

VIA ELECTRONIC FILING

5 October 2018

Marlene H. Dortch

Secretary Federal  
Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554Re: Oral *Ex Parte* Notice  
Kepler Communications Petition for Declaratory Ruling  
IBFS File No. SAT-PDR-20161115-00114

Dear Ms. Dortch:

On October 4<sup>th</sup>, 2018, Nickolas Spina of Kepler Communications Inc. (“Kepler”) met with Rachael Bender from the Chairman’s Office to discuss the above captioned non-geostationary satellite orbit (“NGSO”) fixed-satellite service (“FSS”) system in Ku-band. The presentation given can be found as an attachment to this letter.

During the meeting, Kepler described the success of its first operational satellite and how demand for its service is growing rapidly. Kepler also highlighted several other points, including the difference of its proposed system to other filers within the processing round<sup>1</sup>, its commitment to mitigating orbital debris, as well as the public interest benefits that Kepler’s operational NGSO system brings to the US. Namely:

- The immediate introduction of a low-cost system targeted directly at the global expansion of the Internet of Things (“IoT”), for low and high bandwidth requirements alike.
- The ability to offer service capacity with the first deployed satellite<sup>2</sup>, where each additional satellite is used to increase said capacity, and without the requirement for an extensive ground network.
- The planned establishment of near real-time data backhaul for other satellite operators, relieving the coordination burden, and allowing other satellite operators a more continuous stream of data.
- The relatively small number of continuously deployed satellites; accurate satellite positional knowledge; continuous tracking, telemetry & control; and the natural elimination of any potential debris due to the specific orbit selection and satellite design.

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<sup>1</sup> See IBFS File Nos. SAT-LOI-20160428-00041 (OneWeb); SAT-MOD-20160624-00060 and SAT-AMD-20161115-00116 (O3b Limited); SAT-PDR- 20161115-00108 (Telesat Canada); SAT-LOA-20161115-00109 (The Boeing Company); SAT-PDR-20161115-00111 (Space Norway AS); SAT-PDR-20161115-00112 (LeoSat MA, Inc.); SAT-LOA-20161115-00113 (Karousel LLC); SAT-PDR-20161115-00114 (Kepler Communications Inc.); SAT-LOA-20161115-00117 (Audacy Corporation); SAT-LOA-20161115-00118 (Space Exploration Holdings, LLC (SpaceX)); SAT-PDR-20161115-00120 (ViaSat, Inc.); SAT-LOA-20161115-00121 (Theia Holdings A, Inc.)

<sup>2</sup> Kepler’s first satellite was deployed in January 2018 and is currently providing service globally.

Kepler highlighted that as it awaits licensing within the US, it is delaying business opportunities and servicing of existing US customer demand. Finally, Kepler discussed the imminent launch of its second satellite and the customers it hopes to service with the added capacity.

Pursuant to Section 1.1206(b)(2) of the FCC's rules, 47 C.F.R. § 1.1206(b)(2), this *ex parte* notification is being filed electronically for inclusion in the public record of the above-referenced proceeding.

Thank you for your attention to this matter. Should you have any questions, please do not hesitate to contact me.

Sincerely,

/s/ Nickolas G. Spina

**Nick G. Spina** | Manager Launch & Regulatory Affairs

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# KEPLER

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UNBOUNDED CONNECTIVITY

System Overview • Status Updates • Application Progress



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The Kepler space network operates many small satellites as routers in space. The routers will form a network connecting devices on the ground and in space.



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1 satellite  
**LAUNCHED** -January, 2018

2 satellites  
November, 2018

3 satellites  
June, 2019

13 satellites  
Q1 2020

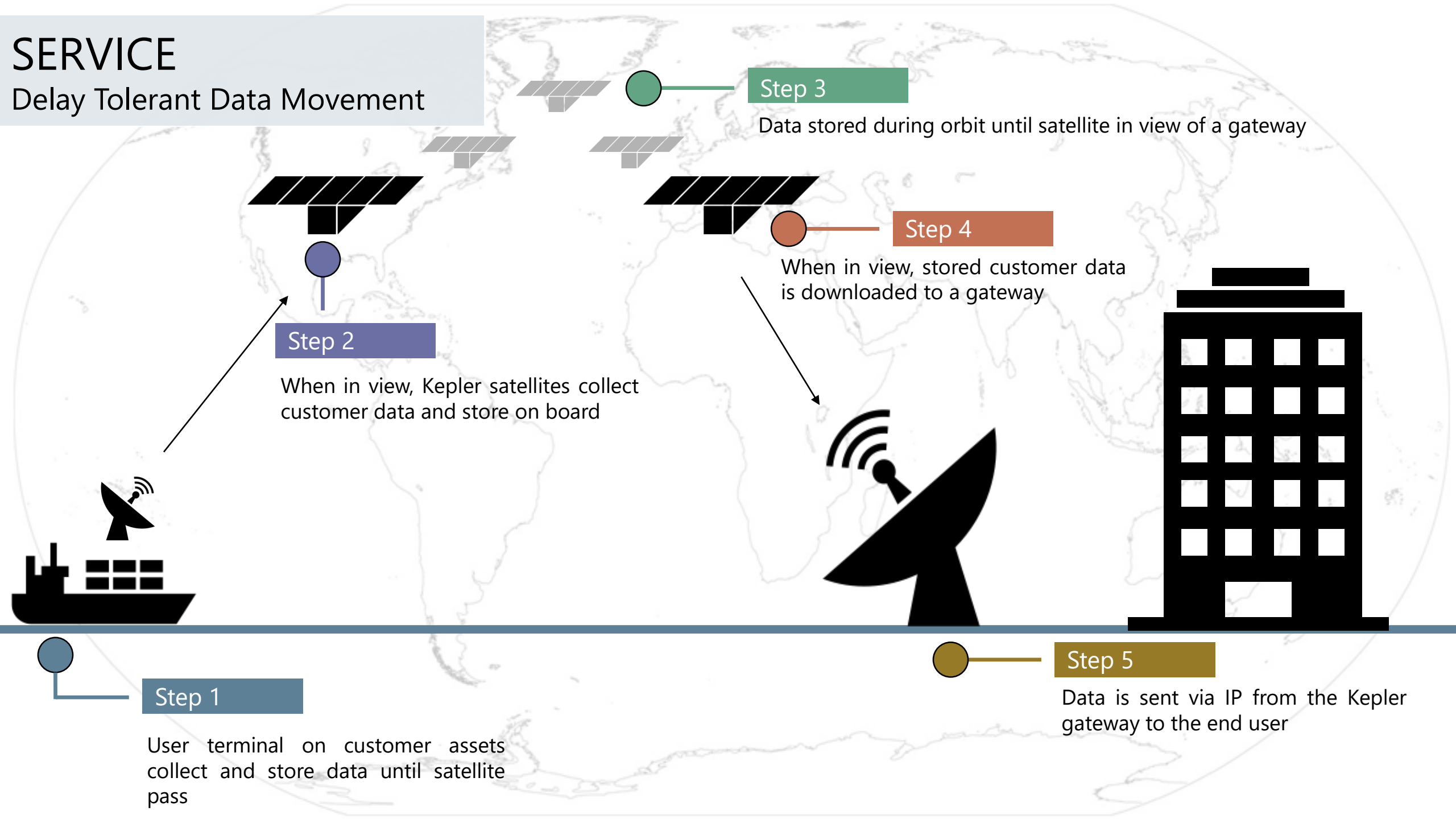
50 satellites  
2021

140 satellites  
2022



# SERVICE

## Delay Tolerant Data Movement









# SERVING THE PUBLIC INTEREST



## Bulk Transfer

Billing data, scientific data collection, CCTV footage, network backhaul, imagery



## IoT Data

Asset utilization, environmental conditions, operations data



## Alarm & Control

Hazard monitoring, theft prevention, supervisory control and data acquisition



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# ORBITAL DEBRIS MITIGATION

Kepler as responsible user of space

Last discussed: Sept 19<sup>th</sup>, 2018

## Total Probability of Collision

- Estimated  $<0.001$ , which is compliant with NASA Orbit Debris Requirement 4.5.2.1
- Modelled using most conservative assumptions over 15 years of full network operations
- No debris will survive re-entry

## Space Situational Awareness

- High-accuracy positional knowledge maintained and shared with other operators
- Space data sharing agreements already in place with JSpOC

## Maneuverability

- Global TT&C through inter-satellite links provides collision avoidance agility
- Active conjunction monitoring and maneuvering from launch to reentry
- No conjunctions experienced with existing satellite

## EPFD

- Kepler has provided multiple showings to the commission demonstrating compliance with EPFD requirements
- Further flexibility is afforded in the system given Kepler's unique software defined radio and the delay tolerant nature of its service

## Coordination

- Kepler has already completed coordination with a number of GEO and NGSO systems



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<http://kepler.space>