Narrative
File No. 2287-EX-ST-2023

Applicant Information
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Purpose of Experimental Special Temporary Authority

SES Americom Inc. ("SES") respectfully requests experimental Special Temporary Authority ("STA") for a period of 6 months beginning on January 1, 2024, through July 1, 2024, to test and demonstrate the efficacy and capabilities of the Planet Labs High Gain Helical Antenna ("Helical Antenna"). SES will test this antenna as part of a demonstration that was approved by the Commission earlier this year.[1] The Helical Antenna will transmit from the ground in a fixed position and communicate with the NSS-9 GSO spacecraft[2] located at 177° W.L. using the 6262 - 6423 MHz uplink C-band frequencies.

All operations in these frequency bands will be coordinated in compliance with 47 C.F.R. § 101.103(d). SES has begun the coordination process at the test location and will not seek to operate prior to the completion of the coordination process. SES will submit its completed coordination documents to the application file when they are finalized.

Grant of the requested authority is in the public interest as it will allow SES to evaluate and demonstrate the ability of these antennas to support critical satellite communications, such as for NASA's future commercial space relay missions.[3]

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[1] *See* SES Americom, Inc., call sign WV9XVS, File No. 1420-EX-ST-2023, granted July 31, 2023 ("July 2023 STA").
[2] *New Skies Satellites B.V.*, Call Sign S2756, File Nos. SAT-MPL-20090331-00040 et al., granted July 1, 2009.
[3] *NASA Selects SES Government Solutions to Support Near-Earth Communications*, (May 10, 2022), https://www.ses.com/press-release/nasa-selects-ses-government-solutions-support-near-earth-communications; *see also* Business Wire, *Planet Labs PBC Releases First Ground Testing Results for NASA CSP Program,* (Nov. 3, 2023), https://www.businesswire.com/news/home/20231103291640/en/Planet-Labs-PBC-Releases-First-Ground-Testing-Results-for-NASA-CSP-Program.

Class of station (fixed, mobile, fixed and mobile)

For this demonstration, the antenna will communicate with SES's NSS-9 GSO satellite in a fixed position on the ground.

Description of the location and geographical coordinates of the proposed operation

1245 Terra Bella Ave.
Mountain View, CA. 94043
Geographical coordinates: 37° 24' 29.0" N, 122° 4' 21.0" W

Transmit equipment to be used

Manufacturer	Model	Gain (dBi)	Size	Number of Units
Planet Labs	High Gain Helical Antenna	12.0	80 mm height 13.4 mm diameter	1

Frequencies and transmit power levels

Antenna	Frequency	Station Class	Maximum EIRP	ERP	Mean Peak	Frequency Tolerance (+/-)	Emission Designator	Modulating Signal
Planet Labs Helical	6262 - 6423 MHz	FX	15.0 dBW/MHz	19.3 W	P	0.000024 %	1M00G7W	QPSK

Overall height of antenna of antenna structure above the ground

The overall height of the antennas above ground level is approximately 3 meters.

Directional Antenna Information

Is a directional antenna used? Yes.

Antenna	Width of the beam in degrees at the half power point	Orientation in horizontal (azimuth) plane (degrees)
Planet Labs Helical	Az = 25 degrees El = 25 degrees	Azimuth from 246.9° to 246.9°

Compliance with Part 25 Off-Axis EIRP Density

Please see Figure 1 below, which demonstrates that the Planet Labs Helical antenna Off-axis EIRP density, from 0 to 180 degrees, complies with the FCC 25.218(d) envelope.