See also:
SAT-AMD-20050103-00002
SAT-LOA-20040909-00169

GRANTED

SAT-AMD-20041122-00210
with attached Conditions
S2641 3/8/2005

Approved by OMB
3060-0678

See Conditions See Conditions
Chief, Satellite
Robert G. Nelson Engineering Branch

Date & Time Filed: Nov 22 2004 9:35:14:516AM
File Number: SAT-AMD-20041122-00210

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD - MAIN FORM FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
DIRECTV GROUP DIRECTV 10 S2641 AMD (@ 102.8 WL)

1-8. Legal Name of Applicant

Name:	The DIRECTV Group, Inc.	**Phone Number:**	310-964-0725
DBA Name:		**Fax Number:**	310-964-0843
Street:	2250 E. Imperial Highway	**E-Mail:**	dapattillo@directv.com
City:	El Segundo	**State:**	CA
Country:	USA	**Zipcode:**	90245 -
Attention:	David Pattillo		

Attachment
Conditions of Authorization
March 8, 2005

1. DIRECTV Group, Inc.'s ("DIRECTV") application, SAT-LOA-20040909-00169, Call Sign S2641, as amended by SAT-AMD-20041122-00210 and SAT-AMD-20050103-00002 IS GRANTED. Accordingly, DIRECTV is authorized to launch and operate its DIRECTV-10 Ka-band satellite at the 102.8° W.L. orbit location, in the 18.3-18.8 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space) and 29.25-29.5 GHz (Earth-to-space) frequency bands in accordance with the terms, conditions, and technical specifications set forth in its application, this Attachment, and the Federal Communications Commission's ("Commission") Rules.

2. DIRECTV-10 must be constructed, launched, and placed into operation in accordance with the technical parameters and terms and conditions of this authorization by these specified time periods following the date of authorization:

    a. Execute a binding contract for construction by 3/8/2006
    b. Complete the Critical Design Review by 3/8/2007
    c. Commence construction by 3/8/2008
    d. Launch and begin operations by 3/8/2010
    e. DIRECTV must file a bond with the Commission in the amount of $3 million, pursuant to the procedures set forth in Public Notice, DA 03-2602, 18 FCC Rcd 16283 (2003), as revised by Amendment of the Commission's Space Station Licensing Rules and Policies, *First Order on Reconsideration and Fifth Report and Order*, FCC 04-147 19 FCC Rcd. 12637 (2004), within 30 days of the date of this grant..

    Failure to meet any of these dates shall render this authorization null and void.

3. DIRECTV's request for a waiver of the cross-polarization isolation requirements, contained in Section 25.210(i) of the Commission's rules is GRANTED. Section 25.210(i) of the Commission's rules require the ratio of the on-axis co-polar gain to the cross-polar gain of the antenna in the assigned frequency band be at least 30 dB within its primary coverage area.[1] The DIRECTV-10 antennas have been designed to meet a minimum cross-polarization requirement of 27 dB. DIRECTV states that its cross-polarization interference is an intra-system design issue that does not affect inter-system coordination and therefore will not affect other Ka-band satellite systems. DIRECTV plans to employ digital modulation with forward error correction coding on both polarization senses to reduce system sensitivity to cross-polarization interference. In addition polarization isolation, directivity and antenna implementation losses have also been optimized for best performance. Based on DIRECTV's representations that it is using digital, rather than analog modulation, and that other Ka-band satellite systems will

[1] 47 C.F.R. § 25.210(i).

not be affected by its operation, we find that it is in the public interest to waive Section 25.210(i).[2] We find that this grant is consistent with previous Commission actions.[3]

4. We GRANT DIRECTV's request for waiver of Sections S6,[4] S7,[5] S10[6] and S13[7] of Schedule S. DIRECTV has provided representative data for the beams stating that the beams have essentially identical electrical parameters. In addition DIRECTV has provided a matrix of connectivity that allows derivation of the transponder combinations. Considering the complexity of the DIRECTV-10 satellite design, the amount of information that would need to be provided in these Sections of the Schedule S Form would be extensive and, in many ways, redundant. The information provided by DIRECTV in its Schedule S Form and application is sufficient for us to determine whether the system meets the Commission's technical requirements. We find that this grant is consistent with previous Commission actions.[8]

5. DIRECTV shall prepare the necessary information, as may be required, for submission to the ITU to initiate and complete the advance publication, international coordination, due diligence, and notification process of this space station, in accordance with the ITU Radio Regulations. DIRECTV shall be held responsible for all cost recovery fees associated with these ITU filings. We also note that no protection from interference caused by radio stations authorized by other administrations is guaranteed unless coordination and notification procedures are timely completed or, with respect to individual administrations, by successfully completing coordination agreements. Any radio station authorization for which coordination has not been completed may be subject to additional terms and conditions as required to effect coordination of the frequency assignments of other administrations. *See* 47 C.F.R. § 25.111(b).

6. DIRECTV must coordinate its downlink operations for the specific frequencies authorized in the 18.3-18.8 GHz band with U.S. Government systems, including Government operations to earth stations in foreign countries, in accordance with footnote US334 to the Table of Frequency Allocations, 47 C.F.R. § 2.106.

7. DIRECTV must conduct its operations pursuant to this authorization in a manner consistent with the power flux-density requirements of footnote US255 to the Table of Frequency Allocations, 47 C.F.R. § 2.106, 47 C.F.R. § 25.138(a)(6), and 47 C.F.R. § 25.208, of the Commission's Rules.

8. The license term for the DIRECTV-10 satellite, Call Sign S2641, is fifteen years and will begin to run on the date that DIRECTV certifies to the Commission that the satellite has

---

[2] 47 C.F.R. § 25.210(i).

[3] *See, e.g.*, New Skies Satellites, N.V., Petition for Declaratory Ruling, *Order*, 17 FCC Rcd 10369 at para. 19 (2002) and SES Americom, Inc., Application to Launch and Operate the Americom-23 hybrid C/Ku/Extended Ku-Band Satellite, File No. SAT-LOA-20031218-00358, granted July 13, 2004.

[4] This section contains information regarding service areas for the satellite system.

[5] This section contains information regarding space station antenna beam characteristics for each beam of a satellite system.

[6] This section contains information regarding space station transponders.

[7] This section contains information regarding typical emissions.

[8] *See* DIRECTV Group, Inc. SAT-MOD-20040614-00113, *Grant Stamp* November 4, 2004

been successfully placed into orbit and its operation fully conforms to the terms and conditions of this authorization.

9. DIRECTV is afforded thirty days from the date of release of this grant and authorization to decline this authorization as conditioned. Failure to respond within this period will constitute formal acceptance of the authorization as conditioned.

10. This grant is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within 30 days of the date of the public notice indicating that this action was taken.

9–16. Name of Contact Representative (If other than applicant)

Name:	William M. Wiltshire	**Phone Number:**	202–730–1350
Company:	Harris, Wiltshire & Grannis LLP	**Fax Number:**	202–730–1301
Street:	1200 Eighteenth St., N.W. 12 Floor	**E–Mail:**	
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20036–
Contact Title:		**Relationship:**	Legal Counsel

CLASSIFICATION OF FILING

17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b. ○ a1. Earth Station ◉ a2. Space Station	(N/A) b1. Application for License of New Station (N/A) b2. Application for Registration of New Domestic Receive–Only Station ◉ (N/A) b3. Amendment to a Pending Application ○ (N/A) b4. Modification of License or Registration b5. Assignment of License or Registration b6. Transfer of Control of License or Registration ○ (N/A) b7. Notification of Minor Modification (N/A) b8. Application for License of New Receive–Only Station Using Non–U.S. Licensed Satellite (N/A) b9. Letter of Intent to Use Non–U.S. Licensed Satellite to Provide Service in the United States ○ (N/A) b10. Other (Please specify)

17c. 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):

17d.

Fee Classification CWY – Space Station Amendment(Geostationary)

18. If this filing is in reference to an existing station, enter:	19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:	
(a) Call sign of station: S2641	(a) Date pending application was filed:	(b) File number:
	09/09/2004	SATRPL2004090900169

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:

- [x] a. Fixed Satellite
- [ ] b. Mobile Satellite
- [ ] c. Radiodetermination Satellite
- [ ] d. Earth Exploration Satellite
- [x] e. Direct to Home Fixed Satellite
- [ ] f. Digital Audio Radio Service
- [ ] g. Other (please specify)

21. STATUS: Choose the button next to the applicable status. Choose only one.

○ Common Carrier ◉ Non–Common Carrier

22. If earth station applicant, check all that apply.

- [ ] Using U.S. licensed satellites
- [ ] Using Non–U.S. licensed satellites

23. If applicant is providng INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:

○ Connected to a Public Switched Network ○ Not connected to a Public Switched Network ◉ N/A

24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).

- [ ] a. C–Band (4/6 GHz)
- [ ] b. Ku–Band (12/14 GHz)
- [x] c.Other (Please specify upper and lower frequencies in MHz.)

Frequency Lower: 18300 Frequency Upper: 30000 (Please specify additional frequencies in an attachment)

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

- ○ a. Fixed Earth Station
- ○ b. Temporary–Fixed Earth Station
- ○ c. 12/14 GHz VSAT Network
- ○ d. Mobile Earth Station
- ◉ e. Geostationary Space Station
- ○ f. Non–Geostationary Space Station
- ○ g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY:

○ Transmit/Receive ○ Transmit–Only ○ Receive–Only ◉ N/A

"For Space Station applications, select N/A."

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

- ☐ a — authorization to add new emission designator and related service
- ☐ b — authorization to change emission designator and related service
- ☐ c — authorization to increase EIRP and EIRP density
- ☐ d — authorization to replace antenna
- ☐ e — authorization to add antenna
- ☐ f — authorization to relocate fixed station
- ☐ g — authorization to change frequency(ies)
- ☐ h — authorization to add frequency
- ☐ i — authorization to add Points of Communication (satellites & countries)
- ☐ j — authorization to change Points of Communication (satellites & countries)
- ☐ k — authorization for facilities for which environmental assessment and radiation hazard reporting is required
- ☒ l — authorization to change orbit location
- ☐ m — authorization to perform fleet management
- ☐ n — authorization to extend milestones
- ☐ o — Other (Please specify)

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.	○ Yes ◉ No

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30–34.

29. Is the applicant a foreign government or the representative of any foreign government?	○ Yes ◉ No ○ N/A
30. Is the applicant an alien or the representative of an alien?	○ Yes ◉ No ○ N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	○ Yes ◉ No ○ N/A
32. Is the applicant a corporation of which more than one–fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	○ Yes ◉ No ○ N/A

33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one–fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	◉ Yes ○ No ○ N/A
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.	Exhibit A

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.	○ Yes ◉ No
36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explination of circumstances.	○ Yes ◉ No

37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explination of circumstances.	○ Yes	◉ No
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attemptiing unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition?If Yes, attach as an exhibit, an explanation of circumstances	○ Yes	◉ No
39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhinit, an explanation of the circumstances.	○ Yes	◉ No
40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.	EXHIBIT B	

41. 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
42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43.	○ Yes ◉ No
42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?	

43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

The DirecTV Group, Inc. seeks to amend its pending satellite application to operate at 102.8 WL rather than 103.05 WL. Please see Exhibit C for further information.

Exhibit C

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- ○ Individual
- ○ Unincorporated Association
- ○ Partnership
- ◉ Corporation
- ○ Governmental Entity
- ○ Other (please specify)

45. Name of Person Signing	46. Title of Person Signing
Romulo Pontual	Exec. VP & Chief Technology Officer

-->

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).

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD–PERM, Paperwork Reduction Project (3060–0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to jboley@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060–0678.

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.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

Application of	)	
THE DIRECTV GROUP, INC.	)	Call Sign: S2191
For Minor Amendment to Offset Operation of the DIRECTV 10 Ka-band Satellite from 103.05° W.L. to 102.8° W.L.	)	File No. _____

APPLICATION FOR MINOR AMENDMENT

The DIRECTV Group, Inc. ("DIRECTV") hereby requests that the Commission amend its pending application for a geostationary Ka-band replacement satellite system at the nominal 103° W.L. orbital location[1] to allow DIRECTV to operate at a slight offset – specifically, at 102.8° W.L. This very minor repositioning of the satellite (combined with a similar offset of a companion Ka-band satellite at 99° W.L.) will have major benefits for subscribers receiving Direct-to-Home ("DTH") satellite services from this slot, as it will enable them to receive a high-quality signal using a smaller dish, and will thereby promote competition as well. In addition, this slight offset will enhance orbital management and decrease the likelihood of in-orbit collision with other satellites. Moreover, as demonstrated herein, the proposed minor modification is anticipated by Commission rules and will not increase harmful interference to any other satellite system. In fact, the only satellite operator potentially affected is a DIRECTV subsidiary licensed to operate at the nominal 101° W.L. slot, which will still be able to use its Ka-band frequencies for their intended purpose.

[1] *See* FCC File No. SAT-RPL-20040909-00169 (application for DIRECTV 10 satellite).

I. CHANGES TO PREVIOUS TECHNICAL INFORMATION

In this Application, DIRECTV seeks neither additional spectrum nor additional orbital resources, but only a slight offset from its current licensed location consistent with the Commission's rules. Amended applications need only identify the information in the original application that is affected by the proposed change,[2] and such information is included in this Application and Technical Annex. DIRECTV hereby certifies that the remaining information in its application has not changed.[3]

In this case, the only aspects of the satellite's operations reflected in the Technical Annex that will change as a result of moving the satellite from 103.05° W.L.[4] to 102.8° W.L. will be:

- Slightly revised sample link budgets for operations at this slightly offset location.
- Slightly revised sample link budgets for DIRECTV 8's Ka-band operations from the nominal 101° W.L. orbital location, demonstrating that moving DIRECTV 10 toward that slot will not cause harmful interference to its intended service.[5] (The requested eastern offset will move the satellite away from the Ka-band slots to the west

---

2 *Cf.* 47 C.F.R. § 25.117(d). While the letter of this provision applies to modification requests, it applies *a fortiori* to amendments as well.

3 This Application also includes revised ownership information that reflects the reincorporation of News Corporation in the United States.

4 At the time the Commission assigned Ka-band orbital locations in the first processing round, the applicants for orbital locations between 95° W.L. and 105° W.L. agreed to operate their satellites with a nominal 0.05° offset to the west in order to increase separation from a Luxembourg satellite filing at 93.2° W.L. *See Assignment of Orbital Locations to Space Stations in the Ka-Band*, 13 FCC Rcd. 1030, Appendix A (Int'l Bur. 1997). This offset was recently made part of the DIRECTV's Ka-band authorization. *See* Public Notice, DA 04-3529 at 2 (rel. Nov. 5, 2004).

5 Note that these revised link budgets for 101° W.L. actually reflect operations of DIRECTV 8 from 100.85° W.L. and also include the effect of the companion shift of the DIRECTV 11 satellite from 99.05° W.L. to 99.2° W.L.

(including at 105° W.L.), and so will not increase interference to operations at those locations.)

Because moving the satellite only 0.25° will have a *de minimis* affect on the predicted gain contours, revised contours have not been submitted.

II. THE PROPOSED MODIFICATION WOULD SERVE THE PUBLIC INTEREST

DIRECTV is currently authorized to operate a Ka-band system at the 103.05° W.L. orbital location. As contemplated under Section 25.210(j)(3) of the Commission's rules,[6] DIRECTV requests that it be authorized to operate at a slight offset from this nominal location, at 102.8° W.L. Although the requested offset is very small – just 0.25° W.L. – it will create large benefits for consumers through improved system performance. Specifically, when combined with a similar (albeit westward) offset DIRECTV has requested for the companion DIRECTV 11 Ka-band satellite authorized to operate at 99° W.L., this very slight relocation of the satellite will enable DIRECTV to reduce the size of the satellite dish used by consumers to receive DIRECTV's Ka-band DTH signals. As a result, DIRECTV subscribers will be able to use a single dish of a consumer-friendly size to receive high definition programming (including HD local-into-local signals) from two Ka-band slots, as well as programming from DIRECTV's DBS slots at 101° W.L., 110° W.L., and 119° W.L. This will promote consumer acceptance of DIRECTV's new HD services and help DIRECTV continue to provide robust competition to cable operators and other multichannel video programming distributors, to the benefit of the American public.

---

[6] 47 C.F.R. § 25.210(j)(3) (operations may be authorized at assigned orbital longitudes offset by 0.05°or multiples thereof from the nominal orbital location specified in the station authorization).

Moreover, DIRECTV's proposal will achieve this improved performance and enhanced competition without causing harmful interference to any other operator. In fact, as common sense would indicate, by moving slightly away from the adjacent 105° W.L. Ka-band orbital location licensed to SES Americom, DIRECTV will not increase interference to that slot (or any other slots located further West). The proposed offset will move DIRECTV 10 slightly closer to the 101° W.L. Ka-band orbital location licensed to a DIRECTV subsidiary (DIRECTV Enterprises, LLC), which is planning to launch and operate DIRECTV 8, a hybrid DBS/Ka-band satellite, next year. However, as the attached Technical Annex demonstrates, the proposed offset will not prevent DIRECTV 8 from using its Ka-band payload for its intended function of backhauling local programming from remote sites to DIRECTV's broadcast centers.

In addition, this slight offset will allow DIRECTV to operate DIRECTV 10 in a station keeping volume that does not overlap with either of the other space stations (AMC-1 and Solidaridad-1) operating at the nominal 103° W.L. orbital location.[7] This proposal will therefore advance the Commission's goal of decreasing the risk of in-orbit collision between space stations[8] and also enhance the efficiency with which orbital resources are used.

Thus, the proposed offset will have a direct and positive impact on the customer experience of the DIRECTV service, further enhance competition, and enhance orbital risk management – all without negatively impacting the operations of the DIRECTV system or

---

[7] No other U.S. systems are currently seeking Commission authorization to operate at this nominal orbital location. Internationally, Canada, Tonga, and the United Kingdom currently have coordination requests on file at the ITU for satellite networks at 103° W.L., but DIRECTV has found no evidence that satellite construction contracts have been awarded for any of these networks, and notes that the FAA Commercial Space Station Second Quarter 2004 Report shows no pending launch for any of these networks.

[8] *See, e.g., Mitigation of Orbital Debris*, 19 FCC Rcd. 11567, 11588 (2004)(adopting requirements for GEO applicants to assess and coordinate station keeping volumes of any known satellites located at, or reasonably expected to be located at, a requested orbital location).

any other satellite system. The public interest clearly would be served by a grant of the Application.

III. WAIVER PURSUANT TO SECTION 304 OF THE COMMUNICATIONS ACT

In accordance with Section 304 of the Communications Act of 1934, as amended, 47 U.S.C. § 304, DIRECTV hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise.

IV. CONCLUSION

The proposed 0.25° offset of DIRECTV 10 from its currently licensed orbital location will enable DIRECTV to use a more consumer-friendly receive antenna that will allow it to continue to provide the most potent competition possible to entrenched cable operators. Moreover, this important improvement in performance for DIRECTV's system will not compromise the operational abilities of any other satellite system, and in fact will allow for safer and more effective management of orbital resources.

For these reasons, DIRECTV submits that the proposed minor modification request is in the public interest and respectfully requests that the Commission expeditiously grant this request.

Respectfully submitted,

THE DIRECTV GROUP, INC.

By: \s_____
Romulo Pontual
Executive Vice President and Chief
Technology Officer

ENGINEERING CERTIFICATION

The undersigned hereby certifies to the Federal Communications Commission as follows:

(i) He is the technically qualified person responsible for the engineering information contained in the foregoing Application for Minor Amendment,

(ii) He is familiar with Part 25 of the Commission's Rules, and

(iii) He has either prepared or reviewed the engineering information contained in the foregoing Application for Minor Amendment, and it is complete and accurate to the best of his knowledge and belief.

Signed:

/s/

Jack Wengryniuk
Senior Director
DIRECTV Operations Inc.

November 18, 2004

Date

TECHNICAL

ANNEX

DIRECTV 10 Offset Operation Link Budget – National

DIRECTV 10 at 102.8W	National - WDC Mode 3	Clear Sky	Rain Dn
Uplink C/N (thermal), dB	Transmit power, dBW	7.6	7.6
Los Angeles	Transmit losses, dB	-2.0	-2.0
	Ground antenna gain, dB	66.3	66.3
	Antenna pointing loss, dB	-0.5	-0.5
29.3 GHz	Free space loss, dB	-213.2	-213.2
	Atmospheric loss, dB	-1.1	-1.1
	Uplink rain loss, dB	0.0	0.0
	Satellite G/T, dB/K	18.0	18.0
	Bandwidth, dB-Hz	-74.8	-74.8
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Uplink C/N		**28.9**	**28.9**
Downlink C/N (thermal),dB	Satellite EIRP, dBW/36 MHz	54.3	54.3
Washington, DC	Free space loss, dB	-209.4	-209.4
	Atmospheric loss, dB	-1.0	-1.0
	Downlink rain loss, dB	0.0	-3.8
	Rain temp increase, dB	0.0	-3.1
	Rcv. antenna pointing loss, dB	-1.0	-1.0
	Antenna wetting + noise increase, dB	0.0	-1.0
	Ground G/T, dB/K	18.4	18.4
	Bandwidth, dB-Hz	-74.8	-74.8
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Downlink C/N		**15.1**	**7.2**
		Clear Sky	**Rain Dn**
Totals	Uplink C/N (thermal), dB	28.9	28.9
	Downlink C/N (thermal), dB	15.1	7.2
	Total inter and intra-system C/I, dB (incl. x-pol, ASI, ACI, ABI, TX E/S)	**15.2**	**15.2**
	Total C/(N+I), dB	**12.0**	**6.5**
	Required C/(N+I), dB (includes implementation margin)	**5.2**	**5.2**
	Margin, dB	**6.8**	**1.3**

DIRECTV 10 Offset Operation Link Budget – Spot Beam

DIRECTV 10 at 102.8W	Spot Mode 5 (LA)	Clear Sky	Rain Dn
Uplink C/N (thermal), dB	Transmit power, dBW	7.6	7.6
Los Angeles	Transmit losses, dB	-2.0	-2.0
	Ground antenna gain, dB	66.3	66.3
	Antenna pointing loss, dB	-0.5	-0.5
	Free space loss, dB	-213.2	-213.2
	Atmospheric loss, dB	-1.1	-1.1
	Uplink rain loss, dB	0.0	0.0
	Satellite G/T, dB/K	18.0	18.0
	Bandwidth, dB-Hz	-74.8	-74.8
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Uplink C/N		**28.9**	**28.9**
Downlink C/N (thermal),dB	Satellite EIRP, dBW/36 MHz	57.5	57.5
Los Angeles	Free space loss, dB	-209.3	-209.3
	Atmospheric loss, dB	-1.0	-1.0
	Downlink rain loss, dB	0.0	-1.4
	Rain temp increase, dB	0.0	-1.7
	Rcv. antenna pointing loss, dB	-1.0	-1.0
	Antenna wetting + noise increase, dB	0.0	-1.0
	Ground G/T, dB/K	18.4	18.4
	Bandwidth, dB-Hz	-74.8	-74.8
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Downlink C/N		**18.4**	**14.3**
		Clear Sky	**Rain Dn**
Totals	Uplink C/N (thermal), dB	28.9	28.9
	Downlink C/N (thermal), dB	18.4	14.3
	Total inter and intra-system C/I, dB (incl. x-pol, ASI, ACI, ABI, TX E/S)	**11.8**	**11.8**
	Total C/(N+I), dB	**10.9**	**9.8**
	Required C/(N+I), dB (includes implementation margin)	**7.9**	**7.9**
	Margin, dB	**3.0**	**1.9**

DIRECTV 10 Offset Operation Link Budget – Backhaul

DIRECTV 10 at 102.8W	LA-CRK Backhaul Mode 3	Clear Sky	Rain Dn
Uplink C/N (thermal), dB	Transmit power, dBW	7.6	7.6
Los Angeles	Transmit losses, dB	-2.0	-2.0
	Ground antenna gain, dB	66.3	66.3
	Antenna pointing loss, dB	-0.5	-0.5
	Free space loss, dB	-213.2	-213.2
	Atmospheric loss, dB	-1.1	-1.1
	Uplink rain loss, dB	0.0	0.0
	Satellite G/T, dB/K	18.0	18.0
	Bandwidth, dB-Hz	-74.8	-74.8
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Uplink C/N		**28.9**	**28.9**
Downlink C/N (thermal),dB	Satellite EIRP, dBW/36 MHz	50.6	50.6
Castle Rock	Free space loss, dB	-209.3	-209.3
	Atmospheric loss, dB	-1.0	-1.0
	Downlink rain loss, dB	0.0	-10.2
	Rain temp increase, dB	0.0	-3.9
	Rcv. antenna pointing loss, dB	-1.0	-1.0
	Antenna wetting + noise increase, dB	0.0	-1.0
	Ground G/T, dB/K	32.4	32.4
	Bandwidth, dB-Hz	-74.8	-74.8
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Downlink C/N		**25.5**	**10.4**
		Clear Sky	**Rain Dn**
Totals	Uplink C/N (thermal), dB	28.9	28.9
	Downlink C/N (thermal), dB	25.5	10.4
	Total inter and intra-system C/I, dB (incl. x-pol, ASI, ACI, ABI, TX E/S)	**15.6**	**15.6**
	Total C/(N+I), dB	**15.0**	**9.2**
	Required C/(N+I), dB (includes implementation margin)	**5.2**	**5.2**
	Margin, dB	**9.8**	**4.0**

DIRECTV 8 Pinched Operation Ka Band Link Budget – 24 MHz Backhaul

DIRECTV 8 Ka Band, 100.85W	Backhaul – PINCHED	Clear Sky	Rain Dn
Uplink C/N (thermal), dB	Transmit power, dBW	13.7	13.7
Castle Rock	Transmit losses, dB	-2.0	-2.0
	Ground antenna gain, dB	66.8	66.8
	Antenna pointing loss, dB	-0.5	-0.5
	Free space loss, dB	-213.3	-213.3
	Atmospheric loss, dB	-1.1	-1.1
	Uplink rain loss, dB	0.0	0.0
	Satellite G/T, dB/K	8.9	8.9
	Bandwidth, dB-Hz	-73.0	-73.0
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Uplink C/N		**28.1**	**28.1**
Downlink C/N (thermal),dB	Satellite EIRP, dBW/24 MHz	41.8	41.8
Los Angeles	Free space loss, dB	-209.9	-209.9
	Atmospheric loss, dB	-1.0	-1.0
	Downlink rain loss, dB	0.0	-9.3
	Rain temp increase, dB	0.0	-3.7
	Rcv. antenna pointing loss, dB	-0.5	-0.5
	Ground G/T, dB/K	41.0	41.0
	Bandwidth, dB-Hz	-73.0	-73.0
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Downlink C/N		**27.0**	**13.9**
		Clear Sky	**Rain Dn**
Totals	Uplink C/N (thermal), dB	28.1	28.1
	Downlink C/N (thermal), dB	27.0	13.9
	x-pol interference, dB	22.9	22.9
	Aggregate C/I from ASI	29.3	29.3
	Aggregate C/I from TX E/S (U/L)	35.6	35.6
	Total C/(N+I), dB	**19.9**	**13.1**
	Required C/(N+I), dB	**9.0**	**9.0**
	Margin, dB	**10.9**	**4.1**

DIRECTV 8 Pinched Operation Ka Band Link Budget – 36 MHz Backhaul

DIRECTV 8 Ka Band, 100.85W	**Backhaul – PINCHED**	**Clear Sky**	**Rain Dn**
Uplink C/N (thermal), dB	Transmit power, dBW	13.7	13.7
Castle Rock	Transmit losses, dB	-2.0	-2.0
	Ground antenna gain, dB	66.8	66.8
	Antenna pointing loss, dB	-0.5	-0.5
	Free space loss, dB	-213.3	-213.3
	Atmospheric loss, dB	-1.1	-1.1
	Uplink rain loss, dB	0.0	0.0
	Satellite G/T, dB/K	8.9	8.9
	Bandwidth, dB-Hz	-75.5	-75.5
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Uplink C/N		**25.6**	**25.6**
Downlink C/N (thermal),dB	Satellite EIRP, dBW/36 MHz	41.8	41.8
Los Angeles	Free space loss, dB	-209.9	-209.9
	Atmospheric loss, dB	-1.0	-1.0
	Downlink rain loss, dB	0.0	-9.3
	Rain temp increase, dB	0.0	-3.7
	Rcv. antenna pointing loss, dB	-0.5	-0.5
	Ground G/T, dB/K	41.0	41.0
	Bandwidth, dB-Hz	-75.5	-75.5
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Downlink C/N		**24.5**	**11.4**
		Clear Sky	**Rain Dn**
Totals	Uplink C/N (thermal), dB	25.6	25.6
	Downlink C/N (thermal), dB	24.5	11.4
	x-pol interference, dB	22.9	22.9
	Aggregate C/I from ASI	27.5	27.5
	Aggregate C/I from TX E/S (U/L)	33.9	33.9
	Total C/(N+I), dB	**18.6**	**10.9**
	Required C/(N+I), dB	**9.0**	**9.0**
	Margin, dB	**9.6**	**1.9**

DIRECTV 8 Pinched Operation Ka Band Link Budget – 54 MHz Backhaul

DIRECTV 8 Ka Band, 100.85W	Backhaul – PINCHED	Clear Sky	Rain Dn
Uplink C/N (thermal), dB	Transmit power, dBW	13.7	13.7
Castle Rock	Transmit losses, dB	-2.0	-2.0
	Ground antenna gain, dB	66.8	66.8
	Antenna pointing loss, dB	-0.5	-0.5
	Free space loss, dB	-213.3	-213.3
	Atmospheric loss, dB	-1.1	-1.1
	Uplink rain loss, dB	0.0	0.0
	Satellite G/T, dB/K	8.9	8.9
	Bandwidth, dB-Hz	-76.5	-76.5
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Uplink C/N		**24.6**	**24.6**
Downlink C/N (thermal),dB	Satellite EIRP, dBW/54 MHz	41.8	41.8
Los Angeles	Free space loss, dB	-209.9	-209.9
	Atmospheric loss, dB	-1.0	-1.0
	Downlink rain loss, dB	0.0	-9.3
	Rain temp increase, dB	0.0	-3.7
	Rcv. antenna pointing loss, dB	-0.5	-0.5
	Ground G/T, dB/K	41.0	41.0
	Bandwidth, dB-Hz	-76.5	-76.5
	Boltzmann's constant, dBW/Hz K	228.6	228.6
Total Downlink C/N		**23.5**	**10.4**
		Clear Sky	**Rain Dn**
Totals	Uplink C/N (thermal), dB	24.6	24.6
	Downlink C/N (thermal), dB	23.5	10.4
	x-pol interference, dB	22.9	22.9
	Aggregate C/I from ASI	25.8	25.8
	Aggregate C/I from TX E/S (U/L)	32.1	32.1
	Total C/(N+I), dB	**17.9**	**9.9**
	Required C/(N+I), dB	**9.0**	**9.0**
	Margin, dB	**8.9**	**0.9**