

S2135      SAT-STA-20170623-00094      IB2017001678  
SES Americom, Inc.  
AMC-4



\*with conditions

File # SAT-STA-20170623-00094

Call Sign S2135 Grant Date 06/28/17

(or other identifier)

Term Dates period of  
From 06/28/17 To: 30 days

Approved: *Stephen J. Duall*

Stephen J. Duall  
Chief, Satellite Policy Branch

Approved by OMB  
3060-0678

Date & Time Filed: Jun 23 2017 10:32:33:370AM  
File Number: SAT-STA-20170623-00094  
Callsign:

FEDERAL COMMUNICATIONS COMMISSION  
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY

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APPLICANT INFORMATION


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

Request for Special Temporary Authority to Position and Operate AMC-4 (Call Sign S2135) at 85.0 W.L.

1. 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-STA-20170623-00094

<b>IBFS File No(s):</b>	SAT-STA-20170623-00094	<b>GRANTED – With Conditions</b>    <b>International Bureau Satellite Division</b>
<b>Licensee/Grantee:</b>	SES Americom, Inc.	
<b>Call Sign:</b>	S2135	
<b>Satellite Name:</b>	AMC-4	
<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 <sup>1</sup>	
<b>Nature of Service:</b>	Fixed-Satellite Service (FSS); Direct-to-home (DTH) <sup>2</sup> ; Telemetry, Tracking, and Command (TT&C)	
<b>Scope of Grant:</b>	Special temporary authority for a period of 30 days to (1) conduct TT&C operations necessary to drift AMC-4 to the 85.0° W.L. orbital location, using the following center frequencies: 3700.5 MHz, 4199.5 MHz, 11.702 GHz, and 12.198 GHz (space-to-Earth); and 6423.5 MHz (Earth-to-space), and (2) authority to provide FSS from 85.0° W.L. in the 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth), 13.75-14.0 GHz, (Earth-to-space) and 14.0-14.5 GHz (Earth-to-space) frequency bands, including DTH in the 11.7-12.2 GHz (space-to-Earth) frequency band. <sup>3</sup>	
<b>Service Area(s):</b>	CONUS, Hawaii, and Puerto Rico; parts of Alaska, Canada, and Mexico. <i>See</i> IBFS File No. SAT-MOD-20170316-00051, Schedule S and accompanying GIMS file (coverage area authorized for AMC-6 at the 85.0° W.L. orbital location).	
<b>Frequencies:</b>	11.45-11.7 GHz (space-to-Earth) 11.7-12.2 GHz (space-to-Earth) 13.75-14.0 GHz (Earth-to-space) 14.0-14.5 GHz (Earth-to-space)  Telemetry, Tracking & Command center frequencies: 3700.5 MHz, 4199.5 MHz, 11.702 GHz, and 12.198 GHz (space-to-Earth) 6423.5 MHz (Earth-to-space)	

<sup>1</sup> SES Americom states that it will operate AMC-4 pursuant to an agreement with EchoStar Satellite Operating Corporation, which holds the license for the conventional Ku-band payload (11.7-12.2 GHz and 14.0-14.5 GHz frequency bands) of the AMC-16 Ku/Ka-band spacecraft located at 85.0° W.L. AMC-4 will operate in the extended Ku-band (11.45-11.7 GHz and 13.75-14.0 GHz) frequency bands under ITU network filing NSS-G4-10 of the Netherlands Administration.

<sup>2</sup> For purposes of this condition, DTH means the services subject to section 25.701 of the Commission's rules. 47 CFR § 25.701.

<sup>3</sup> We note that the AMC-4 space station is currently authorized to drift from its assigned location at 67.0° W.L. to the 134.9° W.L. orbital location. IBFS File No. SAT-STA-20170503-00070 (granted June 7, 2017). An accompany modification application was filed for authority to operate AMC-4 at the 134.9° W.L. orbital location. IBFS File No. SAT-MOD-20170518-00073.

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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. Operations pursuant to this special temporary authority must be on an unprotected and non-harmful interference basis, i.e., the AMC-4 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 any 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 the operations of AMC-4 with existing geostationary space stations to ensure that no unacceptable interference results from its operations during drift to the 85.0° W.L. orbital location.
3. SES Americom must operate only the TT&C frequencies authorized for AMC-4 during the space station's drift to the 85.0° W.L. orbital location.
4. While at the 85.0° W.L. orbital location, SES Americom must maintain the AMC-4 spacecraft 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-4 at the 85.0° W.L. orbital location in compliance with all 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 coordinations.
7. The operations of AMC-4 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 85.0° W.L. orbital location. SES Americom must also comport with the maximum power limits indicated in existing or future coordination agreements at 85.0° 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 85.0° W.L. involving approved communications with U.S.-licensed earth stations.
8. SES Americom's use of the 11.45-11.7 GHz (space-to-Earth) frequency band is subject to footnote US211 to the United States Table of Frequency Allocations, 47 CFR § 2.106, US211, which urges applicants for airborne or space station assignments to take all practicable steps to protect radio astronomy observations in the adjacent bands from harmful interference, consistent with footnote US74.
9. SES Americom's operation of the AMC-4 space station in the 11.45-11.7 GHz (space-to-Earth) frequency band is limited to international operations in accordance with footnote NG52 to the United States Table of Frequency Allocations. 47 CFR § 2.106, NG52.
10. 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.
11. On our own motion, waiver of section 25.202(g) of the Commission's rules, 47 CFR § 25.202(g), IS GRANTED. Section 25.202(g) requires, in relevant part, that telemetry, tracking, and command signals be transmitted within assigned frequency bands. SES previously sought and was granted waiver of section 25.202(g) to conduct TT&C with AMC-4 at the 67.0° W.L. orbital location using center

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frequencies at 3700.5 MHz (space-to-Earth) and 6423.5 MHz (Earth-to-space), which were outside the frequency bands in which AMC-4 was providing service.<sup>4</sup> Similarly, we grant a waiver for TT&C operations using these center frequencies, in addition to 4199.5 MHz (space-to-Earth), at the 85.0° W.L. orbital location based upon the following findings: (a) operations in the C-band have already been coordinated by SES Americom for the AMC-2 space station at the nominal 85.0° W.L. orbital location, and therefore operation of an additional satellite will have minimal impact on adjacent satellite operations; (b) TT&C operations using the 3700.5 MHz, 4199.5 MHz, and 6423.5 MHz center frequencies must be on a non-harmful interference basis; and (c) SES Americom must accommodate future space station networks that are compliant with section 25.202(g) of the Commission's rules.

12. Pursuant to footnote US337 to the United States Table of Frequency Allocations, 47 CFR § 2.106, US337, any earth station in the United States and its possessions communicating with the AMC-4 space station in the 13.75-13.8 GHz (Earth-to-space) frequency band is required to coordinate through National Telecommunications and Information Administration's (NTIA's) Interdepartment Radio Advisory Committee's (IRAC's) Frequency Assignment Subcommittee (FAS) to minimize interference to the National Aeronautics and Space Administration Tracking and Data Relay Satellite System, including manned space flight.
13. Operations of any earth station in the United States and its possessions communicating with the AMC-4 space station in the 13.75-14.0 GHz band (Earth-to-space) must comply with footnote US356 to United States Table of Frequency Allocations, 47 CFR § 2.106, US356, which specifies a mandatory minimum antenna diameter of 4.5 meters and the equivalent isotropically radiated powers (e.i.r.p.) of any emission should be at least 68 dBW and should not exceed 85 dBW. Operations of any earth station located outside the United States and its possessions communicating with the AMC-4 space station in the 13.75-14.0 GHz band (Earth-to-space) frequency band are subject to footnote 5.502 to the ITU Radio Regulations, which allows a minimum antenna diameter of 1.2 meters for earth stations of a geostationary satellite orbit network and specifies mandatory power limits.
14. Pursuant to footnote US356 to the United States Table of Frequency Allocations, 47 CFR § 2.106, US356, in the 13.75-14.0 GHz band (Earth-to-space), receiving space stations in the Fixed-Satellite Service must not claim protection from radiolocation transmitting stations operating in accordance with the United States Table of Frequency Allocations.
15. Operations of any earth station in the United States and its possessions communicating with the AMC-4 space station in the 13.77-13.78 GHz band (Earth-to-space) must comply with footnote US357 to United States Table of Frequency Allocations, 47 CFR § 2.106, US357, which specifies that a required maximum e.i.r.p. density of emissions not exceeded 71 dBW in any 6 MHz band for communications with a space station in geostationary-satellite orbit. Operations of any earth station located outside the United States and its possessions communicating with the AMC-4 space station in the 13.77-13.78 GHz band (Earth-to-space) are subject to footnote 5.503 to the ITU Radio Regulations, which specifies a required maximum e.i.r.p. density of emissions (limit is dependent on antenna diameter) for communications with a space station in geostationary-satellite orbit.
16. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at SES Americom's own risk.

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 CFR § 0.261, and is effective upon release.

<sup>4</sup> IBFS File No. SAT-MOD-20100623-00144 (granted Nov. 4, 2010).

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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).		
<b>Action Date:</b>	June 28, 2017	
<b>Term Dates</b>	<b>From:</b> June 28, 2017	<b>To:</b> period of 30 days
<b>Approved:</b>	 Stephen J. Duall Chief, Satellite Policy Branch	

<b>2. Contact</b>	
<b>Name:</b> Karis Hastings <b>Company:</b> SatCom Law LLC <b>Street:</b> 1317 F St, NW Suite 400 <b>City:</b> Washington <b>Country:</b> USA <b>Attention:</b>	<b>Phone Number:</b> 202-599-0975 <b>Fax Number:</b> <b>E-Mail:</b> karis@satcomlaw.com <b>State:</b> DC <b>Zipcode:</b> 20004 - <b>Relationship:</b> Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.) <b>3. Reference File Number or Submission ID</b>	
<b>4a. Is a fee submitted with this application?</b> <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):	
<b>4b. Fee Classification</b> CRY – Space Station (Geostationary)	
<b>5. Type Request</b> <input checked="" type="radio"/> Change Station Location <input type="radio"/> Extend Expiration Date <input type="radio"/> Other	
<b>6. Temporary Orbit Location</b> 85.0 W.L.	<b>7. Requested Extended Expiration Date</b>

8. Description (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

SES Americom, Inc. (SES) requests special temporary authority for 30 days to temporarily locate AMC-4 (Call Sign S2135) at 85.0 W.L. AMC-4 will briefly take on traffic currently carried by AMC-6, making AMC-6 available for relocation to 83 W.L. to restore service affected by a recent anomaly on AMC-9. See attached narrative.

9. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; for these purposes.  Yes  No

10. Name of Person Signing  
Petra A. Vorwig

11. Title of Person Signing  
Senior Legal & Regulatory Counsel

12. Please supply any need attachments.

Attachment 1: STA Narrative

Attachment 2:

Attachment 3:

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

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



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

In the Matter of	)	
	)	
SES AMERICOM, INC.	)	File No. SAT-STA-_____
	)	Call Sign S2135
Request for Special Temporary Authority to	)	
Position and Operate the AMC-4 Fixed-Satellite	)	
Space Station at 85° W.L.	)	

*Expedited Action Requested*

**REQUEST OF SES AMERICOM, INC.**

SES Americom, Inc. ("SES") respectfully requests special temporary authority ("STA") for a period of 30 days beginning no later than June 29, 2017, to permit SES to temporarily locate the AMC-4 C/Ku-band fixed-satellite space station at 85° W.L. At that position, AMC-4 will briefly take on traffic currently carried by SES's AMC-6 satellite, making AMC-6 available for relocation to 83° W.L. to restore service affected by a recent anomaly on AMC-9. SES seeks authority to (1) temporarily locate AMC-4 at 85.0° W.L. and maintain it at that location using certain C-band and conventional Ku-band frequencies for Telemetry, Tracking and Command ("TT&C");<sup>1</sup> and (2) operate the conventional and extended Ku-band communications payloads to serve customers currently using AMC-6 during the relocation of that satellite to 83° W.L. Grant of the requested authority will serve the public interest by allowing SES to offer a long-term solution for customers whose service on AMC-9 was interrupted by the anomaly.

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<sup>1</sup> The AMC-4 TT&C frequencies and nominal polarizations are as follows:  
Command: 6423.5 MHz (vertical polarization; uplink)  
Telemetry: 3700.5 MHz (vertical polarization; downlink),  
4199.5 MHz (horizontal polarization; downlink), and  
11702.0 MHz (horizontal polarization; downlink)  
12198.0 MHz (vertical polarization; downlink).

As SES previously notified the Commission, on June 17, 2017, the AMC-9 satellite assigned to 83° W.L. experienced an anomaly of unknown origin. Due to this anomaly, the satellite is not responding to commands, and SES is unable to maintain the satellite in its assigned stationkeeping volume. SES received STA for 30 days to continue communications with the satellite for TT&C purposes only.<sup>2</sup> A significant portion of the traffic that had been carried by AMC-9 has been transitioned to SES's AMC-6 satellite, which was recently relocated to 85° W.L. pursuant to Commission authority.<sup>3</sup>

In response to the anomaly, SES has developed a plan to restore long-term service to the customers previously using AMC-9 at 83° W.L. and seeks the necessary authority to implement the solution as quickly as possible. Initially, SES's AMC-4 satellite, which recently began drifting to 134.9° W.L. pursuant to STA,<sup>4</sup> will stop temporarily at 85° W.L. on or around June 29, 2017. SES will transfer active traffic currently on AMC-6 at 85° W.L. to AMC-4, which is identical to AMC-6 in configuration, frequency plan and coverage.<sup>5</sup> Once the traffic has been transferred, which is expected to be completed early on June 30, AMC-6 can be relocated to 83.0° W.L.<sup>6</sup> After AMC-6 arrives at 83.0° W.L. on or around July 3, SES will transfer all of the traffic from AMC-4 back to AMC-6. Following completion of that traffic transfer on or before July 7, 2017, AMC-4 will resume its drift to the nominal 135° W.L. orbital location.

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<sup>2</sup> See SES Americom, Inc., File No. SAT-STA-20170619-00091, granted June 17, 2017.

<sup>3</sup> See SES Americom, Inc., File No. SAT-MOD-20170316-00051 (the "AMC-6 Modification"), granted June 14, 2017.

<sup>4</sup> SES Americom, Inc., File No. SAT-STA-20170503-00070, granted June 7, 2017.

<sup>5</sup> AMC-4's communications operations will match that of AMC-6; however, AMC-4's TT&C operations will use polarizations opposite to those of AMC-6's TT&C operations.

<sup>6</sup> SES is simultaneously filing a separate STA request to drift AMC-6 to, and operate it at, 83.0° W.L.

SES has entered into an agreement with EchoStar Satellite Operating Corporation (“EchoStar”), which holds the license for the Ku-band payload of the AMC-16 Ku/Ka-band spacecraft located at 85° W.L.,<sup>7</sup> to operate AMC-4 temporarily at 85° W.L. in order to facilitate the relocation of AMC-6 to 83° W.L. and to restore customers affected by the AMC-9 anomaly.

The Commission has generally permitted satellite operators the flexibility to design and modify their networks in response to customer requirements, absent compelling countervailing public interest considerations.<sup>8</sup> Here, the requested authority is necessary to provide a quick and long-term solution to restore service for customers, including the U.S. Department of Defense, that were affected by the AMC-9 anomaly.

Furthermore, authorizing the drift will not adversely affect other operators. AMC-4 and AMC-6 were designed and built to the same specifications. As a result, the operations of AMC-4 will be virtually identical to AMC-6’s licensed operations at 85° W.L. as described in the AMC-6 Modification. During the roughly 24-hour period when AMC-4 is co-located with other SES satellites at 85° W.L., SES will closely control the satellites to ensure their safe operation.

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<sup>7</sup> See File No. SAT-ASG-20141020-00111.

<sup>8</sup> See, e.g. *AMSC Subsidiary Corporation*, 13 FCC Rcd 12316 at ¶ 8 (IB 1998) (the Commission generally leaves space station design decisions to the licensee “because the licensee is in a better position to determine how to tailor its system to meet the particular needs of its customers”) (footnote omitted).

For the foregoing reasons, SES respectfully requests grant of STA to permit the temporary positioning and operation of AMC-4 at 85° W.L.

Respectfully submitted,

SES AMERICOM, INC.

By: */s/ Petra A. Vorwig*

Of Counsel

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Dated: June 23, 2017