



High performance ground equipment

Comtech EF Data is a subsidiary of Comtech Telecommunications Corp. and a leading supplier of satellite bandwidth efficiency and link optimization. The company's high performance satellite communications ground equipment is deployed globally to support mission-critical and demanding applications for government, mobile backhaul, premium enterprise and mobility. Lou Dubin, Comtech EF Data's Senior Vice President, discusses the company's premiere VSAT platform, the Heights Networking Platform, and how it's raising the bar for the industry.



Lou Dubin, Comtech EF Data's Senior Vice President

Question: We're excited to hear as much as we can about the Heights Networking Platform, specifically the opportunities and flexibilities it affords potential customers. What can you tell us?

Lou Dubin: Our Heights Networking Platform has historically been targeted at mid to high-end VSAT terminals, so we have been focussing on customers that are looking at services in the hundreds of Kbps or Mbps, and certainly tens of megabits of capacity, on a VSAT platform. Other VSAT

providers are focused on smaller transactional types of sales.

Our Heights platform has typically been used for VSATs that require half a megabit and up. Our target customers are telco operators, mobility in terms of cruise ships, cargo shipping with a lot of data, and government entities that are using VSAT to aggregate local assets and have a meaningful (non-transactional) amount of capacity at remote sites. That's always been our strength.

We're really hearing two things that

are of importance to the platform. One is a necessity for a lower cost platform. We've done very well at the high end, but we are growing and evolving with some of our customers' needs to address the lower end services. We've introduced a new product called H-Pico Heights Remote Gateway, which is designed to be a cost competitive product that doesn't necessarily try to address a typical low end transactional type of platform, but is certainly



targeting tens to hundreds of kilobits of capacity rather than megabits of capacity as with the high end.

Furthermore, to accommodate some of these customers that are in the lower data rates, we're introducing a unique flavour of TDMA, this is in addition to our Heights Dynamic Network Access (H-DNA) return waveform that allows you to jump from very low capacity, a very contended kind of operation, to a very dedicated H-DNA type of operation. Those two things are going to allow us to play in the lower capacity, higher volume networks, while still retaining the upper end for our Heights platform VSAT services.

Question: We've been learning about the JUPITER system from Hughes, do you feel like there's significant differentiation between that system and Heights, or do you think that's not the issue?

Lou Dubin: We have to differentiate in order to be successful. Hughes is a very successful company, and their JUPITER systems have done a wonderful job of addressing home office, suburban home, or consumer types of operations. They have been very focused on consumer type user terminals so that you can use it for consumer broadband or small office applications. Their focus has been on consumer based features and applications. This typically means a higher cost /complexity hub with lower cost, low complexity remotes that may not have the features and capabilities that cellular backhaul, cruise lines or government requirements demand.

Our customers tend to have a larger set of SLAs and KPIs that must be addressed. They need guaranteed Committed Information Rates (CIRs),

usually a consumer based product is high contention ratio, so they'll oversubscribe broadband 50 to 1, 100 to 1, knowing that for every 50 homes they sell to, only a few will actually need a chunk of that capacity at any given moment in time. When you surf the web, you may be getting 30Mbps down to your home, but this is not a sustained user rate.

Our customers tend to be sending traffic all the time, and lots of it, so it's less contended; they also want to run their own hubs, which most consumers don't want. Our customers want to own everything from start to finish. They want complete control of what we call a data plane, which is the actual traffic, and the management plane, which is the ability to communicate to the equipment. They need to make sure it's performing well, that they have all the metrics, and that they can deliver a bill to their customer that proves that they delivered a guaranteed data rate over the course of a month, six months, or a year. This is a very different model than Hughes.

Question: Which vertical sectors are getting the most out of the Heights platform? Surely maritime industries stand to benefit?

Lou Dubin: We address the enterprise and non-government organisation (NGO) verticals, as well as the military, mobility and maritime verticals, and the mobile network operator/cellular provider verticals. Of those, we've gotten the most traction with maritime and mobile network operators.

The enterprise business is also a big part of our success story. We are well known for high data rates, services that require low latency, low jitter, very high packet per second processing and 2G/

3G/4G/LTE optimization. Features and technologies that are specific to our end users. We enable mobile network operators to deliver the same quality and experience over a satellite link that they get using microwave or terrestrial. This differentiates our VSAT platform from others. Our MNO customer base expects to make a call, and that call will be crystal clear without echo or excessive delay, every time, at a much higher standard than a consumer broadband product, where, 9 times out of 10 it works. That may be acceptable for broadband, perfectly unacceptable for a cellular network operator, and we're eager to address that dichotomy.

In the maritime sector, quite frankly, our advantage is that no one can compete with the capacity and processing speeds at which our equipment runs. We're running 100s of Mbps; in order for our competitors to do that, they have to daisy chain or cobble together multiple devices, trying to bond five or six terminals to get the same kind of performance you get with just one of our VSATs. Our VSATs are designed with very high-speed packet processors that can manage such large traffic, our products uniquely address these sorts of demands. Our remote terminals are feature-rich and offer processing power that wouldn't be cost-effective for a small office or consumer type of terminals.

Question: Is mobile backhaul still a major market moving forward?

Lou Dubin: Yes, mobile backhaul has been a key market for Comtech for more than 20 years. We are certainly successful in other markets, but we have no intention of forfeiting our strength in the mobile network operator market.



Our experiences with the mobile network operators in being able to address their unique data profiles is unmatched, we plan on addressing that market for a long time to come. Mobile networks serviced over satellite are slated to grow by 15+ percent per year, we're not planning on turning our back on that market any time soon.

Question: Will the clamour for LEO constellations change the way Comtech approach their future product development

Lou Dubin: We have products today that work on LEO platforms. We're working with Kepler Communications, NSLComm in Israel, and a number LEO platforms in the pre-launch stage. There are different kinds of LEO platforms; there are platforms that are 'open,' which can work with multiple ground segment providers, and there are platforms that are 'closed,' that typically select one type of ground segment and tend to focus on providing end to end user services.

Depending on the platform, LEO Investors may need to wait a considerable amount of time to get a return on their investment. Obviously, anytime a business fails in the satcom arena, it's not good for the industry, so

for those reasons I hope they're all successful. However, this may put a lot of pressure on traditional satellite providers, and a lot of our partners are in that business, so hopefully there's some level of success they can gain without cannibalising other players in the industry.

Question: Comtech EF Data is solving the problems of TDMA products by eliminating the limitations usually associated with them. How do you think this'll effect the industry?

Lou Dubin: For a long time, the industry has had to choose when it comes to return access schemes. Do you want to ride to work on the bus, which is a very efficient means of transportation, but perhaps not the most accommodating? Or, do you want to take your car, which is very accommodating, you can take any route you want, but it's not necessarily the most efficient? What we're bringing to the table, which no one else has done to date, is the ability to have the strengths of both accommodation and efficiency. Imagine the ability to ride the bus when needed and jump off any time where a car is waiting to take you to your exact destination. We don't force

you to commit to a single method of getting to where you need to go. Our system allows users a dynamic selection of an efficient H-DNA waveform or a TDMA waveform. That selection will be made automatically by our system and will be done based on the amount of data that a customer is requesting. We'll give them the best of both worlds without forcing them to choose. In the past, it's been difficult for customers to make those sorts of choices. They have to choose between efficiency or fast reacting waveforms like TDMA that allow one to scale up and down quickly. We're taking that barrier away.

Question: Would you care to make any closing remarks regarding the future direction of the industry?

Lou Dubin: It really is an amazing time to be a part of the satellite community. In my 25 years with the satellite community there have been many developments and moderate advances in satellite communications. However, In the past five years, with the launch of LEOs, MEOs, HTS satellites and great advances in the ground segment that the satellite community is bringing to market, it's going to get very exciting for us all. ■

