

February 20, 2020

VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC

Re: Notice of Ex Parte Communication, IB Docket No. 17-172

Dear Ms. Dortch:

This is to inform you that on February 19, 2020, Ben Stout, Bill Wiltshire, Mihai Albulet (by phone), Zahid Islam (by phone) and I on behalf of Space Exploration Technologies Corp. ("SpaceX") met with Jose Albuquerque, Alyssa Roberts, and Kal Krautkramer (by phone) of the Commission's International Bureau with respect to the above referenced docket.

During this meeting, SpaceX discussed the potential safe-harbor guidelines for implementing the siting methodologies for gateway earth stations that use Ka-band spectrum discussed in Section 25.136(a) of the Commission's rules listed in the attachment hereto, which was provided at the meeting. SpaceX urged the Commission to provide such guidance in order to help streamline the authorization process for gateways supporting non-geostationary orbit satellite systems as they approach the launch of commercial service.

Very best regards,

/s/ David Goldman

David Goldman
Director of Satellite Policy

SPACE EXPLORATION TECHNOLOGIES CORP.
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Attachment

cc: Jose Albuquerque
Alyssa Roberts
Kal Krautkramer

EARTH STATION SITING METHODOLOGIES FOR SECTION 25.136
IB Docket No. 17-172

- Many earth station sites will involve multiple antennas, each of which will track a different NGSO satellite. Applicants should be allowed to use the worst-case aggregate EIRP density toward the horizon determined with orbital simulations and a “composite” antenna pattern, not to be exceeded for 99% of the time. Provides a technical envelope within which earth stations may operate while still protecting UMFUS systems.
 - Consistent with Ka-band gateway applications submitted and granted to date.

- In calculating PFD contours, applicants should have the option to use either actual antenna characteristics or a worst-case off-axis antenna gain mask. (GSO masks in Section 25.209 are not appropriate for use with NGSO antennas.) The latter would provide a technical envelope within which the operator could innovate and redesign antennas yet still be sure of protecting UMFUS systems.
 - Consistent with Section 25.132(a)(1), operators could perform tests on representative equipment in representative configurations to validate compliance with the simulated antenna gain mask.

- Applicants should be allowed to use the ITU propagation model ITU-R Rec. P.452, which applies for frequencies from 0.1 GHz to 50 GHz. Commercially available computer programs (e.g., Transfinite) implement that model.
 - The analysis should include the effects of terrain and ground clutter around the earth station site.
 - Applicants should also be able to take shielding into account – can certify that the indicated level of shielding has been installed once the facility is complete.

- In determining potential impact of population, applicants should use the “actual area method” as this more accurately captures the relevant data.
 - Applicants should use the most recent measured U.S. Census data at the census block level.
 - For this analysis, applicants should be able to use compilations such as the most updated version of NASA’s Socioeconomic Data and Applications Center Gridded Population of the World (“GPWv4”), which is based on population counts collected at the most detailed spatial resolution available from the results of the most recent U.S. Census.