Approved by OMB
3060–0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATIONEnter a description of this application to identify it on the main menu:
Request for STA Using Hagerstown, Maryland Earth Station KA258

1. Applicant

Name:	Intelsat License LLC	**Phone Number:**	703–559–7848
DBA Name:		**Fax Number:**	703–559–8539
Street:	c/o Intelsat Corporation	**E–Mail:**	susan.crandall@intelsat.com
	7900 Tysons One Place		
City:	McLean	**State:**	VA
Country:	USA	**Zipcode:**	22102 –5972
Attention:	Susan H. Crandall		

GRANTED International Bureau
File # SES-STA-20140917-00735
KA258
Call Sign (or other identifier) Grant Date 10-7-14
Term Dates From 10-16-14 To: 11-15-14
Approved:

Applicant: Intelsat License LLC
Call Sign: KA258
File No.: SES-STA-20140917-00735
Special Temporary Authority (STA)

Intelsat License LLC is granted STA to operate its earth station Call Sign KA258 in Hagerstown, Maryland for 30 days to conduct launch and early orbit phase (LEOP) services and provide telemetry, tracking, and control (TT&C) functions during in-orbit testing (IOT) and drift of the U.S. licensed Intelsat 30 satellite. The satellite is expected to be launched on October 16, 2014. The LEOP and TT&C operations during IOT will be under the following conditions:

1. Intelsat will perform the operations in the uplink frequencies (Earth-to-space): 13750.50 MHz and 14003.50 MHz (LHCP) and the downlink frequencies (space-to-Earth): 11198.00 MHz, 11198.50 MHz, 11199.25 MHz and 11199.75 MHz (RHCP) within coordinated emission and power limits. The maximum EIRP shall not exceed 85 dBW per NTIA manual US 356.

2. Intelsat will coordinate the proposed IOT operations at IOT location 132.0° W.L. with operators of co-frequency satellites within six degrees. During the drift from 132.0° W.L. to the satellite's permanent orbital location 95.05° W.L., Intelsat will coordinate with operators of co-frequency satellites in the drift path.

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 Intelsat 30 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.

4. Operations, 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. In the event of any harmful interference under this grant of STA, Intelsat License LLC KA258 must cease operations immediately upon notification of such interference, and must inform the Commission, in writing, immediately of such an event.

6. Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future Intelsat License LLC applications.

7. Any action taken or expense incurred as a result of operations pursuant to this STA 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.

2. Contact

Name:	Susan H. Crandall	**Phone Number:**	703–559–7848
Company:	Intelsat Corporation	**Fax Number:**	703–559–8539
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?
◉ If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R.Section 1.1114).
○ Governmental Entity ○ Noncommercial educational licensee
○ Other(please explain):

4b. Fee Classification CGX – Fixed Satellite Transmit/Receive Earth Station

5. Type Request

○ Use Prior to Grant ○ Change Station Location ◉ Other

6. Requested Use Prior Date	
7. CityHagerstown	8. Latitude (dd mm ss.s h) 39 35 54.0 N

9. State MD	10. Longitude (dd mm ss.s h) 77 45 33.0 W

11. Please supply any need attachments.

Attachment 1: STA Request Attachment 2: Exhibit A Attachment 3:

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.)

Intelsat License LLC herein requests a grant of Special Temporary Authority for 30 days, commencing October 16, 2014, to use its Hagerstown, Maryland Ku-band earth station, call sign KA258, to provide launch and early orbit phase services for Intelsat 30, which is expected to be launched on October 16, 2014. Intelsat also requests STA to provide

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.

◉ Yes ○ No

14. Name of Person Signing Cynthia J. Grady	15. Title of Person Signing Regulatory Counsel, Intelsat Corporation

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).

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12. Description

Intelsat License LLC herein requests a grant of Special Temporary Authority for 30 days, commencing October 16, 2014, to use its Hagerstown, Maryland Ku-band earth station, call sign KA258, to provide launch and early orbit phase services for Intelsat 30, which is expected to be launched on October 16, 2014. Intelsat also requests STA to provide telemetry, tracking, and control services at the in-orbit testing location, 132.0 W.L., and to drift the satellite from the IOT location to the final location of Intelsat 30 at 95.05 W.L.

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September 17, 2014

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

Re: Request for Special Temporary Authority
Hagerstown, Maryland Earth Station KA258

Dear Ms. Dortch:

Intelsat License LLC ("Intelsat") herein requests a grant of Special Temporary Authority ("STA")[1] for 30 days, commencing October 16, 2014, to use its Hagerstown, Maryland Ku-band earth station—call sign KA258—to provide launch and early orbit phase ("LEOP") services for Intelsat 30, which is expected to be launched on October 16, 2014. Intelsat also requests STA to provide telemetry, tracking, and control ("TT&C") services at the in-orbit testing ("IOT") location, 132.0° W.L., and to drift the satellite from the IOT location to Intelsat 30's final location at 95.05° W.L.

The proposed operations will be performed using the following frequencies: 13750.50 MHz and 14003.50 MHz in the uplink (LHCP), and 11198.00 MHz, 11198.50 MHz, 11199.25 MHz, and 11199.75 MHz in the downlink (RHCP). The proposed operations will be coordinated with all operators of satellites that use the same frequency bands and are in the LEOP path, the drift path, or are potentially affected by these operations at the IOT location.[2] All operators of potentially affected satellites 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 Intelsat 30 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 Exhibit A, which contains technical information that demonstrates that the operation of the earth station will be compatible with its electromagnetic environment and will not cause harmful interference into any lawfully operating terrestrial facility. In the extremely unlikely event that harmful interference should occur due to

[1] Intelsat has filed its STA request, an FCC Form 159, a $195.00 filing fee, and this supporting letter electronically via the International Bureau's Filing System ("IBFS").

[2] Intelsat will handle the coordination.

transmissions to or from its earth station, Intelsat will take all reasonable steps to eliminate the interference. Intelsat also notes that for purposes of the Intelsat 30 mission, it is seeking to operate in the frequencies listed in this request at power levels not to exceed 22.9 dBW.

Grant of this STA request will allow Intelsat to help launch the Intelsat 30 satellite. This, in turn, will help ensure continuity of service at the 95.05° W.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

Cynthia J. Grady
Regulatory Counsel
Intelsat Corporation

cc: Paul Blais

Exhibit A
Intelsat License LLC
Hagerstown, Maryland
NEC 12.5 Meter Earth Station
Call Sign: KA258

Compliance with FCC Report & Order (FCC96-377) 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 ("Intelsat") satellite earth station in Hagerstown, Maryland is in compliance with 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:

Table 1. Earth Station Characteristics

• Coordinates (NAD83):	39° 35' 54.6" N, 77° 45' 33.0" W
• Satellite Location for Earth Station:	IS-30 at 5.0° W to 150.0° W
• Frequency Band:	13.75-14.5 GHz for uplink
• Polarizations:	Circular
• Emissions:	816KF2D
• Modulation:	FM
• Maximum Aggregate Uplink EIRP:	88.0 dBW for all Carriers
• Transmit Antenna Characteristics	
Antenna Size:	14.2 meter in Diameter
Antenna Type/Model:	TIW
Gain:	65.1 dBi
• RF power into Antenna Flange:	22.9 dBW or -1.4 dBW/ MHz (Maximum)
• Minimum Elevation Angle:	
Hagerstown, Md.	5.5° @ 101.9° Az.
	5.7° @ 257.8° Az.

- Side Lobe Antenna Gain: $29 - 25*\log(\theta)$

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 with the U.S. Navy and/or NASA systems in two areas. These areas are noted in FCC Report and Order 96-377 dated September 1996, 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 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 U.S. Navy ships. 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 dBW/m^2/4 kHz.

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

1. Clear Sky EIRP: 88.00 dBW
2. Carrier Bandwidth: 816 kHz
3. PD at antenna input: -0.2 dBW/4kHz
4. Transmit Antenna Gain: 65.1 dBi
5. Antenna Gain Horizon: FCC Reference Pattern
6. Antenna Elevation Angles: 5°

The earth station will radiate interference toward the ocean according to its off-axis side-lobe performance. A conservative analysis, using the FCC standard reference pattern, results in off-axis antenna gains of 12.3 dBi towards the Atlantic ocean.

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

PFD = Antenna Feed Power density (dBW/4kHz) + Antenna Off-Axis Gain (dBi) – Spread Loss (dbW-m^2)

$= -0.2$ dBW/4kHz + 12.3 dBi – $10*\log[4\pi*(131000m)^2)$

$=$ -102.2 dBW/ m^2/4 kHz + Additional Path Losses (~69.0 dB)

= -171.2 dBW/ m2/4 kHz

Our calculations indicate additional path loss of approximately 69.0 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 -171.2 dbW/ m^2/4 kHz. This is 4.2 dB below the -167 dBW/ m^2/4 kHz interference criteria of the R&O 96-377. Therefore, there should be no interference to the U.S. Navy RADAR from the Hagerstown 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 License LLC 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 License LLC 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 less than 71 dBW/6 MHz in this band. The 14.2 meter earth station antenna will have an EIRP greater than 71 dBW/6 MHz in this band. The total EIRP for all carriers is 88.0 dBW, and the equivalent EIRP per 6 MHz segment remains at 88.0 dBW/6 MHz. Therefore, there will be potential interference to the TDRSS space-to-space link (Table 1).

4. Coordination Issue Result Summary and Conclusions

The results of the analysis and calculations performed in this exhibit indicate that compatible operation between the earth station at the Hagerstown, Maryland facility and the U.S. Navy and NASA systems space-to-earth link are possible. These analyses have been based on the assumption of 850 kHz bandwidth carriers. Operations in NASA systems space-to-space link (13772.0 to 13778.0 MHz) will not be permitted.

Table 1
Excluded Frequency Range for Intelsat License LLC Earth Station

System	Frequency Restriction
TDRSS	13.770-13.780 GHz (see Note 1)

Note 1: In order to meet the less than 71 dBW/6 MHz interference criteria, the earth station would have to be limited to a maximum total EIRP of 70.9 dBW.

No interference to U.S. Navy RADAR operations from the Hagerstown, Maryland site earth station will occur.

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September 19, 2014

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

Re: Supplement to Request for Special Temporary Authority for Hagerstown, Maryland Earth Station, Call Sign KA258; File No. SES-STA-20140917-00735

Dear Ms. Dortch:

Intelsat License LLC ("Intelsat") herein supplements its above referenced request for Special Temporary Authority ("STA") to provide launch and early orbit phase ("LEOP") services for Intelsat 30; provide telemetry, tracking, and control ("TT&C") services for Intelsat 30 at the in-orbit testing ("IOT") location, 132.0° W.L.; and to drift the satellite from the IOT location to Intelsat 30's final location at 95.05° W.L. Specifically, Intelsat is seeking a waiver of the footnote NG52 to the U.S. Table of Frequency Allocation.

In order to perform LEOP services and TT&C during IOT and drift on the 11198.0 MHz, 11198.5 MHz, 11199.25 MHz, and 11199.75 MHz frequencies, Intelsat requests a waiver of the footnote NG52 to the U.S. Table of Frequency Allocations, which limits the use of the 10700-11700 MHz frequency band to "international systems."[1] Intelsat seeks waiver to permit the Hagerstown, Maryland earth station, KA258, to communicate with the Intelsat 30 satellite for the limited purposes of LEOP services, TT&C services at 132.0° W.L., and to drift Intelsat 30 to its permanent location at 95.05° W.L.

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.

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[1] *See* 47 C.F.R. § 2.106 fn. NG52.

[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.

Good cause exists here to grant a waiver allowing KA258 to provide LEOP services and TT&C during IOT and drift for Intelsat 30 in the 10700-11700 MHz band. LEOP, IOT, and the drift of the satellite will only be for a short duration. In addition, as explained in the STA request, the proposed operations will be coordinated with all operators of satellites that use the same frequency bands and are in the drift path, or are potentially affected by these operations at the IOT location. To Intelsat's knowledge, there are no co-frequency satellites within plus/minus six degrees of 132.0° W.L.

For the reasons set forth in its original STA request, Intelsat respectfully requests that the Commission grant the request.

Respectfully submitted,

Cynthia J. Grady

Cynthia J. Grady
Regulatory Counsel
Intelsat Corporation

cc: Paul Blais