Targeting high end applications

Comtech EF Data Corporation, a subsidiary company of Comtech Telecommunications Corporation, is a world-leading supplier of satellite bandwidth efficiency and link optimisation. Its satellite communications infrastructure includes the Heights Networking Platform, Advanced VSAT solutions, modems, RAN and WAN optimisation, network and bandwidth management, and RF products. Amy Saunders met with Louis Dubin, Senior Vice President, Product Management and Marketing for Comtech EF Data, to discuss the ins and outs of the satcom sector.

Question: Can you provide a brief overview of Comtech EF Data's position in the satellite communications market?

Louis Dubin: Comtech EF Data is specifically focused on ground-based technologies and solutions for the wireless community. We also deliver services to support that equipment. While we do talk quite a bit about our services, they are not competitive with our customers who provide services to the end user; our services keep our equipment up and running, help customers configure our products, and let them reconfigure equipment if they add new sites, services or customers. We're not going to provide Internet connectivity to the end user!

All the products we bring to the table enhance the user experience for wireless over satellite or wireless over microwave. We work with both providers and satellite operators, although sometimes they are one and the same.

Question: In January 2018 it was announced that Comtech EF Data was awarded a massive equipment order from Telesat to support its connectivity solutions in Canada's Far North. What can you tell us about the order, and how will it improve services delivered over the Telstar 19 VANTAGE satellite?

Louis Dubin: Telesat, a leading global satellite operator, will utilize our CDM-760 Advanced High-Speed Trunking and Broadcast Modem and the FX Series WAN Optimization by our subsidiary, Memotec, to support its multi-Gigabit enhanced connectivity solutions for remote communities in Canada's Far North. The CDM-760 Advanced High-Speed Trunking and Broadcast Modem was designed to be the most efficient, highest throughput, point-to-point trunking and broadcast modem available. It offers users the most advanced combination of space segment saving capabilities while minimizing overhead. Building on Memotec's long experience of voice and data optimization in mobile networks, the FX Series delivers superior IP packet optimization and traffic shaping capabilities.

Telesat will combine the performance of powerful Ka-band, high throughput satellite (HTS) spot beams aboard its new Telstar 19 VANTAGE satellite, scheduled to launch mid-2018, with our CDM-760 Advanced High-

Louis Dubin, Senior Vice President, Product Management and Marketing for Comtech EF Data

Speed Trunking and Broadcast Modem and FX Series. Through this combination of the latest space and ground technologies, Telesat will deliver carrier services for government, mobile and Internet trunking with unrivalled speeds and efficiencies to communities in the Nunavut territory of Northern Canada. These remote communities will benefit from satellite-based connectivity with an initial service launch of over 14 Gbps. One satellite link will approach 4 Gbps aggregate speed using CDM-760 Advanced High-Speed Trunking and Broadcast Modems.

Regarding the deal with Telesat, we've launched three new products that will really benefit Canada's Far North.

We've released a brand new high-speed version of our CDM-760 modem. This new release essentially doubles the throughput with 720Mb each way – that's 1.4Gb of capacity on a single modem. That's especially useful in the Northern territories of Canada, where there are pockets of 1,000-2,000 people living in villages on maybe 2-10Mbps of data for the entire community. Now, these peoples' lives are changing in a very positive way. They'll have higher speeds than some people in well-populated cities!

In some Canadian territories there is a requirement for even more throughput than what a single 1.4Gbps modem can provide, so Comtech developed an automatic load balancer, our HX product. The solution allows us to set-up multiple circuits on different transponders that can be stitched together and act like a very large super circuit. To the user, it looks like they're getting a 5Gb link, even though it's actually many smaller links aggregated together. The HX product enables a company like Telesat to aggregate multiple transponders or what may have been considered useless fragments of nearly full transponders to get the total capacity that is required to meet the customer's demand.

Another product we are delivering for this service is the FX WAN optimisation device, which ensures that if there is congestion, the important content can be sent over the satellite, and the less important data can be dropped. Someone browsing the web, for example, could be bumped by a school that's trying to present an online classroom. The difference between other WAN optimization products and ours is that our FX communicates with the modem in a dynamic and intelligent way. If the modem is changing capacity because of bad weather, the WAN optimization device can minimize low value traffic traversing the link to perfectly match the capacity of the modem. When conditions improve, the FX WAN optimizer will open up and push higher levels of traffic according to the customer's desired rules for additional capacity.

The modem, the FX and the HX are all in sync to provide the users with the best overall experience.

### Question: We understand you've got some other fantastic new products available too?
Louis Dubin: We've launched quite a few new products recently in addition to those I've already mentioned, including two new Heights Remote Gateway products that are targeting specific customers in the VSAT community.

We now offer outdoor versions of our Heights Remote Gateways, which give clients the ability to install and commission VSAT terminals without the need for outdoor shelters, air conditioning, etc. – they can simply mount the outdoor rated units wherever they want, eliminating a significant amount of power consumption, as well as cost reduction and simplification of installation. Many of our customers tell us that the number one cost for VSAT systems isn't the satellite capacity, it's the fuel needed to run the ground station generators. If we can make an outdoor unit that doesn't require a shelter, air conditioning, etc. then we can enable more sites and more users on our platform.

The second product I want to talk about is the H-Plus Heights Remote Gateway, which is a new lower cost-point VSAT system; it has lower throughput figures than our H-Pro does, so the H-Plus is a mid-tier product. Of particular note is that clients can utilise the H-Plus in a point-to-point environment. Historically, clients had to decide if they wanted to start with a simple SCPC network and then replace the equipment if they wanted to grow into a networked platform. With the H-Plus, we're giving users the ability to buy a single product that will act like an SCPC modem until they grow large enough to transition to our Heights networking platform. They can maximize their CapEx spend by using the same hardware and simply switching software to make the transition rather than replacing product! Another benefit of the H-Plus is the ability to offer or add a plug-in single board computer (SBC). This allows for a significant amount of user expansion in processing power. As an example, if the customer needed to add processing intensive software that would optimize LTE traffic, they can simply install the required software on the SBC. The optional SBC will allow organic software solutions and 3rd party software

H-Pro Heights
Remote Gateway
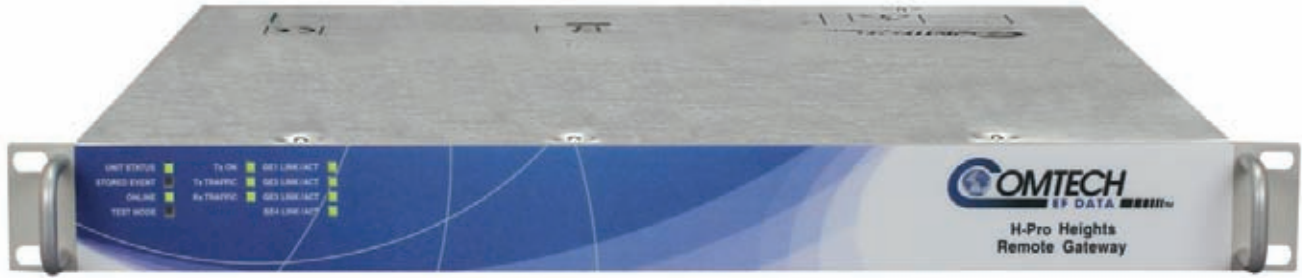
solutions to be easily implemented onto the H-Plus platform.

Question: The Comtech EF Data Heights Networking Platform is certainly proving popular, with Intelsat and SES Networks both jumping on board. Can you tell us a bit more about the benefits delivered by the platform and how they compare with alternative products?
Louis Dubin: There are a lot of platforms out there. The reason why people are using our platform is that we're targeting the mid to high-end clients and applications. We're not targeting the 20,000 site ATM networks or gas station networks.

To target the clients we serve, such as the high capacity maritime, mobility and large-scale enterprise, we are pushing 10, 20, 200+ Mbps from a VSAT terminal. Processing power and efficiency become very important. The way we handle packets, packet load, optimization, hitless switching etc. is important. We have a significant number of high-end features our customers demand that probably are not needed for a SCADA or ATM network. At Comtech EF Data, we're targeting high-end users who are pushing the limits of what a VSAT can do; that's where we want to play.

Question: In recent years we've seen a huge level of technological advancement, with high throughput satellites (HTS) making a major impact across the sector. What's your assessment of today's satellite market, and Comtech EF Data's future within it?
Louis Dubin: HTS is an opportunity, a complex environment, and, in some cases, exhibits signs of cannibalism. That's how I'd define it!

HTS manufacturers and service providers are bringing more capacity online than ever before; we're going to be able to compete with fibre, microwave, terrestrial infrastructure,

that's the opportunity.

However, HTS can be an extraordinarily complex environment and this requires collaboration. In initial HTS launches, we saw little coordination with the ground segment, and when the satellites went up, we found ourselves and the HTS providers scrambling to piece together complex hardware solutions; the rules for the network topology had greatly changed and I don't think the impact on the ground was fully appreciated. The ground segment companies and HTS providers recognize the need for better coordination today. HTS providers are approaching us with long-term satellite roadmaps and topologies. We are working closer than ever before and this is really a requirement. Long gone are the days of build it and the ground segment will follow.

Advanced planning and discovery is the new norm. HTS comes in all shapes and sizes - it's very complex, and this complexity is bringing us together in ways not needed before.

What do I mean by cannibalism? There's so much capacity, combined with video services moving into OTT over land lines or 4G/LTE. FSS fill rates

and video renewals are showing signs of slowing and there are struggles backfilling that capacity; things could get tough. It's not just one operator eating another's market share, in some cases they're eroding their own services.

HTS brings huge opportunities, but there are also some concerns.

Question: It's been a pretty good year so far for Comtech EF Data – How are things looking for the rest of the year?
Louis Dubin: Comtech has seen significant opportunity and growth in our networking platform portfolios in the mobility sector, as well as in our mobile network operators sector. Our high-speed trunking solutions are changing the way operators and end users think about what is possible over satellite. We are successfully landing new business and more importantly, we are retaining the business as seen by strong follow-on orders.

Furthermore, our Government Solutions have seen strong demand, which has been followed by strategically important orders for military and defence solutions. We are in a good place with much to come. ■

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