Exhibit B
Section 25.136 Demonstration

Pursuant to 47 C.F.R. § 25.115, Intelsat License LLC, as debtor in possession ("Intelsat"), herein seeks authority to operate two identical gateway earth stations (together, the "Brewster Gateways") co-located in Brewster, WA. The first proposed gateway earth station ("Brewster Gateway 1") will communicate with Intelsat 40e (S3066) at 91° W.L. The second proposed gateway earth station ("Brewster Gateway 2") will communicate with Galaxy 30 (S3016) at 125° W.L. as the gateway's primary point of communication and Intelsat 40e as its secondary point of communication.

Both Brewster Gateways will utilize 9.4-meter antennas and operate in Ka-band, including the 27.5-28.35 GHz frequency band. Section 25.136(a)(4) of the Federal Communications Commission's ("FCC" or "Commission") rules[1] specifies four conditions that proposed new earth stations operating in the 27.5-28.35 GHz frequency band must meet. This demonstration shows that the proposed Brewster Gateways satisfy the criteria set forth in Section 25.136(a)(4).

For Sections II and III, Intelsat used power flux density ("PFD") contours derived from simulations it ran for the following cases: (1) Brewster Gateway 1 pointed toward Intelsat 40e and Brewster Gateway 2 pointed toward Galaxy 30 ("Case 1"), and (2) Brewster Gateway 1 pointed toward Intelsat 40e and Brewster Gateway 2 pointed toward Intelsat 40e ("Case 2", collectively, the "Brewster Gateway PFD contours").[2] The input data and resulting PFD contours are provided in Appendix A.

I. Section 25.136(a)(4)(i) - Earth Stations per County

Section 25.136(a)(4)(i) limits the number of authorized earth stations operating in the 27.5-28.35 GHz band to three per county. Brewster is located in Okanogan County, WA. At the time of this application's submission, there is only one authorized earth station, Call Sign E160015,[3] in Okanogan County. With the addition of the Brewster Gateways the total number of earth stations in Okanogan County will be within the allowable number of earth stations per county.

II. Section 25.136(a)(4)(ii) - Population

Section 25.136(a)(4)(ii) requires that an earth station applicant in the 27.5-28.35 GHz band demonstrate that the aggregate population within existing and proposed earth stations' -77.6 $dBm/m^2/MHz$ PFD contour, as measured at 10 meters above ground level, complies with the maximum for a population within an Upper Microwave Flexible Use Service ("UMFUS") license area.

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[1] Unless otherwise stated, all references to rule sections in this document refer to sections in Title 47 of the Code of Federal Regulations.

[2] Intelsat's simulations took into account other authorized co-frequency earth stations. *See* Appendix A.

[3] *See Satellite Communications Services Information; Actions Taken*, Report No. SES-02014, File No. SES-MOD-20170919-01032 (Dec. 6, 2017) (Public Notice).

The maximum allowable population within an UMFUS license area with the population of Okanogan County (42,243 people[4]) is 450 people.[5]

To estimate the population that falls within the Brewster Gateway PFD contours, Intelsat superimposed the Brewster Gateway PFD contours onto a 2020 population distribution grid from the National Aeronautics and Space Administration's ("NASA") Gridded Population of the World ("GPWv4").[6] The resulting projections are shown below in Figures 1 and 2. The total population within each PFD contour was estimated to be less than 75 people. Therefore, the aggregate population within in the Brewster Gateway PFD contours, 75 people, falls below the maximum allowable population of 450 people.

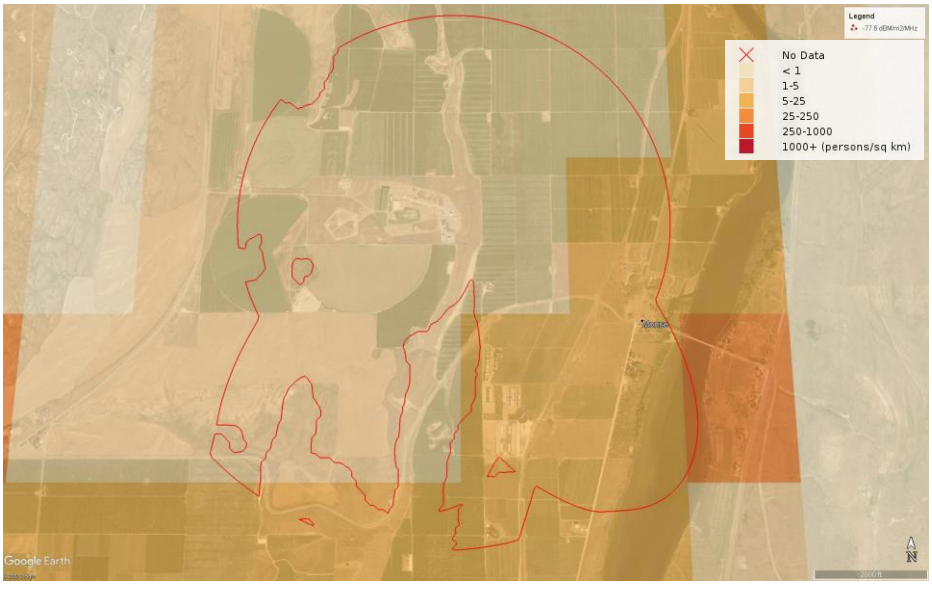

Figure 1. Case 1 PFD contour projected on to GPWv4 population grid.

[4] *See* https://www.census.gov/quickfacts/fact/table/okanogancountywashington/PST045219

[5] *See* 47 C.F.R. § 25.136(a)(4)(ii) at Table 1.

[6] *See* National Aeronautics and Space Administration, Gridded Population of the World, v. 4, https://sedac.ciesin.columbia.edu/data/collection/gpw-v4.

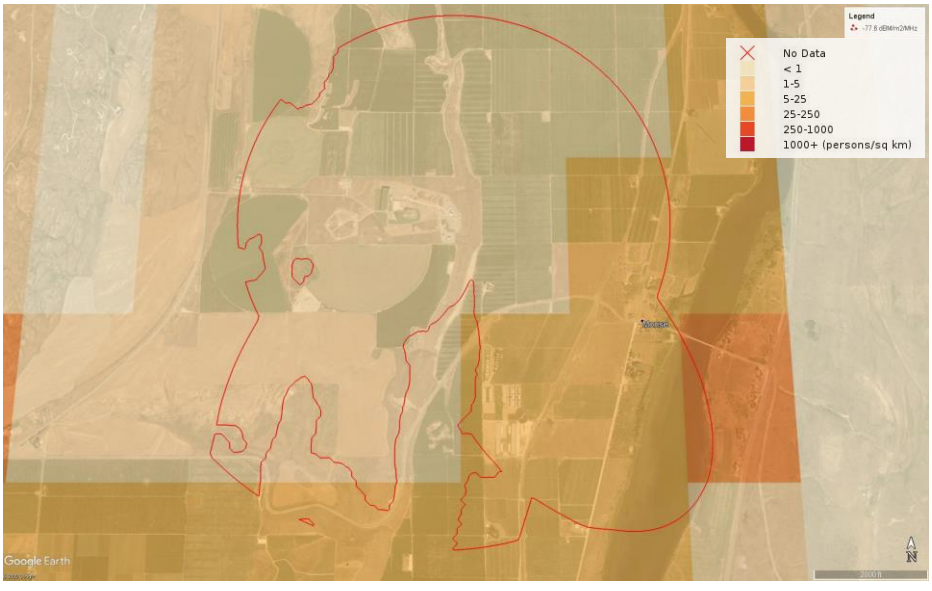

Figure 2. Case 2 PFD contour projected on to GPWv4 population grid.

III. Section 25.136(a)(4)(iii) - Federal Highways & Major Event Venues

Per Section 25.136(a)(4)(iii), applicants must demonstrate that the PFD contour for the proposed earth station does not contain any major event venue, urban mass transit route, passenger railroad, or cruise ship port.

The figures below demonstrate that the Brewster Gateway PFD contours do not contain any "Interstate, Other Freeways and Expressways, or Other Principal Arterial roads" as defined in functional classification guidelines issued by the Federal Highway Administration ("FHWA").[7]

Figure 3. Case 1 PFD contour projected on an aerial image[8] of the proposed location**.**

[7] *See* 23 C.F.R. 470.105(b).
[8] All aerial images used are from Google Earth.

Figure 4. Case 2 projected PFD contour projected on an aerial image of the proposed location.

Based on maps from the FHWA's HEPGIS website,[9] there are also no major event venues, urban mass transit routes, passenger railroads, cruise ship ports, or roads classified by the FHWA's guidelines within either of the Brewster Gateway PFD contours.

IV. Section 25.136(a)(4)(iv) - Coordination with UMFUS Licensees

Section 25.136(a)(4)(iv) requires that applicants successfully complete frequency coordination with UMFUS licensees operating within the Brewster Gateway PFD contours. Intelsat has provided a Frequency Coordination Report, which demonstrates the required successful frequency coordination, as Appendix B.

[9] *See* Federal Highway Administration, HEPGIS, https://hepgis.fhwa.dot.gov/fhwagis/.

Appendix A

Derivations of the PFD Contour

In order to model the PFD contours necessary for the demonstrations required by Section 25.136(a), Intelsat used Visualyse Professional.[1] The following provides the inputs used in the Visualyse Professional simulations as well as the resulting contours.

The gateways were modeled using the following earth station parameters:

Site Location	Brewster, WA
County	Okanogan
Antenna Coordinates	48.14686, -119.692116
Antenna Size	9.4 meters
Antenna's Gain	65.8 dBi
Input Power into the Antenna	-0.6 dBW/MHz

The antenna radiation pattern of each earth station complies with Section 25.209. Additionally, the proposed gateways have an improved performance beyond 19.1° off-axis angles—therefore the below input was used:

Off-axis gain	unit	Off-axis angel
29-25log(θ)	dBi	for $2° \leq \theta \leq 7°$
8	dBi	for $7° < \theta \leq 9.2°$
32-25log(θ)	dBi	for $9.2° < \theta \leq 19.1°$
-15	dBi	for $19.1° < \theta \leq 45°$
-20	dBi	for $45° < \theta \leq 180°$

To model the received emission by an UMFUS receiver in any possible direction, Intelsat used a reference antenna defined at 10 meters height above ground with omni-directional pattern and isotropic receive gain. In the simulations, this reference antenna was moved around the gateway in small steps (30 m) and the value of received power was measured at each location.

The simulation modeled the terrain profile using the NASA Shuttle Radar Topography Mission 1-Arc-Second Digital Terrain Elevation Data, which has a resolution of approximately 30 meters by 30 meters.

Intelsat used the International Telecommunication Union Radiocommunication Sector's ("ITU-R") Recommendation P.525-4 for basic transmission loss to model the propagation of the radio frequency signal; ITU-R's Recommendation P.452-16 for clutter estimation was used to model the location of the gateways.

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[1] For more information visit: https://www.transfinite.com/content/professional.

For the Section 25.136(a)(4)(ii) demonstration, Intelsat ran simulations using the above inputs and the technical parameters of the relevant existing earth station, E160015,[2] the for the following cases: (1) Brewster Gateway 1 pointed toward Intelsat 40e and Brewster Gateway 2 pointed toward Galaxy 30 ("Case 1"), and (2) Brewster Gateway 1 pointed toward Intelsat 40e and Brewster Gateway 2 pointed toward Intelsat 40e ("Case 2").[3]

For the Section 25.136(a)(4)**(**iii) demonstrations, Intelsat ran simulations using the inputs provided in this Appendix for Case 1 and Case 2.[4]

[2] *See Satellite Communications Services Information; Actions Taken*, Report No. SES-02014, File No. SES-MOD-20170919-01032 (Dec. 6, 2017) (Public Notice).

[3] *See* Exhibit A at Figure 1-2.

[4] *See* Exhibit A at Figure 3-4.

Appendix B

Ka-Band Earth Station – Brewster, WA

Frequency Coordination Report

28 GHz

Prepared on Behalf of
INTELSAT LICENSE
LLC

November 30, 2020

COMSEARCH®
A CommScope Company

Table of Contents

1. Summary of Results

On behalf of INTELSAT LICENSE LLC, Comsearch performed a coordination notice under Section 25.203(c) and Section 25.136(a)(4) of the FCC's rules for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in Brewster, WA, which will transmit at 28 GHz[1]. Prior-notification letters were sent to the licensees and a copy of the notification data is provided in section four of this report. The earth station coordination was finalized on November 30, 2020.

No objections were received from any of the incumbent 28 GHz licensees.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Brewster, WA was prior-coordinated by Comsearch. A notification letter and datasheets for this earth station were sent to the following 28 GHz common carrier fixed microwave licensees. These licensees are authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis or local basis.

Licensee	Authorized Geographic Area
Frontier	Nationwide

A notification letter and datasheets for the Ka-Band earth station in Brewster, WA were also sent to the following 28 GHz local television transmission licensee. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Information Super Station, LLC	Continental US

No objections were received from the common carrier or local television transmission service incumbents.

[1] The proposed earth station will operate in the 27.5 – 28.6 GHz & 29.0 – 30.0 GHz portion of the Ka-Band.

3. 28 GHz UMFUS Coordination

There were two 28 GHz UMFUS licensees within the coordination distance of the proposed earth station. The proposed earth station will operate on frequencies that overlap Channel L1 & L2 of the UMFUS service. The total frequency allocation for Channels L1 & L2 of the UMFUS spectrum appears below.

Channel: **L1** 27.500 - 27.925 GHz
L2 27.925 - 28.350 GHz

UMFUS Licensee	Authorized Geographic Area
DISH Network	Market-Based
Verizon	Market-Based

No objections were received from the UMFUS incumbents.

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in Brewster, WA. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.

Job Number:	201026COMSGE10

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	
Licensee Code	INTELS
Licensee Name	Intelsat License LLC

Site Information — BREWSTER, WA

Venue Name	
Latitude (NAD 83)	48° 8' 48.7" N
Longitude (NAD 83)	119° 41' 31.6" W
Climate Zone	A
Rain Zone	5
Ground Elevation (AMSL)	379.99 m / 1246.7 ft

Link Information

Satellite Type	Geostationary
Mode	TR - Transmit-Receive
Modulation	Digital
Satellite Arc	91° W to 125° West Longitude
Azimuth Range	143.7° to 187.1°
Corresponding Elevation Angles	28.2° / 34.5°
Antenna Centerline (AGL)	10.0 m / 32.8 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32
Manufacturer		ASC		ASC
Model		9.4m-Ka		9.4m-Ka
Gain / Diameter		62.0 dBi / 9.4 m		65.8 dBi / 9.4 m
3-dB / 15-dB Beamwidth		0.50° / 1.00°		1.10° / 2.20°
Max Available RF Power	(dBW/4 kHz)			-24.6
	(dBW/MHz)			-0.6
Maximum EIRP	(dBW/4 kHz)			41.2
	(dBW/MHz)			65.2
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz 20%
	Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz 0.0025%

Frequency Information

	Receive 18.0 GHz	Transmit 28.0 GHz
Emission / Frequency Range (MHz)	1M00G7W - 140MG7W / 17800.0 - 18800.0	1M00G7W - 140MG7W / 27500.0 - 29100.0
	1M00G7W - 140MG7W / 19200.0 - 19400.0	1M00G7W - 140MG7W / 29250.0 - 30000.0
	1M00G7W - 140MG7W / 19600.0 - 20200.0	
Max Great Circle Coordination Distance	152.5 km / 94.7 mi	2.0 km / 1.24 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi	100.0 km / 62.1 mi

5. Contact Information

For questions or information regarding the 28 GHz Frequency Coordination Report, please contact:

Contact person:	Dennis Jimeno
Title:	Engineer III, Telecommunications
Company:	Comsearch
Address:	19700 Janelia Farm Blvd., Ashburn, VA 20147
Telephone:	703-726-5858
Fax:	703-726-5599
Email:	DJimeno@Comsearch.com
Web site:	www.comsearch.com