

## **Description of Experimental Authorization Request**

With this application, Viasat, Inc. (“Viasat”) requests an Experimental Authorization for operation of its earth station located in Pendergrass, Georgia. This a currently licensed terminal with call sign E160161, File No. SES-MOD-20170718-00770). This authorization will require new narrowband emissions that will be used to communicate with the STPSat-4 Earth Exploration Satellite Service (“EESS”) non-geostationary orbit (“NGSO”) satellite. The Viasat ground station will be used with the OTB satellite for telemetry, tracking, and control (“TT&C”). The authorization is required for 12 months starting October 1, 2019.

The STPSat-4 satellite is a new Department of Defense (DoD) Space Test Program (STP) satellite. The STPSat-4 will host space technology experimental payloads such as the Air Force Research Laboratory (AFRL) Modular RF Tile L-band Experiment and other U.S. Air Force Academy undergraduate student education projects. The AFRL L-band experiment will be the only active transmitter while all other onboard payloads on the STPSat-4 satellite are passive devices. The STPSat-4 satellite is currently scheduled for launch in October 2019 and the intended use is less than one year.

The STPSat-4 satellite is a non-geosynchronous satellite with apogee and perigee of 400 km and an inclination angle of 51.6 degrees. The satellite will transmit on a frequency of 2277.9 MHz (space-to- Earth) with emissions 437KG1D and 875KG1D (power of 2 Watts) while in view of the ground stations located at Colorado Spring, CO and Houston, TX. The STPSat-4 receives on a frequency of 2097.566 MHz (Earth-to-space) with 17K2G1D emission from the ground stations located Colorado Spring, CO and Houston, TX (see SPS-22315/1 and SPS-22567/1).

The STPSAT-4 satellite has been given a waiver by the National Telecommunications and Information Administration to operate without international registration. This waiver is provided as a separate document named “6 - ITU Waiver\_105158\_NTIA MEMO to AFSMO - STPSat-4\_FINAL.pdf”

The uplink power from the earth station to the STPSat-4 satellite will be 47 dBW which is more than 6 dB below the limit of 53.20 dBW currently included in the FCC license for the Pendergrass E160161 earth station. The uplink power density per 4 KHz from the earth station to the STPSat-4 satellite will be 40.7 dBW/4KHz which is less than the limit of 41.2 dBW/4KHz currently included in the FCC license for the Pendergrass E160161 earth station. Hence, no additional interference resulting from this request is foreseen.