

July 5, 2018

Innovation, Science and Economic Development Canada  
c/o Senior Director, Spectrum Licensing and Auction Operations  
235 Queen Street, 6<sup>th</sup> Floor  
Ottawa, Ontario K1A 0H5  
Canada

**Re: Addendum to the Consultation on Releasing Millimetre Wave Spectrum to Support 5G (SLPB-005-18)**

DEAR SIR OR MADAM,

Space Exploration Technologies Corp. (SpaceX) welcomes the opportunity to provide inputs in response to the “Addendum to the Consultation on Releasing Millimetre Wave Spectrum to Support 5G” notice (“the notice”) issued by Innovation, Science and Economic Development Canada (ISED) and published in the Canada Gazette, Part I on June 16, 2018.

SpaceX has plans to build and operate a constellation of non-geostationary orbit (NGSO) satellites for the provision of global broadband services. In March 2018, the U.S. Federal Communications Commission (FCC) granted operating authority for the constellation, and we have made the corresponding regulatory filings at the International Telecommunications Union (ITU). For ISED’s reference, we have enclosed the Technical Annex of our FCC application describing in more detail our satellite system plans.

The proposed SpaceX NGSO constellation will utilize Ku-band frequencies to communicate between satellites and end-users, and Ka-band between the satellites and our gateways. As such, SpaceX believes that preserving sensible satellite access to the 26 GHz band for Fixed Satellite Services (FSS) is a crucial policy decision in the path toward creating access to broadband for all Canadians. With innovative on-orbit and ground technology, SpaceX has concluded in its public filings with the U.S. FCC that the deployment of our NGSO satellite constellations is compatible with envisioned 5G systems in Ka-band, including the 26 GHz band. The final plan filed with the U.S. FCC envisions employing phased array antenna technology and directional separation. We have concluded that under this plan our NGSO antennas can operate even on the same building as planned 5G small cell systems, whose antennas point largely toward the ground and along the horizon while the NGSO gateway antenna looks skyward.

For ISED’s reference, and relevant to questions A8, A9, and A10 posed in the Notice regarding coordination between the fixed satellite service and proposed flexible use terrestrial stations, we have also attached analysis on Ka-band compatibility between NGSO and 5G that we had submitted as public comments to the U.S. FCC in their Spectrum Frontiers proceeding.

With specific reference to Question A9, regarding “whether there should be restrictions on the geographic areas in which new FSS earth stations can be deployed in the 27.0–28.35 GHz band,” SpaceX has concluded that no such restrictions are necessary and that market forces may require co-location of these antennas with any future 5G transmitters that may be deployed in adjacent bands.

We look forward to contributing to ISED’s decision-making and the prospect of delivering high-speed broadband to Canada’s citizens.

With best regards,



Patricia Cooper  
Vice President of Satellite Government Affairs