

Exhibit A

PETITION FOR WAIVER OF SECTIONS 25.137 AND 25.114

Pursuant to Section 25.137 of the Federal Communications Commission's ("Commission" or "FCC") rules, earth station applicants "requesting authority to communicate with a non-U.S. licensed space station" to serve the United States must demonstrate that U.S.-licensed satellite systems have effective competitive opportunities to provide analogue services in certain countries and must provide the same legal and technical information for the non-U.S.-licensed space station as required by Section 25.114 for U.S.-licensed space stations.¹ Intelsat License LLC ("Intelsat") herein seeks authority to provide launch and early orbit phase ("LEOP") services—not commercial services—to the United States, and thus believes that Section 25.137 does not apply.²

To the extent the Commission determines, however, that Intelsat's request for authority to provide LEOP services on a special temporary basis is a request to serve the United States with a non-U.S.-licensed satellite, Intelsat respectfully requests a waiver of Sections 25.137 and 25.114 of the Commission's rules.³ The Commission may grant a waiver for good cause shown.⁴ The Commission typically grants a waiver where the particular facts make strict compliance inconsistent with the public interest.⁵ In granting a waiver, the Commission may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.⁶ Waiver is therefore appropriate if special circumstances warrant a deviation from the general rule, and such a deviation will serve the public interest.

In this case, good cause exists for a waiver of both Section 25.137 and Section 25.114 of the FCC's rules. With respect to Section 25.114, Intelsat seeks authority only to provide LEOP services for the JCSAT-18 satellite. The information sought by Section 25.114 is

¹ 47 C.F.R. § 25.137.

² See *EchoStar Satellite Operating Company Application for Special Temporary Authority Related to Moving the EchoStar 6 Satellite from the 77° W.L. Orbital Location to the 96.2° W.L. Orbital Location, and to Operate at the 96.2° W.L. Orbital Location*, Order and Authorization, 28 FCC Rcd. 4229 (2013) (noting that operating TT&C earth stations in the United States with a foreign-licensed satellite does not constitute "DBS service").

³ 47 C.F.R. §§ 25.137 and 25.114.

⁴ 47 C.F.R. § 1.3.

⁵ *N.E. Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) ("*Northeast Cellular*").

⁶ *WAIT Radio v. FCC*, 419 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

not relevant to LEOP services. Moreover, Intelsat does not have—and would not easily be able to obtain—such information because Intelsat is not the operator of the JCSAT-18 satellite. Intelsat has a contract with Boeing, the manufacturer of the JCSAT-18 satellite, to conduct LEOP services.

The information required under Section 25.114 of the FCC’s rules is not necessary to determine potential harmful interference. The Schedule S information for this satellite would pertain to the operation of the JCSAT-18 satellite at its final orbital location. However, the present application for LEOP services involves communications *prior* to the satellite attaining its final location in the geostationary orbit. In other words, during the LEOP mission, the earth station will not be communicating with a satellite located in the geostationary orbit. Rather, it will be transmitting to a satellite traveling on its “transfer orbit” or “LEOP path,” which starts immediately following its separation from a launch vehicle, and ends when the satellite reaches its geostationary orbital location. Moreover, as with any STA, Intelsat will perform the LEOP services on a non-interference basis.

Because it is not relevant to the service for which Intelsat seeks authorization, and because obtaining the information would be a hardship, Intelsat seeks a waiver of all the information required by Section 25.114 of the Commission’s rules. Intelsat has provided in this STA request the required technical information that is relevant to the LEOP services for which Intelsat seeks authorization.

Good cause also exists to waive Section 25.137 of the agency’s rules. Section 25.137 is designed to ensure that “U.S.-licensed satellite systems have effective competitive opportunities to provide analogous services” in other countries.⁷ Here, there is no service being provided by the satellite; it is simply being placed in its orbital location after separating from the launch vehicle. Thus, the purpose of Section 25.137 would not be served by applying these rules to LEOP services. For example, Section 25.137(d)(4) requires earth station applicants requesting authority to operate with a non-U.S.-licensed space station that is not in orbit and operating to post a bond.⁸ The underlying purpose of Section 25.137(d)(4)—to provide parity between U.S.-licensed and non-U.S.-licensed commercial satellite systems in discouraging orbital location warehousing—would not be served by requiring Intelsat to post a bond to provide approximately 45 days of LEOP services to the JCSAT-18 satellite.

It is Intelsat’s understanding that JCSAT-18 is licensed by Japan, which is a WTO-member country. Thus, the purpose of Section 25.137—to ensure that U.S. satellite operators enjoy “effective competitive opportunities” to serve certain foreign markets—will not be undermined by grant of this waiver request.

⁷ 47 C.F.R. § 25.137(a).

⁸ *See* 47 C.F.R. §25.137(d)(4).

Finally, Intelsat notes that it expects to operate with the JCSAT-18 satellite using its U.S. earth station for a period of approximately 45 days. Requiring Intelsat to obtain copious technical and legal information from an unrelated party, where there is no risk of harmful interference and the operations will cease after approximately 45 days, would pose undue hardship without serving underlying policy objectives. Given these particular facts, the waiver sought herein is plainly appropriate.

Exhibit B
Request for Waiver of the U.S. Table of Allocations

To the extent necessary, Intelsat requests a waiver of the U.S. Table of Frequency Allocations, which limits the fixed-satellite service use of the 12.7-12.75 MHz frequency band to Earth-to-space.¹ Intelsat seeks waiver to permit KA258, located in Hagerstown, MD, to communicate with the JCSAT-18 satellite during its launch and early orbit phase (“LEOP”) mission.

The Commission may grant a waiver for good cause shown.² The Commission typically grants a waiver where the particular facts make strict compliance inconsistent with the public interest.³ In granting a waiver, the Commission may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.⁴ Waiver is therefore appropriate if special circumstances warrant a deviation from the general rule, and such a deviation will serve the public interest.

Good cause exists to waive, for purposes of the JCSAT-RA LEOP mission, the designation of the 12.7-12.75 MHz frequency band for FSS uplink only. The antenna will be receiving from the satellite as it travels on its non-geosynchronous “transfer orbit” or “LEOP path,” which starts immediately following its separation from a launch vehicle, and ends when the satellite reaches its geostationary orbital location. Allowing Intelsat to provide LEOP services to JCSAT-18 in this band will serve the public interest by ensuring safety of flight during orbit rising and help provide additional capacity from the 150.0° E.L. orbital location. Moreover, Intelsat’s operations will be on a non-protected, non-interference basis.

Grant of this waiver is consistent with the Commission’s precedent. A waiver of the Table of Allocations is generally granted “when there is little potential interference into any service authorized under the Table of Frequency allocations and when the nonconforming operator accepts any interference from authorized services.”⁵ Intelsat expects to communicate with the JCSAT-18 satellite intermittently over a period of approximately 45 days, receiving in only two frequencies in the 12.7-12.75 GHz band. As such, this use poses a negligible risk of potential interference to co-frequency operations in the 12.7-12.75 GHz frequency band.

Given these particular facts, the waiver sought herein is plainly appropriate.

¹ See 47 C.F.R. § 2.106.

² 47 C.F.R. §1.3.

³ *N.E. Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) (“*Northeast Cellular*”).

⁴ *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

⁵ See *The Boeing Company*, Order and Authorization, 16 FCC Rcd 22645, 22651 (Int’l Bur. & OET 2001); *Application of Fugro-Chance, Inc. for Blanket Authority to Construct and Operate a Private Network of Receive-Only Mobile Earth Stations*, Order and Authorization, 10 FCC Rcd 2860 (Int’l Bur. 1995) (authorizing MSS in the C-band); see also *Application of Motorola Satellite Communications, Inc. for Modification of License*, Order and Authorization, 11 FCC Rcd 13952-13956 (Int’l Bur. 1996) (authorizing service to fixed terminals in bands allocated the mobile satellite service).

Exhibit C
Intelsat License LLC
Hagerstown, Maryland

TIW 14.2 Meter Earth Station

1. Background

This Exhibit is presented to demonstrate the extent to which the Intelsat License LLC ("Intelsat") satellite earth station in Hagerstown, Maryland is in compliance with the Federal Communications Commission ("FCC") Report and Order 96-377. The potential interference from the earth station to U.S. Navy shipboard radiolocation operations ("RADAR") and the National Aeronautics and Space Administration ("NASA") space research activities in the 13.75-14.0 GHz band is addressed in this exhibit. The parameters for the earth station are:

Coordinates (NAD83):	39° 35' 54.6" N, 77° 45' 33.0" W
Satellite Arc Range for Earth Station:	JCSAT-18 at 6°W to 149°W
Frequency Band:	13.75-14.00 GHz
Polarizations:	Linear & Circular
Emissions:	1M00F2D
Modulation:	FM/PCM/PSK
Maximum Aggregate Uplink EIRP:	85dBW for all Carriers
Transmit Antenna Characteristics	
Antenna Size:	14.2 Meters in Diameter
Antenna Type/Model:	TIW
Gain:	64.5 dBi
RF Power into Antenna Flange:	20.5 dBW or -3.5 dBW/4kHz
Minimum Elevation Angle:	5.3° @ 101.86° Azimuth 5.69° @ 257.78° Azimuth
Side Lobe Antenna Gain	FCC Reference Pattern

Because the above uplink spectrum is shared with the Federal Government, coordination in this band requires resolution data pertaining to potential interference between the earth stations and both U.S. Navy Department and NASA systems. Potential interference from the earth station could impact the U.S. Navy and/or NASA systems in two areas. These areas are noted in GCC Report and Order 96-377 dated September 1996, and consist of (1) Radiolocation and Radio Navigation, (2) Data Relay Satellites.

Summary of Coordination Issues:

- a.) Potential Impact to Government Radiolocation (Shipboard Radar)
- b.) Potential Impact to NASA Tracking and Data Relay Satellite Systems ("TDRSS")

2. Potential Impact to Government Radiolocation (Shipboard Radar)

Radiolocation operations ("RADAR") may occur anywhere in the 13.4-14.0 GHz frequency band aboard ocean-going U.S. Navy ships. FCC order 96-377 allocates the top 250MHz of this 600 MHz band to the Fixed Satellite Service ("FSS") on a co-primary basis with the radiolocation operations and provides for an interference protection level of $-167 \text{ dBW/m}^2/4\text{kHz}$.

The closest distance to the shoreline from Hagerstown, Maryland earth station is approximately 131 km. The calculation of the power spectral density at this distance is given by:

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|------------------------------|--|
| 1. Clear Sky EIRP: | 85 dBW |
| 2. Carrier Bandwidth: | 1000 kHz |
| 3. PD at antenna input: | -3.5 dBW/4kHz |
| 4. Transmit Antenna Gain: | 64.5 dBi |
| 5. Antenna Gain to Horizon: | 10.9 dBi |
| 6. Antenna Elevation Angles: | 5.3° @ 101.9° azimuth
5.7° @ 257.8° azimuth |

The earth station will radiate interference toward the ocean according to its off-axis side-lobe performance. A conservative analysis, using FCC standard reference pattern, results in an off-axis antenna gain of 10.9 towards the nearest shoreline.

The signal density at the shoreline, through free space is:

$\text{PFD} = \text{Antenna Feed Power density (dBW/4kHz)} + \text{Antenna Off-Axis Gain (dBi)} - \text{Spread Loss (dBW/m}^2)$

$$= -3.5\text{dBW/4kHz} + 10.9\text{dBi} - (10 \cdot \log[4 \cdot \pi \cdot [131\text{km}]^2])$$

$$= -105.9 \text{ dBW/m/4kHz} - \text{Additional Path Losses (69 dB)}$$

Our calculation indicate additional path loss of approximately 69 dB including absorption loss and earth diffraction loss for the actual path profiles from the earth station to the nearest shoreline.

The calculated PFD, including additional path losses to the closest shoreline, is $-174.9 \text{ dBW/m}^2/4 \text{ kHz}$. This is 7.9dB below the $-167.0 \text{ dBW/m}^2/4 \text{ kHz}$ interference criteria of the R&O 96-377. Therefore, there should be no interference to the U.S. Navy RADAR from the Hagerstown, Maryland earth station due to the distance and the terrain blockage between the site and the shore.

3. Potential Impact to NASA's Tracking and Data Relay Satellite System

The geographic location of the Intelsat earth station in Hagerstown, Maryland is outside the 390 km radius coordination contour surrounding NASA's White Sands, New Mexico ground station complex. Therefore the TDRSS space-to-earth link will not be impacted by the Intelsat earth station in Hagerstown, Maryland.

The TDRSS space-to-space link in the 13.772 to 13.778 GHz band is assumed to be protected if an earth station produces an EIRP of less than 71 dBW/6MHz in this band. The 14.2 meter earth station antenna will not transmit in this band. Therefore, there will be no potential interference to the TDRSS space-to-space link.

4. Coordination Result Summary and Conclusions

The results of the analysis and calculation performed in this exhibit indicate that compatible operation between the earth station at the Hagerstown, Maryland facility and U.S. Navy and NASA TDRSS space-to-earth and space-to-space links are possible. No interference to U.S. Navy RADAR or NASA TDRSS operations from the Hagerstown, Maryland site earth station should occur.