



File # SAT-MOD-20191223-00152

Call Sign S2181 Grant Date March 5, 2020  
(or other identifier)

Approved by OMB  
3060-0678

Term Dates  
From 2/7/2020 To: 1/1/2022

Approved:

*John W. Whalen*  
John W. Whalen  
Acting Chief, Satellite Policy Branch

Date & Time Filed: Dec 23 2019 8:00:56:130PM  
File Number: SAT-MOD-20191223-00152

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD – MAIN FORM

FCC Use Only

FCC 312 MAIN FORM FOR OFFICIAL USE ONLY

#### APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:  
Modification Request to Extend License Term for AMC-16

#### 1-8. Legal Name of Applicant

<b>Name:</b>	SES Americom, Inc./EchoStar Satellite Services L.L.C.	<b>Phone Number:</b>	202-478-7143
<b>DBA</b>		<b>Fax Number:</b>	202-478-7111
<b>Name:</b>			
<b>Street:</b>	1129 20th Street NW Suite 1000	<b>E-Mail:</b>	petra.vorwig@ses.com
<b>City:</b>	Washington	<b>State:</b>	DC
<b>Country:</b>	USA	<b>Zipcode:</b>	20036
<b>Attention:</b>	Ms Petra A Vorwig		

**ATTACHMENT TO GRANT**  
 SES Americom, Inc./EchoStar Satellite Services LLC  
 IBFS File No. SAT-MOD-20191223-00152

<b>IBFS File No(s):</b>	SAT-MOD-20191223-00152	<b>G R A N T E D – With Conditions</b>  <b>International Bureau Satellite Division</b>
<b>Licensee/Grantee:</b>	SES Americom, Inc. (SES)/EchoStar Satellite Services LLC (EchoStar)	
<b>Call Sign:</b>	S2181	
<b>Satellite Name:</b>	AMC-16	
<b>Orbital Location: (required station- keeping tolerance)</b>	85.0° W.L. (+/- 0.05 degrees east/west station keeping)	
<b>Administration:</b>	United States of America	
<b>Nature of Service:</b>	Fixed-Satellite Service (FSS), including Direct-to-Home (DTH)	
<b>Scope of Grant:</b>	Authority to modify the authorization for AMC-16, a hybrid Ku/Ka-band fixed-satellite service space station operating at 85.0° W.L., <sup>1</sup> in order to extend its license term through January 1, 2022.	
<b>Previous Grant(s):</b>	Authority to reorient the Ka-band beams to provide coverage of the United States, Canada, and parts of the Caribbean. <i>See</i> IBFS File No. SAT-MOD-20170301-00025 (granted May 18, 2017).  Authority to launch and operate AMC-16 at 85° W.L. to provide FSS, including DTH in the 11.7-12.2 GHz, 14.0-14.5 GHz, 18.6-18.8 GHz, 19.7-20.2 GHz, 28.4-28.6 GHz, and 29.5-30.0 GHz frequency bands. <i>See</i> IBFS File Nos. SAT-MOD-20121224-00221; SAT-MOD20060929-00113; SAT-MOD-20050621-00132; SAT-AMD-20051115-00218; SAT-RPL-20040227-00024; SAT-MOD-20040227-00022; and SAT-LOA-19950929-00133.	
<b>Service Area(s):</b>	Continental United States, Alaska, Hawaii, Canada, and parts of the Caribbean. <i>See</i> Schedule S Tech Report of IBFS File No. SAT-MOD-20170301-00025. <sup>2</sup>	
<b>Frequencies:</b>	11.7-12.2 GHz (space-to-Earth) 14.0-14.5 GHz (Earth-to-space) 18.6-18.8 GHz and 19.7-20.2 GHz (space-to-Earth) 28.4-28.6 GHz and 29.5-30.0 GHz (Earth-to-space)  Telemetry, tracking, & command center frequencies: 11700.75 MHz (space-to-Earth) 12199.25 MHz (space-to-Earth) 18584.0 MHz (space-to-Earth) 14001.5 MHz (Earth-to-space)	
<b>Unless otherwise specified herein, operations under this grant must comport with the legal and technical specifications set forth by the applicant or petitioner and with Federal Communication Commission's rules not waived herein. This grant is also subject to the following conditions:</b>		
<ol style="list-style-type: none"> <li>1. SES and EchoStar must prepare the necessary information, as may be required, for submission to the International Telecommunication Union (ITU) to initiate and complete the advance publication, coordination, due diligence, and notification process of this space station, in accordance with the ITU Radio Regulations. SES will be held responsible for all cost-recovery fees associated with ITU filings.</li> </ol>		

<sup>1</sup> *See* IBFS File No. SAT-MOD-20121224-00221 (granted Mar. 22, 2013). The Ku-band portion of the license was assigned to EchoStar in 2015. *See* IBFS File No. SAT-ASG-20141020-00111 (granted Mar. 24, 2015).

<sup>2</sup> This is the most recent technical information regarding the AMC-16. Narrative at 1, FN 2.

**ATTACHMENT TO GRANT**  
SES Americom, Inc./EchoStar Satellite Services LLC  
IBFS File No. SAT-MOD-20191223-00152

No protection from interference caused by radio stations authorized by other administrations is guaranteed unless coordination and notification procedures are timely completed or, with respect to individual administrations, coordination agreements are successfully completed. Any radio station authorization for which coordination has not been completed may be subject to additional terms and conditions as required to effect coordination of the frequency assignments of other administrations. See 47 CFR § 25.111.

2. In connection with the provision of service in any particular country, SES and EchoStar are obliged to comply with the applicable laws, regulations, rules, and licensing procedures of that country.
3. SES and EchoStar must operate AMC-16 at the 85.0° W.L orbital location in accordance with any existing or future coordination agreements for this location. In the absence of a coordination agreement, such communications must comply with applicable provisions of the ITU Radio Regulations as the Commission cannot guarantee the success of the required coordination.
4. While at the 85.0° W.L. orbital location, SES and EchoStar must maintain the AMC-16 satellite with an east/west longitudinal station-keeping tolerance of +/- 0.05 degrees.
5. SES and EchoStar are authorized to operate the AMC-16 satellite's Ka-band TT&C beacon with left-hand circular polarization in the frequency band 18.58385-18.58415 GHz.
6. SES and EchoStar are authorized to provide DTH services over the AMC-16 satellite, in both the Ka- and Ku-bands, in accordance with SES Americom, Inc., Applications for Modification of Fixed-Satellite Service Space Station License, *Order and Authorization*, 18 FCC Rcd 16589 (2003).
7. The operations of AMC-16 must comply with any agreement previously coordinated with United States Government systems pursuant to footnote US334 to the Table of Frequency Allocations or must request coordination of the new beam pattern.
8. The license term for Call Sign S2181 is extended from Feb. 7, 2020 through Jan. 1, 2022.

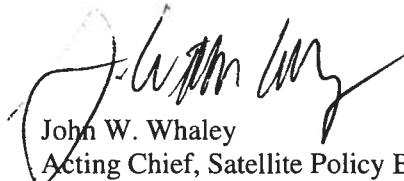
Licensees/grantees are afforded thirty (30) days from the date of release of this action to decline the grant as conditioned. Failure to respond within this period will constitute formal acceptance of the grant as conditioned.

This action is taken pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release.

Station licenses are subject to the conditions specified in Section 309(h) of the Communications Act of 1934, as amended, 47 U.S.C. § 309(h).

Action Date:	March 5, 2020	
Term Dates	From: February 7, 2020	To: January 1, 2022

**Approved:**



John W. Whaley  
Acting Chief, Satellite Policy Branch

9-16. Name of Contact Representative

<b>Name:</b>	Karis Hastings	
<b>Company:</b>	SatCom Law LLC	
<b>Street:</b>	1317 F Street, N.W.	<b>Phone Number:</b> 2025990975
	Suite 400	<b>Fax Number:</b>
<b>City:</b>	Washington	<b>E-Mail:</b> karis@satcomlaw.com
<b>Country:</b>	USA	<b>State:</b> DC
<b>Attention:</b>		<b>Zipcode:</b> 20004-
		<b>Relationship:</b> Legal Counsel

CLASSIFICATION OF FILING

17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.

- a1. Earth Station
- a2. Space Station

- (N/A) b1. Application for License of New Station
- (N/A) b2. Application for Registration of New Domestic Receive-Only Station
- b3. Amendment to a Pending Application
- b4. Modification of License or Registration
- b5. Assignment of License or Registration
- b6. Transfer of Control of License or Registration
- b7. Notification of Minor Modification
- (N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
- (N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
- (N/A) b10. Other (Please specify)
- (N/A) b11. Application for Earth Station to Access a Non-U.S. satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States
- (N/A) b12. Application for Database Entry
- b13. Amendment to a Pending Database Entry Application
- b14. Modification of Database Entry

17c. Is a fee submitted with this application?

If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R.Section 1.1114).

Governmental Entity  Noncommercial educational licensee

Other(please explain):

17d.

Fee Classification BFY – Space Station Modification(Geostationary)

18. If this filing is in reference to an existing station, enter:

(a) Call sign of station:

S2181

19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:

(a) Date pending application was filed:

(b) File number:

SATMOD2017030100025

## TYPE OF SERVICE

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

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

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

Common Carrier  Non-Common Carrier

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

- Using U.S. licensed satellites
- Using Non-U.S. licensed satellites

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

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

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

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

Frequency Lower: \_\_\_\_\_ Frequency Upper: \_\_\_\_\_ (Please specify additional frequencies in an attachment)

## TYPE OF STATION

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

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

26. TYPE OF EARTH STATION FACILITY:

- Transmit/Receive
- Transmit-Only
- Receive-Only
- N/A

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

## PURPOSE OF MODIFICATION

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

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

## ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.

Yes  No

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

29. Is the applicant a foreign government or the representative of any foreign government?

Yes  No

30. Is the applicant an alien or the representative of an alien?

Yes  No  N/A

31. Is the applicant a corporation organized under the laws of any foreign government?

Yes  No  N/A

32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?

Yes  No  N/A

33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?  Yes  No  N/A

34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote. Question 34

#### 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

Question 40 (SES)

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 (Echo)

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.)

SES Americom, Inc. and EchoStar Satellite Services L.L.C. seek to extend their joint license to operate the Ku- and Ka-band satellite, AMC-16, at 85° W.L. until January 1, 2022. Please see attached 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.)

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

45. Name of Person Signing  
Petra A. Vorwig

46. Title of Person Signing  
Senior Legal & Regulatory Counsel

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WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT  
(U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION  
(U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

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**THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.**

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

In the Matter of )  
 )  
SES AMERICOM, INC. and ) File No. SAT-MOD-\_\_\_\_\_  
ECHOSTAR SATELLITE SERVICES L.L.C. ) Call Sign S2181  
 )  
Application for Modification of AMC-16 )  
Fixed-Satellite Space Station License )

**APPLICATION OF SES AMERICOM, INC.**

SES Americom, Inc. (“SES”) and EchoStar Satellite Services L.L.C.<sup>1</sup> (“EchoStar,” and with SES, “the Licensees”) respectfully request modification of their joint license for the AMC-16 hybrid Ku/Ka-band fixed-satellite service space station to extend the license term to January 1, 2022. Grant of the requested modification will serve the public interest by allowing SES and EchoStar to continue offering services using AMC-16, thus promoting efficient use of satellite and orbital resources. A completed FCC Form 312 is attached, and the Licensees incorporate by reference the information previously provided in support of AMC-16.<sup>2</sup>

AMC-16 is a hybrid Ku/Ka-band satellite that is licensed by the Commission to operate at 85° W.L.<sup>3</sup> with a license term that expires February 7, 2020. The Licensees request an

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<sup>1</sup> This license was formerly held by EchoStar Satellite Operating Corporation. *See* File No. SAT-ASG-20191220-00150, deemed granted pursuant to Section 25.119(i) effective Dec. 23, 2019.

<sup>2</sup> The most recent technical information regarding AMC-16 is found in File No. SAT-MOD-20170301-00025. *See also* File Nos. SAT-MOD-20121224-00221; SAT-MOD-20060929-00113; SAT-MOD-20050621-00132; SAT-AMD-20051115-00218; SAT-RPL-20040227-00024; SAT-MOD-20040227-00022 & SAT-LOA-19950929-00133.

<sup>3</sup> *See* File No. SAT-MOD-20121224-00221, granted March 22, 2013. The Ku-band portion of the license was assigned to EchoStar in 2015. *See* File No. SAT-ASG-20141020-00111, granted March 24, 2015.

extension of the AMC-16 license term to January 1, 2022. SES, which is responsible for operating the satellite, has calculated that there is sufficient fuel onboard AMC-16 for the spacecraft to continue providing reliable service during the proposed extended license term and to deorbit the spacecraft to a disposal altitude of at least 281 kilometers above the geostationary arc, as previously authorized.

AMC-16 experienced a temporary anomaly affecting a solar array circuit in September 2019. This anomaly is known to affect Lockheed A2100 satellite buses. SES performed an internal analysis and modified its operating processes to ensure that AMC-16 can achieve all post mission disposal requirements.

Apart from these issues, the satellite's overall health is good, with all satellite subsystems functioning nominally. There is no single point of failure in the satellite's design, and there is no problem with the satellite's TT&C links, including the back-up TT&C links. As a result, extending the license term for AMC-16 will serve the public interest by allowing the Licensees to continue to use the spacecraft to provide service to customers, promoting the efficient use of satellite and orbital resources.

For the foregoing reasons, the Licensees seek a modification of the AMC-16 license to extend the satellite's license term through January 1, 2022.

Respectfully submitted,

SES AMERICOM, INC.

By: /s/ Jennifer A. Manner

Jennifer A. Manner  
Senior Vice President, Regulatory Affairs  
EchoStar Satellite Services L.L.C.  
11717 Exploration Lane  
Germantown, MD 20876

By: /s/ Petra A. Vorwig

Petra A. Vorwig  
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Washington, D.C. 20004  
Tel: (202) 599-0975  
*Counsel to SES Americom, Inc.*

Dated: December 23, 2019

**EXHIBIT 3**

**ALIEN OWNERSHIP**  
(Response to Question 32 - Alien Ownership)

Section 310(b)(4) of the Communications Act of 1934, as amended, establishes certain limitations on indirect foreign ownership and voting of certain common carrier and broadcast licensees. By definition, these limitations do not apply to the non-broadcast, non-common carrier operations proposed in this application.