



File # SAT-STA-20090121-00006

Call Sign _____ Grant Date 01/30/09
(or other identifier)

From 02/02/09 Term Dates period of 30 days
To: _____

Approved: Stephen J. Duall

Chief, Policy Branch
Satellite Division

Approved by OMB
3060-0678

Date & Time Filed: Jan 21 2009 4:46:23:446PM
File Number: SAT-STA-20090121-00006
Callsign:

*subject to
attached conditions

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY

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APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
STA - DIRECTV 1 - De-orbit


1. Applicant

Name:	DIRECTV Enterprises, LLC	Phone Number:	310-726-4993
DBA Name:		Fax Number:	310-535-5323
Street:	2230 E. Imperial Hwy CA/LAIN340	E-Mail:	dapattillo@directv.com
City:	El Segundo	State:	CA
Country:	USA	Zipcode:	90245 -
Attention:	Dave Pattillo		

Attachment to Grant
DIRECTV Enterprises, LLC
IBFS File No. SAT-STA-20090121-00006

The application of DIRECTV Enterprises, LLC (DIRECTV) for special temporary authority, IBFS File No. SAT-STA-20090121-00006, IS GRANTED. Accordingly, DIRECTV is authorized for a period of 30 days commencing on February 2, 2009, to perform tracking, telemetry, and command (TT&C) functions with the DIRECTV 1 satellite to execute end-of-life maneuvers boosting the satellite to a disposal orbit above the geostationary arc in accordance with the terms, conditions, and technical specifications set forth in its application, the Commission's rules, and the following conditions:

1. DIRECTV shall coordinate all orbit raising maneuver TT&C operations with existing geostationary satellites to ensure that no unacceptable interference results from its TT&C operations during its disposal operations.
2. During the disposal operations, no harmful interference shall be caused by DIRECTV 1 to any other lawfully operating space station or radio communications system and operations of the DIRECTV 1 satellite shall cease immediately upon notification of such interference.
3. DIRECTV is required to accept interference from other lawfully operating space stations of radio communications systems.
4. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at DIRECTV's own risk.
5. Within 30 days of completion of the end-of-life maneuvers, DIRECTV shall send a letter to the Chief, Satellite Division, International Bureau, indicating the apogee and perigee of the DIRECTV 1 disposal orbit.

	
GRANTED *	
International Bureau	
File #	<u>SAT-STA-20090121-00006</u>
Call Sign (or other identifier)	Grant Date <u>01/30/09</u>
From <u>02/02/09</u>	Term Dates <u>period of 30 days</u>
To: <u>30 days</u>	
Approved:	<u>Stephen J. Ruell</u>
	Chief, Policy Branch
	Satellite Division

* subject to conditions

2. Contact

Name:	William M. Wiltshire	Phone Number:	202-730-1350
Company:	Harris, Wiltshire & Grannis LLP	Fax Number:	202-730-1301
Street:	1200 18th Street, NW	E-Mail:	wwiltshire@harriswiltshire.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20036 -
Attention:	William M. Wiltshire	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

5. Type Request

- Change Station Location Extend Expiration Date Other

6. Temporary Orbit Location

7. Requested Extended Expiration Date

8. 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.)

See Exhibit A.

9. 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

10. Name of Person Signing
James Butterworth

11. Title of Person Signing
Senior Vice President

12. Please supply any need attachments.

Attachment 1: Exhibit A

Attachment 2:

Attachment 3:

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.

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

DIRECTV Enterprises, LLC (“DIRECTV”) requests special temporary authority (“STA”), beginning on February 2, 2009 and lasting for a period of up to thirty (30) days, in order to (1) de-orbit its DIRECTV 1 satellite from its current location at the Broadcasting Satellite Service (“BSS”) slot allocated to Canada at 91° W.L. in the ITU Region 2 BSS Plan, and (2) perform telemetry, tracking and command (“TT&C”) functions with DIRECTV 1 during this maneuver.

Under an arrangement with Telesat Canada (“Telesat”), this satellite has been used by Telesat to support BSS service into Canada under a license issued by the Canadian government. The satellite has now reached the end of its useful life. DIRECTV intends to de-orbit DIRECTV 1 to a location consistent with both the guidelines established by the Inter-Agency Space Debris Coordination Committee (“IADC”)¹ and the Commission’s requirements for geostationary space stations operating at U.S.-licensed locations under authorizations issued after March 2002.² The formula used by both the IADC and the Commission for this purpose is:

$$36,021 \text{ km} + (1000 * C_R * A/m)$$

where C_R is the solar pressure radiation coefficient of the spacecraft, and A/m is the Area to mass ratio, in square meters per kilogram, of the spacecraft. The relevant values for the DIRECTV 2 satellite are:

$$\begin{aligned} C_R &= 1.2 \\ A &= 63.9 \text{ m}^2 \\ m &= 1283 \text{ kg} \end{aligned}$$

¹ See *Mitigation of Orbital Debris*, 19 FCC Red. 11567, ¶ 65 (2004).

² 47 C.F.R. § 25.283.

Plugging these values into the equation yields the following results:

$$36,021 \text{ km} + (1000 * 1.2 * (63.9 / 1283)) = 36,080.8 \text{ km}$$

Since geostationary altitude is generally considered to be 35,786 km,³ this yields a desired disposal orbit of at least 294.8 km above the geostationary arc. DIRECTV intends to boost DIRECTV 1 to at least this height, and in fact will target a height of approximately 300 km above geostationary altitude.

Grant of the requested STA will not present any significant risk of interference to other satellites. During the relocation of DIRECTV 1, the satellite's communications payload will remain inactive and only the TT&C payload will operate. DIRECTV requests authority to operate on the following TT&C frequencies: 17303.0 MHz (uplink) and 12200.5 and 12201.75 MHz (downlink). DIRECTV will coordinate with potentially affected satellite operators in accordance with industry practice, and will operate on a non-interference basis. Upon completion of de-orbit maneuvers, DIRECTV will ensure that all stored energy sources on board DIRECTV 1 are discharged by venting excess propellant, discharging batteries, relieving pressure vessels, and other appropriate measures.

For the foregoing reasons, DIRECTV urges the Commission to grant the requested STA as expeditiously as possible.

³ *Mitigation of Orbital Debris*, ¶ 65.