## Year in Review: ST Engineering iDirect

To say that 2020 has been unique would be a true understatement. At the beginning of the year, no one could have predicted the impact that a global pandemic could have on every aspect of our lives and the markets that the satellite industry serves.

However, despite the challenges that COVID-19 has thrown at every company this year, it's been an extremely busy and rewarding one for *ST Engineering iDirect* during which we have worked together with our partners to ensure our joint success in these challenging times. The year began with the exciting prospect of bringing two companies together and integrating our talent and portfolios and we are emerging from 2020 having achieved milestones in technology innovation. We know more change is coming — and we are ready for it.

In this article, we'd like to take you through just a few of the accomplishments of 2020 and the great things that have been achieved with our customers all over the world. Though COVID-19 may have forced us physically apart this year, the ties with our partners and customers are stronger than ever.



**Connecting Remote Places on Earth** 

Working with our long-term partner, Peruvian service provider, **Andesat**, we enabled a regional **Mobile Network** Operator (MNO) to extend its reach to remote and rural regions of the country. Known as 'Te Connectamos Peru,' this project is benefiting a universe of 60,000 towns and villages and a total of more than three million people. Using Andesat's already-installed multi-service **Evolution** hub, the requirement for any new services or hardware was eliminated and the company was able to move rapidly into a new market, providing Wi-Fi and 4G services to villages and allowing residents to access voice, data and video via computer or mobile device. The timing of the project was crucial, given that connectivity to these remote locations is particularly important to stay connected against the backdrop of COVID-19. Satellite plays an integral role in delivery of vital services such as education and healthcare to these remote villages.

As a leader in satellite ground infrastructure and solutions for the cellular backhaul and trunking markets, it's critical that we collaborate with leading, like-minded players to continue

to develop solutions for MNOs to extend their reach and solve the growing connectivity issues. Our work



with the **Telecom Infrastructure Project**, or *TIP*, is a great example of the amazing work that can be done when we partner together. TIP helps accelerate the development and deployment of open, disaggregated, standards-based solutions with the goal of delivering high quality connectivity on a global scale.

Earlier this year our Head of Cellular Backhaul and Trunking, *Semir Hassanaly*, presented during their *Plugfest* event on the importance of establishing the right business case for satellite-based cellular backhaul.

## **Critical Connectivity for Government**

Satellite technology has been a critical enabler for government agencies in the worldwide response to the pandemic. Our customers stepped up to the challenge deploying highly available, reliable connectivity solutions to enable first responders and the healthcare providers across the globe.

For example, **Global Radiodata Communications** used the **iQ 200** modem for its **Satcube** solution that has been deployed to provide high-bandwidth, secure voice and data to medical teams. The lightweight terminal is online in less than a minute and is as simple as using a smartphone. It's this kind of instant access to connectivity that has been so critical at this time.

The *iQ LTE* is also having an impact in the first responder sector and has been integrated by *IP Access* into its *FUSION* range to create a converged solution that automatically finds and connects to all available networks, including LTE, 4G/5G and multiple satellite networks, without user intervention. As a result, it delivers reliable data communication for several use cases where the physical path redundancy is critical.

We have also supported those deployed to natural disasters





#### ST Engineering iDirect's iQ Lite rackmount

that have occurred this year such as wildfires and hurricanes in the United States. The **Dialog** platform played an integral role in **Verizon**'s response to **Hurricane Laura** earlier this year and enabled the re-establishment of connectivity to fuel the efforts of first responder and aid agencies to help rebuild and restore the community.

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#### Innovation in the Defense Sector

The *MDM9000* modem (*pictured above*) received *Wideband Global SATCOM* (*WGS*) Certification earlier in the year which expands our portfolio of WGS-certified solutions, including the *iDirect Evolution Defense* platform, *Tactical Hub*, and *9-Series* family of modems. Designed to support a wide range of fixed and



mobile government and defense applications, the field-proven MDM9000 modem is now one of the most powerful DVB-S2X modems operating on the WGS constellation. Its flexibility and efficiency open up new capabilities for high-speed data links, complementing existing WGS-certified Evolution Defense



Evolution 4.2.2.0 is the company's latest defensegrade release that enhances the Evolution Defense platform with information assurance (IA) and cybersecurity.

Solutions.

The defense sector is a prime target for both cybersecurity threats and intentional and unintentional signal interference. With the digitalization of the battlefield has come increased risk. Security systems must therefore have the capability to predict, detect, prevent and mitigate the mix of threats that could hamper operations. Our latest Evolution 4.2.2.0 release introduces Communication Signal Interference Removal (CSIR™) technology to effectively remove signal interference and reduce noise of satellite signal emitters in real time. This can help Defense customers predict, detect, mitigate threats prevent and and vulnerabilities.

## Agility in Broadcasting

We further strengthened our long-standing relationship with leading telecom provider **VIVACOM** with a new agreement to supply our **MCX7000** modulators to facilitate additional broadcast offerings in Eastern Europe and Africa. VIVACOM, the largest telecommunications provider in Bulgaria, will use the **MCX7000**, a dense DVB-S2X, multi-carrier, satellite gateway, to launch new video services in Africa, in partnership with a global satellite operator. The modulators will also provide enhanced services for an existing **Direct-to-Home** (DTH) operator across Eastern Europe.

# OUTSIDE BROADCAST TRANSFORMED BY NEWTEC DIALOG®

With the pandemic affecting live events broadcasters and *SNG* (*Satellite News Gathering*) operators were forced to learn to adapt and operate in very different circumstances. We supported our customers in their creative approaches to re-purpose SNG trucks, outfitted with our solutions, to turn them into mobile communication centers. These trucks can offer full IP capabilities and travel to wherever they are required for on-the-spot connectivity providing much needed help for aid agencies, medical staff and first responders.

We saw new interest in satellite's ability to provide OTT services this year. There was a dramatic increase in demand for video streaming and networks were hit with massive congestion as a result of home working and business closures, negatively impacting **Quality of Experience** (QoE). Our solutions were used to facilitate offloading of traffic from the terrestrial backbone and to feed the **Content Delivery Networks** (CDNs).

#### **Excelling in Maritime Capabilities**

Mobility is set to be an even bigger theme in 2021 due to an inexorable rise in demand for connectivity anywhere — and we have bolstered our position on the high seas with some significant agreements. Our leading mobility position and solutions that empower our customers across all mobility segments was recognized through the *MSUA Company to Watch* award. This was also a nod to our future vision and passion to facilitate seamless connectivity as new constellations, applications and markets emerge.



**Speedcast** has deployed the WTA Award-winning **Newtec** Dialog® platform to provide worldwide satellite broadband services for its customers. The deployment enables the service provider to respond to the rising requirement for high-speed connectivity on board cruise ships and may also be used for other vertical market segments with increasing bandwidth requirements, such as yachting, oil and gas and the enterprise market.

Already facing a daunting task of converting more than 100 maritime sites to this new technology, the team was confronted with a new challenge when COVID-19 prevented or delayed the dispatch of field engineers to some remote sites. The team came up with an innovative remote installation plan to move the project forward quickly, maintain the project plan timeline and support customer needs.

**Marlink** is also rolling out its deployment of Dialog that will help enable the company to deliver advanced solutions to their customers, further strengthening its maritime and enterprise offerings. This will enhance capabilities across additional market segments including shipping and tanker companies, cruise lines, ferries, yachts and fishing boats, all of which have increasing throughput demands due to digital transformation. Our technology enables Marlink's special purpose highly resilient satellite network solution for the *Remotely Operated Service at Sea* (*ROSS*) project developed by offshore services operator *SeaOwl*.





In Africa, our long-term customer, **Paratus**, a pan-African telecommunications group, is leveraging our Evolution platform alongside modems with marine antenna from manufacturer and integrator **KNS**, to provide reliable, high-speed connectivity to mining ships based in Guinea. With ships essentially becoming offices at sea, we anticipate more demand for high speed, highly reliable marine connectivity in the future.

## A Move Into IoT

As everyone and everything becomes more connected than ever before our customers will gain first-mover advantage with our flexible IoT enablement solutions, enabling them to deliver an IoT solution whilst leveraging their existing infrastructure investments and capacity. The offering entails a complete connectivity solution for Service Providers to procure the IoT terminals from a single trusted source, and flexible Service enablement options easing the entry into the IoT market.

### A Vision of the Future Through Innovation

Throughout the year, our team continued to be heavily involved in several consortia and initiatives that promote the



**SatMagazine** 

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integration of satellite into 5G delivery. To play a significant role, satellite must fit, seamlessly, into a 5G hybrid ecosystem and utilize the technologies that are native to the telco world such as virtualization, orchestration and software defined networking. That will enable us to leverage advances in our industry, such as the move to multi-orbit constellations, and be part of the global communications fabric.

In October, together with Avanti Communications, we enabled the successful integration of a commercially available 5G core network into a live satellite network within the SaT5G project. This marked a major milestone for the Sat5G initiative and the industry as a whole, as it was the first time a live satellite network has been managed and operated using a standard and unmodified commercially available 5G core network.

Several 5G use case demonstrations over live satellite links were performed with satellites carrying out several different tasks. The project undertook research and demonstrated the benefit of satellite technology in delivering content to the network edge. We have taken our first and very significant steps toward the multi-orbit approach that will define our future as an industry. Our high-performance ground infrastructure has been selected for O3b mPOWER, SES's next-generation MEO communications system. Pairing our breakthrough ground technology with spacecraft innovations, O3b mPOWER will enable a flexible, low-latency, high-speed, fiber-like experience. Our ground technology is key to optimizing the end-to-end capabilities of the MEO constellation which promises to transform how satellite services are delivered.



MEO But it's not just connectivity where we have seen significant developments. We have also made groundbreaking advancements in LEO (Low Earth Orbit), as well. We completed the world's first Over-the-Air (OTA) testing of our Multi-Frequency Time Division Multiple Access (MF-TDMA) return link on the Telesat Phase-1 LEO satellite.



Telesat's LEO constellation.

This achievement demonstrated dynamic sharing of bandwidth among multiple terminals within a LEO constellation, a capability that extends the capacity and flexibility of Telesat's multi-beam beam hopping architecture, and opens up a wide range of use cases for Telesat's LEO customers in the commercial, government, and defense markets.

#### The Road Ahead

Though 2020 has been filled with challenges for everyone, there are many reasons to be positive and we will see recovery with markets coming back to 2019 levels in 2021 and 2022. NSR already forecasts long-term potential with SATCOM revenues reaching \$26.5 billion by 2029.

Some markets will recover rapidly but others, such as the aviation and IFC (Inflight connectivity) will take longer to bounce back to the levels they were at before. However, when they do, they will emerge as an important differentiator.

Technologically, there is much to look forward to and some disruptive technologies are emerging that will shape the future of our industry. Take virtualization and the cloud. As a ground infrastructure provider, we will create the scalability and throughput so that many different services may be used. This will transform the way in which satellites are viewed by the telecommunications industry and how satellites link up to the global fabric of terrestrial communication.

In 2021, we look forward to further enabling our customers and partners in our established, core markets and also to taking our first steps into new ones, opening up a new future of connectivity that can be enjoyed by everyone, everywhere.

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