On the eve of the NewSpace boom

Comtech EF Data is a leader in satellite bandwidth efficiency and link optimization technology, providing ground equipment deployed globally to support mission-critical and demanding applications for government, mobile backhaul, premium enterprise and mobility. The company has recently performed several acquisitions, expanding its capabilities at the eve of the NewSpace boom. Lou Dubin, Senior Vice President, Product Management and Marketing for Comtech EF Data talks about their strategy at this critical juncture.

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

Laurence Russell, News and Social Editor, Satellite Evolution Group

Question: What's the latest from Comtech EF Data?

Lou Dubin: The most obvious announcements are that we've agreed to venture into purchasing Gilat and UHP, both of which are VSAT ground segment electronics manufacturers. We've also agreed to buy CGC Technology, an XY antenna manufacturer focusing on specific antenna needs that would be required of MEO and LEO constellations as well as telemetry and control tracking.

Comtech EF Data has also released new capabilities and products within the Heights Networking Platform product portfolio. We are introducing a new TDMA waveform which is quite unique in that it breaks the traditional concepts of TDMA capabilities – our system will allow customers to seamlessly move between TDMA and H-DNA waveforms enabling the best fit access scheme for the application.

This will enable our customers to address highly oversubscribed networks, as well as networks that require high capacity, low latency/low jitter while using the same hardware and platform.

It has been a very busy time for Comtech. We are excited about both our acquisition portfolio and our product development programs.

Image courtesy of Comtech EF Data

Question: Famously, the Heights platform can allow users to switch between H-DNA and TDMA connections. As the 5G revolution speeds up, how does Comtech EF Data's best of both world's solution benefit users at the cutting edge?

Lou Dubin: The benefit of being able to seamlessly switch between TDMA and H-DNA is a significant breakthrough for the satellite community. We are enabling networks and our customers to support a wide variety of traffic profiles without the concern and risk of supplying hardware that is improperly suited to the end use demands. Other VSAT terminal manufacturers can offer their customers the up-front choice of oversubscription or efficiency, but we are providing our users with a single platform that can accommodate both without the need to exchange hardware or turn the network down to change profiles. Our system will transition dynamically, on the fly without user intervention to accommodate the traffic profiles as they change.

We are offering flexibility that changes conventional network planning. We are removing the time and money involved when a network is designed with improper or unknown traffic planning. We are enabling our customers to minimise site visits, hardware exchanges and downtime. All of which has a significant impact to our customers finances and the end user experience.

Another significant improvement of our TDMA offering is the ability for each site to burst traffic at its best fit return modulation and coding (MODCOD). Our TDMA carriers aren't static in terms

MODCOD selection. Historically, TDMA carriers require every site that's participating on that carrier to run at the exact same user throughput MODCOD. The only elasticity was how many timeslots the site was given or which TDMA carrier to join. Our TDMA carriers enable every site to transfer data at the highest throughput capacity it can attain.

TDMA systems today only accommodate for a narrow range of signal to noise quality. Our TDMA platform enables all of our 37 MODCODS available in our H-DNA return access scheme to be used, giving our users 17dB of range and enabling the widest trade-off between efficiency and carrier quality of any VSAT system today.

We offer nearly the same level of efficiency for our TDMA waveforms as we offer with our H-DNA.

This makes our TDMA access scheme truly revolutionary. Whether you're enabling 5G or enterprise communications, our connections and throughput are going to give our customers the edge in terms of overall user capacity available for dollar spent.

Question: This kind of innovative application of a return waveform is remarkable and seems to set Comtech EF Data apart. Are these kinds of technical tricks which squeeze efficiency out of your technology common for EF Data?

Lou Dubin: If there's one thing we're known for, it's always trying to squeeze efficiency out of our products. With Comtech, we've certainly made efficiency our speciality. We always strive to provide the best solutions we can for our customers.

As an example, we recognised that we needed to address customers with low-rate traffic profiles servicing terrestrial or mobile network operation restoration services where they might have many primarily idle sites. When restoration services are needed and a terrestrial connection has been compromised, these services need to go over satellite. It is similar to going from park to top speed in an automobile, which can be very demanding for conventional technology to accommodate.

We are enabling our customers to rapidly accommodate traffic profile changes. That's just one example of how we're still innovating, providing the best that we can for our customers.

Question: The world of data security is an ever-evolving frontier. As a company that sells to defence markets, how does Comtech connectivity ensure data security?

Lou Dubin: This is a question with many different answers for many different users. It's very relevant, but it's broad enough that it's hard to give a generalised answer. Comtech has delivered a vast set of security features in all sorts of ways over the years.

We offer a wide portfolio of products, some of which have specific access to certain security features. Other features are more generic. The balance is to offer the best security capabilities while trying to ensure the majority of our consumer base will have access to them. We want to offer multiple levels of security while not alienating customers due to export controls.

We offer encryption from low-level triple DES or AES128 up to NIST certified protection, the standard used by many United States Department of Defence (DoD) organizations.

Question: Some NewSpace executives have previously stated that ground station technology is lagging behind the level of sophistication in satellites. As a supplier of the ground segment, do you think that's true, and if so, how do you think the industry can close that gap?

Lou Dubin: I am sure I have explicitly made this remark before, and I'm glad

Comtech Heights and modems. Photo courtesy of Comtech EF Data

you've asked this because I'd like to clarify my position on the topic.

I think it's quite accurate that satellite-based technology has been hugely innovative. Satellite modernization has made large strides in improving spacefaring infrastructure. This can make it seem like ground segment is lagging in a technological sense.

By comparison, it may appear that many ground segment suppliers seemingly advertise minor evolutions in technology. As we look through the proverbial warzone of new satellites, constellations, and launches, what's missing is the financial impact.

If the ground segment is seen as technically lagging, it illuminates the fact that our industry is an ecosystem. Advancement and investment in satellites cannot benefit the community without similar investments and advancements in the counterparts to that infrastructure.

The large-scale funding of complex constellations must be matched with funding of the ground segment. It's common to hear of multi-billion-dollar companies and governments investing in new satellites.

The same cannot be said about the infrastructure needed to communicate with these increasingly sophisticated systems.

Compounding the issues on the ground is the fact that new constellations don't necessarily have a lot of uniformity. Manufacturers are having difficulty re-using their technology due to the difference in constellations. You're not able to leverage what you've developed for one constellation on the next.

Industry tends to thrive when it achieves an equilibrium, and with the high-speed cycles we're seeing in the world of NewSpace, that symmetry is under pressure.

Question: Several leading satcom developers take pride in working closely with their clients and partners to understand their needs as closely as possible, and even list that practice as the secret of their success. What's the nature of Comtech EF Data's working relationships?

Lou Dubin: In this business, we must work together. If we want our customers and operators to be successful, we must collaborate in terms of expected price point and capability.

Comtech is having those sorts of conversations with the owners of the constellations, operators and the end users we support. We cannot be successful without the proper level of integration and communication between the ground segment, satellite operator, and end customer. We are in communication with our partners and customers more than ever to collaborate on the collective goal of how our companies can each benefit one another.

Question: What are Comtech EF Data's primary goals going forward?

Lou Dubin: I think we'll be quite busy with mergers while focussing on bringing the best concepts and products to market in a comprehensive package as quickly as we can.

We will be in a unique position in terms of engineering resources and we will need to focus our efforts on the platforms and solutions where we believe we can bring value. We will need to assess the market's overall demand and direct resources accordingly.

We believe in the industry, and we're eager to address the issues set before us to forge forward toward the best landscape for everyone. That's what Comtech's always been about, and you can expect more of the same going forward. ■

Photo courtesy of Shutterstock