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.

Name: Mike Blefko
Address: 11790 Sunrise Valley Drive, Suite 300, Reston, VA 20191[1]
Phone: (703) 610-0957 Office; (571) 419-1333 Mobile
E-mail: Mike.Blefko@SES-GS.com

(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 a new terminal that has been developed to operate with the O3b Ka-band non-geostationary orbit ("NGSO") satellite system[2] that operates in a medium earth orbit ("MEO") 8,062 km above the earth.

Specifically, SES-GS requests STA to perform testing and evaluation of a 2.2 meter AvL Litecom model antenna with the O3b network to determine the antenna's suitability for deployment as part of a worldwide U.S. Army network. SES-GS will conduct the tests at and around an AvL facility in Asheville, NC and a teleport in Port St. Lucie, FL. The antennas will communicate with O3b's Ka-band NGSO satellite constellation using spectrum in which NGSO operations have sole primary status, transmitting in the 28.6-29.1 GHz frequencies and receiving in the 18.8-19.3 GHz frequencies.

(3) Time and Date of Proposed Operation

SES-GS requests expedited processing to allow testing to begin by April 19, 2021. The timing is driven by the need to meet U.S. Army program scheduling dates for qualifying the terminal with the O3b MEO network. Once the qualification is complete, the terminal could be deployed to provide high throughput, low latency connectivity for the U.S. Army at more than one hundred sites around the world. SES-GS is seeking to expedite the qualification process in order to speed the delivery of this valuable service to armed services personnel. Another factor in the timing is the limited availability of O3b capacity that SES-GS can use to perform the testing. SES-GS has determined that the relevant

[1] 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.

[2] 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) ("O3b Market Access Grant").

O3b beam capacity will be available during the last two weeks of April, but its availability past that time period is unknown.

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

The transmitting stations will operate as fixed satellite earth stations.

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

SES-GS will operate the terminals at and around an AvL facility in Asheville, NC and a teleport in Port St. Lucie, FL in fixed mode. During testing the antennas will be positioned within a 1-mile (1.6 km) radius of the designated coordinates listed below:

1. Fixed testing within 1.6 km of 35° 38' 24.2" N 82° 34' 32.6" W (Asheville, NC)
2. Fixed testing within 1.6 km of 27° 16' 57.0" N 80° 28' 59.0" W (Port St. Lucie, FL)

Maps of the sites are provided below.

Asheville, NC:

Port St. Lucie, FL:

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

AvL 2.2 meter Ka-band antenna AN/TSC-156(E) (experimental), part number Lite Sat 2.2A-PH-Q, 6 units.

Please note that each earth station terminal unit will include two technically identical antennas.

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

The maximum transmitted EIRP will be 60 dBW. The linear SSPA power is 41.76 dBm, or 15 watts.

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

50M0G7D

(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 antenna's overall height above ground level is 2.5 meters.

(10) Directional Antenna Characteristics

Asheville, NC Location	
Width of the antenna beam in degrees at the half-power point	0.3-0.5 degrees
Orientation of the antenna in the horizontal plane	Azimuth sweep range is from 200 degrees to 158 degrees
Orientation of the antenna in the vertical plane	Elevation will vary from 29.9 degrees to 32.5 degrees across the pass

Port St. Lucie, FL Location	
Width of the antenna beam in degrees at the half-power point	0.3-0.5 degrees
Orientation of the antenna in the horizontal plane	Azimuth sweep range is from 208 degrees to 158 degrees
Orientation of the antenna in the vertical plane	Elevation will vary from 40 degrees to 44 degrees across the pass

Gain information and antenna patterns are provided in Annex 1.