Kepler Communications Inc.
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To: Ofcom Spectrum Licensing
PO Box 1285
Warrington, WA1 9GL
UK

August 22nd, 2022

Kepler Communications: Satellite (Earth Station Network) Radio License Request

Kepler Communications Inc. ("Kepler") hereby submits this request to provide services in the United Kingdom via a satellite Earth station network. Kepler has previously been authorized to operate in the UK under an Earth station network license ("ESN License"), first acquiring a license in May 2018.[1] Kepler's network is intended to support a host of applications, from store and forward-based IoT services to real-time data transfer services when the network reaches full deployment. The sun-synchronous orbits will provide coverage over the entirety of the Earth's surface, including the underserved polar regions, while the inclined orbits augment Kepler's ability to provide sufficient coverage and capacity over the heavily trafficked equatorial region. The Kepler System will utilize the first class of Kepler satellites with propulsive capabilities, providing enhanced station keeping, conjunction avoidance, and end of life disposal.

[1] Ofcom license no. 1153698/1.; Kepler's license was due to be renewed the 31st of May 2022, subject to payment of annual fees.

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Ofcom has previously evaluated Kepler's network design, and has deemed the provision of Kepler's services to be in public interest for the UK. Given Kepler's prior licensing history in the UK, and that Kepler's network design and ability to coexist with other Non-Geostationary Orbit ("NGSO") operators in the UK has not changed, Kepler respectfully requests that Ofcom expedite this license request. Herein, Kepler provides additional information as a supplement to the attached license application form, outlining Kepler's compliance with coexistence requirements.

In accordance with Kepler's previous license, Kepler seeks to continue to operate in the following frequency bands:

Frequency Bands
14.0-14.25 GHz
27.5-27.8185 GHz
28.4545-28.8265 GHz
29.5-30 GHz (NGSO)

Section D.1: Coexistence with existing systems

Ofcom requires that Kepler provide information demonstrating that its system is capable of coexisting with existing NGSO satellite systems that are currently licensed in the UK.[2] The Kepler System is fully capable of coexisting with current NGSO licensees in the UK, as

[2] At the time of submitting this application, the existing NGSO licensees are Network Access Associates Ltd (License number 1102679) and Starlink Internet Services Limited (License number 1239247).

demonstrated by Kepler's operations alongside these systems throughout the four years Kepler held its previous license granted by Ofcom. Kepler has actively engaged in coordination discussions with these NGSO operators, and continues to do so in the interest of ensuring an ability to coexist not only within the UK, but on a worldwide basis. Moreover, over the course of the past four years of Kepler's prior license, Kepler has not had technical issues or conflicts with the existing licensees in operating in the UK, which ought to sufficiently demonstrate the capability of Kepler's system to coexist as well as the fact that Kepler's system would have a very limited impact on the other licensees. There are therefore no concerns of coexistence with existing licensees which should prevent Kepler from re-obtaining an ESN license in the UK.

Section D.2.: Coexistence with future systems

Ofcom also requires that an operator confirm the flexibility of its user terminals to coexist with future NGSO systems, including an indication of what measures could be put in place for to ensure coexistence. In order for a system to be capable of coexisting with future

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systems which are yet to have any clear technical parameters which can be used as points of discussion in coordination talks, a system must be flexible. As Ofcom is aware from its prior evaluation of Kepler's system, Kepler integrates substantial flexibility into its system design and operations; for example, each Kepler satellite is equipped with a Kepler Software-Defined Radio (SDR) granting the capability to dynamically adjust transmission parameters on-orbit. Due to the technical flexibility of the SDR, rapid and efficient adjustment of transmit power, channel center

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frequencies and channel bandwidths is also made a trivial procedure, allowing dynamic frequency channelization if required. Kepler is therefore highly unlikely to pose any issues for future systems, providing sufficient flexibility to facilitate future coexistence, thus encouraging operators seeking to deploy NGSO networks in the future. Kepler would be happy to address any questions Ofcom may have about its system or intended operations, and respectfully requests that Ofcom grant this application.

Respectfully submitted,

[redacted]

[redacted]