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October 19, 2018

**BY EFILE**

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W., Room TW-A325  
Washington, DC 20554

Re: *Hiber, Inc., Petition for Declaratory Ruling to Access U.S. Market Using the Hiberband Low-Earth Orbit System, Call Sign S3038, IBFS File No. SAT-PDR-20180910-00069*

Dear Ms. Dortch:

Pursuant to Section 1.1206 of the Commission's rules,<sup>1</sup> Hiber, Inc. ("Hiber") submits this *ex parte* letter to provide notice of an October 18, 2018 meeting between Maarten Engelen, Chief Technology Officer for Hiber; Bruce Henoeh, General Counsel for Hiber; and the undersigned, with Troy Tanner, Karl Kensinger, and Stephen Duall of the International Bureau. During the meeting, the Hiber representatives discussed the points addressed in the attached presentation.

Please direct any questions concerning this submission to the undersigned.

Respectfully submitted,

/s/ Lynne M. Montgomery  
Lynne M. Montgomery  
Counsel to Hiber, Inc.

Cc (by email): Stephen Duall  
Karl Kensinger  
Troy Tanner

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<sup>1</sup> 47 C.F.R. § 1.1206.



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# Hiber Global Petition for Declaratory Ruling for U.S. Market Access

*October 18, 2018*

# Introduction

- Hiber was established in 2016 as Magnitude Space by people with years of experience in satellite technology, ecommerce and digital thinking. Hiber's founders include the ex Vice President of General Electric Satcom and ex CFO of Booking.com to the founders of Just-Eat Benelux and Treatwell. Name of company changed to Hiber in 2017.
  - CEO is Ernst Peter Hovinga, 15+ years of satellite communications experience (GE Satcom, KPN, Stratos, Inmarsat)
  - CMO is Laurens Groenendijk, co-founder/CEO, Just-Eat Benelux and Treatwell
  - CFO is Erik Wienk, former CFO Booking.com and co-founder, Treatwell
  - VP, Corporate Affairs is Coen Janssen, Aerospace engineer/Deutsche Bank
  - CTO is Maarten Engelen, CTO/co-founder of Treatwell
  - CLO is Bruce Henoach, 20+ years in satellite industry, Comsat, Stratos, Inmarsat, Orbital ATK
- Company headquarters is in Amsterdam; design facility in Delft, Netherlands. U.S. corporate presence in Maryland



# About Hiberband®

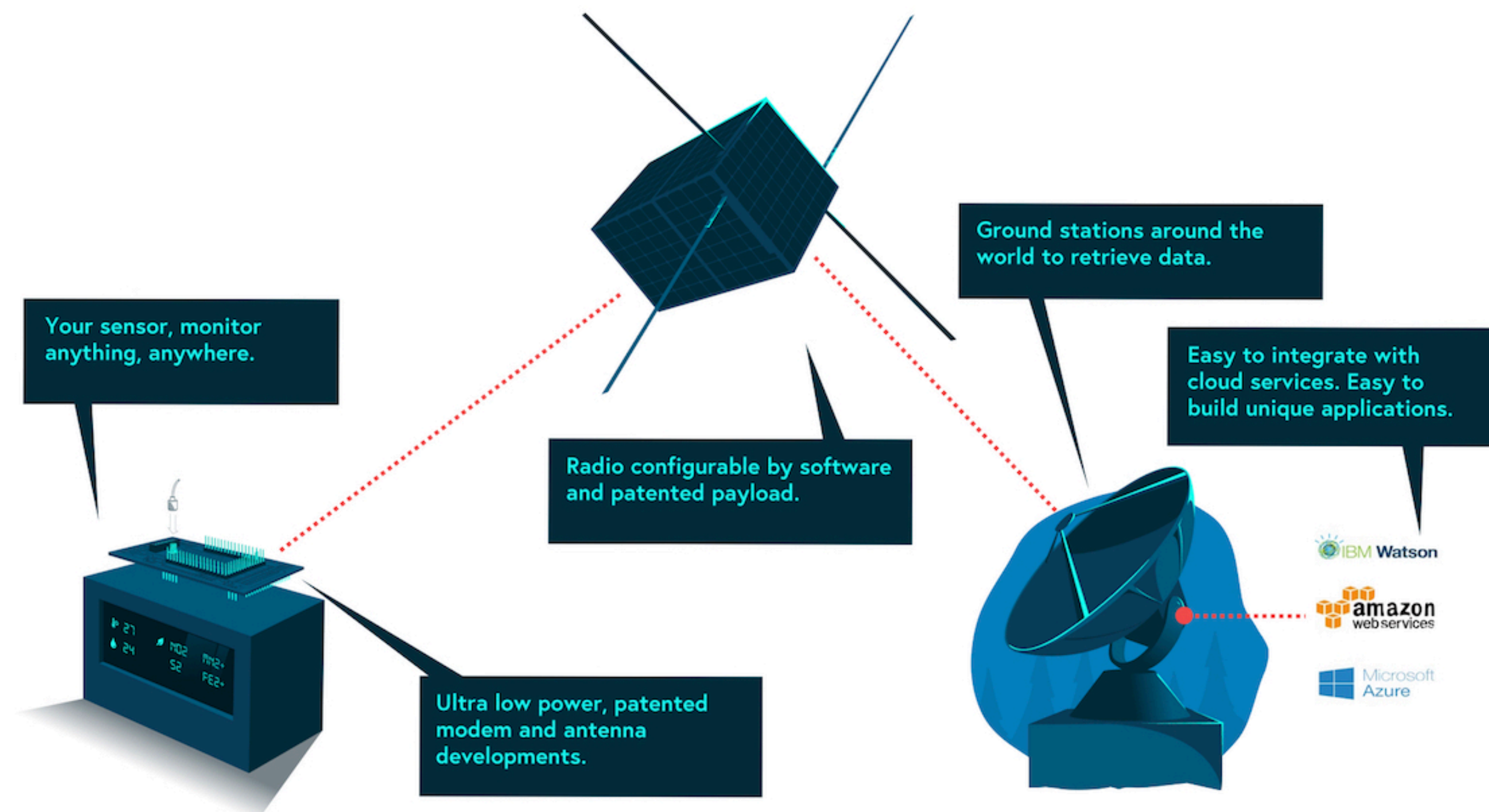
- Hiberband® is a Low Power Global Area Network (LPGAN), that will be offered by Hiber
  - Up to 24 (including in-orbit spares) small, low-earth orbit satellites in polar sun-synchronous orbit at an altitude of approximately 600 km
  - Up to 8 orbital planes, each containing up to 3 satellites circling the Earth approximately 15 times a day
  - Satellites developed in partnership with Innovative Solutions in Space B.V., a Netherlands-based company
  - First two 6U satellites slated for launch in fourth quarter of 2018
  - Remaining satellites expected to launch over the next five years
  - Exploring the use of smaller 3U satellites as the network is built out (both satellites will use the same antenna)
- Hiberband® delivers global connectivity for sensor and Internet of Things (IoT) related devices at affordable cost, by launching our own satellite network. Hiberband® will provide true connectivity for rural, remote, and network-independent IoT and other applications.
- IoT and other applications will allow subscribers to manage natural resources, grow crops more efficiently, protect wild animals, and track weather and soil data, among other uses.



# Hiberband® Satellite Network

Hiberband® will work as follows:

1. The modem receives data from the sensor;
2. The modem is in sleep mode (hibernation) until a satellite passes over;
3. The modem wakes up and transmits the data to our satellite;
4. The satellite stores all collected data;
5. Once in view of a gateway, the data is forwarded back to Earth;
6. From here, the messages are processed and stored for pickup or forwarded to the systems of the owner.



# Hiberband® Modem



Hiber differs from other satellite operators providing IoT services:

- 1. Long battery life:** Hiber's modem batteries have an expected battery life of at least 10 years.
  - The Hiberband® modem is in sleep mode most of the time. It wakes up the moment the satellite passes overhead to transmit the collected data. This makes the power consumption 5 to 15 times more efficient than existing direct-to-satellite networks.
- 2. Modems will not require service**
- 3. Low Cost IoT solution:** Service will start at just a few dollars a year.



# FCC Petition for Declaratory Ruling (PDR) Authorizing US Market Access

September 2018 FCC Filing

- *FCC Filing:* PDR seeks US market access to provide new non-voice, non-geostationary (NVNG) mobile satellite services (MSS) using Hiber's planned LEO system
  - Filed on September 10, 2018 (IBFS File No. SAT-LOI-20180910-00069)
  - Petition subject to request for waiver of modified processing round rules
- *Network Facilities:* consisting of (i) a constellation of up to 24 small satellites (including in-orbit spares); (ii) several gateways outside the U.S., including two in Norway and the Netherlands; and (iii) user terminal modems in the U.S. and abroad
- *Satellite Licensing:* Authorized by the Agentschap Telecom/ Radiocommunications Agency Netherlands for launch and operations
- *ITU Filings:* Constellation registered under ITU filings by the Netherlands for the "HOL-MG-ANS-002" and "HOL-MG-A006" networks



# FCC Petition for Declaratory (PDR) Ruling Authorizing US Market Access

## Operating Frequencies

Frequencies (MHz)	Proposed U.S. Operations
400.15-401	NVNG MSS (service downlinks) (U.S. and abroad)
399.9-400.05	NVNG MSS (service uplinks) (U.S. and abroad)
401-402 MHz	TT&C downlinks (only outside the U.S.)
148-149.9 MHz	TT&C uplinks (only outside the U.S.)
2200-2290 MHz	EESS (feeder downlinks) (only outside the U.S.)

- Service links are consistent with US and international allocations
- TT&C only with non-US gateways, and thus no FCC grant required for TT&C operations
  - In any event, TT&C operations are consistent with international allocations and Sec. 25.202(g) of FCC rules
- Feeder downlinks only with non-US gateways, and thus no FCC grant required for feeder downlink operations
  - In any event, feeder downlinks qualify as Earth-Exploration Satellite Service (EESS), and thus are consistent with international allocations
  - Request for waiver, to the extent required, to permit feeder downlinks on non-conforming basis





# FCC Petition for Declaratory Ruling (PDR) Authorizing US Market Access

*Hiber's application should be considered under a first-come, first-served procedure*

- In 2008, the FCC announced that applications to operate in NVNG MSS spectrum would be reviewed under a first-come, first-served procedure. FCC has also proposed exemption from processing round requirements in current smallsat proceeding.
- The FCC has previously waived the modified processing round requirement and allowed NGSO satellite systems, including small satellites in the EESS, to be processed on a first-come, first-served basis.
- These waivers rely on the demonstration that the small satellites “can avoid interference events through means such as scheduling of transmissions, and would not prevent future entrants from using the same spectrum.”
- Hiber's system is fully capable of sharing with current and future NGSO systems operating in the same frequency bands. There is no mutual exclusivity would not prevent future entrants from using the same spectrum.



# FCC Petition for Declaratory Ruling (PDR) Authorizing US Market Access

*Hiber is capable of sharing its spectrum with existing operators and future entrants*

- Spectrum sharing is possible because the Hiberband<sup>®</sup> satellites transmit only during short periods of time when the satellite is visible from the transmitting earth station.
- Initially, Hiber will transmit between its satellites and ground stations once a day and will increase the number of transmissions over four years.
- *400.15-401 MHz downlink:* Hiber will operate in 100 kHz channels, using GFSK modulation. Interference between Hiber's satellites and those of other systems in this band is unlikely because the Hiber's system will transmit only in short bursts of approximately 400 ms while in view of a satellite passing overhead.
- *399-400.05 MHz uplink:* Hiber's operations will comply with the EIRP limit of approximately 5 dBW that will be considered and potentially adopted at WRC-19.
  - Spire Global has filed a request to waive the processing round rules for its proposed operations in this band.
  - No other satellite operators are currently operating in the band.
- In any event Hiber is also capable, through coordination with the other NGSO operators, of avoiding simultaneous satellite and Hiberband<sup>®</sup> earth station transmissions.



# FCC Petition for Declaratory (PDR) Ruling Authorizing US Market Access

*Compliance with FCC Requirements*

- *Milestone – will launch and operate satellites within 6 years as required under Section 25.164(b)*
- *Bond – will post initial \$1 million bond and additional amounts as required under Section 25.165(a)*
- *Orbital debris mitigation – will comply with debris mitigation requirements under Dutch law*
- *Public interest presumption – U.S. market access presumed to be pro-competitive and in the public interest because system is licensed by the Netherlands, a World Trade Organization (WTO) member country, and used to provide WTO-covered NVNG MSS to the U.S.*
- *Later Filings:* Hiber will file the necessary applications for its earth stations at a later date





# hiber®

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