

Exhibit A

DESCRIPTION OF STA REQUEST

I. DESCRIPTION OF STA REQUEST

ISAT US, Inc. (“ISAT US”) hereby requests special temporary authority (“STA”) to operate a fixed earth station with the Inmarsat 5 F2 (I5F2) satellite in the 19.575-19.675 GHz (space-to-Earth) and 29.375-29.475 GHz (Earth-to-space) bands. The earth station will be located at the Inmarsat facility in Palm Bay, Florida. The operations are to test and demonstrate the use of a new waveform. ISAT US is already licensed by the Commission to operate a set of fixed earth stations in the 19.7-20.2 GHz and 29.5-30.0 GHz bands.¹ The specific antenna that will be used for this demonstration is not included in that license but the Schedule B parameters of the antenna are provided below. The Antenna will operate with the Inmarsat Global Xpress I5F2 satellite from the 55° W.L. orbital location and the Lino Lakes Satellite Access Station, which have both been authorized for U.S. market access.²

ISAT US will be responsible for all technical aspects of the system during the demonstration. The user terminal operations in the additional spectrum requested will be closely monitored by the Inmarsat Network Operations Center (NOC) and the engineering team associated with the demonstration. It is expected that the Antenna will be used starting 9 January 2017 for approximately 30 days.

II. ISAT US SEEKS AUTHORITY TO OPERATE A FIXED TERMINAL IN THE 19.575-19.675 GHZ AND 29.375-29.475 GHZ BANDS

ISAT US is already licensed to operate certain land earth station terminals in the 19.7-20.2 GHz (downlink) and the 29.5-30.0 GHz (uplink) bands with the I5F2 satellite. ISAT US requests to operate in the 19.575-19.675 GHz and 29.375-29.475 GHz frequency bands on a non-interference and non-protected basis using a General Dynamic 1.8 m antenna. Annex 1 includes a certification that the antenna meets the Commission's relevant 25.209 Earth station antenna performance. Additionally the input power density to the antenna will not exceed 3.5 dBW/MHz. Thus the antenna meets the Commission's applicable rules for routine licensing of transmitting FSS earth stations in the 29.375-29.475 GHz band.

ISAT US requests a waiver of the U.S. Table of Frequency Allocations,³ as necessary, to allow the proposed FSS STA operations in the 19.575-19.675 GHz frequencies. Grant of a waiver would serve the public interest because it would allow demonstration of a new waveform through the I5F2 satellite that will facilitate further deployment of satellite broadband to end users. As discussed below, grant of the requested waivers would not undermine the policy objective of the rule, as the primary operators in these bands under the U.S. Table would be protected from harmful interference.

¹ See, ISAT US GX fixed user terminal earth station Call Sign E150097.

² See, Inmarsat Mobile Networks, Inc., Granted March 30, 2015, (Call Sign E120072; IBFS File No. SES-LIC-20120426-00397) (“Lino Lakes Order”).

³ 47 C.F.R. § 2.106.

The Schedule B parameters of the proposed earth station are included below, however for clarity ISAT US highlights the following technical parameters for the proposed STA operations:

EARTH-to-SPACE:

Earth Station Manufacturer and Model: General Dynamics 1.8M Ka-band Series 3180
 Earth Station Diameter: 1.8m
 Transmit Gain: 52.4 dBi
 Transmit Frequencies: 29.375-29.475 GHz
 Transmit Polarisation: RHCP
 Maximum EIRP: 59.4 dBW
 Minimum Elevation for Transmission: 10 degrees

SPACE-to-EARTH:

Earth Station Manufacturer and Model: General Dynamics 1.8M Ka-band Series 3180
 Earth Station Diameter: 1.8m
 Receive Gain: 49.2 dBi
 Receive Frequencies: 19.575-19.675 GHz
 Receive Polarization: LHCP
 Maximum Spacecraft EIRP: 54dBW
 RF Modulation: 64APSK
 Azimuth Range: 360 degrees

HCP Beam: Center at 23.42° N and 76.67° W with a beam radius of 0.8 degrees

The Schedule B information for the antenna is as follows:

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna GainTransmint and/or Recieve(____dBi at ____ GHz)
	GD1.8		General Dyna	3180	1.8	49.2 dBi at 19.575
	GD1.8					49.2 dBi at 19.675
	GD1.8					52.4 dBi at 29.375
	GD1.8					52.4 dBi at 29.475

E28. Antenna Id	E33/34. Diameter Minor/Major(meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
GD1.8	1.8/1.8	0	0	0	5	0	59.4

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization(H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum ERIP Density per Carrier(dBW/4kHz)	Maximum input power density dBW/MHz*
GD1.8	19.575-19.675	R	LHC	32M0G7W	0	0	0
GD1.8	29.375-29.475	T	RHC	460KG7W	52.0	31.4	2.97
GD1.8	29.375-29.475	T	RHC	5M00G1W	59.4	28.4	0.01
GD1.8	29.375-29.475	T	RHC	2M51G7W	59.4	31.4	3.00

Description of Operations

This STA will allow testing and demonstration of new waveform that will facilitate further deployment of broadband communications to Inmarsat customers. The terminal will be operated from the Inmarsat Palm Bay facility in Florida for 30 days commencing on January 9. The specific location of the Inmarsat facility is: 28.04°N, 80.59°W.

24 Hour Point of Contact during the STA: Inmarsat Network Control +44 207 728 1616

Space Station Coordination

The operations under this STA will operate with one of the Global Xpress High Capacity (HCP) spot beam, the technical parameters of which were included in the Inmarsat Mobile Networks, Inc application for market access and incorporated by reference in this request.⁴ During the proposed operations the HCP beam will be centered at 23.42° N and 76.67° W. Figure 1 shows the HCP beam location.

⁴ See IBFS File No. SES-LIC-20120426-00397, Attachment A, Technical Appendix (“Inmarsat Market Access Application”).



The coordination of communications for the use of the frequencies (19.575-19.7 GHz and 29.375-29.5 GHz) with the I5F2 spacecraft at the 55° W.L. orbital location with existing spacecraft operators during the demonstration is the responsibility of Inmarsat and ISAT US. Inmarsat has completed coordination with potentially affected satellite operators, and operations under the STA will be consistent with these agreements.

As demonstrated in the Inmarsat Market Access Application, the proposed STA operations in the 19.575-19.675 GHz frequencies are unlikely to cause interference into fixed service operations that are primary in that band segment. It is noted that the Commission recently granted ISAT US an STA⁵ that allowed operations in these same frequency bands and no complaints of interference from satellite transmissions were received. The Antenna will be receiving in this band and therefore will not cause interference to other users. Moreover, as the Commission acknowledged in granting market access for the I5F2 spacecraft, the space-to-Earth transmissions comply with the pfd limits established under Article 21 of the ITU Radio Regulations established to protect all fixed earth stations.⁶

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Grant of the requested STA will serve the public interest, convenience and necessity because it will enable ISAT US to conduct testing and demonstration of a new wave form using the I5F2 spacecraft, within technical parameters consistent with the parameters

⁵ See IBFS File No. SES-STA-20161006-00830

⁶ *Lino Lakes Order* ¶ 27

described herein using the described Antenna, without creating any risk of harmful interference. ISAT US respectfully requests that the Commission grant STA beginning 9 January 2017 for a period of 30 days.