



Exhibit A

Description of Experiment for Ka-Band

This application is for a Special Temporary Authority in the 28.6-29.1 GHz band.

Experiment Description

Viasat, Inc. requests a Special Temporary Authority (“STA”) in support of a customer requirement to test Ka-band antenna systems over the air with the Telesat non-geostationary (NGSO) satellite LEO-1 (call sign S2976)¹. The tests will be done in conjunction with DEUCSI (Defense Experimentation Under Commercial Satellite Internet) under Air Force Research Lab (AFRL) – Air Force Strategic Development Planning & Experimentations (SDPE); however, some testing will be performed not under government contract.

Viasat will be testing the following antennas:

- Sea Tel 4412: 1.1m antenna
- Global Aero Terminal (GAT) 5530: 0.767 m x 0.153 m asymmetric antenna

During the exercise, the Sea Tel antenna will serve as a “gateway” antenna, and the GAT 5530 will serve as the user terminal. The antennas will have a minimum elevation angle of 10°. The tests require communication with Telesat’s LEO-1 satellite which is in a low earth orbit (“LEO”). The communications to be made under the STA will be used to test and demonstrate certain design features of LEO-1, including antenna tracking, RF performance, and end-to-end network performance. See the terrain profile diagram as Exhibit B.

STA operations will be limited to the Ka-bands 28.6-29.1 GHz (Earth-to-space) and 18.8-19.3 GHz (space-to-Earth), which the Federal Communication Commission’s Ka-band plan allocates on a primary basis to NGSO operations. Each earth station will operate on a non-interference basis from one of three locations:

- Duluth, GA - 1725 Breckinridge Plaza, Duluth, GA 30096
- Carlsbad, CA - 6155 El Camino Real, Carlsbad, CA 92009-1699
- Germantown, MD - 13135 Winged Foot Lane, Germantown, MD 20874

Viasat requests a 6-month period for the STA. There will be a two-week initial test in March 2021, followed by additional testing later in the year pending the results. The testing is expected to take place between normal business hours (8 AM to 8 PM EDT). The point of contact for ceasing transmissions in case of interference is Alton Earle (1-678-924-2653).

¹ See Telesat Petition for Declaratory Ruling under IBFS file No. SAT-PDR-20161115-00108 and Grant of Authority. Under IBFS file No. SAT-MPL-20201231-00158

Emissions

The following table outlines the emission designator and EIRP values for each antenna.

Terminal	Frequency Band	Emission Designator	EIRP (dBW W)	EIRP Density (dBW / Hz)
Sea Tel 4412	28600-29100 MHz	10M5D1D	57 dBW 501187.23 W	-13.21
	28600-29100 MHz	50M5D1D	57 dBW 501187.23 W	-20.03
GAT 5530	28600-29100 MHz	10M5D1D	49 dBW 79432.82 W	-21.21
	28600-29100 MHz	50M5D1D	49 dBW 79432.82 W	-28.03

Satellite Description

LEO-1 is part of an NGSO LEO satellite network in the Ka-band. LEO-1 was launched in January 2018 and has been operating at a mission orbit of 99.5° (circular) at an altitude of 1000 km.

- Perigee: 1000.0 km
- Apogee: 1000.0 km
- Inclination Angle: 99.5°
- Orbital Period: 6306.9 seconds

Telesat Network Services, Inc. ("TNSI") submitted a detailed orbital debris assessment report ("ODAR") prepared by NXTRAC for LEO 1 that was previously submitted to the Federal Communication Commission². The ODAR confirms compliance with U.S. government orbit lifetime and orbital debris mitigation regulations. The report is submitted with this application as Attachment 1 for reference.

² See Telesat Canada, Request for Special Temporary Authority to Construct and Operate an Earth Station to Test, Validate, and Demonstrate communications with Telesat's LEO 1 Satellite, IBFS File No. SES-STA-20190604-00724, Attachment 3: ODAR.