



Federal Communications Commission
Washington, D.C. 20554

March 10, 2021

Mr. Nicholas G. Spina
Manager of Launch and Regulatory Affairs
Kepler Communications Inc.
675 King Street West, #204
Toronto, ON Canada
MSV 1M9
nspina@keplercommunications.com

Re: Kepler Communications Inc., IBFS File No. SAT-MPL-20200904-00104

Dear Mr. Spina:

In May 2020, Kepler Communications Inc. filed the above referenced application requesting that the Commission modify the grant of market access for its non-geostationary satellite orbit (NGSO) fixed-satellite service (FSS) system to reflect a change in the physical design of its satellites from a 5-kg class (3U CubeSat) to 12-kg class (6U CubeSat) architecture. The application seeks review and approval of an updated description of the technical specification of Kepler's satellites and orbital debris mitigation plan, as required by a condition to its grant of market access. See IBFS File No. SAT-PDR-20161115-00114, FCC 18-162, condition 25(g). The orbital debris mitigation plan relies on the use of differential drag maneuvers to mitigate the risk of collision with large objects. Application Exhibit B, "Kepler Orbital Debris Assessment Report" (Kepler ODAR) at 16-19. Please provide the following additional information in order to assist in the processing of this application:

1. In the application, Kepler states that, upon receipt of a conjunction warning it will "review and take all possible steps to assess the risk of the warning," and that it will take action to mitigate the collision risk "if deemed necessary." Kepler ODAR at 16. Please provide additional detail concerning the steps that will be taken to "assess the risk of the warning" and the criteria that will be applied in determining whether action is "deemed necessary." For example, please indicate whether there are any risk thresholds that will be used in determining whether an action is required, the sequence of events from the time Conjunction Data Message (CDM) is received to the time a drag maneuver is executed, etc.
2. Kepler notes that all operational satellites have the capability to conduct differential drag maneuvers to respond to a CDM if provided 48 to 72 hours' notice prior to the predicted event. Kepler ODAR at 18-19. Please indicate whether Kepler plans to routinely conduct collision avoidance maneuvers based on such CDMs. Please also indicate the basis for the specification of the 48 to 72-hour range. What factors impact whether the notice should be as long as 72 hours in advance, or as short as 48 hours in advance?
3. For CDMs first provided less than 48 hours prior to the predicted event, please describe the measures that will be taken, if any, to address the potential collision risk. For CDMs provided more than 120 hours before the predicted event, will any maneuvers be undertaken?
4. Please state, for the Kepler spacecraft already in orbit, the approximate current altitude and inclination of each spacecraft, how many CDMs have been received for such spacecraft, and any

significant actions taken in response, including contacting other operators or executing a maneuver.

5. Please provide an analysis, considering an array of typical conjunctions in the Kepler operational orbits, of whether high-risk events mitigated by at least one and one half orders of magnitude below the mitigation action threshold. If Kepler has not adopted such a threshold, please use a 1E-5 threshold.

Please submit the requested information by **April 10, 2021**. See 47 CFR § 25.112(c).

Sincerely,

Karl A. Kensinger

Karl A. Kensinger
Acting Chief, Satellite Division
International Bureau