 Earth station is a multi-axis stabilized Earth station employing a 0.65 meter diameter antenna. 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). As shown in Exhibit B, the Sea Tel GX60 Earth stations will operate within these levels under clear

[13] Lino Lakes Application, Exhibit A at 7.

sky conditions. Therefore its transmissions will not cause any more interference than any other Earth stations that meet these levels.

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 Section 25.209(a) and (b) or the actual receiving earth station antenna performance. As shown in Exhibit B, the Sea Tel GX60 Earth station does not meet the Section 25.209(a) and (b) antenna patterns at all off-axis angles. Inmarsat acknowledges the exceedances in the receive pattern and understands 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 in a dynamic environment, *i.e.* while in motion, and are capable of operating in a two-degree spaced GSO FSS environment. The minimum elevation angle required for transmission from these terminals is five degrees. As illustrated in Figure 4 below, the orientation of the antenna is controlled by two mechanisms. The first is a multi-directional stabilized platform that detects pitch, roll and yaw angles of the platform the antenna is installed on and adjusts the azimuth and elevation of the antenna to compensate for the relative movement of the platform. The second is a RF closed-loop tracking technique that employs an algorithm that minimizes the pointing error by analysing a pre-determined signal received from the wanted satellite. The RF closed-loop automatic tracking technique adjusts, in successive steps, the antenna pointing by maximising 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 another satellite. Furthermore, the GX Terminals 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 wanted satellite. The high level of pointing accuracy results in a maximum pointing error of less than or equal to 0.2 degrees for both the Sea Tel 4012GX and the GX60 Earth stations, respectively. As an additional layer of protection for adjacent satellite networks, the Sea Tel Earth stations are designed to inhibit any transmission when mis-pointed by more than 0.5 degrees within 100ms and will not resume transmissions until the mis-pointing angle to the wanted satellite is less than or equal to 0.2 degrees.

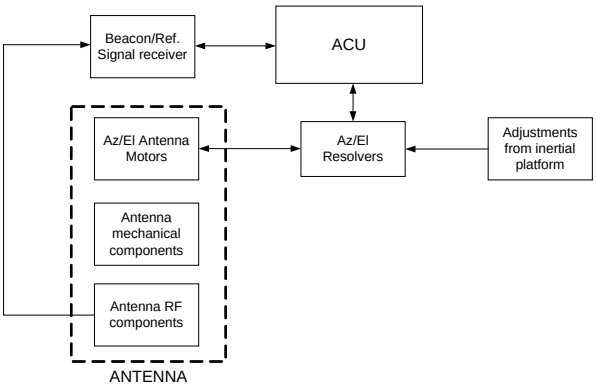

FIGURE 4[14]

Inmarsat will maintain a point of contact in the U.S. available 24/7 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, at which point Inmarsat will work to resolve any confirmed interference from the GX Terminal operations.

For each GX Terminal, a record of the ship location (*i.e.*, latitude/longitude), transmit frequency, channel bandwidth and satellite used will be recorded and maintained for a period of no less than one year. This information will be recorded at time intervals no greater than 20 minutes while the Earth station is transmitting. Inmarsat will make this data available upon request to 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

[14] ACU in Figure 4 is the Antenna Control Unit.

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. In accordance with Section 25.130(f), the half-power beam width of the antenna downlink is 0.08 degrees at 19 GHz.

6. Conclusion

ISAT US has demonstrated that the maritime Earth stations that are the subject of this application will advance the Commission's goals of facilitating the expanded availability of wireless broadband service and increasing competition. ISAT US also has shown that the maritime Earth stations will provide appropriate interference protection for other services. Grant of ISAT US's application, therefore, is in the public interest, and ISAT US urges the Commission to grant this application as soon as possible.