



Federal Communications Commission
Washington, D.C. 20554

October 7, 2021

VIA ELECTRONIC MAIL

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

Re: Kepler Communications Inc.
IBFS File Nos. SAT-MPL-20200904-00104; Call Sign: S2981

Dear Mr. Spina:

Kepler Communications Inc. (Kepler) has filed the above-referenced application requesting that the Commission modify Kepler's grant of market access for its a non-geostationary satellite orbit (NGSO) fixed-satellite service (FSS) system. On March 10, 2021, the Commission sent a letter requesting additional information to facilitate processing of the application. Kepler provided a response on April 6, 2021, and following clarification at Kepler's request of one of the questions, Kepler provided an additional response on May 4, 2021.

Please address the following matters in order to further assist in the processing of this application:

1. In the orbital debris assessment report (ODAR) submitted by Kepler in support of its modification application, Kepler indicated that for the fully deployed scenario, the A/M (area-to-mass) ratio used in the Debris Assessment Software (DAS) report is 0.0180 (m²/kg).¹ Using an M value of 12 kg, the corresponding A value is 0.216 m². We are unable to replicate this A value based on the information provided. Please describe how the A value used in the DAS assessment was derived, include all parameters and assumptions used.
2. For satellites that fail to deploy in orbit, in calculating the in-orbit collision risk, Kepler uses an A/M ratio for the DAS assessment² of 0.00410 (m²/kg), which corresponds with an A value of 0.0492 m² when M=12 kg. Please described how the A value used in the DAS assessment was derived, include all parameters and assumptions used.
3. Kepler noted that its constellation of 140 operational orbiting spacecraft will be built and replenished by launching approximately 50 spacecraft per year, resulting in

¹ Kepler Application, SAT-MPL-20200904-00104, Appendix B, Orbital Debris Assessment Report (ODAR), Section 6, Assessment of Spacecraft Potential for On-Orbit Collision at 20-21.

² *Id.*

approximately 750 spacecraft deployed over the course of 15 years.³ Please describe in greater detail the basis for this estimate, including the criteria for replacing spacecraft and for estimating launch rates for purposes of replenishing the constellation. For example, does this estimate take into account spacecraft that fail in-orbit and must be replaced outside the regular replenishment cycle for the constellation? Is there any data available from early experience with Kepler satellites to support estimates of satellite reliability?

4. Please update the information in the record with the anticipated launch schedule for the coming year.⁴

Please feel free to contact us if you have any further questions, and we ask that you please submit the requested information by **November 8, 2021**.

Sincerely,

Karl A. Kensinger

Karl A. Kensinger
Chief, Satellite Division
International Bureau

³ *Id.* at 16-17.

⁴ *See id.* at 6-7; 47 CFR § 1.65.