

## Kepler reviews plan for constellation architecture

by Debra Werner — September 13, 2019



Kepler Communications CEO and co-founder Mina Mitry. Photo: Kepler Communications

PARIS – Kepler Communications is reviewing the architecture for its internet-of-things constellation in response to SpaceX’s plan to revise the architecture of its Starlink constellation.

“There is definitely an impact purely from a conjunction basis,” said Kepler CEO Mina Mitry. If there are more satellites at more altitudes, spacecraft nearby “are more likely to encounter an interference event” where they have to move out of the way or communicate in a different band, he said Sept. 11 at the World Satellite Business Week conference here.

Toronto-based Kepler has two satellites in orbit and plans to operate an internet-of-things constellation with 140 cubesats at an altitude of 575 kilometers. Kepler’s ultimate goal, however, is to build a communications network to support machines and devices both on Earth and in orbit, Mitry said.

The U.S. Federal Communications Commission granted SpaceX permission in April to lower 1,584 Ku-band Starlink satellites from a planned altitude above 1,110 kilometers to 550 kilometers.

In spite of that decision, Mitry said he is optimistic the FCC “will be supportive of trying to mitigate any impact on constellations that have business lines.”

In light of the FCC decision, Kepler is evaluating potential changes to its constellation. The firm could decide, for example, to increase the number of

spacecraft to ensure it can maintain “a certain quality of service,” Mitry said. “That impact can be managed if the right burden is placed on the operator that is causing the undue hardship on us.”

As that discussion plays out, Kepler is preparing to expand its constellation with the launch of its third satellite “in the next few months,” Mitry said. With that satellite, built by AAC Clyde, Kepler will introduce a narrowband communications service to begin connecting devices in the internet of things, he added.

Unlike many of its peers racing to deploy satellites to connect devices in the internet of things, Kepler also moves large quantities of data in Ku-band.

“Whether it’s closed-circuit television camera footage or geographic information services data, people measure us by the gigabytes of data moved on our network,” Mitry said. Kepler customers transfer megabytes of data per month, he added.

Due to heavy data traffic, Kepler operates its own antennas in Canada, Norway and New Zealand. “These have been a necessary component of being able to deliver the end service to our customers,” Mitry said.

Kepler is seeking to create its constellation rapidly. By the end of 2020, the firm plans to operate 14 satellites. In 2021, Kepler expects to have 50 satellites in orbit. In 2022, Kepler will continue building its 140-satellite constellation, Mitry said.

Kepler **raised \$16 million** last year in a Series A investment round led by technology investor Costanoa Ventures. Kepler anchor customer, Germany railway company Deutsche Bahn, participated in the round through Deutsche Bahn Digital Ventures. Deutsche Bahn will begin deploying Kepler products in the first quarter of 2020, Mitry said.

Kepler’s strategy is focused on the long term. It takes new companies an average of five years to obtain 100,000 subscribers for a new service, Mitry said. While the internet of things could help decrease that timeline, Kepler is counting on its “core Ku-band service” to sustain it in the early years, Mitry said. That business, which provides “a much higher average revenue per user” than narrowband service, will help Kepler “ride out the adoption curve and build a business,” he added.

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