

S2964      SAT-STA-20170526-00080      IB2017001422  
SES Americom, Inc.  
SES-11



File # SAT-STA-20170526-00080  
Call Sign S2964 Grant Date 07/06/17  
(or other identifier) ~~06/28/17~~  
From see conditions Term Dates period of 30 days  
To: 30 days  
Approved: Stephen J. Dvall  
Stephen J. Dvall  
Chief, Satellite Policy Branch

Approved by OMB  
3060-0678

Date & Time Filed: May 26 2017 11:23:01:286AM  
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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 30-Day STA to Conduct In-Orbit Tests of SES-11 (S2964) at 142.5 W.L.

1. Applicant

<b>Name:</b>	SES Americom, Inc.	<b>Phone Number:</b>	202-478-7143
<b>DBA Name:</b>		<b>Fax Number:</b>	202-478-7111
<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.**  
**IBFS File No. SAT-STA-20170526-00080**

<b>IBFS File No(s):</b>	SAT-STA-20170526-00080	<p><b>GRANTED – With Conditions</b></p>  <p><b>International Bureau Satellite Division</b></p>
<b>Licensee/Grantee:</b>	SES Americom, Inc.	
<b>Call Sign:</b>	S2964	
<b>Satellite Name:</b>	SES-11	
<b>Orbital Location: (required station-keeping tolerance)</b>	142.5° W.L. (+/- 0.1 degrees east/west) <sup>1</sup>	
<b>Administration:</b>	United States of America	
<b>Nature of Service:</b>	In-Orbit Testing (IOT) and Telemetry, Tracking and Command (TT&C)	
<b>Scope of Grant:</b>	Special temporary authority for a period of 30 days to perform IOT of SES-11 at the 142.5° W.L. orbital location and to perform TT&C operations necessary to maintain SES-11 at 142.5° W.L. and to effect drift of SES-11 to its authorized orbital location at 104.95° W.L. upon completion of IOT.	
<b>Service Area(s):</b>	Not Applicable	
<b>Frequencies:</b>	Payload testing frequencies: <sup>2</sup> 11.7-12.2 GHz (space-to-Earth) 14.0-14.5 GHz (Earth-to-space) 18.3-18.8 GHz (space-to-Earth) 18.8-19.3 GHz (space-to-Earth) 19.7-20.2 GHz (space-to-Earth) 28.6-29.1 GHz (Earth-to-space) 29.25-29.5 GHz (Earth-to-space) 29.5-30.0 GHz (Earth-to-space)  Ku-band TT&C center testing and drift frequencies: 11.703 GHz and 12.1985 GHz (space-to-Earth); 14.0005 GHz, 14.0035 GHz, 14.4975 GHz and 14.4995 GHz (Earth-to-space)	
<p><b>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></p> <ol style="list-style-type: none"> <li>1. All operations under this grant of special temporary authority must be on an unprotected and non-harmful interference basis, <i>i.e.</i>, SES-11 must not cause harmful interference to, and must not claim protection from interference caused to it by, any other lawfully operating station.</li> <li>2. In the event of any harmful interference under this grant of special temporary authority, SES Americom must cease operations of SES-11 immediately upon notification of such interference and must inform the Commission, in writing, immediately of such an event.</li> <li>3. SES Americom must coordinate the operations of SES-11 with existing geostationary space stations to ensure that no unacceptable interference results from its operations at the 142.5° W.L. orbital location or during drift from the 142.5° W.L. orbital location to the 104.95° W.L. orbital location.</li> <li>4. SES-11's operations at the 142.5° W.L. orbital location must be limited to IOT and must not include the provision of commercial services.</li> </ol>		

<sup>1</sup> See Condition 6, waiving the requirement in section 25.210(j) for space stations in the geostationary orbit to be maintained within +/- 0.05° of the assigned orbital longitude in the east/west direction.

<sup>2</sup> In its STA request, SES Americom also sought to perform IOT in the 3700-4200 MHz and 5925-6425 MHz bands. See Request of SES Americom, Inc. at 2 (dated May 26, 2017). However, SES Americom subsequently stated that it would seek authority to conduct IOT using those frequencies through earth station applications.

**ATTACHMENT TO GRANT**  
**SES Americom, Inc.**  
**IBFS File No. SAT-STA-20170526-00080**

5. SES Americom must operate only the TT&C frequencies on SES-11 during the space station's drift from the 142.5° W.L. orbital location to the 104.95° W.L. orbital location.

6. SES Americom's request for a waiver of section 25.210(j) is GRANTED. Increasing the station-keeping volume of the SES-11 space station will not adversely affect the operations of other space stations, and would conserve fuel for future operations. SES Americom's request to operate SES-11 with ±0.1 degrees of the 142.5° W.L. orbital location during IOT is subject to no other space station being located within the station-keeping volume of SES-11. Should such a space station be launched or relocated into the station-keeping volume of SES-11, SES Americom will be required to maintain ±0.05 degrees of the 142.5° W.L. orbital location, or coordinate its operations with the other space station.

7. SES Americom must notify the Commission within three business days of the commencement of SES-11's operations pursuant to this grant.


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).

<b>Action Date:</b>	July 6, 2017	
<b>Term Dates</b>	<b>From:</b> see conditions	<b>To:</b> period of 30 days

**Approved:**

  
 Stephen J. Duall  
 Chief, Satellite Policy Branch

2. Contact	
<b>Name:</b> Karis Hastings	<b>Phone Number:</b> 202-599-0975
<b>Company:</b> SatCom Law LLC	<b>Fax Number:</b>
<b>Street:</b> 1317 F St, NW Suite 1000	<b>E-Mail:</b> karis@satcomlaw.com
<b>City:</b> Washington	<b>State:</b> DC
<b>Country:</b> USA	<b>Zipcode:</b> 20004 -
<b>Attention:</b>	<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.)	
3. Reference File Number or Submission ID	
4a. 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):	
4b. Fee Classification    CRY – Space Station (Geostationary)	
5. Type Request	
<input type="radio"/> Change Station Location <input type="radio"/> Extend Expiration Date <input checked="" type="radio"/> Other	
6. Temporary Orbit Location 142.5 W.L.	7. Requested Extended Expiration Date

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 requests special temporary authority for 30 days to perform in-orbit testing of its SES-11 spacecraft (call sign S2964) at 142.5 W.L. in the C-, Ku-, and Ka-bands. See attachment.

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 Nos. SAT-STA-_____
	)	SES-STA-_____
Request for Special Temporary Authority to Test	)	Call Signs S2964, KB27
SES-11 at 142.5° W.L.	)	

**REQUEST OF SES AMERICOM, INC.**

SES Americom, Inc. (“SES”) respectfully requests space station and earth station special temporary authority (“STA”) to permit SES to perform in-orbit testing (“IOT”) of its SES-11 spacecraft at 142.5° W.L. Authority is sought for a period of up to 30 days, commencing eleven days following launch of SES-11, which could occur as early as July 2017. Specifically, SES requests: (1) authority to perform telemetry, tracking and command (“TT&C”) in order to position SES-11 at 142.5° W.L. with +/- 0.1 degree stationkeeping; (2) authority to operate the TT&C and communications payloads of SES-11 at 142.5° W.L. during IOT; (3) authority to test the Ka-band payload during IOT to test the transmission capability of the satellite and (4) authority to perform TT&C in order to drift the satellite to 104.95° W.L. following completion of IOT.

The Commission has issued SES a license to operate SES-11 at the nominal 105° W.L. orbital location to replace the Ku-band capacity of AMC-15 and has granted U.S. market access for the Gibraltar-licensed C-band payload on SES-11, which will replace the AMC-18

satellite.<sup>1</sup> The SES-11 Applications described the satellite's Ka-band payload as well, but SES did not request or receive operating authority for that payload.<sup>2</sup>

Following launch of SES-11, SES proposes to position the satellite at 142.5° W.L. in order to test the C-, Ku-, and Ka-band payloads. SES-11 will be located at 142.5° W.L. +/- 0.1 degrees during IOT. The proposed stationkeeping volume will not overlap with any other satellite at 142.5° W.L. SES seeks to perform this testing and perform associated TT&C.

As discussed below, temporary operation of SES-11 at 142.5° W.L. rather than at 105° W.L. will permit testing to occur without disruption to existing customers at 105° W.L. and will not adversely affect the operation of any adjacent satellites. SES intends to conduct tests in the following frequency ranges:

3700-4200 MHz	Downlink
5925-6425 MHz	Uplink
11.7-12.2 GHz	Downlink
14-14.5 GHz	Uplink
18.3-18.8 GHz	Downlink
18.8-19.3 GHz	Downlink
19.7-20.2	Downlink
28.6-29.1	Uplink
29.25-29.5	Uplink
29.5-30	Uplink

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<sup>1</sup> SES Americom, Inc., File No. SAT-LOA-20160512-00047, filed May 12, 2016; SES Satellites (Gibraltar) Ltd, File No. SAT-PPL-20160512-0048, filed May 12, 2016 (together, the "SES-11 Applications"). These applications were combined under a single call sign, S2964, and granted on December 7, 2016.

<sup>2</sup> See SES-11 Applications, Technical Appendix at 2-4 & 10-11; Annex 1 at 22-28.



***Grant of STA Will Serve the Public Interest.*** Grant of SES's request to test SES-11 at 142.5° W.L. is in the public interest. By testing SES-11 at this location, SES will minimize the risk of interference to its other satellites operating at the nominal 105° W.L. orbital location. Testing will allow SES to ensure that all of the satellite's communications payloads are fully operational at the time it arrives at its final orbital location, thereby avoiding any interruption in service that otherwise might be associated with spacecraft testing.

***No Harmful Interference to Other Spacecraft.*** Positioning and testing SES-11 at 142.5° W.L. will not cause harmful interference to the operations of any other spacecraft due to orbital angular separation, frequency diversity and/or geographically diverse beam coverage. SES is in the process of coordinating the proposed TT&C and IOT operations with other C-, Ku- and Ka-band satellites positioned near 142.5° W.L., including satellites operated by the Department of Defense at 141° W.L. and 144° W.L. in the 18-20.2 GHz band. There are no other operators nearby with frequency overlap in the C- and Ku-bands. The nearest satellites operating in the C-band are operated by SES. In order to facilitate coordination with nearby C-band spacecraft, SES intends to use only Ku-band frequencies for TT&C while drifting the satellite from 142.5° W.L. to 104.95° W.L.

***No Harmful Interference to Terrestrial Services.*** Transmissions associated with IOT of SES-11 will not cause harmful interference to any co-primary terrestrial services in the conventional C-band. The C-band earth station to be used for in-orbit testing of the satellite has been coordinated to communicate with satellites in an arc that includes 142.5° W.L. The earth station will not exceed the maximum output EIRP density specified in its license. Some IOT procedures will require the satellite transponders to intermittently transmit a CW carrier for a short duration of time lasting from 30 minutes to several hours. During such transmissions, the

maximum satellite downlink PFD density is expected to exceed the PFD limits specified in Section 25.208(a), but only for the minimal amounts of time during IOT.

Transmissions associated with IOT of SES-11 also will not cause harmful interference to any satellite operations in the non-geostationary orbit service, which operate on a primary basis in the 18.8-19.3 GHz (downlink) and 28.6-29.1 GHz (uplink). All Ka-band operations will meet the PFD limits set out in Section 25.208. Some IOT procedures will require the satellite transponders to intermittently transmit a CW carrier for a short duration of time lasting from 30 minutes to several hours. During such transmissions, the maximum satellite downlink PFD density will not exceed the PFD limits specified in Section 25.208(c-e).

In addition, SES will conduct all IOT operations on a non-harmful interference basis and will cease transmissions promptly in the event any harmful interference is caused by such operations.

***Waiver Request.*** SES seeks a limited waiver of Section 25.210(j) of the Commission's rules in order to operate SES-11 at 142.5° W.L. with an east-west stationkeeping tolerance of +/- 0.1 degree during the IOT operations. Grant of this waiver is consistent with Commission policy:

The Commission may waive a rule for good cause shown. Waiver is appropriate if special circumstances warrant a deviation from the general rule and such deviation would better serve the public interest than would strict adherence to the general rule. Generally, the Commission may grant a waiver of its rules in a particular case if the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest.<sup>3</sup>

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<sup>3</sup> *PanAmSat Licensee Corp.*, 17 FCC Rcd 10483, 10492 (Sat. Div. 2002) (footnotes omitted).

Section 25.210(j) specifies that geostationary space stations “must be maintained within 0.05° of their assigned orbital location in the east/west direction, unless specifically authorized by the Commission to operate with a different longitudinal tolerance . . . .”<sup>4</sup> Here, SES is seeking authority to operate SES-11 with a relaxed stationkeeping tolerance of +/- 0.1 degree during the limited period of IOT operations. The Commission has previously waived Section 25.210(j) based on a finding that allowing an increased stationkeeping volume would “not adversely affect the operations of other spacecraft, and would conserve fuel for future operations.”<sup>5</sup> SES requests a waiver because the relaxed stationkeeping tolerance will minimize interruptions to the payload testing operations due to stationkeeping maneuvers, which would delay the satellite’s on-station start of operations. It will also conserve fuel for future satellite operations. Furthermore, the proposed operations will not result in any overlap with other satellites near 142.5° W.L. and therefore will not adversely affect the operations of other spacecraft.

***Protective Conditions.*** SES seeks authority to position and test SES-11 at 142.5° W.L. with +/-0.1 degree stationkeeping tolerance and to relocate it to 104.95° W.L. once testing is completed. SES will coordinate its drift and test operations with all potentially affected operating satellite networks and will operate only the TT&C payload of the SES-11 spacecraft during satellite drift. All testing will be conducted on an unprotected, non-harmful interference basis, and SES operations will cease immediately upon notification of harmful interference. The

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<sup>4</sup> 47 C.F.R. § 25.210(j).

<sup>5</sup> See, e.g., *SES Americom, Inc. Application for Modification of Satcom SN-4 Fixed Satellite Space Station License*, 20 FCC Rcd 11542, 11545 (Sat. Div. 2005).

24/7 point of contact for SES during IOT and drift is Dave Coyle, Manager, South Mountain Earth Station, (805) 386-2710, [dave.coyle@ses.com](mailto:dave.coyle@ses.com).

SES hereby certifies that no party to this application is subject to a denial of benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. § 862.

For the foregoing reasons, SES respectfully requests special temporary authority to position and test SES-11 at 142.5° W.L. for a period of up to 30 days, commencing eleven days following the launch of SES-11, and to relocate the spacecraft to 104.95° W.L. following the completion of in-orbit testing. Grant of the requested authority will permit testing of the spacecraft without affecting services to customers and will permit a seamless transition of services. As noted above, SES is preparing to launch SES-11 in the third quarter of 2017 and requests action on this application to accommodate that schedule.

Respectfully submitted,

SES AMERICOM, INC.

By: /s/ Petra A. Vorwig

Of Counsel

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Dated: May 26, 2017