

ISAT US Inc.
FCC Form 312
Exhibit A
Legal Narrative

1. Introduction and summary

ISAT US, Inc. (“ISAT US”), a subsidiary of Inmarsat Global Ltd. (“Inmarsat”), seeks blanket authority to operate an array of fixed and temporary fixed Ka-band earth station terminals to communicate with the Inmarsat-5 F2 (“I5F2”) satellite in the 29.5-30.0 GHz and 19.7-20.2 GHz bands.¹ The I5F2 satellite is part of Inmarsat’s Global Xpress (“GX”) system that will offer broadband satellite services on a global basis. This application covers thirteen earth station terminal models using antennas that range in size from 65 cm to 1.8 m. The terminals are either for fixed or temporary fixed locations. The terminals are designed for enterprise and government users that require access to communications services, including voice, Internet access and video conferencing, in remote locations or locations with limited infrastructure. The temporary fixed terminals are highly transportable and allow organizations from sectors, including media, humanitarian, energy, and government to quickly deploy a communication network to meet mission needs anywhere in the United States or its territories.

2. Technical compatibility with other users in the bands

Each of the thirteen Earth station terminals being proposed consists of the antenna and relevant electronics. The Connect 70, Connect 100, Connect 100T and SKY98GX/01 models have a slightly asymmetrical antenna with an off-set feed. Each of the other antennas has a circular aperture with a symmetrical center-feed. For information a pictorial of a representative Earth station terminal is shown in the Figure below. All of the terminals in this application are manually pointed except for the Atom 65AA/GX01 and Cobham EXP5075 that use automatic acquisition.

¹ See *Inmarsat Mobile Networks, Inc.*, Order and Authorization and Declaratory Ruling, 30 FCC Rcd 2700 (2015) (granting market access for the Inmarsat-5 F2 space station). Consistent with the market access grant for the I5F2 satellite, this application does not seek authority to provide direct-to-home (“DTH”) video or audio services.



The following Table groups the terminal models into eight categories. The terminals in each category use the same antenna and maximum power levels and therefore the transmit off-axis EIRP density, receive antenna gains and receive half power beamwidths are identical. The Table also lists the manufacturer, model, use of each earth station, the relevant Section of Exhibit B for each terminal category and the half-power beamwidth required in Section 25.130(f).

Category	Manufacturer	Model	Use	§25.138 and §25.209 Plots	Half-Power Beamwidth @ 19 GHz §25.130(f)
1	Cobham SATCOM	3075 5075	Fixed Transportable	Exhibit B1	1.5
2	Cobham SATCOM	7100	Transportable	Exhibit B2	1.1
3	L3	Cheetah II	Fixed	Exhibit B3	1.3
4	L3	Hawkeye III Lite	Fixed	Exhibit B4	0.9
5	Paradigm/SWT	Connect 70	Fixed	Exhibit B5	1.6
6	SWT	Atom 65GX/01 Atom 65AAGX/01	Fixed Transportable	Exhibit B6	1.7
7	Paradigm/SWT	Connect 100 Connect 100T SKY98GX/01	Fixed Transportable Fixed	Exhibit B7	1.1
8	Paradigm/SWT	Connect 180 SKY180GX/01	Fixed Fixed	Exhibit B8	0.6

The required technical data for each of the Earth stations is provided in Form 312. In addition, 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 illustrated in the off-axis EIRP spectral density plots in the relevant section of Exhibit B (see Table above), the proposed Earth stations meet the performance requirements in Section 25.138 (a) under clear sky conditions. In addition, all the earth stations models will be operated within the -118 dBW/m²/MHz power flux-density at the earth's surface of the I5F2 satellite as set forth in Section

25.138(a)(6). 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 illustrated in relevant section of Exhibit B (see Table above), in the receive 19.7-20.2 GHz frequency band, the proposed earth station models generally conform to the relevant antenna performance patterns in Section 25.209 with a some exceptions. Inmarsat acknowledges the cases of exceedances at certain off-axis angles for the proposed Earth station terminals and understands and agrees to accept interference by adjacent FSS satellite networks to the extent the relevant receiving antenna performance requirements of Section 25.209 are exceeded.

3. Radiation Hazard Analysis

A radiation hazard analysis for each of the proposed antennas and a discussion of the results are provided in Exhibit C.

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