

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
180 Day STA for Bristow O3b Demo 1.8m

1. Applicant

Name: SES Government Solutions, Inc. **Phone Number:** 703-610-0906
DBA Name: **Fax Number:** 703-610-1030
Street: 2010 Corporate Ridge, Suite 550 **E-Mail:** joe.oloughlin@ses-gs.com
City: McLean **State:** VA
Country: USA **Zipcode:** 22102
Attention: Mr Joseph A O'Loughlin


SES STA-20131022-00887
Grant Date: 1-31-14
Term Dates To: 8-31-14
Approved: [Signature]
International Bureau

Applicant: SES Government Solutions, Inc.
File Number: SES-STA-20131022-00887
Call Sign: None
Special Temporary Authority (STA)

SES Government Solutions, Inc. (SES Government Solutions) is granted STA for 180 days to operate a fixed earth station with two 1.8 meter GD/Prodelin model GDST-1.8M located at a facility in Bristow, VA (38 deg 47' 0.25" N.L./077 deg 34' 24.5" W.L.) to communicate with O3b's in-orbit NGSO FSS satellite system, licensed by the United Kingdom, in the 18.372-18.588 (space-to-Earth) and the 28.172-28.388 GHz (Earth-to-space) frequency bands under the following conditions:

1. SES Government Solutions shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference.
2. Grant of this authorization is without prejudice to any determination that the Commission may make regarding any other pending or future application seeking to communicate with the O3b satellite systems.
3. Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna feed and the reflector. Appropriate measures must also be taken to restrict access to other regions in which the antennas' power flux-density levels exceed the specified guidelines.
4. This authorization does not constitute grant of Market Access for O3B's NGSO FSS system.
5. Operations under this authority are on a non-interference basis only.
6. Operations under this authority are on a non-protected basis only.
7. The total power at the antenna flange for all carriers must not exceed 40 Watts.
8. The power flux-density at the Earth's surface produced by emissions from O3b's NGSO FSS system for all methods of modulation shall not exceed the levels established in 47 C.F.R. § 25.308(c), (e) and Article 21 of the ITU Radio Regulations.
9. The operations of the O3b NGSO FSS satellite system must not exceed the EPFD limits in Nos. 22.5C, 22.5D, and 22.5F of the ITU Radio Regulations.
10. O3b satellite transmissions must be conducted in accordance with the coordination agreement between O3b and U.S. government systems signed on January 17, 2013 with the Department of Defense.
11. Transmissions authorized herein must comply with coordination agreements reached between the United Kingdom and other Administrations, including all coordination agreements reached between the United Kingdom and the United States.

12. This STA is limited to operations associated with testing, satellite monitoring, and customer demonstrations purpose. SES Government Solutions may not provide any commercial service under this STA.
13. In the event that there is a report of interference, SES Government Solutions must immediately terminate transmissions and notify the FCC in writing.
14. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at SES Government Solutions 's own risk.
15. This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately.

 GRANTED International Bureau	File # <u>SES-STA-20131022-00887</u>
	Call Sign <u>None</u> Grant Date <u>1-31-14</u> (or other identifier)
	From <u>2-5-14</u> Term Dates <u>8-4-14</u> To:
	Approved: <u>[Signature]</u>

2. Contact	
Name: Karis Hastings	Phone Number: 202-599-0975
Company: SatCom Law LLC	Fax Number:
Street: 1317 F Street, N.W. Suite 400	E-Mail: karis@satcomlaw.com
City: Washington	State: DC
Country: USA	Zipcode: 20004 -
Attention:	Relationship: 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 CGX - Fixed Satellite Transmit/Receive Earth Station	
5. Type Request	
<input type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input checked="" type="radio"/> Other	
6. Requested Use Prior Date	
7. City/Bristow	
8. Latitude (dd mm ss.s h) 38 47 0.25 N	

9. State VA	10. Longitude (dd mm ss.s h) 77 34 24.5 W
11. Please supply any need attachments. Attachment 1: Narrative and Exh. Attachment 2: Attachment 3:	
12. 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 Government Solutions seeks FCC special temporary authority for a period of 180 days to operate an earth station in Bristow, Virginia, with the O3b U.K.-licensed non-geostationary Ka-band satellite system for testing and demonstration purposes only.	
13. 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 <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Joseph A. O'Loughlin	15. Title of Person Signing CTO
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.

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

By this application, SES Government Solutions, Inc., formerly known as Americom Government Services, Inc. ("SES-GS") respectfully requests special temporary authority ("STA") for a period of 180 days to operate an earth station in Bristow, VA that will communicate with the O3b Ka-band non-geostationary orbit ("NGSO") satellite fleet. As discussed below, grant of the requested authority is in the public interest as it will allow SES-GS to test and evaluate O3b services that may be of interest to U.S. government customers. SES-GS does not seek to provide commercial services to end users.

Background: SES-GS provides reliable and secure commercial satellite services to U.S. Government, Intelligence and Civilian agencies. SES-GS believes that adding access to the O3b network may be an attractive option for such customers. Because of its lower NGSO orbit, the O3b fleet can offer service with reduced latency at affordable rates. In order to introduce prospective customers to the capabilities of the O3b network, SES-GS has procured a set of antennas that can communicate with the O3b constellation and can be used to evaluate and demonstrate the O3b services. SES-GS initially seeks to locate these antennas at a location in Bristow, VA that is in close proximity to the site where O3b has a pending earth station application.¹ Under the requested STA, SES-GS seeks to operate the antennas only for testing and providing demonstrations and will not be offering service to customers for a fee.

Protection of Authorized Stations: SES-GS proposes to communicate with O3b in a subset of the Ka-band spectrum that O3b has been licensed to use for its existing U.S. earth stations.² Specifically, O3b has assigned spectrum to SES-GS in

¹ See O3b Limited, Call Sign E130107, File No. SES-LIC-20130618-00516 ("O3b Bristow Application"). Pending action on this application, the Commission has granted O3b temporary authority for operations at the Bristow location. See O3b Limited, Call Sign E130107, File No. SES-STA-20130617-00497, grant-stamped Aug. 27, 2013 ("O3b Bristow STA").

² See O3b Limited, Call Sign E130021, File No. SES-LIC-20130124-00089, granted June 20, 2013 ("O3b Texas License"), Section C (authorizing operations in the 17.8-18.6 GHz, 18.8-19.3 GHz, 27.6-28.4 GHz, and 28.6-29.1 GHz bands); O3b Limited, Call Sign E100088, File No. SES-LIC-20100723-00952 ("O3b Hawaii Application"), granted Sept. 25, 201 ("O3b Hawaii License"), Section C (same).

O3b's beam 3, with uplink spectrum at 28.172-28.388 GHz and downlink spectrum at 18.372-18.558 GHz. NGSO fixed-satellite service ("FSS") does not have a primary U.S. allocation in this spectrum. However, SES-GS demonstrates herein that its proposed communications with the O3b network will not cause interference to primary operations in the spectrum, and SES-GS will not claim interference protection from such operations.

LMDS in the 28.172-28.350 GHz Band: In most of the uplink spectrum O3b has assigned to SES-GS, terrestrial local multipoint distribution service ("LMDS") systems are primary, and FSS has a secondary allocation. In order to ensure that its proposed secondary operations would not cause interference to LMDS operations, SES-GS asked Comsearch to identify all existing and proposed terrestrial networks in the vicinity of the Bristow, VA site. Comsearch notified each of these operators of the technical parameters of the planned SES-GS transmissions. In the attached report, Comsearch confirms that it did not receive any objections to the proposed operations from any of the potentially affected terrestrial systems.

GSO FSS in the 28.350-28.388 GHz and 18.372-18.558 GHz Bands: In the remaining segment of the uplink spectrum assigned to SES-GS, the spectrum is allocated to GSO FSS uplinks on a primary basis, with a secondary allocation for NGSO FSS uplinks. GSO FSS downlinks are primary throughout the downlink spectrum O3b assigned to SES-GS, and there is no NGSO FSS allocation in this segment.

Uplink transmissions from the proposed SES-GS earth station will not cause harmful interference to primary GSO FSS networks. In support of its Bristow application, O3b demonstrated that its proposed operations at that site would comply with ITU uplink EPFD limits applicable to the 28.35-28.4 GHz band.³ This showing was based on the power levels of the earth station and the angular separation between the O3b and geostationary orbits as viewed from the Earth.⁴ The SES-GS and O3b Bristow antennas are effectively co-located, so the angular separation between the O3b and

³ O3b Bristow Application, Narrative at 4-5.

⁴ *Id.*, Narrative at 5 (cross-referencing the O3b Hawaii Application and demonstrating that because the Bristow site is further north than the Hawaii location, the angular separation is greater).

GSO orbits is the same, but the SES-GS antennas will operate at lower power levels than the O3b Bristow antennas.⁵ Accordingly, for the reasons set forth in the O3b Bristow Application, the proposed SES-GS operations will comply with the applicable ITU EPFD_{up} limits. As a result, grant of STA for use of the 28.35-28.4 GHz band on a secondary basis to communicate with the O3b constellation is consistent with Commission precedent.⁶

SES-GS proposes to use the 18.372-18.588 GHz band on a non-conforming basis. SES-GS acknowledges that it is not entitled to protection from interference caused by primary GSO FSS operations in this spectrum. Furthermore, O3b has demonstrated that transmissions from its space stations will comply with the limits developed by the ITU to protect GSO FSS networks from unacceptable interference.⁷ Because SES-GS seeks authority here for operations in close vicinity to the proposed O3b earth station site, the analysis provided in the O3b Bristow Application is directly applicable here, and SES-GS incorporates it by reference.

Earth Station Technical Parameters: SES-GS is attaching the following documents to provide the technical details of the operations proposed under the requested STA:

⁵ Specifically, the maximum earth station EIRP density transmitted by the proposed SES-GS 1.8 meter Bristow earth station for a 216 MHz signal is 21.5 dBW/4kHz, which is equivalent to 31.5 dBW/40kHz. This results in an input power spectral density of -31.5 dBW/4kHz. Assuming a $32 - 25 \log(\Theta)$ gain mask, the off-axis gain of the transmitting earth station for an off-axis angle of 7.4° is 2.8 dBi, resulting in a worst-case off-axis EIRP density towards the GSO of -28.7 dBW/4kHz or -18.7 dBW/40kHz.

⁶ See, e.g., O3b Texas License, Provisions 90086 and 90087 (specifying that transmissions from the earth station are secondary in the 27.6-28.4 GHz band and must comply with ITU EPFD requirements); O3b Hawaii License, Provisions 90039 and 90040 (same); *Northrop Grumman Space & Missions Systems Corp.*, 24 FCC Rcd 2330, 2354 at ¶¶ 72-73 (Int'l Bur. 2009) (authorizing NGSO uplink operations on a secondary basis in primary GSO spectrum conditioned on compliance with ITU EPFD limits); *contactMEO Communications, LLC*, 21 FCC Rcd 4035, 4043-44 at ¶¶ 23-24, (Int'l Bur. 2006) (same).

⁷ See O3b Bristow Application, Exhibit 1 at 6-7 (noting that "O3b is able to satisfy the [EPFD_{down}] limits by taking advantage of the inherent angular separation of the O3b and the GSO orbits when viewed from the surface of the Earth at latitudes away from the equator").

1. Schedule B. Although SES-GS is not seeking a permanent license for the O3b station, SES-GS is providing as Annex 1 hereto a Schedule B with the applicable technical parameters for the Commission's convenience.
2. Comsearch report. As discussed above, Comsearch identified and notified the 28 GHz terrestrial networks in the vicinity of the Bristow site. Attached as Annex 2 is the report confirming that no terrestrial licensee objected to the proposed operations of SES-GS.
3. Antenna patterns. General Dynamics SATCOM Technologies, manufacturer of the 1.8 meter antennas SES-GS will use to communicate with the O3b fleet, has provided antenna patterns that are attached as Annex 3.
4. Link budgets. Representative link budgets for the Bristow earth station are provided in Annex 4.
5. Radiation hazard study. SES-GS has performed an analysis of the maximum radiofrequency levels emitted from the satellite communications antenna, and it is attached as Annex 5.

In addition, SES-GS incorporates by reference herein technical materials provided by O3b:

1. Schedule S. O3b submitted a Schedule S describing the satellite fleet's technical characteristics as an attachment to O3b's application for a gateway earth station in Hawaii. See O3b Limited, Call Sign E100088, File No. SES-LIC-20100723-00952, Completed Schedule S. The operational characteristics of the proposed SES-GS Bristow terminal are within all aspects of the envelope defined for user terminals in O3b's Schedule S.
2. Service area definition. The SES-GS Bristow location falls within the "U" service area identified in the O3b Schedule S, which includes all locations on Earth with elevation angles to the operational O3b satellites greater than 3 degrees.
3. Beam contour maps. In a supplement to the O3b Bristow Application, O3b provided antenna gain contours for the O3b satellite receive and transmit beams when directed towards the O3b Bristow earth station site. See Technical Supplement to O3b Bristow Application filed July 24, 2013 ("O3b Bristow Technical Supplement") at 1-5, Figures A.2-1, A.2-2, and A.2-3. Given the close proximity of the SES-GS and O3b Bristow sites, the gain contours submitted by O3b accurately depict the contours of the beams when directed towards the SES-GS Bristow location.

4. U.S. government coordination. As explained in the O3b Hawaii Application, coordination of the O3b NGSO satellite system has been completed, and the coordination agreement has been provided confidentially to the Commission. See O3b Hawaii Application, Attachment A at 33, Section A.12. O3b has advised SES-GS that the agreement contemplates the operation of U.S. earth stations.
5. Compliance with PFD limits. O3b has shown that the power flux density ("PFD") of the O3b system complies with all applicable FCC limits. See O3b Bristow Technical Supplement at 6-8. This showing is based on a worst-case methodology to calculate the maximum EIRP density produced by the O3b downlinks. The proposed SES-GS Bristow earth station will be operated with O3b downlink signals that are below this maximum EIRP density level.

U.S. Market Access: The O3b Hawaii Application included a showing that allowing U.S. earth stations to communicate with the foreign-licensed O3b NGSO constellation is consistent with U.S. market access policies,⁸ as those policies are set forth in the *DISCO II* framework⁹ and codified in Section 25.137.¹⁰ The Commission granted the application, thereby authorizing communication between the Hawaii earth station and the O3b satellite fleet.¹¹ Subsequent to that grant, no change has occurred in the O3b satellite network's operating parameters or the services that the network will be used to provide. Under these circumstances, no additional showing is needed to allow SES-GS to use its proposed Bristow antennas to communicate with the O3b satellite constellation.¹²

In any event, the SES-GS Bristow antennas will be used for evaluation and demonstration purposes only, and not for commercial services. As a result, grant of the requested authority to communicate with the O3b constellation will have no effect on competition within the U.S.

⁸ See O3b Hawaii Application, Legal Narrative at 10-24.

⁹ See *Amendment of the Commission's Policies to Allow Non-U.S. Licensed Space Stations providing Domestic and International Service in the United States*, Report & Order, 12 FCC Rcd 24094 (1997) ("*DISCO II*").

¹⁰ 47 C.F.R. § 25.137.

¹¹ See O3b Hawaii License, Section D (authorizing communications with the U.K.-licensed O3b NGSO satellite system).

¹² See *DISCO II*, 12 FCC Rcd at 24176, ¶ 192.

Waiver Requests: SES-GS requests grant of any necessary waiver of the Commission's rules in connection with the instant STA request. Such 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.¹³

Section 25.145(c): Section 25.145(c) of the Commission's rules requires Ka-band NGSO systems to meet global and U.S. service coverage requirements.¹⁴ O3b has explained that its network, which was designed with a focus on providing service to emerging markets and areas without significant terrestrial broadband infrastructure, cannot meet these requirements.¹⁵ O3b argued that granting a waiver of the coverage requirements to allow access to the O3b network would further, not undermine, achievement of the rule's purpose – fostering seamless global communications.¹⁶ The Commission granted a waiver of the rule for both the O3b Hawaii and Texas gateway and TT&C earth stations, but stated that the grant was without prejudice to action on any waiver request to provide additional U.S. services.¹⁷

SES-GS seeks grant of any necessary waiver of Section 25.145(c) in connection with the instant STA request. As with the O3b Hawaii and Texas stations, the proposed SES-GS Bristow antennas will not provide commercial services to end

¹³ *PanAmSat Licensee Corp.*, 17 FCC Rcd 10483, 10492 (Sat. Div. 2002) (footnotes omitted).

¹⁴ 47 C.F.R. § 25.145(c).

¹⁵ See O3b Limited, Call Sign E100088, File No. SES-LIC-20100723-00952 (“O3b Hawaii Application”), Legal Narrative at 21-22.

¹⁶ *Id.* at 22.

¹⁷ See O3b Hawaii License, Provision 90044; O3b Texas License, Provision 90044.

users. Instead, the antennas will be operated only for purposes of evaluating the capabilities of the O3b network and demonstrating those capabilities to prospective customers interested in using O3b capacity for their communications needs, whether outside or inside the U.S. No fees will be charged to customers for these demonstrations, and accordingly the proposed operations will have no effect on competition in the U.S. In these circumstances, preventing SES-GS from communicating with the operational O3b global satellite network because that network does not comply with Commission coverage requirements would serve no conceivable public interest objective.

Section 25.210(i)(1): O3b has also explained that its satellite constellation does not comply with the minimum cross-polarization isolation requirement for FSS systems in Section 25.210(i)(1).¹⁸ The Commission granted a waiver of this rule in the O3b Hawaii and Texas Licenses.¹⁹ For the same reasons, SES-GS requests that the Commission grant any necessary waiver of Section 25.210(i)(1) in connection with the instant STA request.²⁰

Conclusion: The requested STA will allow SES-GS to evaluate and demonstrate the O3b network's operational capabilities and will not result in harmful interference to other authorized spectrum users. Thus, grant of the STA will serve the public interest.

¹⁸ See O3b Hawaii Application, Legal Narrative at 22-23.

¹⁹ See O3b Hawaii License, Provision 90041; O3b Texas License, Provision 90041.

²⁰ SES-GS notes that the bond requirements of Section 25.165 are inapplicable to this STA request, as O3b has already posted a bond payable in the event the O3b constellation does not meet operational milestones. See O3b Texas License, Provision 90041. See also *Telesat Canada*, Order, 22 FCC Rcd 588, 593 (Sat. Div. 2007) ("it is not necessary to have more than one bond posted" with respect to a satellite network in order to fulfill the bond requirement's purpose).

Approved by OMB
3060-0678

Date & Time Filed:
File Number: ---
Callsign/Satellite ID:

APPLICATION FOR EARTH 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:
Attachment to STA for Bristow O3b Demo 1.8m

1-8. Legal Name of Applicant			
Name:	SES Government Solutions, Inc.	Phone Number:	703-610-0906
DBA Name:		Fax Number:	703-610-1030
Street:	2010 Corporate Ridge, Suite 550	E-Mail:	joe.oloughlin@ses-gs.com
City:	McLean	State:	VA
Country:	USA	Zipcode:	22102 -
Attention: Mr Joseph A O'Loughlin			

9-16. Name of Contact Representative			
Name:	Maurice Najarian	Phone Number:	703-610-0985
Company:	SES Government Solutions, Inc.	Fax Number:	703-610-1030
Street:	2010 Corporate Ridge Suite 550	E-Mail:	
City:	McLean	State:	VA
Country:	USA	Zipcode:	22102-
Attention:		Relationship:	

CLASSIFICATION OF FILING

<p>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.</p> <p>a.</p> <p><input checked="" type="radio"/> a1. Earth Station (N/A) a2. Space Station</p>	<p>b.</p> <p><input checked="" type="radio"/> b1. Application for License of New Station</p> <p><input type="radio"/> 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 (N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States</p> <p><input type="radio"/> b10. Other (Please specify)</p> <p><input type="radio"/> b11. Application for Earth Station to Access a Non-U.S.satellite Not Currently</p>
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Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States.

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 BAX - Fixed Satellite Transmit/Receive Earth Station

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

(a) Call sign of station:

Not Applicable

19. If this filing is an amendment to a pending application enter:

(a) Date pending application was filed: (b) File number of pending application:

Not Applicable

Not Applicable

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: 18372 Frequency Upper: 28388

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
- (N/A) e. Geostationary Space Station
- (N/A) f. Non-Geostationary Space Station
- g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY: Choose only one.

Transmit/Receive Transmit-Only Receive-Only 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.)

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? 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.

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.

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? United Kingdom

43. Description. (Summarize the nature of the application and the services to be provided). SES Government Solutions seeks FCC authority to operate an earth station in Bristow, Virginia, with the O3b U.K.-licensed non-geostationary Ka-band satellite system for testing and demonstration purposes only.

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
Joseph O'Loughlin

46. Title of Person Signing
CTO

47. Please supply any need attachments.

Attachment 1:	Attachment 2:	Attachment 3:
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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).

**SATELLITE EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B:(Technical and Operational Description)**

FOR OFFICIAL USE ONLY

Location of Earth Station Site

E1. Site Identifier:	WMP 1.8m Ka	E5. Call Sign:	
E2. Contact Name	Tim Kavanaugh	E6. Phone Number:	703-350-8665
E3. Street:	8000 Gainsford Ct	E7. City:	Bristow
E4. State	VA	E8. County:	Prince William
E10. Area of Operation:		E9. Zip Code	20136
E11. Latitude:	38 ° 47 ' 0.25 " N		
E12. Longitude:	77 ° 34 ' 24.5 " W		
E13. Lat/Lon Coordinates are:	<input type="radio"/> NAD-27	<input checked="" type="radio"/> NAD-83	<input type="radio"/> N/A
E14. Site Elevation (AMSL):	86.56 meters		

E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurement? If NO, provide a technical analysis showing compliance with two-degree spacing policy.	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	<input type="radio"/> Yes <input checked="" type="radio"/> No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	<input checked="" type="radio"/> Yes <input type="radio"/> No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	<input type="radio"/> Yes <input checked="" type="radio"/> No
E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	<input type="radio"/> Yes <input checked="" type="radio"/> No

POINTS OF COMMUNICATION

Satellite Name: O3B-A | O3B-A | Eq. NGSO If you selected OTHER, please enter the following:

E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna Gain Transmint and/or Recieve(____dBi at ____GHz)
WMP 1.8m Ka	Ant 1-2	2	GD/Prodelin	GDST-1.8M	1.8	49.1 dBi at 18.562
						52.8 dBi at 28.362

E28. Antenna Id	E33/34. Diameter Minor/Major (meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
Ant 1-2	0.0/0.0	2.4	89.0	0.0	40.0	0.0	68.8

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization (H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum ERIP Density per Carrier (dBW/4kHz)
Ant 1-2	18372 18588	R	Left Hand Circular	1M00G7D	0.0	0.0

E50. Modulation and Services Digital Data

Ant 1-2	18372 18588	R	Left Hand Circular	216MG7D	0.0	0.0
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E50. Modulation and Services Digital Data

Ant 1-2	28172 28388	T	Right Hand Circular	1M00G7D	48.6	24.6
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E50. Modulation and Services Digital Data

Ant 1-2	28172 28388	T	Right Hand Circular	216MG7D	68.8	38.8
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E50. Modulation and Services Digital Data

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency	E54/55. Range of	E56. Earth Station	E57. Antenna Elevation	E58. Earth Station	E59. Antenna Elevation	E60. Maximum EIRP
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		Limits (MHz)	Satellite Arc E/W Limit	Azimuth Angle Eastern Limit	Angle Eastern Limit	Azimuth Angle Western Limit	Angle Western Limit	Density toward the Horizon (dBW/4kHz)
Ant 1-2	Non- Geostationary	18372 18588	0.0/ 0.0	122.4	7.6	238.3	7.0	0.0
	Non- Geostationary	28172 28388	0.0/ 0.0	122.4	7.6	238.3	7.0	38.8

REMOTE CONTROL POINT LOCATION

REMOTE CONTROL POINT LOCATION

E61. Call Sign		E65. Phone Number	
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			
E62. Street Address			
E63. City	E67. County	E64/68. State/Country /	E66. Zip Code

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