TO: [redacted]
[redacted]
Ofcom
2a Southward Bridge Road
London SW1S2ET

22/01/2025

Re.: Response to Ofcom Request for Additional Information

Dear [redacted],

Further to Kepler's letter, dated 16th December, 2024, please find additional information regarding Kepler's response to Question 3 (relating to Kepler's ability to coexist with future NGSO systems), per Ofcom's request by email sent on January 22nd, 2024. This additional information should be treated as an addendum to Question 3, with Kepler having included its previous answer for the necessary context.

3. **Coexistence with future NGSO systems:** Coexistence among NGSO systems requires minimizing the occurrence and impact of in-line events. Kepler's system is designed to implement effective mitigation measures, including the use of opposite polarization and dynamic frequency adjustments. Using opposite polarization could reduce interference by employing both Left-Hand Circular Polarization and Right-Hand Circular Polarization, allowing Kepler's system to effectively isolate its signals from other systems operating within the same frequency band. The system may be capable of switching between these polarizations to ensure efficient coexistence with other operators. To avoid overlapping frequencies, Kepler implements frequency channelization, allowing the system to adjust its operating frequencies if necessary. As previously stated in Kepler's application, the satellites and user terminals are equipped with software-defined radios, which support adaptive output power and beam steering. These capabilities enable Kepler to optimize transmission parameters and reinforce the system's ability to meet coexistence requirements.
   The exact techniques that Kepler would implement will be determined through coordination discussions with other operators, where the unique operational parameters of all relevant systems will be taken into consideration.

   Kepler understands that the specific characteristics of future NGSO systems cannot be predicted and acknowledges the expectation to reasonably accommodate new licensees. It will comply with all such conditions in good faith.

a) Why Kepler chose the higher permitted levels under the filings for its first study;

Ofcom requested that Kepler provide a worst-case scenario. Providing the highest power levels permitted by an ITU filing would constitute the absolute worst possible scenario. However, this does

not consider actual operations, hence why Kepler provided a more realistic outlook in its second study.

b) Why Kepler reduced EIRP levels in the second study; and

Kepler used its operational parameters which accurately reflect the maximum envelope of Kepler's *actual operations*. To further explain, as Kepler provided in email communication to Ofcom on January 20th, 2025, Kepler's assessment of potential interference from the Kepler system involved two studies, each taking a different approach to representing potential interference scenarios. The first study used parameters taken directly from ITU filings to characterize the Kepler system. The second study employed operational parameters for Kepler. It's worth noting that this second study assumed continuous maximum power operation for Kepler, which is not representative of typical operations. This study also used parameters from the coordination efforts with OneWeb to model their system. This approach effectively explored a scenario based on the maximum capabilities of the Kepler satellites, providing insight into a potential operational worst-case. Given that operational parameters fall within the envelope of ITU filings, but at lower power level, it is unsurprising that the second study resulted in increased compatibility.

c) That Kepler do not intend to operate in the UK at power levels above the maximum operational levels assessed in its second study.

This depends on Kepler's coordination agreements with respective operators. That said, based on the information Kepler has been provided during coordination discussions, Kepler does not believe that it will be necessary to operate above the operational powers used in the assessment as a worst-case operational scenario.

Respectfully submitted,

[redacted]
[redacted]
Kepler Communications Inc.