SES Americom
Application for Experimental License

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 Americom ("SES") is a satellite operator that operates U.S. licensed space stations as well as many foreign licensed space stations that are on the Federal Communications Commission's (the "FCC") Permitted List. It's affiliate, O3b Limited, holds a number of authorizations from the Commission as well. SES satellites and earth stations operate in many bands in the U.S. including the 3700-4200 MHz band which is at issue in an ongoing Commission proceeding.

In order to facilitate the Commission's goal of making a portion of the 3700-4200 MHz band available for terrestrial mobile wireless services, SES is developing new techniques and technologies that will allow it to use less spectrum while maintaining its critical C-band services for its many U.S. customers. To further that goal, SES will be conducting antenna performance measurements using an antenna test range with fixed transmitters. Testing will characterize near field effects into a nominal MVPD C-band receive antenna. Transmission will be within the 3.7-4.2 GHz band.

SES will be performing the tests at two co-located test ranges in Albion, MI. SES seeks special temporary authority so that testing can be conducted at these locations. During the tests, the two fixed transmitters will be between 25 ft and 500 ft from the mock receive-only earth station in order to measure the effect of the transmissions on the receive signal.

(3) Time and dates of proposed operation

SES requests temporary authority for approximately 2 months, from November 4, 2019 through January 4, 2020. While the test will only occur for no more than a week, SES requests a larger range to ensure the testing can be conducted within in the time frame of the temporary authority.

SES will notify any U.S. authorized co-channel C-band earth station operators prior to any transmit testing and provide emergency contact information. In addition, when the transmitter will operate in spectrum bands shared with terrestrial operators, SES will complete frequency coordination prior to testing. SES will only transmit in one direction in order to minimize the potential for harmful interference for licensed users near the testing area. In the event that there is harmful interference, SES will immediately cease transmissions.

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

The transmitting stations will operate in fixed mode only.

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

SES will operate the transmitters at the below location:

704 North Clark Street, Albion, Michigan
42° 28 ‘ 38.6” N, 81°, 22’, 24.1” W

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

The maximum EIRP is 30 dBm.

(7) Emission Designator see §2.201 of this chapter) or describe emission (bandwidth, modulation, etc.)

Test signal being transmitted will be a continuous wave (CW).

(8) 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 overall height of the antenna above ground level is 3.9 meters.

O3b Networks
Application for Experimental License Annex A

I. Is a directional antenna (other than radar) used? Yes

a. If yes, provide the following information

i. Width of the beam in degrees at the half power point: N/A, SES will use an omni-directional antenna for testing

ii. Orientation in horizontal plane (degrees): 53.3°

iii. Orientation in vertical plane (degrees): 0°