APPLICATION FOR SPECIAL TEMPORARY AUTHORITY

Pursuant to Section 25.120 of the Commission's rules, the Boeing Company ("Boeing") requests special temporary authority ("STA") to continue communications between its licensed Earth Stations Aboard Aircraft ("ESAA")[1] terminals and Intelsat IS-33E (IS-33E) , Eutelsat 10A (E10A), and Eutelsat 172B (E172B) as authorized points of communication.[2]

The Boeing Broadband Satellite Network ("BBSN") currently operates on a STA for satellite points of communications, IS-33E and E10A under SES-STA-20170919-01031 that will expire on December 26, 2017, and E172B is currently authorized under SES-STA-20171006-01107 and it expires on January 17, 2018. In an effort to reduce applications at the Commission Boeing is consolidating this action in one application. IS-33E, E10A, and E172B support Boeing's operations on behalf of the United States Government. Boeing has therefore applied to modify its ESAA license to begin operating using IS-33E, E10A, and E172B.[3] This STA request is filed to continue testing with the new satellites during the pendency of the modification/amendment application. Boeing requests that this approval be provided by December 27, 2017 and extend for a period of sixty days.

---

[1] Application of The Boeing Company for Authority to Operate Up to 100 Earth Stations Aboard Aircraft, Call Sign E140097, File Not. SES-LIC-20140922-00748 (Granted Mar. 18, 2015) ("Boeing ESAA Application").

[2] IS-33E Call Sign S2939; Eutelsat E10A, W2A (M0311)

[3] Application of The Boeing Company, File No. SES-AFS-20171108-01238 (Filed Nov. 8, 2017); SES-MFS-20170912-00997 (Filed Sept. 12, 2017).

I. SATELLITE POINTS OF COMMUNICATION AND NETWORK CONTROL

IS-33E, and E172B (once licensed) are U.S. licensed satellite listed on the Commission's Approved Space Station List.[4] E10A, licensed in France has been approved for use under FCC grant E100089, however, Boeing only requests operations for its ESAA stations operating outside the US&P and thus does not request market access for operations in the US&P. Thus, all of the information normally required under Section 25.114, 47 C.F.R. § 25.114, has already been provided to, and approved by, the Commission in prior applications. To the extent necessary, Boeing incorporates that information by reference.[5]

The Boeing ESAA network uses variable power-density control of individual simultaneously transmitting co-frequency ESAA terminals in the same satellite receiving beam. Sections 25.227(a)(3)(ii) and 25.227(b)(3)(ii) of the Commission's rules require variable power systems to either operate 1 dB below the off-axis EIRP spectral density ("ESD") envelope defined in the Commission's rules, or to secure certificates from the target satellite operator indicating that such higher power levels have been coordinated with adjacent satellite operators within six degrees in each direction.

---

[4] https://www.fcc.gov/approved-space-station-list.

[5] Application of Panasonic Avionics Corporation, E100089, SES-MFS-20170312-00255 (Granted October 19, 2016)

Accordingly, in Attachment 1, Boeing provides the antenna's and maximum aggregate output EIRP for all carriers, and statements from Intelsat and Eutelsat certifying to the information required by the Commission's rules, including that the aggregate ESD limits that the Boeing ESAA system adheres to have been coordinated with adjacent satellite operators. The network control and measures for ensuring the protection of other spectrum users will be the same as described in Sections II.D and V of Boeing's ESAA application.[6]

II. PUBLIC INTEREST

Boeing's BBSN network exclusively serves the needs of the United States Air Force Air Mobility Command in support of critically-important air transport operations. BBSN is used by the Air Force to enable broadband capabilities on more than a dozen Very Important Personnel/Special Air Mission aircraft operated by the U.S. Air Force to transport senior leadership of the U.S. Government and the Department of Defense.

It is crucial that BBSN add this additional coverage and capacity as the capabilities required by Air Force Mobility Command has change. Boeing will need to do extensive testing of the BBSN system with these new satellites prior to an operational cutover. Therefore, extraordinary circumstances exist requiring this temporary authority and a delay in the institution of these temporary test operations would seriously prejudice the public interest.[7]

---

[6] Boeing ESAA Application at 7, 15.

[7] See 47 C.F.R. § 25.120(b)(1).

ATTACHMENT 1

Antennas

Model Number: Boeing Phased Array Antenna
Maximum aggregate output EIRP for all carriers 51.2 dBw

Model Number: Boeing Reflector Terminal
Maximum aggregate output EIRP for all carriers 46.7 dBw

Model Number: KuStream 1500
Maximum aggregate output EIRP for all carriers 44.8 dBw

Frequencies

IS-33E(S2939) satellite at the 60° E.L.
AC Tx: 14234.95 MHz
AC Rx: 11464.95 MHz

Eutelsat 10A satellite at the 10.0 E.L.
AC Tx: 14107.0 MHz
AC Rx : 11513.0 MHz

E172B satellite at 172°E
North Pacific transponder
AC Tx: 14040.25MHz
AC Rx: 11683.0MHz

SouthWest Pacific transponder
AC Tx: 14113.25MHz
AC Rx: 11593.0MHz

South Pacific transponder (Australia)
AC Tx: 14367.80MHz
AC Rx: 12601.80MHz

eutelsat
communications via satellite

September 1st, 2017

To whom it may concern

Re: Engineering Certification of Eutelsat

Eutelsat confirms and hereby certifies the following with respect to the operations proposed in the above reference application:

a) The proposed Ku-band operation of BOEING's ESAA terminal has the potential to create harmful interference to adjacent satellite networks that may be unacceptable;
b) BOEING will use Eutelsat capacity on the Eutelsat 10A and Eutelsat 172B satellites for other ESAA operations
c) The proposed operation of the ESAA transmit/receive terminals at the power density levels defined between BOEING and Eutelsat is consistent with existing satellite coordination agreements with the adjacent satellites of the Eutelsat 10A and Eutelsat 172B satellites within 6 degrees of orbital separation from the satellite.

If the FCC authorizes the operation proposed by BOEING, Eutelsat will include the power density levels specified by BOEING, defined within the satellite coordination agreements, in all future satellite network coordination with operators of satellite that are adjacent to those satellites addressed by this letter.

Sincerely,

For Eutelsat
Filipe De Oliveira
Director of Resources Engineering

Eutelsat S.A. · société anonyme à Conseil d'Administration au capital de 987 459 990 € · RCS n° 422 551 176 Paris
Siège social · 70 rue Balard · F-75502 Paris Cedex 15 · France · tel. +33 1 53 98 47 47 · fax +33 1 53 98 37 00

INTELSAT
Envision. Connect. Transform.

August 17, 2017

The Boeing Company
P.O. Box 3707
Seattle, WA 98124-2207

Re: Satellite Operator Coordination Certification of Boeing Earth Station Aboard Aircraft (ESAA) License Application

To Whom It May Concern:

Intelsat confirms and hereby certifies the following with respect to the operations proposed in the above referenced application:

(a) The proposed Ku-band Earth Station Aboard Aircraft (ESAA) operation of the Boeing Company has the potential to create harmful interference to satellite networks adjacent to the target satellite(s) that may be unacceptable;

(b) The power density levels that Boeing provided to this Satellite Operator are consistent with the existing coordination agreements between the IS-33e satellite at 60EL and the adjacent satellite networks within 6 degrees of orbital separation from the satellite, and

(c) The power density levels of the proposed ESAA operations will be included in future coordination agreements in accordance with FCC rules and regulations.

Please let us know if additional information is required.

Sincerely,

Alexander Gerdenitsch
Manager, Spectrum Policy, Americas