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:
STA for Earth Station E060384 to Perform TT&C to the Intelsat 16 Satellite

1. Applicant

Name:	Intelsat North America LLC	**Phone Number:**	202−944−7848
DBA Name:		**Fax Number:**	202−944−7870
Street:	c/o Intelsat Corporation	**E−Mail:**	susan.crandall@intelsat.com
	3400 International Drive, N.W.		
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20008 −3006
Attention:	Susan H Crandall		

With Conditions

FEDERAL COMMUNICATIONS COMMISSION
GRANTED
International Bureau

File # SES-STA-20100125-00113
Call Sign E060384 Grant Date 2/19/2010
(or other identifier)
Term Dates
From 2/21/2010 To: 3/22/2010
Approved: Shahnaz Ghavami

Attachment

SES-STA-20100125-00113

Condition:

All operations are on a non-protected, non-interference basis.

Intelsat shall coordinate its operations with neighboring satellites with ± 6 degrees of its orbital location.

Intelsat shall immediate cease operations if interference is reported.

With Conditions

GRANTED
International Bureau

File # SES-STA-20100125-00113

Call Sign E060384 Grant Date 2/19/2010

(or other identifier)

Term Dates

From 2/21/2010 To: 3/22/2010

Approved: Shahnaz Ghavami

2. Contact

Name:	Intelsat North America LLC	**Phone Number:**	202-944-7848
Company:		**Fax Number:**	202-944-7870
Street:	c/o Intelsat Corporation	E-Mail:	susan.crandall@intelsat.com
	3400 International Drive, N.W.		
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20008 -3006
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. CityNuevo	8. Latitude (dd mm ss.s h) 33 47 46.1 N

9. State CA

10. Longitude
(dd mm ss.s h) 117 5 15.1 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 North America LLC herein requests a grant of Special Temporary Authority for 30 days, from February 21, 2010 through March 22, 2010, to use its Riverside, California Ku-band earth station, call sign E060384, to provide TT&C services for the Intelsat 16 satellite at 48.0 W.L. while the satellite undergoes in-orbit testing, as well as during

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
Susan H. Crandall

15. Title of Person Signing
Asst. General 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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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.

12. Description

Intelsat North America LLC herein requests a grant of Special Temporary Authority for 30 days, from February 21, 2010 through March 22, 2010, to use its Riverside, California Ku-band earth station, call sign E060384, to provide TT&C services for the Intelsat 16 satellite at 48.0 W.L. while the satellite undergoes in-orbit testing, as well as during the drift of the satellite to and operation at its permanent location of 58.10 W.L. Intelsat 16 is expected to be launched on February 11, 2010.

January 25, 2010

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

INTELSAT

Re: Request for Special Temporary Authority
Riverside, California Earth Station E060384

Dear Ms. Dortch:

Intelsat North America LLC ("Intelsat") herein requests a grant of Special Temporary Authority ("STA")[1] for 30 days, from February 21, 2010 through March 22, 2010, to use its Riverside, California Ku-band earth station -- call sign E060384 -- to provide telemetry, tracking and command ("TT&C") services for the Intelsat 16 satellite at 48.0° W.L. while the satellite undergoes in-orbit testing, as well as during the satellite's drift to and operation at its permanent location of 58.10° W.L.[2] Intelsat 16 is expected to be launched on February 11, 2010.

Upon launch and subject to receipt of FCC approval, Intelsat 16 will be located temporarily at 48.0° W.L. for in-orbit testing.[3] The satellite's permanent location ultimately will be 58.10° W.L.[4] The Intelsat 16 TT&C operations will be performed in the following frequency bands: 13997.5 MHz and 14499.5 MHz in the uplink and 12198.25 MHz and 12198.75 MHz in the downlink.

For 48.0° W.L., Intelsat has coordinated the proposed TT&C operations with operators of co-frequency satellites within six degrees. During the drift from 48.0° W.L. to 58.10° W.L., Intelsat has coordinated with operators of co-frequency satellites in the drift path. For 58.10° W.L., Intelsat will operate the TT&C transmissions in conformance with its coordination agreements for the nominal 58.0° W.L. location, as well as with the FCC's rules designed to allow co-frequency operations in a two-degree separation environment.

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[1] Intelsat has filed its STA request, an FCC Form 159, a $175.00 filing fee and this supporting letter electronically via the International Bureau's Filing System ("IBFS").

[2] Intelsat will shortly file an application to modify the E060384 license to add 58.10° W.L. as a point of communication.

[3] *See Intelsat North America LLC Request for Special Temporary Authority*, File No.SAT-STA-20100111-00007 (filed Jan. 11, 2010).

[4] *See Policy Branch Information; Actions Taken*, Report No. SAT-00610, File No. SAT-LOA-20080416-00085 (June 5, 2009) (Public Notice).

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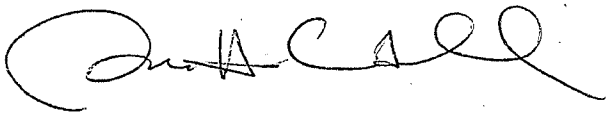
Operations in the 14499.5 MHz, 12198.25 MHz and 12198.75 MHz frequencies will be consistent with the antenna's licensed parameters. With respect to operations in the 13997.5 MHz frequency, Intelsat is attaching Exhibit A, which contains technical information that demonstrates that the operation of the earth station will be compatible with its electromagnetic environment and will not cause harmful interference into any lawfully operating terrestrial facility.[5] In the extremely unlikely event that harmful interference should occur due to transmissions to or from its earth station, Intelsat will take all reasonable steps to eliminate the interference.

The provision of TT&C services to the Intelsat 16 satellite at 48.0° W.L., during drift, and at 58.10° W.L. is critical to ensure the safe station-keeping of the satellite while it undergoes in-orbit testing and at its permanent location. This, in turn, will result in additional capacity at the nominal 58.0° W.L. location, and thereby promotes the public interest.

Please direct any questions regarding this STA request to the undersigned at (202) 944-7848.

Respectfully submitted,



Susan H. Crandall
Assistant General Counsel
Intelsat Corporation

Cc: Kathyrn Medley

[5] The EIRP levels for transmissions in the 13997.5 MHz frequency will be consistent with the antenna's licensed parameters.

Exhibit A

Compliance of Operations in the 13.75 - 14.0 GHz Band with FCC Report & Order (FCC96-377)

1. Background

This exhibit is presented to demonstrate the extent to which the Intelsat North America LLC earth station in Nuevo, CA is in compliance with FCC Report & Order 96-377. The potential interference from the earth station to US Navy shipboard radiolocation operations (RADAR) and the NASA space research operations in the 13.75 - 14.0 GHz band is addressed in this exhibit. The parameters for the earth station are as follows:

Table 1. Earth Station Characteristics

• Coordinates (NAD83):	33° 47' 47.3" North, 117° 05' 15.0" West
• Satellite Location for Earth Station:	Intelsat IS-16 from 48.0°W to 58.0°W
• Frequency Band:	13.9975 GHz
• Polarizations:	Linear and Circular
• Emissions:	850KG7D
• Modulation:	Digital
• Maximum Aggregate Uplink EIRP:	85.0 dBW
• Transmit Antenna Characteristics	
Antenna Size:	9.0 meters in Diameter
Antenna Type/Model:	Vertex/RSI KPK
Gain:	60.1 dBi
• RF power into Antenna Flange:	24.9 dBW or 25.6 dBW/ MHz or 1.6 dBW/4 kHz (Maximum)
• Minimum Elevation Angle: Nuevo, California	8.7° @ 102.0° Az. at 48.0° W. 17.0° @ 108.4° Az. at 58.0° W.
• Side Lobe Antenna Gain:	32 - 25*log(θ)

Because the above uplink spectrum is shared with the federal government, analysis of potential interference between the earth station and both Navy Department and NASA systems is required. 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 and (2) Data Relay Satellites.

Summary of Coordination Issues:

2) Potential Impact to Government Radiolocation (Shipboard Radar)
3) 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 on board United States Navy ships. The FCC's 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, with an interference protection level of -167 dBW/m^2/4 kHz.

The closest distance to the shoreline from the Nuevo, CA earth station is approximately 64.8 km west towards the Pacific Ocean. The power spectral density at this distance is provided below:

1. Clear Sky EIRP: 85.0 dBW
2. Carrier Bandwidth: 850 KHz
3. PD at antenna input: 1.6 dBW/4 kHz
4. Transmit Antenna Gain: 60.1 dBi
5. Antenna Gain Horizon: FCC Reference Pattern

Since the earth station will be operating to a satellite at azimuths 102° and eventually at 108.4°, it will radiate interference toward the ocean on its back-lobe. A conservative analysis, using FCC standard reference pattern, results in a worst case gains of -10.0 dBi towards the Intelsat satellite, at azimuths of 102° and 108.4°.

The calculated signal density at the shoreline, assuming free space loss only is provided below:

$PFD_{(\text{free space loss only})}$ = Antenna Feed Power density (dBW/4 kHz) + Antenna Off-Axis Gain (dBi) – Spread Loss (dBW/m^2).

= 1.6 dBw/4 kHz + (-10.0) dBi – $10*\log[4\Pi(64800m)^2]$
= -115.6 dBW/m^2/4 kHz

However there is an additional path loss of approximately 94.9 dB, which includes absorption loss and earth diffraction loss for the actual path profiles from the proposed earth station to the nearest shoreline.

PFD_{actual} = $PFD_{\text{free space loss only}}$ +Additional Path Losses (~ 94.9 dB)
= -210.5 dBW/m^2/4 kHz

The resulting PFD, including additional path losses to the closest shoreline location, is -210.5 dBW/m^2/4 kHz. This is 43.5 dB below the –167 dBW/m^2/4 kHz interference criteria of R&O 96-377. Therefore, the

interference to the U.S. Navy RADAR from the earth station will be well within the permissible levels per the FCC's rules, given the distance and the terrain blockage between the site and the shore.

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

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

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 9.0 meter earth station that is the subject of this application will not radiate in this band, as the proposed transmissions will be limited to the 13997.5 GHz frequency.

Therefore, there will be interference to the TDRSS space-to-space link.

4. Summary and Conclusions

The result of the analysis performed in this exhibit indicates compatible operation between the Nuevo, CA earth station and the U.S. Navy radiolocation operations.

Similarly, there will be no interference above permissible FCC levels into NASA's TDRSS systems, as the intended operations are outside of the 13772.0 to 13778.0 MHz frequency range.