

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
Request for Special Temporary Authority Using Castle Rock, Colorado Earth Station KL92

1. Applicant

Name:	Intelsat License LLC	Phone Number:	703-559-7848
DBA Name:		Fax Number:	703-559-3957
Street:	c/o Intelsat Corporation 7900 Tysons One Place	E-Mail:	susan.crandall@intelsat.com
City:	McLean	State:	VA
Country:	USA	Zipcode:	22102 -5972
Attention:	Susan H. Crandall		

File # SES-STA-20140728-00618
KL92
Call Sign (or other Identifier) 9-8-17
Grant Date 9-2-17
Term Dates 10-8-17
From [Signature]
Approved [Signature]
International Bureau

Applicant: Intelsat License LLC
Call Sign: KL92
File No.: SES-STA-20140728-00618
Special Temporary Authority (STA)

Intelsat is granted, under the following conditions, STA for 30 days to use its earth station at Castle Rock, Colorado to provide launch and early orbit phase (LEOP) services for the Australian licensed Optus-10 satellite that has the permanent orbital location 164.0° E.L. The in-orbit testing location will be 176.0° E.L. The satellite is expected to be launched on September 8, 2014.

1. Uplink to Optus-10 satellite on 13978.5 MHz, 13980.5 MHz, and 13982.5 MHz (RHCP) within coordinated emission and power limits.
2. Downlink from Optus-10 satellite on 12233.5 MHz, 12235.5 MHz, and 12237.5 MHz (RHCP).
3. The LEOP operations must be coordinated with all operators of satellites that use the same frequency bands and are in the LEOP path. All operators of satellites in that path will be provided with an emergency phone number where the licensee can be reached in the event that harmful interference occurs. Currently the 24x7 contact information for the Optus-10 LEOP mission is as follows: Ph.: (202) 944-7701 - East Coast Operations Center (primary); (310) 525-5900 - West Coast Operations Center (back-up). Request to speak with Harry Burnham or Kevin Bell.
4. All operations shall be on an unprotected and non-harmful interference basis, Intelsat License LLC, KL92, shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference.
5. All operations under this grant of special temporary authority must be on an unprotected and non-harmful interference basis, *i.e.*, Intelsat must not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating station.
6. In the event of any harmful interference under this grant of STA, station KL92 must cease operations immediately upon notification of such interference, and must inform the Commission, in writing, immediately of such an event.
7. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at Intelsat License LLC's risk.
8. This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately.

File No. SES-STA-20140728-00618

Call Sign KL92 **Grant Date** 9-2-14
(or other identifier)

From 9-8-14 **Term Dates** To: 10-8-14

Approved: [Signature]

GRANTED
International Bureau

2. Contact			
Name:	Susan H. Crandall	Phone Number:	703-559-7848
Company:	Intelsat Corporation	Fax Number:	703-559-3957
Street:	7900 Tysons One Place	E-Mail:	susan.crandall@intelsat.com
City:	McLean	State:	VA
Country:	USA	Zipcode:	22102 -5972
Attention:	Susan H. Crandall	Relationship:	Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)			
3. Reference File Number or Submission ID			
4a. Is a fee submitted with this application?			
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).			
<input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee			
<input type="radio"/> Other (please explain):			
4b. Fee Classification CGX - Fixed Satellite Transmit/Receive Earth Station			
5. Type Request			
<input type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input checked="" type="radio"/> Other			
6. Requested Use Prior Date			
7. City Castle Rock			
			8. Latitude (dd mm ss.s h) 39 16 38.0 N

9. State	CO
10. Longitude (dd mm ss.s h)	104 48 25.0 W
11. Please supply any need attachments.	Attachment 1: STA Request Attachment 2: Exhibit A Attachment 3: Exhibit B
12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)	<p>Intelsat License LLC herein requests a grant of Special Temporary Authority for 30 days, commencing September 8, 2014, to use its Castle Rock, Colorado Ku-band earth station, call sign KL92, to provide launch and early orbit phase services for the Optus-10 satellite that is expected to be launched as early as September 8, 2014.</p>
13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; for these purposes.	<p>Yes <input checked="" type="radio"/> No <input type="radio"/></p>
14. Name of Person Signing	Susan H. Crandall
15. Title of Person Signing	Assoc. General Counsel, Intelsat Corporation
<p>WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).</p>	

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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

Exhibit A

I. 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 operate with a non-U.S. licensed space station *to serve the United States*" must demonstrate that effective competitive opportunities exist and must provide the same technical information 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. With respect to Section 25.114, Intelsat seeks authority only to provide LEOP services for the Optus-10 satellite. The information sought by Section 25.114 is 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 Optus-10 satellite, nor is Intelsat in contractual privity with that operator. Rather, an affiliate of Intelsat has a contract with Space Systems/Loral, the manufacturer of the Optus-10 satellite, to conduct LEOP services for the satellite.

¹ 47 C.F.R. § 25.137 (emphasis added).

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*, DA 13-593, File No. SAT-STA-20130220-00023 (released Apr. 1, 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*, 418 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

The information that Intelsat is not including is not required to determine potential harmful interference. The Schedule S information for this satellite would pertain to the operation of the Optus-10 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. 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. Section 25.137 is designed to ensure that “U.S.-licensed satellite systems have effective competitive opportunities to provide analogous services” in other countries. 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 the information required by Section 25.137 is not implicated here. For example, Section 25.137(d) 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.⁷ The underlying purpose in having to post a bond—*i.e.*, to prevent warehousing of orbital locations by operators seeking to serve the United States—would not be served by requiring Intelsat to post a bond in order to provide approximately ten days of LEOP services to the Optus-10 satellite.

It is Intelsat’s understanding that Optus-10 is licensed by Australia, which is a WTO-member country. Thus, the purposes of Section 25.137—to ensure that U.S. satellite operators enjoy “effective competitive opportunities” to serve foreign markets and to prevent warehousing of orbital locations serving the United States—will not be undermined by grant of this waiver request.

Finally, Intelsat notes that it expects to operate with the Optus-10 satellite using its U.S. earth station for a period of approximately ten 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 ten days, would pose undue hardship without serving underlying policy objectives. Given these particular facts, the waiver sought herein is plainly appropriate.

⁷ See 47 C.F.R. §25.137(d)(4).

II. REQUEST FOR WAIVER OF THE U. S. TABLE OF FREQUENCY ALLOCATIONS

In the U.S. Table of Frequency Allocations, the 12200-12700 MHz band is allocated to Fixed, Mobile (except aeronautical mobile), Broadcasting, and Broadcasting-Satellite, each on a co-primary basis.⁸ Intelsat seeks a waiver of the U.S. Table of Frequency Allocations to allow temporary use of the downlink frequencies 12233.5 MHz, 12235.5 MHz and 12237.5 MHz for Fixed-Satellite Service (“FSS”) in Region 2.

The Commission may grant a waiver for good cause shown.⁹ The Commission typically grants a waiver where the particular facts make strict compliance inconsistent with the public interest.¹⁰ 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.¹¹ 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 for a waiver to allow Intelsat to conduct LEOP operations for the Optus-10 satellite using the 12233.5 MHz, 12235.5 MHz and 12237.5MHz frequencies. The TT&C frequencies on the satellite cannot be changed. As such, during the short period that the Optus-10 satellite passes over the United States during the LEOP mission, Intelsat must temporarily utilize these frequencies to obtain telemetry for the spacecraft. The Optus-10 satellite ultimately will be deployed to ITU Region 3 and its TT&C frequencies are in compliance with the ITU allocation for that region.

Intelsat’s temporary use of the 12233.5 MHz, 12235.5 MHz and 12237.5MHz frequencies will not unduly harm incumbent operations. Intelsat plans to use these frequencies solely for the Optus-10 LEOP operations, which it expects to last approximately ten days. Furthermore, the Optus-10 satellite will make a rapid ascent and will transition across the United States arc very quickly. Therefore, Intelsat believes that any interference it may cause to incumbent operations during the LEOP mission—to the extent there is any—will be very short term. For these reasons—and to ensure a safe LEOP mission for the Optus-10 satellite—the Commission should grant the waiver sought herein.

⁸ 47 C.F.R. § 2.106.

⁹ 47 C.F.R. §1.3.

¹⁰ *N.E. Cellular Tel. Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) (“*Northeast Cellular*”).

¹¹ *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969); *Northeast Cellular*, 897 F.2d at 1166.

Exhibit B

Compliance with FCC Report & Order (FCC 96-377) for the 13.75 - 14.0 GHz Band Analysis and Calculations

1. Background

This Exhibit is presented to demonstrate the extent to which the Intelsat License LLC satellite earth station in Castle Rock, CO is in compliance with FCC Report & Order 96-377. The potential interference from the earth station to U.S. Navy shipboard radiolocation operations (RADAR) and the NASA space research activities in the 13.75 - 14.0 GHz band is addressed in this exhibit. The parameters for the earth station are:

Table 1. Earth Station Characteristics

• Coordinates (NAD83):	39° 16' 38.0" N, 104° 48' 25.0" W
• Satellite Location for Earth Station:	OPTUS-D10 at 33.0° W to 177.0° W
• Frequency Band:	13.75-14.5 GHz for uplink
• Polarizations:	Circular
• Emissions:	850KF2D
• Modulation:	FM
• Maximum Aggregate Uplink EIRP:	92.0 dBW for all Carriers
• Transmit Antenna Characteristics	
Antenna Size:	12.5 meter in Diameter
Antenna Type/Model:	NEC
Gain:	64.0 dBi
• RF power into Antenna Flange:	28.0 dBW or -0.7 dBW/ MHz or -2.3 dBW/4 kHz (Maximum)
• Minimum Elevation Angle: Castle Rock, Co.	5.3° @ 101.8° Az. at 33.0 W 5.0° @ 258.5° Az. at 177.0 W.
• Side Lobe Antenna Gain:	32 - 25*log(θ)

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 Navy Department and NASA systems. Potential interference from the earth station could impact the Navy and/or NASA systems in two areas. These areas are noted in FCC Order 96-377 and consist of (1) Radiolocation and radio navigation, (2) Data Relay Satellites.

Summary of Coordination Issues:

- 1) Potential Impact to Government Radiolocation (Shipboard Radar)
- 2) 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 GHz frequency band aboard ocean going United States Navy ships. The FCC Order 96-377 allocates the top 250 MHz 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 the Castle Rock, CO earth station is approximately 1350 km southwest toward the Pacific Ocean.

Therefore, there should be no interference to the U.S. Navy RADAR from the Castle Rock, CO earth station due to distance and terrain blockage between the site and the shore.

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

The geographic location of the earth station in Castle Rock, CO 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 earth station in Castle Rock, CO.

The transmissions from the earth station in Castle Rock, CO will not overlap with the 13.75-13.8 GHz band. Therefore, the TDRSS forward space-to-space link (TDRSS forward link-to-LEO) will not be impacted by the earth station in Castle Rock, CO.

4. Coordination Result Summary and Conclusions

The results of the analysis and calculations performed in this exhibit indicate that compatible operation between the Castle Rock, CO earth station and the U.S. Navy and NASA systems in the 13.75 - 14.0 GHz band is possible. These analyses have been based on the assumption of 850

kHz bandwidth carriers. No interference to U.S. Navy RADAR operations, TDRSS space-to-earth link, or TDRSS space-to-space link will occur from the Castle Rock, CO earth station.

July 28, 2014

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Request for Special Temporary Authority
Castle Rock, Colorado Earth Station KL92

Dear Ms. Dortch:

Intelsat License LLC (“Intelsat”) herein requests a grant of Special Temporary Authority (“STA”)¹ for 30 days, commencing September 8, 2014, to use its Castle Rock, Colorado Ku-band earth station—call sign KL92—to provide launch and early orbit phase (“LEOP”) services for the Optus-10 satellite. Optus-10 is expected to be launched as early as September 8, 2014.² The LEOP period is expected to last approximately ten days.³

The Optus-10 LEOP operations will be performed in the following frequency bands: 13978.5 MHz, 13980.5 MHz and 13982.5 MHz in the uplink (RHCP), and 12233.5 MHz, 12235.5 MHz and 12237.5 MHz in the downlink (RHCP). The LEOP operations will be coordinated with all operators of satellites that use the same frequency bands and are in the LEOP path.⁴ All operators of satellites in that path will be provided with an emergency phone number where the licensee can be reached in the event that harmful interference occurs.

The 24x7 contact information for the Optus-10 LEOP mission is as follows:

Ph.: (703) 559-7701 – East Coast Operations Center (primary)
(310) 525-5591 – West Coast Operations Center (back-up)

Request to speak with Harry Burnham or Kevin Bell.

In further support of this request, Intelsat hereby attaches Exhibits A and B, which contain technical information that demonstrates that the operation of the earth station will be compatible with its

¹ Intelsat has filed its STA request, an FCC Form 159, a filing fee, and this supporting letter electronically via the International Bureau’s Filing System (“IBFS”).

² The permanent orbital location for Optus-10, which Intelsat understands is licensed by Australia, will be at 164.0° E.L. The in-orbit testing location will be 176.0° E.L.

³ Intelsat is seeking authority for 30 days to accommodate a possible launch delay.

⁴ Space Systems/Loral (“SS/L”), the manager of the Optus-10 LEOP mission, will handle the coordination.

Ms. Marlene H. Dortch
July 28, 2014
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electromagnetic environment and will not cause harmful interference into any lawfully operating terrestrial facility, as well as waiver requests. Intelsat also notes that for purposes of the Optus-10 LEOP mission, it is seeking to operate in the frequencies listed in the request at power levels not to exceed 25.5 dBW.

Finally, Intelsat clarifies that during the Optus-10 launch, the spacecraft will be controlled by SS/L. SS/L will build and send the commands to the Intelsat antenna, which will process and execute the commands. Telemetry received by Intelsat will be forwarded to SS/L. Intelsat will remain in control of the baseband unit, RF equipment and antenna.

Grant of this STA request will allow Intelsat to help launch the Optus-10 satellite. This, in turn, will help ensure continuity of service at the 164.0° E.L. orbital location and thereby promotes the public interest.

Please direct any questions regarding this STA request to the undersigned at (703) 559-6949.

Respectfully submitted,



Cynthia J. Grady
Regulatory Counsel
Intelsat Corporation

cc: Paul Blais