Kepler Communications Inc.

196 Spadina Avenue, Suite 400
Toronto, ON Canada
M5T 2C2

EXHIBIT D

Waivers

The following text is an excerpt from Exhibit A – Legal Narrative

The Commission may grant a waiver of a rule when departure from the rule would better serve the public interest than strict adherence.[1] In particular, the Commission may grant such a waiver provided that the policy objective of the rule is not undermined and the waiver otherwise serves the public interest. Kepler requests the following waivers of the Commission's rules, which are appropriate and in the public interest under the particular facts presented.

A. Geographic service requirements of Section 25.146(b)

Kepler hereby requests a waiver of the requirement for NGSO FSS space stations to provide continuous service provision capability throughout the fifty states, Puerto Rico, and the US Virgin Islands.[2] Kepler's system is designed specifically to provide service to regions north of 55°N latitude, and it is therefore not feasible to meet the geographic coverage requirements stipulated by Section 25.146(b). Kepler's system as proposed will provide valuable connectivity services to the heavily underserved but increasingly active Arctic region. The size and complexity of the constellation is kept as minimal as possible to reduce the overall costs of providing the end service, minimize interference concerns with GSO and NGSO networks, and to reduce the time required to begin delivering the service. If required to meet the conditions of Section 25.146(b), the necessary redesigns would render the constellation unrecognizable, and would jeopardize its unique benefits and entire business model. In this case, there is good cause to grant a waiver of these requirements, as doing so would enable the delivery of these services to underserved American customers, and ultimately act in favor of the public interest. Therefore, Kepler respectfully requests that the Commission accordingly grant a waiver of the geographic service requirements of Section 25.146(b).

B. Section 2.106, To Provide Fixed Satellite Service to Earth Stations in Motion

Noting the ESIM Review, out of an abundance of caution, Kepler hereby requests a waiver of Section 2.106 of the Commission's rules to allow the provision of FSS to mobile land, maritime, and

[1] Northeast Cellular Telephone Co. v. FCC, 897 F.2d 1164, 1166 (D.C. Cir. 1990).
[2] 47 C.F.R. §25.146(b)

aeronautical terminals (referred to generally as "ESIMs") within certain bands otherwise allocated to the provision of FSS in the US, but without a specific designation for ESIMs. The frequencies of concern include the 17.8 - 18.3 GHz, 18.3 - 18.6 GHz, 18.8 - 19.4 GHz, 19.7 - 20.2 GHz, 27.5 - 29.1 GHz, and 29.5 - 30.0 GHz bands. A grant of this waiver would directly permit more bandwidth to be used to provide high-capacity FSS to the heavily underserved ESIM market, thereby greatly benefiting the public interest. Concerns of overallocation of these bands between GSO and NGSO systems in the FSS and BSS are mitigated greatly by Kepler's northernly service area, a region poorly situated to receive satellite services. Furthermore, the Commission has previously adopted similar rules for GSO services in these bands,[3] and is presently engaged in an ongoing rulemaking procedure on precisely this issue as it pertains to NGSO networks.[4] For much the same reasons that have motivated these alternate engagements, and for the reasons provided above, there is good cause for the Commission to grant such a waiver. Kepler therefore respectfully requests that the Commission grant a waiver of the specified requirements of Section 2.106.

C. Section 2.106: To provide MSS in the 19.7 – 20.2 and 29.5 – 30.0 GHz bands in exception of the Commission's Ka-band plan

Kepler hereby requests a waiver of the Commission's Ka-band plan[5] to permit the delivery of MSS in the 19.7 – 20.2 and 29.5 – 30.0 GHz bands using the same characteristics as its FSS operations. Although both ITU and U.S. Non-Federal allocations list the MSS in these bands, the Commission's Ka-band plan does not provide respective service rules for the MSS, instead dedicating the band to the FSS.[6] However, the Commission has previously found that the grant of a similar waiver to O3b was in the public interest, based on the assessment that O3b's MSS operations would "have the same characteristics of [its] FSS operations and that directional earth station antennas will also be used," and would therefore be indistinguishable from its FSS operations in these bands being conducted with ESIMs.[7] Kepler's

[3] *Amendment of Parts 2 and 25 of the Commission's Rules to Facilitate the Use of Earth Stations in Motion Communicating with Geostationary Orbit Space Stations in Frequency Bands Allocated to the Fixed Satellite Service*, 33 FCC Rcd 9327 (14).
[4] *Facilitating the Communications of Earth Stations in Motion with Non-Geostationary Orbit Space Stations*, Notice of Proposed Rulemaking, IB Docket No. 18-315, FCC 18-160, ¶ 1 (rel. Nov 16, 2018)
[5] *Updated Rules to Facilitate Non-Geostationary Satellite Systems*, Report and Order, IB Docket No. 16-408, 32 FCC Rcd 7809 (9).
[6] In particular, the Ka-band plan does not adopt sharing criteria between NGSO FSS and NGSO MSS systems in the 19.7 – 20.2 and 29.5 – 30.0 GHz bands.
[7] *O3b Limited, Request for Modification of U.S. Market Access for O3b Limited's Non-Geostationary Satellite Orbit System in the Fixed-Satellite Service and in the Mobile-Satellite Service*, Order and Declaratory Ruling, 33 FCC Rcd 5508, ¶¶ 21-22 (2018) ("O3b Grant").

proposed operations in this band similarly follow this description, and are technically identical to those it will conduct within the FSS towards ESIMs. Furthermore, Kepler's MSS operations would therefore comply with the same EPFD limits that are subject to its FSS operations, and the non-interference, non-protection requirements subject to its proposed ESIM operations in these bands. Therefore, good cause is shown to permit these operations in the same manner and respect as done for O3b. Consequently, Kepler respectfully requests that the aforementioned restrictions imposed by the Ka-band plan on the provision of MSS services within the 19.7 – 20.2 and 29.5 – 30.0 GHz bands be granted, subject to the conditions proposed or further rulemaking.

D. Section 25.114(c)(4)(v): Provision of Saturation Flux Density Figures within the Schedule S

Kepler hereby requests a limited waiver of the requirement to provide values for saturation flux density in the associated Schedule S to this application. The concept of saturation flux density does not technically apply to Kepler's system, as unlike many legacy bent-pipe systems, it processes signals prior to retransmission. Because Kepler cannot portray this inapplicability on the associated Schedule S, it has entered values of "0" and "-0.1" for maximum and minimum saturation flux densities in those respective fields. The Commission has previously granted similar waivers to other operators under the same reasoning.[8] Grant of this waiver would not undermine the purpose and intent of the rule, which is that the Commission must receive a full and complete set of information necessary to evaluate the application. Moreover, any necessary information not contained in the Schedule S is provided in the Technical Appendix attached to this application. Grant of this waiver would not undermine the public interest, as the provision of saturation flux density values for a system to which they are inapplicable do not meaningfully contribute to the evaluation of that system. Therefore, Kepler respectfully requests the Commission grant this waiver accordingly, consistent with Commission precedent.

E. Section 25.156(d)(4): Applications involving feeder links and service links

To the extent necessary, Kepler seeks waiver of Section 25.156(d)(4) of the Commission's rules, which provides for separate consideration of applications for feeder link and service link authority.[9]

[8] See, e.g., O3b Grant, ¶ 35; Space Exploration Holdings, LLC, *Application for Approval for Orbital Deployment and Operating Authority for the SpaceX NGSO Satellite System*, Memorandum Opinion, Order, and Authorization, 33 FCC Rcd 3391, ¶ 36 (2018).
[9] 47 C.F.R. § 25.156(d)(4).

Consideration of Kepler's entire filing, which includes requests to operate both feeder links and service links, would be most efficient and in the public interest.

F. Section 25.137(d)(5): Multiple applications

Though Kepler does not believe that the present application implicates the restrictions imposed by Section 25.137(d)(5) of the Commission's rules, out of an abundance of caution Kepler seeks waiver of this rule. Section 25.137(d)(5) prohibits non-U.S. applicants for market access from applying for market access of a system when it has applied for market access for another unbuilt system. The purpose of the rule is to safeguard against frivolous or speculative applications, to prevent spectrum warehousing.[10]

In this instance, Kepler has launched the initial portion of its currently authorized system, with plans to launch fifteen additional satellites this year. Therefore, Kepler does not believe that the Kepler Ku system is considered "unbuilt" under the rule and waiver would not be necessary. Additionally, Kepler has demonstrated that it intends to use the Ku authority granted to it by the Commission, both by having placed satellites into orbit and initiating services from them. Moreover, there is very little overlap between the two systems. The current application is for a separate constellation that will provide real-time broadband data and only use Ku band for a few large gateways situated in Alaska, to serve Alaska and its surroundings. For these reasons, the current application is not frivolous or speculative. If the Commission determines that a waiver is required, a waiver would therefore be in the public interest, especially to allow the provision of services otherwise not available.

G. Section 25.165: Surety bond requirements

The Commission additionally imposes an escalating bond requirement on NGSO operators to ensure that these milestones are met.[11] Kepler seeks waiver of this bond requirement on the basis that Kepler is seeking to only provide service to a small portion of the United States, outside of CONUS and in a geographic area – Alaska and adjacent U.S. waters – where spectrum use is relatively sparse. Thus, the Commission's reasons for requiring a bond, which is to ensure that scarce national spectrum resources are not hoarded, are not substantially present in this instance.[12] Kepler further notes that its existing

[10] *Amendment of the Commission's Space Station Licensing Rules and Policies*, First Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 10760, 10847-49 (2003).
[11] 47 C.F.R. § 25.165.
[12] *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Further Notice of Proposed Rulemaking, 29 FCC Rcd. 12116, 12123-24 (2014).

Kepler Ku Grant already imposes the requirement of an escalating bond for the use of Ku-band spectrum. Despite the systems being mutually exclusive, the Ku frequencies within this application overlap those in the Kepler Ku Grant, which Kepler is already making use of by having launched initial portions of its constellation and providing service. A bond requirement made on the pretense of hoarding spectrum for which it is already using is moot and thus unduly burdensome. The intent of the rule is already satisfied in this circumstance, and strict adherence to the application of a bond requirement acts only to encumber Kepler's ability to deploy the proposed system and therefore the public interest.

Regarding its requested Ka-band spectrum, the limitation of its coverage to the Alaskan service area vastly reduces the real value of the requested market access. To the extent that a bond requirement should be applied to its request for Ka-band spectrum, Kepler requests a reduction proportionate with the value of the limited market access obtained by constraining its target service area to a state that constitutes less than 1% of the population of the United States.[13]

[13] The U.S. Census Bureau estimates a population of the state of Alaska to be 731,545 as of July 1, 2019, representing a mere 0.2% of the U.S. population.
URL: https://www.census.gov/quickfacts/AK