

## **SES Space and Defense 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 Space & Defense (“SES SD”), a wholly-owned subsidiary of SES S.A. (“SES”) and an affiliate of O3b Limited (“O3b”), provides satellite solutions to U.S. government customers to meet mission critical needs. SES SD is seeking an experimental special temporary authority (“STA”) in order to test and demonstrate a terminal that will communicate with the O3b non-geostationary orbit (“NGSO”) satellite system in the Ka-band (Call Sign S2935).<sup>1</sup>

Specifically, SES SD requests this STA<sup>2</sup> to perform time-sensitive testing and demonstration of the 2.4-meter Airbus Ranger 2400 antenna with the O3b network to assess the antenna’s suitability to support satellite communications to U.S. Government customers deployed around the world.

The antenna 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 SD requests expedited processing to allow testing to begin by February 23<sup>rd</sup>, 2023.

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<sup>1</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) (“O3b Market Access Grant”).

<sup>2</sup> SES SD intends to file an application for an experimental license at this location and others for the testing of this terminal model once it has fully determined the scope of its future tests and the availability of spectrum for these tests.

The timing is driven by the availability of the satellite resources as well as the antenna and personnel to conduct the tests. The terminal will be used to upload and download files and data at higher speeds and lower latencies than previously possible. With this type of capability, U.S. Government personnel will be better connected, providing a higher probability of mission success as well as morale, welfare and recreation connectivity if needed.

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

The transmitting antenna will operate as a fixed satellite earth station.

**(5) Description of the location(s) and geographical coordinates of the proposed operation.**

SESSD will test and operate the terminal in fixed mode at one location. During testing or demonstration, the antenna will be positioned within a 0.5-mile (0.8 km) radius of the coordinates indicated below.

- Port St. Lucie, FL (United Teleport)
  - Latitude: 27.28254 N
  - Longitude: 80.48264 W
  - Antenna Elevation Range: 40.6° - 44.6°
  - Antenna Azimuth Range: 157.5° - 208.5°
  - Operating Range: 0.8 kilometers

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

Airbus, Ranger 2400 (2.4m/50W), 2 units.

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

Maximum transmitted EIRP will be 69.0 dBW, the transmitted power is 50 Watts, and the peak ERP is 7943282 Watts.

The frequency tolerance is 0.5 ppb (0.00000005%). Modulating signal is QPSK.

For all operations, SES SD 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 or 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 will be less than 6 meters.

**(10) Directional Antenna Characteristics.**

Beam width at half power point (degrees): 0.31

Orientation in horizontal (azimuth) plane (degrees):  
157.5° - 208.5°

Orientation in vertical (elevation) plane (degrees):  
40.6° - 44.6°

Annex 1 attached provides antenna test and performance data using the Section 25.209 mask.