APPLICATION FOR MODIFICATION

The Boeing Company ("Boeing") requests modification of its existing license (E140097) for Earth Stations Aboard Aircraft ("ESAA")[1] to add satellites Intelsat IS-33E (IS-33E) and Eutelsat 10A (E10A) as authorized points of communication.[2]

The Boeing Broadband Satellite Network ("BBSN") currently operates with multiple satellite points of communications, IS-33E and E10A are being added to increase the satellite footprint which is necessary to support Boeing's operations on behalf of the United States Government. Boeing therefore seeks authority to begin operating using the Intelsat IS-33E and Eutelsat 10A satellites as soon as possible. Concurrently with this application, Boeing is filing a request for Special Temporary Authority to permit testing to begin with the new satellites during the pendency of this application.

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[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; *Known as Eutelsat E10A, W2A (M0311)*

## I. SATELLITE POINTS OF COMMUNICATION AND NETWORK CONTROL

IS-33E is a U.S. licensed satellite listed on the Commission's Approved Space Station List.[3] E10A, licensed in France has been approved for use under FCC grant E100089. 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.[4]

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. Accordingly, Boeing provides the attached statements from Intelsat 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.[5]

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

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

## 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 maintain the coverage and capacity capabilities required by Air Force Mobility Command missions. Therefore, authority to communicate with IS-33E, and E10A will strongly serve the public interest, and Boeing requests that the Commission grant this application at the earliest practical time.

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[5] Boeing ESAA Application at 7, 15.

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

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



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