

S2445 SAT-MOD-20170810-00115 IB2017002228
SES Americom, Inc.
AMC-1



File # SAT-MOD-20170810-00115

Call Sign S2445 Grant Date 11/22/17

(or other identifier)

Term Dates

From 11/22/17 To: 06/30/21

Approved by OMB
3060-0678

Approved:

Stephen J. Duall
Stephen J. Duall
Chief, Satellite Policy Branch

Date & Time Filed: Aug 10 2017 11:31:24:033AM
File Number: SAT-MOD-20170810-00115


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 to reassign AMC-1 (call sign S2445) to 130.9 WL

1-8. Legal Name of Applicant			
Name:	SES Americom, Inc.	Phone Number:	202-478-7143
DBA Name:		Fax Number:	202-478-7111
Street:	1129 20th Street NW Suite 1000	E-Mail:	petra.vorwig@ses.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20036 -
Attention:	Ms Petra A Vorwig		

ATTACHMENT TO GRANT
SES Americom, Inc.
IBFS File No. SAT-MOD-20170810-00115

IBFS File No(s):	SAT-MOD-20170810-00115	GRANTED – With Conditions  International Bureau Satellite Division
Licensee/Grantee:	SES Americom, Inc.	
Call Sign:	S2445	
Satellite Name:	AMC-1	
Orbital Location: (required station-keeping tolerance)	130.9° W.L. (+/- 0.05 degrees east-west station keeping)	
Administration:	United States of America	
Nature of Service:	Fixed-Satellite Service (FSS); Direct-to-Home (DTH) ¹	
Scope of Grant:	Grant of authority to (1) conduct telemetry, tracking and command operations necessary to drift the AMC-1 space station from the 129.15° W.L. orbital location to the 130.9° W.L. orbital location, and to maintain AMC-1 at 130.9° W.L., using the following center frequencies: 6423.5 MHz (Earth-to-space), 3700.5 MHz, 4199.5 MHz, and 12.198 GHz (space-to-Earth); (2) provide fixed satellite service, including direct-to-home services, during the drift to the 130.9° W.L. orbital location in the 11.7-12.2 GHz (space-to-Earth) and 14.0-14.5 GHz (Earth-to-space) frequency bands; (3) provide fixed satellite service at 130.9° W.L. in the 3700-4200 MHz (space-to-Earth), 5925-6425 MHz (Earth-to-space), 11.7-12.2 GHz (space-to-Earth), and 14.0-14.5 GHz (Earth-to-space) frequency bands, including direct-to-home services in the 11.7-12.2 GHz frequency band; and (4) extend the license term to June 30, 2021.	
Previous Grant(s):	<p>Grant of a two-year license extension of the AMC-1 space station at the 129.15° W.L. orbital location. IBFS File No. SAT-MOD-20160816-00083 (granted Oct. 5, 2016).</p> <p>Grant of authority to relocate the AMC-1 space station to the 129.15° W.L. orbital location. IBFS File Nos. SAT-MOD-20140730-00089 and SAT-AMD-20150219-00006 (granted May 28, 2015).</p> <p>Grant of a five-year license extension of the AMC-1 space station at the 103.0° W.L. orbital location. IBFS File No. SAT-MOD-20110718-00130 (granted Oct. 13, 2011).</p> <p>Order granting authority to relocate the GE-1 space station to the 103.0° W.L. orbital location and certain modifications relating to transponder power and configuration. IBFS File No. SAT-MOD-19930805-00031 (released Mar. 1, 1994).</p> <p>Order granting extension of time to construct and launch the Satcom H-1 space station and to change the authorized orbital location to 85.0° W.L. IBFS File No. SAT-MOD-19911114-00033 (released Aug. 11, 1992).</p> <p>Order granting authority to construct, launch, and operate the Satcom H-1 space station. <i>Applications of GE American Communications, Inc. for Authority to Construct, Launch and Operate Space Stations in the Domestic Fixed-Satellite Service, Order & Authorization, 3 FCC Rcd 6984 (1988).</i></p>	
Service Area(s):	Contiguous United States, Alaska, Hawaii, Mexico, and parts of Canada and the Caribbean. <i>See</i> Schedule S and accompanying .gxt files.	
Frequencies:	3700-4200 MHz (space-to-Earth) 5925-6425 MHz (Earth-to-space)	

¹ For purposes of this condition, DTH means the services subject to section 25.701 of the Commission's rules. 47 CFR § 25.701.

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	11.7-12.2 GHz (space-to-Earth) 14.0-14.5 GHz (Earth-to-space) Telemetry, tracking, & command center frequencies: 3700.5 MHz (space-to-Earth) 4199.5 MHz (space-to-Earth) 6423.5 MHz (Earth-to-space) 12198 MHz (space-to-Earth)
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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:

1. All operations of AMC-1 during drift from the 129.15° W.L. orbital location to the 130.9° W.L. orbital location must be on an unprotected and non-harmful interference basis, *i.e.*, the AMC-1 space station must not cause harmful interference to, and must not claim protection from interference caused to it by, any other lawfully operating station. In the event of harmful interference, SES Americom must cease operations immediately upon notification of such interference, and must inform the Commission, in writing, immediately of such an event.
2. SES Americom must coordinate operations of AMC-1 with existing geostationary space stations to ensure that no unacceptable interference results during the drift to the 130.9° W.L. orbital location.
3. During the drift to the 130.9° W.L. orbital location, SES Americom must operate only the 11.7-12.2 GHz (space-to-Earth) and 14.0-14.5 GHz (Earth-to-space) frequency bands and the TT&C frequencies authorized for the AMC-1 space station.
4. While at the 130.9° W.L. orbital location, SES Americom must maintain the AMC-1 space station with an east/west longitudinal station-keeping tolerance of +/- 0.05 degrees.
5. In connection with the provision of service in any particular country, SES Americom is obliged to comply with the applicable laws, regulations, rules, and licensing procedures of that country.
6. SES Americom must operate AMC-1 at the 130.9° W.L. orbital location in compliance with all existing or future coordination agreements for this location.
7. The U.S. Administration will not object to use of the AMC-1 space station by the Administration of the Netherlands for bringing into use or continuing use of orbital assignments in the 11.7-12.2 GHz and 14.0-14.5 GHz frequency bands at the 130.9° W.L. orbital location contained in the filing NSS-G4-6.
8. The operations of AMC-1 and associated earth stations must comport with the applicable uplink and downlink limits in 47 CFR § 25.140(a)(3) of the Commission's rules, unless SES Americom coordinates any non-conforming operations with the operations of U.S.-licensed geostationary orbit space stations within 6 degrees of the 130.9° W.L. orbital location. SES Americom must also comport with the maximum power limits indicated in existing or future coordination agreements at 130.9° W.L. Non-conforming operation must also be coordinated with respect to those operations of non-U.S.-licensed space stations within 6 degrees of 130.9° W.L. involving approved communications with U.S.-licensed earth stations.
9. Pursuant to footnote US342 to the United States Table of Frequency Allocations, 47 CFR § 2.106, US342, services operating in the 14.47-14.5 GHz band shall take all practicable steps to protect the radio astronomy service from harmful interference.
10. SES Americom's request for a waiver of section 25.114(c)(vi)(A) of the Commission's rules, 47 CFR § 25.114(c)(vi)(A), is granted. Section 25.114(c)(vi)(A) requires applicants to provide predicted space station antenna gain contour(s) for each transmit and each receive antenna beam and nominal orbital

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location requested. The main purpose of the contour map is to allow evaluation of the potential for harmful interference with other operators and services in the frequency band. SES Americom states that it did not provide gain information for the global horn antenna in accordance with section 25.114(c)(vi)(A) because the space station manufacturer did not provide data for this antenna in the required format. We find that the gain vs. off-set angle information is provided as Figure A-8 in Annex A of the Technical Appendix, IBFS File Nos. SAT-AMD-20150219-00006 and SAT-MOD-20140730-00089, together with the descriptive characterization provided on page 4 of that Technical Appendix, provide a sufficiently complete description of the global horn antenna on the AMC-1 space station to enable the Commission to determine whether the AMC-1 space station meets the Commission's technical requirements.

11. We grant the request of SES Americom for waivers of sections 25.114(d)(14)(ii) and 25.283(c) of the Commission's rules, 47 CFR §§ 25.114(d)(14)(ii) and 25.283(c). These rules require an applicant to demonstrate that all stored energy will be vented at the spacecraft's end of life. AMC-1 is a Lockheed Martin A2100A model spacecraft that is not designed to vent all of its pressurized systems. Following launch of the spacecraft on September 8, 1996, two oxidizer tanks were permanently sealed by firing pyrotechnic valves. As a result, SES Americom states that at the end of AMC-1's operational life, there will be oxidizer remaining in the tanks that cannot be vented. SES Americom states that the residual oxidizer in AMC-1's two oxidizer tanks have masses of 7.9 kg each and volumes of 229 liters each at a temperature of 21° Celsius. The pressure of each of the oxidizer tanks is 18.75 bar at a temperature of 21° Celsius. We grant the requested waiver because AMC-1 was launched before section 25.283(c) became effective and compliance would require direct retrieval of the spacecraft, which is not currently possible. In making this determination, however, we note that the information submitted in the 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.²
12. The license term for the AMC-1 space station is extended from May 31, 2018, through June 30, 2021.
13. Within 30 days of the completion of end-of-life maneuvers, SES Americom must send a letter to the Chief, Satellite Division, International Bureau, indicating the apogee and perigee of the AMC-1 disposal orbit.

Licensee/grantee is 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:	November 22, 2017	
Term Dates	From: November 22, 2017	To: June 30, 2021

² See IBFS File No. SAT-MOD-20110718-00130 (granted Oct. 13, 2011).

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Approved:



Stephen J. Duall
Chief, Satellite Policy Branch

9-16. Name of Contact Representative

Name:	Karis A. Hastings	Phone Number:	202-599-0975
Company:	SatCom Law LLC	Fax Number:	
Street:	1317 F St NW Suite 400	E-Mail:	karis@satcomlaw.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20004-
Attention:		Relationship:	

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:
S2445

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:

SATMOD2016081600083

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?	<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? Yes No N/A

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

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? 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

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. Exhibit B

41. By checking Yes, the undersigned certifies, that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; for these purposes.

Yes No

42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43.

Yes No

42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?

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

SES Americom, Inc. hereby applies for a modification of the license for its AMC-1 spacecraft, call sign S2445, to reassign the satellite to 130.9 degrees W.L. and to extend the satellite's license term to June 30, 2021. 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

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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