

S2746 SAT-LOA-20071221-00183 IB2007003094
EchoStar Corporation
AMC-14

Approved by OMB
3060-0678

Date & Time Filed: Dec 21 2007 5:05:57:266PM
File Number: SAT-LOA-20071221-00183
Callsign/Satellite ID: S2746

APPLICATION FOR SATELLITE SPACE STATION AUTHORIZATIONS FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only
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APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

Application for Authority to Launch and Operate the New AMC-14 DBS Satellite at 61.5 W.L.

1-8. Legal Name of Applicant			
Name:	EchoStar Satellite Operating Corporation	Phone Number:	303-723-1000
DBA Name:		Fax Number:	303-723-1699
Street:	9601 South Meridian Boulevard	E-Mail:	
City:	Englewood	State:	CO
Country:	USA	Zipcode:	80112 -
Attention:	Linda Kinney - (202)293-0981		

1



File # SAT-LOA-20071221-00183

Callsign S2746 Grant Date 3/12/08

Application #

File Title

launch + 10 yrs - conditions #5

[Signature]
Policy Branch Chief

w/conditions

Attachment
Conditions of Authorization
IBFS File Nos. SAT-LOA-20071221-00183, SAT-STA-20080219-00048,
SAT-STA-20080229-00054
Call Sign: S2746
March 12, 2008

EchoStar Corporation's (EchoStar's) application for authority to launch and operate a Direct Broadcast Service (DBS) satellite, AMC-14, IBFS File No. SAT-LOA-20071221-00183 (Call Sign: S2746), IS GRANTED. Accordingly, EchoStar is authorized to launch and operate the AMC-14 space station at the 61.5° W.L orbital location using the 17.3-17.8 (Earth-to-space) and 12.2-12.7 GHz (space-to-Earth) frequency bands on channels 1-22 and 25-32,¹ in accordance with the technical specifications set forth in its application, this Attachment, and the Commission's Rules and subject to the following conditions:

1. EchoStar shall operate the AMC-14 space station at the 61.5° W.L orbital location in compliance with all existing or future coordination agreements for that location.

2. EchoStar shall provide the Commission with all information it requires in order to modify the Appendix 30 Broadcasting-Satellite Service Plans and associated Appendix 30A feeder-link Plans to incorporate the characteristics of USABSS-28, in accordance with the International Telecommunication Union (ITU) radio regulations. EchoStar 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 other 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 and/or for which the necessary agreements under Appendices 30 and 30A have not been obtained may be subject to additional terms and conditions as required to effect coordination or obtain the agreement of other Administrations. See 47 C.F.R. § 25.111(c)

EchoStar's request for waiver of Section 25.210(i), of the Commission's rules, 47 C.F.R. § 25.210(i), IS GRANTED as conditioned. Section 25.210(i) states that "[S]pace station antennas in the Fixed-Satellite Service must be designed to

¹ Application of Direct Broadcasting Satellite Corporation For Assignment of Direct Broadcast Satellite Orbital Positions and Channels, *Memorandum Opinion And Order*, 8 FCC Rcd. 7959,7961 (para. 12) (1993) (even numbered channels 2-22); Application of Direct Broadcasting Satellite Corporation For Assignment of Direct Broadcast Satellite Orbital Positions and Channels, *Order*, 11 FCC Rcd 10494 (Int'l Bur. 1996); Rainbow DBS Company LLC, Assignor and EchoStar Satellite L.L.C., Assignee, Consolidated Application for Consent to Assignment of Space Station and Earth Station Licenses, and Related Special Temporary Authorization, IB Docket No. 05-72, *Memorandum Opinion and Order*, 20 FCC Rcd 16868 (2005) (assigning 11 odd numbered channels from 1-21); Application for consent to assign Dominion's 8 DBS channels at 61.5 W.L. to EchoStar, IBFS File No. SAT-ASG-2007060840081, Grant (September 27, 2007) (assigning channels 25-32 from Dominion Video Satellite, Inc. to EchoStar).

1

2

GRANTED

File # SAT-LOA-20071221-00183
 SAT-STA-20080219-00048
 SAT-STA-20080229-00054

Call Sign S2746 Grant Date March 12, 2008
 (or other identifier)

From launch Term Dates To: + 10 yrs.

Approved Patricia Gausch Chief

provide a cross-polarization isolation such that the ratio of the on axis co-polar gain to the cross-polar gain of the antenna in the assigned frequency band shall be at least 30 dB within its primary coverage area.” EchoStar indicates that, over its primary service area, the minimum cross-polarization isolation ratio for AMC-14’s fixed-satellite service (FSS) feeder-link receive antennas is at least 27 dB within their primary coverage area.² EchoStar indicates that the lower cross-polarization isolation ratio for these FSS feeder-link antennas will not affect any other satellite and that the small additional uplink interference into the AMC-14 satellite has already been taken into account in the satellite’s link design.³ We find that this shortfall will not produce a significant increase in interference, except to the applicant itself, and will not adversely affect any other operator. As a condition of the waiver, EchoStar shall claim no more protection from interference from other licensed radiocommunication systems operating in accordance with the Commission’s rules than if its FSS feeder-link receiving antennas had met Section 25.210(i) of the rules. Grant of this waiver request is consistent with our precedent.⁴

4. EchoStar’s request for a partial waiver of Section 25.283(c) of the Commission’s rules, 47 C.F.R. 25.283(c), IS GRANTED. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. EchoStar indicates that due to its design, AMC-14’s oxidizer tanks cannot be completely depleted but will retain approximately 3% of the tank volume at the end of life of the satellite. EchoStar states that the oxidizer tanks are designed to leak rather than burst to in the case of a flaw in the materials. This waiver is granted because modification of the spacecraft would present an undue hardship, given the late stage of satellite construction. In making this determination, we note that the information submitted in the application is not sufficient to support a finding: a) that oxidizer is the equivalent of an inert gas such as xenon for purposes of assessing whether the intent of the rule would be satisfied; or b) that the intent of the rule would be satisfied by sealing the oxidizer tank or by the design of the oxidizer tanks themselves.
5. The license term for the space station is 10 years and will begin on the date EchoStar certifies to the Commission that the satellite has been successfully placed into orbit and its operation fully conforms to the terms and conditions of this authorization. 47 C.F.R. § 25.121(d)(1). EchoStar shall file its certification

² See EchoStar Satellite Operating Corporation Application for Modification of Authority to Launch and Operate the new AMC-14 DBS Satellite at 61.5° W.L., SAT-LOA-20071221-00183 (Call Sign: S2746), Narrative at 9 (AMC-14 Application). We note that EchoStar requested waivers of both Sections 25.210(i) and 25.215 of the Commission’s rules, 47 CFR §§ 25.210(i), 25.215. In its application, however, EchoStar indicates that only the feeder-link receive antennas do not meet 30 dB requirement. Accordingly, we dismiss the request for waiver of section 25.215 of our rules as moot.

³ AMC-14 Application Narrative at 9-10.

⁴ Star One S.A.; Petition for Declaratory Ruling to Add The Star One C1 Satellite at 65° W.L. to the Permitted Space Station List, *Order*, 19 FCC Rcd 16334 (Int’l Bur., Sat. Div. 2004) (finding that the impact on neighboring satellite systems of a 3-5dB difference from the required cross polarization isolation ratio would be negligible).

with the Chief, Satellite Division, International Bureau within 5 business days of the satellite being placed into operation at the 61.5° W.L. orbital location.

6. EchoStar 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.
7. EchoStar's request for special temporary authority to conduct in-orbit testing of the AMC-14 satellite at the 56.5° W.L. orbital location for a period of 60 days prior to AMC-14's installation at the 61.5° W.L. orbital location, File No. SAT-STA-20080219-00048, as amended by SAT-STA-20080229-00054, IS GRANTED. Accordingly, EchoStar is authorized to conduct space station Telemetry, Tracking, and Control operations on AMC-14 necessary to effect operation at the 56.5° W.L. orbital location and testing of the 17.3-17.8 (Earth-to-space) and the 12.2-12.7 GHz (Earth-to-space) frequency bands using channels 1-32 for a period of 60 days commencing March 14, 2008, subject to the following conditions:
 - a. All operations shall be on an unprotected and non-harmful interference basis, *i.e.*, EchoStar shall not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating radiocommunication system.
 - b. In the event of any harmful interference as a result of EchoStar's operations at the 56.5° W.L. orbital location, EchoStar shall cease operations immediately upon notification of such interference and shall inform the FCC, in writing, immediately of such an event.
 - c. While at the 56.5° W.L. orbital location, EchoStar shall maintain the AMC-14 spacecraft with an east/west longitudinal station-keeping tolerance of 0.05 degrees.
 - d. Any actions taken as a result of operation of AMC-14 at 56.5° W.L. orbital location are solely at EchoStar's own risk.
8. EchoStar does not seek and this action does not provide EchoStar with authority to operate AMC-14 on channels 23 and 24 at the 61.5° W.L orbital location.⁵
9. These actions are issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and are effective immediately. 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 these actions were taken.

⁵ EchoStar indicated that at some time in the future it may file a request for special temporary authority to operate AMC-14 using channels 23 and 24 at the 61.5° W.L orbital location

9-16. Name of Contact Representative

Name:	Pantelis Michalopoulos	Phone Number:	202-429-3000
Company:	Steptoe & Johnson LLP	Fax Number:	202-429-3902
Street:	1330 Connecticut Ave., NW	E-Mail:	
City:	Washington	State:	DC
Country:	USA	Zipcode:	20036 -
Attention:		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.

- a.
 (N/A) a1. Earth Station
 a2. Space Station

- b.
 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
 (N/A) b5. Assignment of License or Registration
 (N/A) 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
 b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
 b10. Replacement Satellite Application - no new frequency bands
 b11. Replacement Satellite Application - new frequency bands (Not eligible for streamlined processing)
 b12. Petition for Declaratory Ruling to be Added to the Permitted List
 (N/A) b13. Other (Please specify)

TYPE OF SERVICE

<p>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:</p> <p><input checked="" type="checkbox"/> a. Fixed Satellite</p> <p><input type="checkbox"/> b. Mobile Satellite</p> <p><input type="checkbox"/> c. Radiodetermination Satellite</p> <p><input type="checkbox"/> d. Earth Exploration Satellite</p> <p><input type="checkbox"/> e. Direct to Home Fixed Satellite</p> <p><input type="checkbox"/> f. Digital Audio Radio Service</p> <p><input checked="" type="checkbox"/> g. Other (please specify) Direct Broadcast Satellite (DBS)</p>	
<p>21. STATUS: Choose the button next to the applicable status. Choose only one.</p> <p><input type="radio"/> Common Carrier <input checked="" type="radio"/> Non-Common Carrier</p>	<p>22. If earth station applicant, check all that apply.</p> <p>Not Applicable</p>
<p>23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:</p> <p><input type="radio"/> Connected to a Public Switched Network <input type="radio"/> Not connected to a Public Switched Network <input checked="" type="radio"/> N/A</p>	
<p>24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).</p> <p><input type="checkbox"/> a. C-Band (4/6 GHz) <input type="checkbox"/> b. Ku-Band (12/14 GHz)</p> <p><input checked="" type="checkbox"/> c. Other (Please specify upper and lower frequencies in MHz.)</p> <p>Frequency Lower: 12200 Frequency Upper: 17800 (Please specify additional frequencies in an attachment)</p>	

TYPE OF STATION

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

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

26. TYPE OF EARTH STATION FACILITY: Not Applicable

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an "X" in the box(es) next to all that apply.) Not Applicable

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?	<input type="radio"/> Yes <input checked="" type="radio"/> No
30. Is the applicant an alien or the representative of an alien?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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.	

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? Yes No
If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.

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 explanation of circumstances. Yes No
Question 36

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 explanation 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 attempting 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 exhibit, 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. Question 40

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.)

This is an application for authority to launch and operate the new AMC-14 Direct Broadcast Satellite at the 61.5 W.L. orbital location. See narrative.

Narrative

43a. Geographic Service Rule Certification

By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25.

A

By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements.

B

By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached.

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.)		
<input type="radio"/> Individual <input type="radio"/> Unincorporated Association <input type="radio"/> Partnership <input checked="" type="radio"/> Corporation <input type="radio"/> Governmental Entity <input type="radio"/> Other (please specify)		
45. Name of Person Signing Linda Kinney	46. Title of Person Signing Vice President, Law and Regulation	
47. Please supply any need attachments.		
1:	2:	3:
<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>		

Completed Schedule S

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Approved by OMB
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APPLICATION FOR SATELLITE SPACE STATION AUTHORIZATIONS FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only
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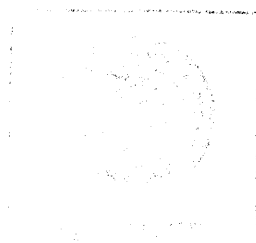
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Attention:	Linda Kinney - (202)293-0981		

1



w/conditions

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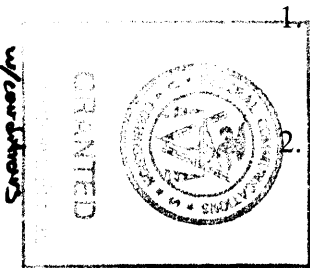
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launch + 10 yrs - conditions #5

[Signature]
Policy Branch Chief

Attachment
Conditions of Authorization
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Approved: [Signature]
 Patricia Gausden, Chief

From Launch To: + 10 yrs.
 Term Dates

Call Sign S2746 Grant Date March 12, 2008
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³ AMC-14 Application Narrative at 9-10.

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6. EchoStar 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.
7. EchoStar's request for special temporary authority to conduct in-orbit testing of the AMC-14 satellite at the 56.5° W.L. orbital location for a period of 60 days prior to AMC-14's installation at the 61.5° W.L. orbital location, File No. SAT-STA-20080219-00048, as amended by SAT-STA-20080229-00054, IS GRANTED. Accordingly, EchoStar is authorized to conduct space station Telemetry, Tracking, and Control operations on AMC-14 necessary to effect operation at the 56.5° W.L. orbital location and testing of the 17.3-17.8 (Earth-to-space) and the 12.2-12.7 GHz (Earth-to-space) frequency bands using channels 1-32 for a period of 60 days commencing March 14, 2008, subject to the following conditions:
 - a. All operations shall be on an unprotected and non-harmful interference basis, *i.e.*, EchoStar shall not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating radiocommunication system.
 - b. In the event of any harmful interference as a result of EchoStar's operations at the 56.5° W.L. orbital location, EchoStar shall cease operations immediately upon notification of such interference and shall inform the FCC, in writing, immediately of such an event.
 - c. While at the 56.5° W.L. orbital location, EchoStar shall maintain the AMC-14 spacecraft with an east/west longitudinal station-keeping tolerance of 0.05 degrees.
 - d. Any actions taken as a result of operation of AMC-14 at 56.5° W.L. orbital location are solely at EchoStar's own risk.
8. EchoStar does not seek and this action does not provide EchoStar with authority to operate AMC-14 on channels 23 and 24 at the 61.5° W.L orbital location.⁵
9. These actions are issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and are effective immediately. 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 these actions were taken.

⁵ EchoStar indicated that at some time in the future it may file a request for special temporary authority to operate AMC-14 using channels 23 and 24 at the 61.5° W.L orbital location

9-16. Name of Contact Representative			
Name:	Pantelis Michalopoulos	Phone Number:	202-429-3000
Company:	Steptoe & Johnson LLP	Fax Number:	202-429-3902
Street:	1330 Connecticut Ave., NW	E-Mail:	
City:	Washington	State:	DC
Country:	USA	Zipcode:	20036 -
Attention:		Relationship:	Legal Counsel

CLASSIFICATION OF FILING

<p>17. Choose the buttonnext to the classification that applies to thisfiling for both questions a. and b. Choose only one for 17a and only one for 17b.</p> <p>a.</p> <p>(N/A) a1. Earth Station</p> <p><input checked="" type="radio"/> a2. Space Station</p>	<p>b.</p> <p><input checked="" type="radio"/> b1. Application for License of New Station</p> <p>(N/A) b2. Application for Registration of New Domestic Receive-Only Station</p> <p>(N/A) b3. Amendment to a Pending Application</p> <p>(N/A) b4. Modification of License or Registration</p> <p>(N/A) b5. Assignment of License or Registration</p> <p>(N/A) b6. Transfer of Control of License or Registration</p> <p>(N/A) b7. Notification of Minor Modification</p> <p>(N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite</p> <p><input type="radio"/> b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States</p> <p><input type="radio"/> b10. Replacement Satellite Application - no new frequency bands</p> <p><input type="radio"/> b11. Replacement Satellite Application - new frequency bands (Not eligible for streamlined processing)</p> <p><input type="radio"/> b12. Petition for Declaratory Ruling to be Added to the Permitted List</p> <p>(N/A) b13. Other (Please specify)</p>
---	---

<p>17c. 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):</p>	
<p>17c. Fee Classification BNY – Space Station (Geostationary)</p>	
<p>18. If this filing is in reference to an existing station, enter: (a) Call sign of station: Not Applicable</p>	
<p>19. If this filing is an amendment to a pending application enter: (a) Date pending application was filed: Not Applicable</p>	<p>(b) File number of pending application: Not Applicable</p>

TYPE OF SERVICE

<p>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:</p> <p><input checked="" type="checkbox"/> a. Fixed Satellite</p> <p><input type="checkbox"/> b. Mobile Satellite</p> <p><input type="checkbox"/> c. Radiodetermination Satellite</p> <p><input type="checkbox"/> d. Earth Exploration Satellite</p> <p><input type="checkbox"/> e. Direct to Home Fixed Satellite</p> <p><input type="checkbox"/> f. Digital Audio Radio Service</p> <p><input checked="" type="checkbox"/> g. Other (please specify) Direct Broadcast Satellite (DBS)</p>	
<p>21. STATUS: Choose the button next to the applicable status. Choose only one.</p> <p><input type="radio"/> Common Carrier <input checked="" type="radio"/> Non-Common Carrier</p>	<p>22. If earth station applicant, check all that apply.</p> <p>Not Applicable</p>
<p>23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:</p> <p><input type="radio"/> Connected to a Public Switched Network <input type="radio"/> Not connected to a Public Switched Network <input checked="" type="radio"/> N/A</p>	
<p>24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).</p> <p><input type="checkbox"/> a. C-Band (4/6 GHz) <input type="checkbox"/> b. Ku-Band (12/14 GHz)</p> <p><input checked="" type="checkbox"/> c. Other (Please specify upper and lower frequencies in MHz.)</p> <p>Frequency Lower: 12200 Frequency Upper: 17800 (Please specify additional frequencies in an attachment)</p>	

TYPE OF STATION

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

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

26. TYPE OF EARTH STATION FACILITY: Not Applicable

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an "X" in the box(es) next to all that apply.) Not Applicable

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?	<input type="radio"/> Yes <input checked="" type="radio"/> No
30. Is the applicant an alien or the representative of an alien?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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.	

BASIC QUALIFICATIONS

<p>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.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>
<p>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 explanation of circumstances.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No Question 36</p>
<p>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 explanation of circumstances.</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>
<p>38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting 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</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>
<p>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 exhibit, an explanation of the circumstances.</p>	<p><input type="radio"/> Yes <input checked="" type="radio"/> No</p>

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. Question 40

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.)

This is an application for authority to launch and operate the new AMC-14 Direct Broadcast Satellite at the 61.5 W.L. orbital location. See narrative.

Narrative

43a. Geographic Service Rule Certification

By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25.

A

By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements.

B

By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached.

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.

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.

The AMC-14 satellite, a CONUS-beam satellite,³ will replace the EchoStar 3 satellite at the 61.5° W.L. orbital location.⁴ EchoStar plans to place AMC-14 at 61.5° W.L. following in-orbit testing at another location. Such in-orbit testing will be subject to receipt of a separate Special Temporary Authorization for such testing. EchoStar also plans to file a separate application to move EchoStar 3 to 61.35° W.L. prior to AMC-14's arrival at 61.5° W.L. Once at that location, traffic will be transferred from the EchoStar 3 satellite to the AMC-14 satellite. EchoStar 3 will eventually be redeployed to another orbital location. Among other things, the AMC-14 satellite will enable EchoStar to utilize more fully the DBS frequencies at 61.5° W.L. As the Commission is aware, due to transponder failures, the EchoStar 3 satellite has not been able to make full use of that spectrum.

EchoStar has purchased all of the capacity on the AMC-14 satellite and will control and operate the satellite under an agreement with SES Americom, Inc. ("SES"). EchoStar is filing this agreement separately with the Commission under a request for confidential treatment, and is also submitting a redacted version for the public record. Under the agreement, SES will provide Telemetry, Tracking and Command ("TT&C") communications for the satellite subject to EchoStar's control.

channels 23 and 24). While EchoStar requests authorization for AMC-14 to operate on all 30 licensed channels licensed to it at 61.5° W.L. and to conduct temporary operations on the two unassigned channels, it anticipates that EchoStar 12 will continue to operate on channels 1-23 odd and 24, as it does currently.

³ Because the EchoStar is seeking authority to operate the AMC-14 satellite at the 61.5° W.L. orbital location, it will not be required to provide DBS service to Alaska and Hawaii. *See* 47 C.F.R. § 25.148(c).

⁴ EchoStar will file separately a request for Special Temporary Authority to test the satellite at an appropriate orbital location after launch and before commencement of operations at 61.5° W.L.

Due to recent launch vehicle incidents involving the Proton rocket, the projected launch date for AMC-14 is in March of 2008, and accordingly EchoStar respectfully requests timely grant of the instant application.

I. TECHNICAL REQUIREMENTS OF PART 25

The technical information for the AMC-14 satellite required to be submitted pursuant to Part 25 of the Commission's Rules, 47 C.F.R. § 25.114, is set forth in the accompanying Technical Narrative (Attachment A), FCC Form 312, and Schedule S, all of which are incorporated into this application by reference.

II. PUBLIC INTEREST CONSIDERATIONS IN SUPPORT OF GRANT OF APPLICATION

Grant of this application will serve the public interest. First, the operation of AMC-14 at 61.5° W.L. will allow EchoStar to improve its service at this orbital location. EchoStar currently operates EchoStar 3 and EchoStar 12 at the 61.5° W.L. orbital location. EchoStar 12 is the former Rainbow satellite, which was built by Rainbow to operate on a total of 13 channels – Rainbow's 11-channel assignment plus the two unassigned channels 23 and 24. EchoStar 3 is licensed to operate the remaining channels – the even channels between 2 and 22 and channels 25 through 32. Due to transponder failures, however, EchoStar 3 is no longer able to use the full complement of these 19 channels, resulting in inefficient use of the DBS spectrum at one of the eight orbital locations allotted to the U.S. for DBS. Replacing the EchoStar 3 satellite with the new AMC-14 satellite will remedy that problem.

Further, the AMC-14 satellite will allow for higher power operations from the 61.5° W.L. orbital location, which will in turn provide consumers with the programming that they demand while preserving the quality of their reception. Competitive developments have placed a strain on the limited bandwidth available to DBS operators and have made it imperative to maximize

the available capacity from licensed spectrum. EchoStar must provide a large and growing amount of High Definition programming. This means that, in a finite spectrum assignment, EchoStar must allocate power to increasing its throughput. This has a price: less power remains available to preserve the quality of reception and link availability that customers have come to expect. In sum, additional power is necessary to respond to consumer demand and competitive pressures without sacrificing reception quality. AMC-14 will help achieve this.

The operation of AMC-14 at 61.5° will also free up EchoStar 3 for eventual redeployment. While EchoStar 3's capacity has diminished, the satellite still has many years of useful life and can provide valuable services from another orbital location where the inefficiencies associated with its transponder losses will have a less pronounced effect. The launch and operation of AMC-14 will better enable EchoStar to provide meaningful competition to terrestrial providers – both cable operators and the telephone companies – thus increasing competition in the MVPD market overall and benefiting consumers.

III. ECHOSTAR REQUESTS CONFIRMATION THAT THE AMC-14 SPACECRAFT MEETS THE ORBITAL DEBRIS MITIGATION RULES OR, IN THE ALTERNATIVE, A LIMITED WAIVER OF THOSE RULES

Section 25.283(c) of the Commission's rules⁵ requires space station licensees to ensure, at spacecraft end-of-life, "that all stored energy sources on board the satellite are discharged by venting excess propellant, discharging batteries, relieving pressure vessels, and other appropriate measures." Similarly, Section 25.114(d)(14)(ii) requires space station applicants to address in their applications "whether stored energy will be removed at the spacecraft's end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored

⁵ 47 C.F.R. § 25.283(c).

energy, or through other equivalent procedures specifically disclosed.”⁶ The purpose of these rules, as is evident from Section 25.114(d)(14)(ii), is to “limit the probability of accidental explosion . . . after the completion of mission operations.”⁷

In the case of the AMC-14 spacecraft, the batteries will be left in a permanent state of discharge and all sources of stored energy with the exception of the oxidizer tanks will be removed or vented at the spacecraft’s end-of-life by leaving all fuel lines open. *See* Technical Narrative at A.10.2. Because of the design of the spacecraft bus by the satellite manufacturer, however, the small amount of oxidizer remaining in the oxidizer tanks of the spacecraft at end-of-mission cannot be vented. Instead, as affirmed in the attached Declaration from the satellite manufacturer (“Lockheed Memorandum”) (Attachment B), this residual oxidizer will be securely sealed using pyrotechnic valves upon the completion of the satellite’s transfer to geostationary orbit, and stored under conditions that would make even a leak extremely unlikely, and an accidental, post-mission explosion more unlikely still. EchoStar and SES have been informed by the satellite manufacturer, Lockheed Martin, that this is a feature common to all Lockheed A2100 spacecraft buses, on which the AMC-14 satellite was built.

As demonstrated in the Lockheed Memorandum, Lockheed has taken a number of measures to avoid an explosion. Specifically, first, it has built hardy tanks that are extremely unlikely to leak. The tanks are all-titanium vessels that have been inspected, tested and qualified

⁶ 47 C.F.R. § 25.114(d)(14)(ii).

⁷ Section 25.114(d)(14)(ii) of the Commission’s rules requires space station applicants to “assess[] and limit[] the probability of accidental explosions” at the end-of-mission by, among other things, “address[ing] whether stored energy will be removed at the spacecraft’s end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy, or through other equivalent procedures specifically disclosed in the application.” 47 C.F.R. § 25.114(d)(14)(ii).

to the stringent requirements of the MIL-STD-1522A (Standard General Requirements for Safe Design and Operation of Pressurized Missile and Space Systems) and the EWR-127-1 (Eastern and Western Range Safety Requirements). *See* Lockheed Memorandum at 1. Given the small amount of oxidizer that will remain in the oxidizer tanks, the tanks would have to be heated above 165° F (or 76° C) in order for their designed pressure tolerances to be exceeded. Such temperatures are highly unlikely to be experienced, and Lockheed’s worst-case analysis shows that temperatures will be less than 95° F (or 35° C) at end-of-life, resulting in a maximum pressure well below the pressure tolerance of the tanks. *See id.* at 1. Second, Lockheed has designed and constructed the tanks in accordance with stringent technical standards to leak rather than burst in the case of a flaw in the materials. The tanks have accordingly been qualified as leak-before-burst pressure vessels. *Id.* at 1-2. For these reasons, post-mission storage of the oxidizer in this manner is no less secure than post-mission venting of these vessels.

In these circumstances, the Lockheed-designed and built tanks satisfy the Commission’s rules. Section 25.283(c) mentions an illustrative list of “appropriate measures” for discharging energy sources. The measures taken by Lockheed to discharge the energy (including the ultra-secure storage of a small residual amount) should qualify as such an appropriate measure. The reading of the rule as setting forth an illustrative list of “appropriate measures” is confirmed by Section 25.114(d)(14)(ii), which requires applicants to address “whether [not that] stored energy will be removed at the spacecraft’s end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy, *or through other equivalent procedures specifically disclosed in the application.*” In other words, Section 25.114(d)(14)(ii) contemplates

“other equivalent procedures” than the ones listed for limiting the probability of accidental explosions and does not limit these procedures to removal or depletion of energy.

Indeed, the Commission appeared to recognize that it is possible to satisfy the rule by means other than venting or relieving pressure when it granted Hughes Communications, Inc., an authorization for the Spaceway-3 satellite without a waiver of the orbital debris mitigation rules, even though four tanks on the Boeing 702 spacecraft would continue to have residual helium and xenon gas in them at the end-of-life. *See Hughes Communications, Inc.*, Stamp Grant, File Nos. SAT-MOD-20050523-00106, SAT-AMD-20060306-00025 (granted Jun. 24, 2006) (“HNS”). As Hughes noted in its amended application, “the standard practice of retaining four tanks with a low residual pressure is both a responsible approach and results in a far lower risk of accidental explosion over time than would any attempt to completely depressurize the tanks during or after the spacecraft’s mission.” Amendment at Att. A, p.20.

The Commission appeared to reach a similar conclusion when it evaluated a request by PanAmSat for a waiver of the orbital debris mitigation rules with respect to the sealing of oxidizer tanks on its Horizons 2 and Intelsat 11 spacecraft. *See PanAmSat H-2 Licensee Corp.*, Stamp Grant, File No. SAT-AMD-20070731-00108 (granted Nov. 30, 2007) (“PanAmSat H-2”); *PanAmSat Licensee Corp.*, Stamp Grant, File No. SAT-AMD-20070716-00102 (granted Oct. 4, 2007) (“Intelsat 11”). While the Commission granted the request for waiver in those cases, it stopped short of saying that the rule could never be complied with by alternative measures such as the ones taken here, if an appropriate showing is made. It found only that “the information submitted in [PanAmSat’s] application is not sufficient to support a finding that the intent of the rule would be satisfied by the described procedure for sealing the oxidizer tanks.” *PanAmsat H-2* at condition 5; *Intelsat 11* at condition 7. In contrast, the detailed information provided in this

case supports a finding that the AMC-14 spacecraft design is consistent with the Commission's orbital debris policies.

Should the Commission disagree, EchoStar hereby requests a waiver of Sections 25.283(c) and 25.114(d)(14)(ii) to the extent necessary. The Commission has authority to grant waivers of its rules for "good cause shown."⁸ In general, good cause exists if grant of a waiver would not undermine the purposes of the rule and would otherwise serve the public interest.⁹ In this case, the sealing of the residual oxidizer in the oxidizer tanks of the AMC-14 satellite would achieve the same purpose as the venting of the tanks, which is to limit the probability of post-mission explosion. At the spacecraft's end-of-mission, only a small amount of oxidizer will remain in the spacecraft's oxidizer tanks (expected to be less than 3% of the total volume of the tank). *See* Lockheed Memorandum at 1. Due to the design of the Lockheed Martin A2100 spacecraft bus, on which the AMC-14 satellite was based, this residual oxidizer cannot be vented but will be securely sealed in the spacecraft's two oxidizer tanks through the use of pyrotechnic valves upon completion of transfer orbit operations.

A waiver of the Commission's rules is also appropriate in the circumstances once "considerations of hardship, equity, or more effective implementation of overall policy" have been taken into account.¹⁰ In this case, requiring compliance with Section 25.283(c) would cause undue hardship to a greater degree than in the case of the Horizons 2 spacecraft, for which the Commission waived these rules. *See PanAmSat H-2* at condition 5. Like in *PanAmSat H-2*, the construction of the AMC-14 satellite is substantially complete and is scheduled for launch in

⁸ *See* 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153 (1969)..

⁹ *See, e.g., WAIT Radio*, 418 F.2d at 1157; *Intelsat North America LLC*, 22 FCC Rcd 11989, at ¶ 6 (2007); *Dominion Video Satellite, Inc.* 14 FCC Rcd 8182, at ¶ 5 (1999).

¹⁰ *WAIT Radio*, 418 F.2d at 1159.

S2746 **SAT-LOA-20071221-00183** **IB2007003094**
 EchoStar Corporation
 AMC-14

Approved by OMB
 3060-0678

Date & Time Filed: Dec 21 2007 5:05:57:266PM
 File Number: SAT-LOA-20071221-00183
 Callsign/Satellite ID: S2746

APPLICATION FOR SATELLITE SPACE STATION AUTHORIZATIONS FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only
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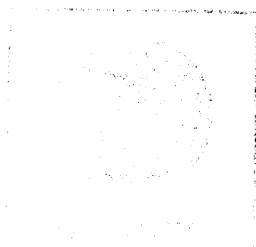
APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

Application for Authority to Launch and Operate the New AMC-14 DBS Satellite at 61.5 W.L.

1-8. Legal Name of Applicant			
Name:	EchoStar Satellite Operating Corporation	Phone Number:	303-723-1000
DBA Name:		Fax Number:	303-723-1699
Street:	9601 South Meridian Boulevard	E-Mail:	
City:	Englewood	State:	CO
Country:	USA	Zipcode:	80112 -
Attention:	Linda Kinney - (202)293-0981		

1



w/conditions

File # SAT-LOA-20071221-00183

Callsign S2746 Grant Date 3/12/08

Application Number

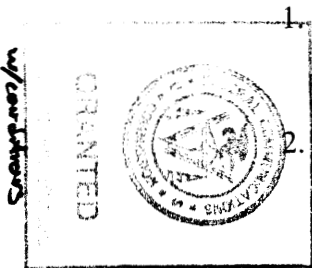
Exp. Date

launch + 10 yrs - conditions #5

[Signature]
 Policy Branch Chief

Attachment
Conditions of Authorization
IBFS File Nos. SAT-LOA-20071221-00183, SAT-STA-20080219-00048,
SAT-STA-20080229-00054
Call Sign: S2746
March 12, 2008

EchoStar Corporation's (EchoStar's) application for authority to launch and operate a Direct Broadcast Service (DBS) satellite, AMC-14, IBFS File No. SAT-LOA-20071221-00183 (Call Sign: S2746), IS GRANTED. Accordingly, EchoStar is authorized to launch and operate the AMC-14 space station at the 61.5° W.L orbital location using the 17.3-17.8 (Earth-to-space) and 12.2-12.7 GHz (space-to-Earth) frequency bands on channels 1-22 and 25-32,¹ in accordance with the technical specifications set forth in its application, this Attachment, and the Commission's Rules and subject to the following conditions:



Approved: [Signature]
 Director
 From: Launch
 To: + 10 yrs.
 Term Dates
 Call Sign: S2746
 Grant Date: March 12, 2008
 (or other identifier)
 File # SAT-LOA-20071221-00183
SAT-STA-20080219-00048
SAT-STA-20080229-00054

1. EchoStar shall operate the AMC-14 space station at the 61.5° W.L orbital location in compliance with all existing or future coordination agreements for that location.

2. EchoStar shall provide the Commission with all information it requires in order to modify the Appendix 30 Broadcasting-Satellite Service Plans and associated Appendix 30A feeder-link Plans to incorporate the characteristics of USABSS-28, in accordance with the International Telecommunication Union (ITU) radio regulations. EchoStar 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 other 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 and/or for which the necessary agreements under Appendices 30 and 30A have not been obtained may be subject to additional terms and conditions as required to effect coordination or obtain the agreement of other Administrations. See 47 C.F.R. § 25.111(c)

EchoStar's request for waiver of Section 25.210(i), of the Commission's rules, 47 C.F.R. § 25.210(i), IS GRANTED as conditioned. Section 25.210(i) states that "[S]pace station antennas in the Fixed-Satellite Service must be designed to

¹ Application of Direct Broadcasting Satellite Corporation For Assignment of Direct Broadcast Satellite Orbital Positions and Channels, *Memorandum Opinion And Order*, 8 FCC Rcd. 7959,7961 (para. 12) (1993) (even numbered channels 2-22); Application of Direct Broadcasting Satellite Corporation For Assignment of Direct Broadcast Satellite Orbital Positions and Channels, *Order*, 11 FCC Rcd 10494 (Int'l Bur. 1996); Rainbow DBS Company LLC, Assignor and EchoStar Satellite L.L.C., Assignee, Consolidated Application for Consent to Assignment of Space Station and Earth Station Licenses, and Related Special Temporary Authorization, IB Docket No. 05-72, *Memorandum Opinion and Order*, 20 FCC Rcd 16868 (2005) (assigning 11 odd numbered channels from 1-21); Application for consent to assign Dominion's 8 DBS channels at 61.5 W.L. to EchoStar, IBFS File No. SAT-ASG-2007060840081, Grant (September 27, 2007) (assigning channels 25-32 from Dominion Video Satellite, Inc. to EchoStar).

provide a cross-polarization isolation such that the ratio of the on axis co-polar gain to the cross-polar gain of the antenna in the assigned frequency band shall be at least 30 dB within its primary coverage area.” EchoStar indicates that, over its primary service area, the minimum cross-polarization isolation ratio for AMC-14’s fixed-satellite service (FSS) feeder-link receive antennas is at least 27 dB within their primary coverage area.² EchoStar indicates that the lower cross-polarization isolation ratio for these FSS feeder-link antennas will not affect any other satellite and that the small additional uplink interference into the AMC-14 satellite has already been taken into account in the satellite’s link design.³ We find that this shortfall will not produce a significant increase in interference, except to the applicant itself, and will not adversely affect any other operator. As a condition of the waiver, EchoStar shall claim no more protection from interference from other licensed radiocommunication systems operating in accordance with the Commission’s rules than if its FSS feeder-link receiving antennas had met Section 25.210(i) of the rules. Grant of this waiver request is consistent with our precedent.⁴

4. EchoStar’s request for a partial waiver of Section 25.283(c) of the Commission’s rules, 47 C.F.R. 25.283(c), IS GRANTED. Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. EchoStar indicates that due to its design, AMC-14’s oxidizer tanks cannot be completely depleted but will retain approximately 3% of the tank volume at the end of life of the satellite. EchoStar states that the oxidizer tanks are designed to leak rather than burst to in the case of a flaw in the materials. This waiver is granted because modification of the spacecraft would present an undue hardship, given the late stage of satellite construction. In making this determination, we note that the information submitted in the application is not sufficient to support a finding: a) that oxidizer is the equivalent of an inert gas such as xenon for purposes of assessing whether the intent of the rule would be satisfied; or b) that the intent of the rule would be satisfied by sealing the oxidizer tank or by the design of the oxidizer tanks themselves.
5. The license term for the space station is 10 years and will begin on the date EchoStar certifies to the Commission that the satellite has been successfully placed into orbit and its operation fully conforms to the terms and conditions of this authorization. 47 C.F.R. § 25.121(d)(1). EchoStar shall file its certification

² See EchoStar Satellite Operating Corporation Application for Modification of Authority to Launch and Operate the new AMC-14 DBS Satellite at 61.5° W.L., SAT-LOA-20071221-00183 (Call Sign: S2746), Narrative at 9 (AMC-14 Application). We note that EchoStar requested waivers of both Sections 25.210(i) and 25.215 of the Commission’s rules, 47 CFR §§ 25.210(i), 25.215. In its application, however, EchoStar indicates that only the feeder-link receive antennas do not meet 30 dB requirement. Accordingly, we dismiss the request for waiver of section 25.215 of our rules as moot.

³ AMC-14 Application Narrative at 9-10.

⁴ Star One S.A.; Petition for Declaratory Ruling to Add The Star One C1 Satellite at 65° W.L. to the Permitted Space Station List, *Order*, 19 FCC Rcd 16334 (Int’l Bur., Sat. Div. 2004) (finding that the impact on neighboring satellite systems of a 3-5dB difference from the required cross polarization isolation ratio would be negligible).

- with the Chief, Satellite Division, International Bureau within 5 business days of the satellite being placed into operation at the 61.5° W.L. orbital location.
6. EchoStar 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.
 7. EchoStar's request for special temporary authority to conduct in-orbit testing of the AMC-14 satellite at the 56.5° W.L. orbital location for a period of 60 days prior to AMC-14's installation at the 61.5° W.L. orbital location, File No. SAT-STA-20080219-00048, as amended by SAT-STA-20080229-00054, IS GRANTED. Accordingly, EchoStar is authorized to conduct space station Telemetry, Tracking, and Control operations on AMC-14 necessary to effect operation at the 56.5° W.L. orbital location and testing of the 17.3-17.8 (Earth-to-space) and the 12.2-12.7 GHz (Earth-to-space) frequency bands using channels 1-32 for a period of 60 days commencing March 14, 2008, subject to the following conditions:
 - a. All operations shall be on an unprotected and non-harmful interference basis, *i.e.*, EchoStar shall not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating radiocommunication system.
 - b. In the event of any harmful interference as a result of EchoStar's operations at the 56.5° W.L. orbital location, EchoStar shall cease operations immediately upon notification of such interference and shall inform the FCC, in writing, immediately of such an event.
 - c. While at the 56.5° W.L. orbital location, EchoStar shall maintain the AMC-14 spacecraft with an east/west longitudinal station-keeping tolerance of 0.05 degrees.
 - d. Any actions taken as a result of operation of AMC-14 at 56.5° W.L. orbital location are solely at EchoStar's own risk.
 8. EchoStar does not seek and this action does not provide EchoStar with authority to operate AMC-14 on channels 23 and 24 at the 61.5° W.L orbital location.⁵
 9. These actions are issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and are effective immediately. 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 these actions were taken.

⁵ EchoStar indicated that at some time in the future it may file a request for special temporary authority to operate AMC-14 using channels 23 and 24 at the 61.5° W.L orbital location

9-16. Name of Contact Representative

Name:	Pantelis Michalopoulos	Phone Number:	202-429-3000
Company:	Steptoe & Johnson LLP	Fax Number:	202-429-3902
Street:	1330 Connecticut Ave., NW	E-Mail:	
City:	Washington	State:	DC
Country:	USA	Zipcode:	20036 -
Attention:		Relationship:	Legal Counsel

CLASSIFICATION OF FILING

17. Choose the buttonnext to the classification that applies to thisfiling for both questions a. and b. Choose only one for 17a and only one for 17b.

- a.
 (N/A) a1. Earth Station
 a2. Space Station

- b.
 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
 (N/A) b5. Assignment of License or Registration
 (N/A) 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

 b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
 b10. Replacement Satellite Application - no new frequency bands
 b11. Replacement Satellite Application - new frequency bands (Not eligible for streamlined processing)
 b12. Petition for Declaratory Ruling to be Added to the Permitted List
 (N/A) b13. Other (Please specify)

TYPE OF SERVICE

<p>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:</p> <p><input checked="" type="checkbox"/> a. Fixed Satellite</p> <p><input type="checkbox"/> b. Mobile Satellite</p> <p><input type="checkbox"/> c. Radiodetermination Satellite</p> <p><input type="checkbox"/> d. Earth Exploration Satellite</p> <p><input type="checkbox"/> e. Direct to Home Fixed Satellite</p> <p><input type="checkbox"/> f. Digital Audio Radio Service</p> <p><input checked="" type="checkbox"/> g. Other (please specify) Direct Broadcast Satellite (DBS)</p>	
<p>21. STATUS: Choose the button next to the applicable status. Choose only one.</p> <p><input type="radio"/> Common Carrier <input checked="" type="radio"/> Non-Common Carrier</p>	<p>22. If earth station applicant, check all that apply.</p> <p>Not Applicable</p>
<p>23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:</p> <p><input type="radio"/> Connected to a Public Switched Network <input type="radio"/> Not connected to a Public Switched Network <input checked="" type="radio"/> N/A</p>	
<p>24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).</p> <p><input type="checkbox"/> a. C-Band (4/6 GHz) <input type="checkbox"/> b. Ku-Band (12/14 GHz)</p> <p><input checked="" type="checkbox"/> c. Other (Please specify upper and lower frequencies in MHz.)</p> <p>Frequency Lower: 12200 Frequency Upper: 17800 (Please specify additional frequencies in an attachment)</p>	

TYPE OF STATION

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

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

26. TYPE OF EARTH STATION FACILITY: Not Applicable

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an "X" in the box(es) next to all that apply.) Not Applicable

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?	<input type="radio"/> Yes <input checked="" type="radio"/> No
30. Is the applicant an alien or the representative of an alien?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> 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.	

BASIC QUALIFICATIONS

<p>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.</p>	<input checked="" type="radio"/> Yes <input type="radio"/> No
<p>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 explanation of circumstances.</p>	<input checked="" type="radio"/> Yes <input type="radio"/> No Question 36
<p>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 explanation of circumstances.</p>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<p>38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting 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</p>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<p>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 exhibit, an explanation of the circumstances.</p>	<input type="radio"/> Yes <input checked="" type="radio"/> 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. Question 40

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.)

This is an application for authority to launch and operate the new AMC-14 Direct Broadcast Satellite at the 61.5 W.L. orbital location. See narrative.

Narrative

43a. Geographic Service Rule Certification

By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25.

A

By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements.

B

By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached.

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.

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.

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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.

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

_____)
In the Matter of)

ECHOSTAR SATELLITE OPERATING)
CORPORATION)

Application for Authority to Launch the)
AMC-14 Satellite and Operate that)
Satellite at 61.5° W.L.)
_____)

File No. SAT-LOA-2007 _____

**APPLICATION FOR LAUNCH AND OPERATING AUTHORITY
FOR THE AMC-14 SATELLITE**

Pursuant to Sections 308, 309 and 319 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 308, 309 and 319, and Part 25 of the Commission's rules, 47 C.F.R. Part 25, EchoStar Satellite Operating Corporation ("EchoStar") hereby files an application for authority to launch the AMC-14 satellite and to operate that satellite on the Direct Broadcast Satellite ("DBS") channels already licensed to EchoStar at the 61.5° W.L. orbital location.¹ By separate application, EchoStar is also amending its Special Temporary Authority to operate on channels 23 and 24 to permit the new satellite to operate on those unassigned channels.²

¹ *Application of Direct Broadcast Satellite Corporation, for Assignment of Direct Broadcast Satellite Orbital Positions and Channels*, Memorandum Opinion and Order, 8 FCC Rcd 7959 (rel. Nov. 10, 1993) (channels 2-22 even); *Rainbow DBS Company LLC, Assignor and EchoStar Satellite L.L.C., Assignee, Consolidated Application for Consent to Assignment of Space Station and Earth Station Licenses, and related Special Temporary Authority*, Memorandum Opinion and Order, FCC 05-177 (rel. Oct. 11, 2005) (assigning channels 1-21 odd from Rainbow DBS Company, LLC to EchoStar); Grant, File No. SAT-ASG-20070608-0081 (Sept. 27, 2007) (assigning channels 25-32 from Dominion Video Satellite, Inc. to EchoStar).

² See File Nos. SAT-STA-20060324-00029, SAT-STA-20070105-00008, SAT-STA-20070329-00058, and SAT-STA-20070926-01033 (special temporary authority to utilize

The AMC-14 satellite, a CONUS-beam satellite,³ will replace the EchoStar 3 satellite at the 61.5° W.L. orbital location.⁴ EchoStar plans to place AMC-14 at 61.5° W.L. following in-orbit testing at another location. Such in-orbit testing will be subject to receipt of a separate Special Temporary Authorization for such testing. EchoStar also plans to file a separate application to move EchoStar 3 to 61.35° W.L. prior to AMC-14's arrival at 61.5° W.L. Once at that location, traffic will be transferred from the EchoStar 3 satellite to the AMC-14 satellite. EchoStar 3 will eventually be redeployed to another orbital location. Among other things, the AMC-14 satellite will enable EchoStar to utilize more fully the DBS frequencies at 61.5° W.L. As the Commission is aware, due to transponder failures, the EchoStar 3 satellite has not been able to make full use of that spectrum.

EchoStar has purchased all of the capacity on the AMC-14 satellite and will control and operate the satellite under an agreement with SES Americom, Inc. ("SES"). EchoStar is filing this agreement separately with the Commission under a request for confidential treatment, and is also submitting a redacted version for the public record. Under the agreement, SES will provide Telemetry, Tracking and Command ("TT&C") communications for the satellite subject to EchoStar's control.

channels 23 and 24). While EchoStar requests authorization for AMC-14 to operate on all 30 licensed channels licensed to it at 61.5° W.L. and to conduct temporary operations on the two unassigned channels, it anticipates that EchoStar 12 will continue to operate on channels 1-23 odd and 24, as it does currently.

³ Because the EchoStar is seeking authority to operate the AMC-14 satellite at the 61.5° W.L. orbital location, it will not be required to provide DBS service to Alaska and Hawaii. *See* 47 C.F.R. § 25.148(c).

⁴ EchoStar will file separately a request for Special Temporary Authority to test the satellite at an appropriate orbital location after launch and before commencement of operations at 61.5° W.L.

Due to recent launch vehicle incidents involving the Proton rocket, the projected launch date for AMC-14 is in March of 2008, and accordingly EchoStar respectfully requests timely grant of the instant application.

I. TECHNICAL REQUIREMENTS OF PART 25

The technical information for the AMC-14 satellite required to be submitted pursuant to Part 25 of the Commission's Rules, 47 C.F.R. § 25.114, is set forth in the accompanying Technical Narrative (Attachment A), FCC Form 312, and Schedule S, all of which are incorporated into this application by reference.

II. PUBLIC INTEREST CONSIDERATIONS IN SUPPORT OF GRANT OF APPLICATION

Grant of this application will serve the public interest. First, the operation of AMC-14 at 61.5° W.L. will allow EchoStar to improve its service at this orbital location. EchoStar currently operates EchoStar 3 and EchoStar 12 at the 61.5° W.L. orbital location. EchoStar 12 is the former Rainbow satellite, which was built by Rainbow to operate on a total of 13 channels – Rainbow's 11-channel assignment plus the two unassigned channels 23 and 24. EchoStar 3 is licensed to operate the remaining channels – the even channels between 2 and 22 and channels 25 through 32. Due to transponder failures, however, EchoStar 3 is no longer able to use the full complement of these 19 channels, resulting in inefficient use of the DBS spectrum at one of the eight orbital locations allotted to the U.S. for DBS. Replacing the EchoStar 3 satellite with the new AMC-14 satellite will remedy that problem.

Further, the AMC-14 satellite will allow for higher power operations from the 61.5° W.L. orbital location, which will in turn provide consumers with the programming that they demand while preserving the quality of their reception. Competitive developments have placed a strain on the limited bandwidth available to DBS operators and have made it imperative to maximize

the available capacity from licensed spectrum. EchoStar must provide a large and growing amount of High Definition programming. This means that, in a finite spectrum assignment, EchoStar must allocate power to increasing its throughput. This has a price: less power remains available to preserve the quality of reception and link availability that customers have come to expect. In sum, additional power is necessary to respond to consumer demand and competitive pressures without sacrificing reception quality. AMC-14 will help achieve this.

The operation of AMC-14 at 61.5° will also free up EchoStar 3 for eventual redeployment. While EchoStar 3's capacity has diminished, the satellite still has many years of useful life and can provide valuable services from another orbital location where the inefficiencies associated with its transponder losses will have a less pronounced effect. The launch and operation of AMC-14 will better enable EchoStar to provide meaningful competition to terrestrial providers – both cable operators and the telephone companies – thus increasing competition in the MVPD market overall and benefiting consumers.

III. ECHOSTAR REQUESTS CONFIRMATION THAT THE AMC-14 SPACECRAFT MEETS THE ORIBTAL DEBRIS MITIGATION RULES OR, IN THE ALTERNATIVE, A LIMITED WAIVER OF THOSE RULES

Section 25.283(c) of the Commission's rules⁵ requires space station licensees to ensure, at spacecraft end-of-life, "that all stored energy sources on board the satellite are discharged by venting excess propellant, discharging batteries, relieving pressure vessels, and other appropriate measures." Similarly, Section 25.114(d)(14)(ii) requires space station applicants to address in their applications "whether stored energy will be removed at the spacecraft's end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored

⁵ 47 C.F.R. § 25.283(c).

energy, or through other equivalent procedures specifically disclosed.”⁶ The purpose of these rules, as is evident from Section 25.114(d)(14)(ii), is to “limit the probability of accidental explosion . . . after the completion of mission operations.”⁷

In the case of the AMC-14 spacecraft, the batteries will be left in a permanent state of discharge and all sources of stored energy with the exception of the oxidizer tanks will be removed or vented at the spacecraft’s end-of-life by leaving all fuel lines open. See Technical Narrative at A.10.2. Because of the design of the spacecraft bus by the satellite manufacturer, however, the small amount of oxidizer remaining in the oxidizer tanks of the spacecraft at end-of-mission cannot be vented. Instead, as affirmed in the attached Declaration from the satellite manufacturer (“Lockheed Memorandum”) (Attachment B), this residual oxidizer will be securely sealed using pyrotechnic valves upon the completion of the satellite’s transfer to geostationary orbit, and stored under conditions that would make even a leak extremely unlikely, and an accidental, post-mission explosion more unlikely still. EchoStar and SES have been informed by the satellite manufacturer, Lockheed Martin, that this is a feature common to all Lockheed A2100 spacecraft buses, on which the AMC-14 satellite was built.

As demonstrated in the Lockheed Memorandum, Lockheed has taken a number of measures to avoid an explosion. Specifically, first, it has built hardy tanks that are extremely unlikely to leak. The tanks are all-titanium vessels that have been inspected, tested and qualified

⁶ 47 C.F.R. § 25.114(d)(14)(ii).

⁷ Section 25.114(d)(14)(ii) of the Commission’s rules requires space station applicants to “assess[] and limit[] the probability of accidental explosions” at the end-of-mission by, among other things, “address[ing] whether stored energy will be removed at the spacecraft’s end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy, or through other equivalent procedures specifically disclosed in the application.” 47 C.F.R. § 25.114(d)(14)(ii).

to the stringent requirements of the MIL-STD-1522A (Standard General Requirements for Safe Design and Operation of Pressurized Missile and Space Systems) and the EWR-127-1 (Eastern and Western Range Safety Requirements). *See* Lockheed Memorandum at 1. Given the small amount of oxidizer that will remain in the oxidizer tanks, the tanks would have to be heated above 165° F (or 76° C) in order for their designed pressure tolerances to be exceeded. Such temperatures are highly unlikely to be experienced, and Lockheed's worst-case analysis shows that temperatures will be less than 95° F (or 35° C) at end-of-life, resulting in a maximum pressure well below the pressure tolerance of the tanks. *See id.* at 1. Second, Lockheed has designed and constructed the tanks in accordance with stringent technical standards to leak rather than burst in the case of a flaw in the materials. The tanks have accordingly been qualified as leak-before-burst pressure vessels. *Id.* at 1-2. For these reasons, post-mission storage of the oxidizer in this manner is no less secure than post-mission venting of these vessels.

In these circumstances, the Lockheed-designed and built tanks satisfy the Commission's rules. Section 25.283(c) mentions an illustrative list of "appropriate measures" for discharging energy sources. The measures taken by Lockheed to discharge the energy (including the ultra-secure storage of a small residual amount) should qualify as such an appropriate measure. The reading of the rule as setting forth an illustrative list of "appropriate measures" is confirmed by Section 25.114(d)(14)(ii), which requires applicants to address "whether [not that] stored energy will be removed at the spacecraft's end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy, *or through other equivalent procedures specifically disclosed in the application.*" In other words, Section 25.114(d)(14)(ii) contemplates

“other equivalent procedures” than the ones listed for limiting the probability of accidental explosions and does not limit these procedures to removal or depletion of energy.

Indeed, the Commission appeared to recognize that it is possible to satisfy the rule by means other than venting or relieving pressure when it granted Hughes Communications, Inc., an authorization for the Spaceway-3 satellite without a waiver of the orbital debris mitigation rules, even though four tanks on the Boeing 702 spacecraft would continue to have residual helium and xenon gas in them at the end-of-life. *See Hughes Communications, Inc.*, Stamp Grant, File Nos. SAT-MOD-20050523-00106, SAT-AMD-20060306-00025 (granted Jun. 24, 2006) (“*HNS*”). As Hughes noted in its amended application, “the standard practice of retaining four tanks with a low residual pressure is both a responsible approach and results in a far lower risk of accidental explosion over time than would any attempt to completely depressurize the tanks during or after the spacecraft’s mission.” Amendment at Att. A, p.20.

The Commission appeared to reach a similar conclusion when it evaluated a request by PanAmSat for a waiver of the orbital debris mitigation rules with respect to the sealing of oxidizer tanks on its Horizons 2 and Intelsat 11 spacecraft. *See PanAmSat H-2 Licensee Corp.*, Stamp Grant, File No. SAT-AMD-20070731-00108 (granted Nov. 30, 2007) (“*PanAmSat H-2*”); *PanAmSat Licensee Corp.*, Stamp Grant, File No. SAT-AMD-20070716-00102 (granted Oct. 4, 2007) (“*Intelsat 11*”). While the Commission granted the request for waiver in those cases, it stopped short of saying that the rule could never be complied with by alternative measures such as the ones taken here, if an appropriate showing is made. It found only that “the information submitted in [PanAmSat’s] application is not sufficient to support a finding that the intent of the rule would be satisfied by the described procedure for sealing the oxidizer tanks.” *PanAmsat H-2* at condition 5; *Intelsat 11* at condition 7. In contrast, the detailed information provided in this

case supports a finding that the AMC-14 spacecraft design is consistent with the Commission's orbital debris policies.

Should the Commission disagree, EchoStar hereby requests a waiver of Sections 25.283(c) and 25.114(d)(14)(ii) to the extent necessary. The Commission has authority to grant waivers of its rules for "good cause shown."⁸ In general, good cause exists if grant of a waiver would not undermine the purposes of the rule and would otherwise serve the public interest.⁹ In this case, the sealing of the residual oxidizer in the oxidizer tanks of the AMC-14 satellite would achieve the same purpose as the venting of the tanks, which is to limit the probability of post-mission explosion. At the spacecraft's end-of-mission, only a small amount of oxidizer will remain in the spacecraft's oxidizer tanks (expected to be less than 3% of the total volume of the tank). *See* Lockheed Memorandum at 1. Due to the design of the Lockheed Martin A2100 spacecraft bus, on which the AMC-14 satellite was based, this residual oxidizer cannot be vented but will be securely sealed in the spacecraft's two oxidizer tanks through the use of pyrotechnic valves upon completion of transfer orbit operations.

A waiver of the Commission's rules is also appropriate in the circumstances once "considerations of hardship, equity, or more effective implementation of overall policy" have been taken into account.¹⁰ In this case, requiring compliance with Section 25.283(c) would cause undue hardship to a greater degree than in the case of the Horizons 2 spacecraft, for which the Commission waived these rules. *See PanAmSat H-2* at condition 5. Like in *PanAmSat H-2*, the construction of the AMC-14 satellite is substantially complete and is scheduled for launch in

⁸ *See* 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153 (1969)..

⁹ *See, e.g., WAIT Radio*, 418 F.2d at 1157; *Intelsat North America LLC*, 22 FCC Rcd 11989, at ¶ 6 (2007); *Dominion Video Satellite, Inc.* 14 FCC Rcd 8182, at ¶ 5 (1999).

¹⁰ *WAIT Radio*, 418 F.2d at 1159.

a matter of months (March 2008). In fact, the satellite was scheduled for launch over a year ago, but its launch has been delayed due to the recent failures of the Proton launch vehicle. Thus, a design change of the magnitude necessary to allow the oxidizer tanks of the AMC-14 satellite to be vented cannot be accomplished at this time without great cost and without delaying the satellite's projected launch date even further. In addition, unlike the newer Orbital Sciences spacecraft at issue in *PanAmSat H-2* and *Intelsat 11*, the Lockheed Martin A2100 type of spacecraft has been in commercial service for over a decade. In very similar circumstances, the Commission has recently granted PanAmSat two waivers of Section 25.283(c) on the grounds that "modification of the spacecraft would present an undue hardship, given the late stage of satellite construction."¹¹ It should do so again here.

IV. WAIVER REQUEST

The AMC-14 satellite meets the technical requirements of Part 25 of the Commission's rules in all but one respect -- the cross-polarization isolation of the satellite's feeder link receive antennas within their primary coverage area is slightly less than the minimum 30 dB required by Sections 25.210(i) and 25.215 of the Commission's rules.¹² Over CONUS, the feeder link receive beams have a minimum cross-polarization of 27 dB or better. Accordingly, EchoStar hereby requests a waiver of Sections 25.210(i) and 25.215 to the extent required.

Commission rules may be waived if there is good cause to do so.¹³ Here, there is good cause, and the International Bureau has previously granted the same waiver to EchoStar with

¹¹ See *PanAmSat H-2* at condition 5; *Intelsat 11* at condition 7.

¹² 47 C.F.R. §§ 25.210(i) and 25.215. Section 25.210(i) applies to the Fixed Satellite Service and Section 25.215 applies to the DBS service. It is unclear which applies to the 17.3-17.8 GHz feeder link frequencies used for DBS service, so EchoStar is requesting a waiver of both rules to the extent necessary.

¹³ See 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

respect to the EchoStar 10 satellite at 110° W.L.¹⁴ The deviation from the rule in this case is even less significant than in that case. As with EchoStar 10, the lower cross-polarization isolation of the AMC-14 satellite *receive* antennas will not affect any other satellite and the small additional uplink interference into the AMC-14 satellite has already been taken into account in the satellite's link design. In fact, the risk presented by the lower cross-polarization isolation performance of the satellite's antennas is that of additional self-interference, which the satellite is designed to tolerate.¹⁵ The small shortfall of no more than 3 dB in the cross-polarization isolation of the satellite's receive antennas will result in negligible levels of self-interference into the AMC-14 satellite compared to other link degradations, and this effect has been fully factored into the design of the link budgets given in the associated Schedule S submission. Accordingly, consistent with past precedent, a waiver of Sections 25.210(i) and 25.215 of the Commission's rules is warranted here.

V. STATUS OF OPERATIONS

EchoStar intends to operate all of the transponders on this DBS satellite on a non-broadcast, non-common carrier basis.¹⁶ As with EchoStar's current services, service from the proposed AMC-14 satellite will be offered to consumers on a subscription basis.

VI. ITU COST RECOVERY

EchoStar is aware that as a result of the actions taken at the 1998 Plenipotentiary Conference, as modified by the ITU Council in June 2001, processing fees are now charged by

¹⁴ See Stamp Grant at conditions 2 and 3, File Nos. SAT-LOA-20051221-00267, SAT-AMD-20060120-00007, SAT-MOD-20060329-00031 (granted May 11, 2006).

¹⁵ See *New Skies* at ¶ 19 (“the only party that will suffer an increase in interference would be New Skies”).

¹⁶ See 47 C.F.R. §§ 25.114(c)(11), 25.114(d)(11).

the ITU for satellite network filings. As a consequence, Commission applicants are responsible for any and all fees charged by the ITU. EchoStar hereby states that it is aware of, and unconditionally accepts, this requirement and its responsibility to pay any ITU cost recovery fees for the ITU filings associated with this application. Invoices for such fees may be sent to the contact representative listed in the accompanying FCC Form 312.

VII. 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, EchoStar 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.

VIII. CONCLUSION

For the foregoing reasons, EchoStar respectfully requests that the Commission promptly grant this application for launch and operating authority as in the public interest, convenience and necessity.

Respectfully submitted,
EchoStar Satellite Operating Corporation

/s/

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