

**SES Government Solutions, Inc. (“SES-GS”)  
Application for Experimental Special Temporary Authority**

**Narrative Statement**

**(1) Name, address, phone number (also e-mail address and facsimile number, if available) of the applicant.**

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**(2) Description of why an STA is needed.**

SES Government Solutions, Inc. (“SES-GS”), a wholly owned subsidiary of SES S.A. and an affiliate of O3b Limited (“O3b”), provides satellite solutions to U.S. government customers to meet mission critical needs. SES-GS seeks an experimental special temporary authority (“STA”) in order to test and demonstrate terminals communicating with the O3b Ka-band non-geostationary orbit (“NGSO”) satellite system.<sup>2</sup>

Specifically, SES-GS requests an STA to test and demonstrate the capabilities of a LiteCom AvL 2.2m satellite antenna (fixed) and a GetSat Millisat W satellite antenna (mobile). SES-GS seeks to demonstrate and assess the use of these antennas to support various applications including disaster response, Intelligence, Surveillance and Reconnaissance technologies, and other applications designed to support U.S. government and non-governmental organizations.

These terminals will operate on the US Marine Corps compound at 29 Palms, California. The antennas will communicate with the O3b Ka-band NGSO satellite constellation, transmitting in the frequency range of 28.172-28.388 GHz (uplink) and receiving in the range of 18.372-18.588 GHz (downlink).

SES-GS has initiated the process of coordinating the transmit frequencies with terrestrial operators.

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<sup>1</sup> Given the ongoing COVID-19 pandemic, SES-GS requests that all correspondence be sent electronically, as physical mail to this address may not be checked regularly.

<sup>2</sup> The FCC has granted market access to the current O3b 20 satellite constellation and authorized the expansion of the constellation to up to 42 satellites. See *O3b Limited*, Order and Declaratory Ruling, 33 FCC Rcd 5508 (2018).

SES-GS certifies pursuant to Sections 25.115(f)(1) and 25.146(a)(2) of the Commission's rules that the operations proposed herein will comply with the equivalent power flux-density ("EPFD") levels in Article 22, Section II, and Resolution 76 of the ITU Radio Regulations to protect geostationary orbit ("GSO") satellites. O3b was previously granted an experimental license for the GetSat Millisat-class terminal, and these applications included data demonstrating that the terminal's operations are compliant with the Article 22 EPFD uplink limits,<sup>3</sup> and SES-GS incorporates that showing by reference herein. SES-GS also will not claim protection from interference from GSO FSS networks.

### **(3) Time and Date of Proposed Operation**

SES-GS requests expedited processing to allow testing to begin as early as 18 April 2022; with this start date, testing should be complete by 7 May 2022. The timing is driven by the need to support U.S. government requirements. Specifically, the demonstration will allow assessment of the antenna's capability to operate with the O3b network to provide data relay services that will allow mitigation of a national level, high priority threat scenario.

### **(4) Class(es) of station (fixed, mobile, fixed and mobile) and call sign of station (if applicable).**

The GetSat transmitting antenna will operate as a fixed and mobile terminal within an 8 km radius of the coordinates specified in this narrative. The LiteCom AvL 2.2m terminal will operate as a fixed antenna at coordinates specified in this narrative.

### **(5) Description of the location(s) and, if applicable, geographical coordinates of the proposed operation.**

SES-GS will operate the GetSat Milli-W terminal at and around a location in 29 Palms, CA, in a fixed and mobile mode. SES-GS will also operate a LiteCom AvL 2.2m satellite antenna, in a fixed mode only. All operations will be conducted within an 8 km (5 mile) radius of the designated coordinates listed below:

1. 34.30375N, 116.16598W (North 34° 18' 13" / West 116° 9' 57")

Figures 1 and 2 (next page) detail a map of the site with both a site view and a broader 8 km (5 mile) radius view.

29 Palms Strategic Expeditionary Landing Field San Bernardino County, CA (USA)

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<sup>3</sup> O3b Limited, Call Sign WL2XNQ, File No. 0008-EX-CN-2021, Annex B, granted Feb. 19, 2021.



Figure 1: Aerial View of area of operation



Figure 2: Zoomed in view of Fixed Location

**(6) Transmit equipment to be used, including name of manufacturer, model, and number of units.**

2.2m LiteCom AvL Ka-band antenna AN/TSC-156(E) (experimental), part number: Lite Sat 2.2A-PH-Q, 1 unit  
 GetSat Millisat W, 1 unit

**(7) Maximum effective radiated power (ERP) or equivalent isotropically radiated power (EIRP).**

Terminal	BUC Size	TX EIRP
2.2m LiteCom AvL [AN/TSC-156(E)]	40W	65.4 dBW or 3,467,368.5 W
GetSat Millisat W	25W	49.3 dBW or 85,113.8 W

For all operations, SES-GS will comply with the radiofrequency radiation exposure limits in 47 C.F.R. § 1.1310 and apply the measures recommended in the FCC's OET Bulletin 65 to ensure compliance.

**(8) Emission Designator**

216MG7D

**(9) Overall height of antenna of antenna structure above the ground (if greater than 6 meters above the ground or an existing structure, see part 17 of this Chapter concerning notification to the FAA).**

The 2.2m LiteCom AvL antenna's overall height is less than 3 meters  
The GetSat Millisat W antenna's overall height is less than 0.3 meters.

**(10) Directional Antenna Characteristics**

<u>Parameter</u>	<u>2.2m LiteCom AvL [AN/TSC-156(E)]</u>	<u>GetSat Milli W</u>
Width of the antenna beam in degrees at the half-power point	Az=0.2° El=0.2°	Az=1.3° and El=2.2°
Orientation of the antenna in the horizontal plane	Tracking from 208.9° to 167.1°	Tracking from 208.9° to 167.1°
Orientation of the antenna in the vertical plane	Tracking from 29.8° to 34.8°	Tracking from 29.8° to 34.8°