

March 8, 2016

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Request for Experimental Radio Station Construction Permit and License

Dear Ms. Dortch:

Intelsat License LLC ("Intelsat") herein requests an Experimental Radio Station Construction Permit and License ("Experimental License")¹ for two years to verify and demonstrate airborne performance of a 12" circular reflector, motion-stabilized, Ku-band antenna system that will communicate with the Intelsat 29e satellite (Call Sign 2913).² Intelsat seeks to commence operations in U.S. domestic airspace no later than March 28, 2016; test events are anticipated with typical duration of one day to one month. Intelsat is requesting operation within CONUS, excluding within 125 km of NASA sites, or within line-of-sight of these facilities.³

Intelsat is seeking to demonstrate Ku-band in-flight aeronautical mobile connectivity and operations using the TECOM KuStream 5000 terminal. The demonstration involves the temporary operation of an aircraft-mounted terminal in the 14.0 – 14.47 GHz band (transmit) and 11.7 – 12.2 GHz (receive) frequency bands. The terminal is designed for aeronautical applications and has been previously licensed by the Commission.⁴

Intelsat herein attaches explanatory Exhibits A - C. Intelsat also incorporates herein by reference technical exhibits provided in the TECOM KuStream 5000 Ku-band experimental license, which include a Radiation Hazard Analysis Report and the Technical Brief for TECOM SATCOM System.⁵ These documents provide the technical details of the system, antenna patterns, pointing performance, link budgets, and analysis for spectral spreading requirements.

¹ Intelsat has filed its STA request, an FCC Form 442, a \$65.00 filing fee, and this supporting letter electronically via the OET Experimental Licensing System ("OET").

² See *Policy Branch Information; Actions Taken*, Report No. SAT-01086, File Nos. SAT-AMD-20140718-00087 and SAT-LOA-20130722-00097 (May 22, 2015) (Public Notice).

³ It is anticipated that the terminal will be tested in Maine (Brunswick), Florida (Jacksonville), Maryland, North Carolina, Georgia, and other locations.

⁴ See *Federal Communications Commission Experimental Radio Station Construction Permit and License*, File No. 0637-EX-PL-2015, Call Sign WI2XBD (granted Feb. 5, 2016).

⁵ See *Application of TECOM Industries, Incorporated to Request an Experimental License for its KuStream1000 System*, File No. 0637-EX-PL-2015 (filed Oct. 25, 2015).

Ms. Marlene H. Dortch
March 8, 2016
Page 2

Previous static testing has verified cross-polarization rejection, linearity (spectral regrowth) at maximum power, modulation & coding optimization, alignment with forward and reverse link calculations, satellite tracking, and satellite switching. Various currently-licensed hub antennas will be used, depending on availability. Link budgets will be performed to ensure compliance with off-axis spectral density using spectral spreading.

In addition, testing under this license will be under human supervision to ensure safety and compliance with the terms of the license. In the extremely unlikely event that harmful interference should occur due to transmissions to or from the antenna, Intelsat will take all reasonable steps to eliminate the interference.

Grant of this Experimental License will allow Intelsat to verify and demonstrate the airborne performance of a 12" circular reflector, motion-stabilized, antenna system. This, in turn, will help determine its readiness for commercial operation and thereby serves the public interest.

Please direct any questions regarding this STA request to the undersigned at (703) 559-6949.

Respectfully submitted,

A handwritten signature in cursive script, reading "Cynthia J. Grady". The signature is written in dark ink and is positioned above the printed name and title.

Cynthia J. Grady
Regulatory Counsel
Intelsat Corporation