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SATELLITE PRO MIDDLE EAST

NOLOGY INTELLIGENCE FOR THE SATCOM MARKET

OILFIELDS OF THE FUTURE
Investment in connectivity must remain paramount despite cuts

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Improving Lives

Welcome to the April edition of *SatellitePro ME*. It was lovely meeting with all of you at CABSAT. There's something intrinsically nice about sitting down and having a chat with friends and industry peers. The stories we share and the opinions about different directions the industry is moving in, and what we must all do to be part of this change. We're living in a constantly changing world, where we can see SpaceX reuse their rockets to deliver payloads into orbit; where we now have satellite spot beams delivering high throughput data; and where there are so many mergers and acquisitions happening, that are helping companies grow.

One of the most important challenges that almost all of you have mentioned is the fact that we have so much unused capacity. There are new applications coming on board, but this is something that I feel is being staggered. If we can innovate and think of ways to make use of this capacity, then the whole job would just become a lot easier. Furthermore it will also stop price wars in the delivery market.

Kymeta, with their antennas are changing the way we imagine connectivity on the move. Future Toyota models will challenge the way we imagine connected cars. Imagine going on a drive, and being able to watch Netflix or work with your email on the move, anywhere and under any conditions. Imagine fewer recalls because of how data can just be beamed via satellite to an antenna on the roof of your car. Not something big and bulky, but something very discreet under the roofline. Most recalls nowadays are not really mechanical failures, but something that can be fixed with a software update. The world is looking ever more connected, and that is a start to eliminate world illiteracy and make people ready for jobs that help them improve their lifestyles.

Have a wonderful April. As always, I'd love to hear your feedback and comments on this issue of the magazine. Please send me an email or call the number in the panel on the left.

Clayton Vallabhan
Editor

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"In broadcast, it's trying to combine 4G and satellite services. I'm sure this will expand beyond the broadcasting world soon"
Freddie Caldwell, Sales Manager, Paradigm Communications
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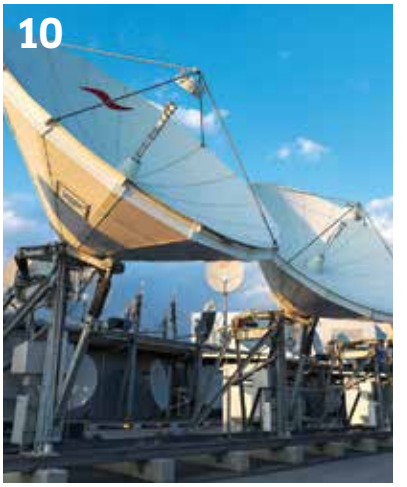

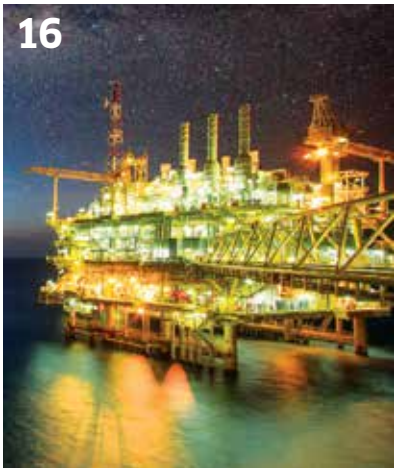

MBRSC signs MoU with KARI in South Korea

MBRSC has signed an MoU with the Korea Aerospace Research Institute (KARI) in South Korea with the goal of cooperating on various space-related activities and transferring expertise. The MoU was signed by His Excellency Yousuf Hamad Al Shaibani, Director General of MBRSC, and Dr Gwang-Rae Cho, President of KARI.

Commenting on the signing of the MoU, Al Shaibani stressed the importance of the close relationship between MBRSC and KARI. He also referred to the knowledge transfer programme with MBRSC's strategic partner Satrec Initiative. "This MoU provides a concrete basis for the ongoing cooperation and partnership between the UAE and South Korea with respect to transferring the know-how of space technology, within coherent frameworks." he said.

Yousuf Hamad Al Shaibani, Director General of MBRSC.

+ mbrsc.ae

+ www.kari.re.kr

EUTELSAT AND GULFSAT LAUNCH AL QURAIN TV IN HD

Kuwait TV, the official Kuwaiti state broadcaster and part of the Kuwaiti Ministry of Information, announced that the new Al-Qurain TV channel has launched its free-to-air HD platform hosted on the EUTELSAT 8 West B satellite. The capacity used by Kuwait TV is provided by Gulfsat, Eutelsat's long-term partner.

Ghassan Murat, Vice President of Business Development and Strategy at Eutelsat Dubai, said: "The addition of Al-Qurain TV to Kuwait TV's platform is indicative of a new wave of growth enabled by our EUTELSAT 8 West B satellite, particularly for HD channels."

Mohammed AlHaj, Chairman and CEO of Gulfsat, said: "We are delighted to support Kuwait TV's new venture and to be part of the expansion of Kuwait's broadcasting landscape."

+ www.eutelsat.com

+ www.gulfsat.com

TAQNIA SPACE AND ARABSAT SIGN MANUFACTURING AGREEMENT

Taqnia Space and Arabsat have signed a new satellite manufacturing agreement, 6-D, on the orbital position 44.5-degrees East, owned by both King AbdulAziz City for Science and Technology and Arabsat.

The new 6-D satellite will provide all Ka- and Ku- satellite telecommunication services, such as internet, fixed and mobile TV broadcast services and satellite services on aircraft.

+ www.taqnia.com

+ www.arabsat.com

INTELSAT AND SENTECH EXTEND RELATIONSHIP FOR AFRICA

Intelsat announced that Sentech, a broadcasting signal distributor in Africa, has extended and expanded its relationship with Intelsat to bolster delivery of media services in sub-Saharan Africa.

Sentech has been leveraging Ku-band services from Intelsat 20, located at 68.5° East, for decades to cost-effectively deliver direct-to-home (DTH) and digital terrestrial television (DTT) services in South Africa. Sentech, which reaches 8.5 million TV households, has contracted additional services on Intelsat 20, Africa's top video neighbourhood, to power its growth in the region.

"The contracting of these additional services with Intelsat will allow Sentech to expand quality media services to the rest of the African continent," said Mlamli Booi, CEO of Sentech.

+ www.intelsat.com

+ www.sentech.co.za

Yahlive most popular for Farsi content

Yahlive is the most popular satellite broadcast provider for Farsi-speaking viewers across the Middle East and Southwest Asia for the third year in a row, according to the latest research report published by Ipsos Connect, an international media, brands and communication advisory company. In addition, Yahlive has witnessed 100% growth in viewership over a period of two years, with a current audience reach of 51 million viewers.

The report found that the total number of viewers of Farsi content over DTH and terrestrial networks grew from 39 million to over 51 million. This considerable increase has been attributed to the premium content Yahlive has on offer for the Farsi community and technical excellence in terms of signal power and reliability.

Currently, of the 66% of the Farsi-speaking population receiving satellite channels at home, 60% opt for Yahlive services. Yahlive's DTH market penetration figure is thus remarkably high, with a total of 34,574,400 viewers enjoying compelling and original content every day.


Samir Boustany, CEO, Yahlive.

According to the research, a significant factor for the consistent growth in Yahlive's market share is that customers are satisfied with the programming and satellite signal quality, and are more likely to recommend Yahlive to friends and family.

+ yahlive.com

UAE-IX INTERNET EXCHANGE TO UPGRADE TO APOLLON

UAE-based UAE-IX Internet Exchange, managed by datamena in partnership with DE-CIX, announced that it will upgrade to the powerful DE-CIX Apollon technology platform as the foundation for its regional infrastructure in the UAE in the near future.

The DE-CIX Apollon platform is the world's largest and most advanced Ethernet interconnection platform. Built on supernodes consisting of a 100GB Ethernet (GE)-capable switching system that supports large numbers of 100GE ports across the switching fabric, DE-CIX Apollon delivers highly secure and resilient connectivity to the UAE-IX peering platform. The technical upgrade accommodates the continuous growth of UAE-IX since its launch five years ago. UAE-IX is a carrier and data centre-neutral internet exchange for the Middle East that interconnects global networks and, above all, network operators and content providers in the GCC region.

+ www.uae-ix.net

NORTHTELECOM ACQUIRES SCOPETEL

NorthTelecom announced that Malaysian telecommunications company ScopeTel is now part of NorthTelecom Group. This agreement further strengthens NorthTelecom's position in the APAC market. The combination of ScopeTel's many years of experience in oil & gas and maritime telecommunication and NorthTelecom's world-class satellite services and solutions will provide clients and partners the very best level of service.

This partnership is expected to result in greater efficiency and significantly increase NorthTelecom's market share and footprint. NorthTelecom will use ScopeTel's brand recognition in the APAC region to provide quality service to clients in that market.

NorthTelecom started its new growth plan in early 2016 and entered into mergers & acquisition with key players globally.

+ www.northtelecom.com

+ www.scopetel.com.my

SES and Intersat sign broadband connectivity agreement

SES and Intersat announced that they have signed a multi-year agreement to deliver internet services across Africa. Intersat, a provider of internet solutions on the African continent, will be providing broadband connectivity to businesses and consumers via SES's NSS-12 satellite, located at 57-degrees East.

The latest agreement with SES includes a new C-band capacity lease, infrastructure services out of the SES Betzdorf teleport and a renewal of upgraded Ku-band capacity out of the SES Djibouti teleport.

"We have been in partnership with Intersat for many years in various markets and sectors. The new agreement reaffirms how SES satellites' comprehensive coverage and SES's competitively priced flexible connectivity platform with a plug-and-play offering has enabled Intersat to expand their reach across East Africa," said Ferdinand Kayser, Chief Commercial Officer at SES.

+ www.ses.com

Ferdinand Kayser, CCO, SES.

INTELSAT AND MARLINK PARTNER TO DELIVER HTS SERVICES

Intelsat SA and Marlink announced that their partnership to deliver high-throughput satellite services to cruise and passenger vessels using Intelsat Epic^{NG} has contributed to an increase of more than 220% in bandwidth delivered on Marlink's Sealink VSAT service during 2016.

This growth in bandwidth broadband connectivity for Marlink is more than three times larger than what it was in 2016.

+ www.intelsat.com

+ marlink.com

SAUDI HIGH SCHOOL GRADUATES TO BE TRAINED FOR AEROSPACE

The Technical and Vocational Training Corp (TVTC) has signed an MoU with ALSALAM aerospace industry to train 500 young Saudi high school graudates for manufacturing and repairing programmes. The MoU is part of the group's need to strengthen the partnership with various government and private sectors to develop skills for young Saudis in the technical field.

The organisation will work with ALSALAM to provide specialised training programmes in technical fields needed to run the company's projects. Trainees will join the programmes in around 16 global TVTC technical colleges for young men to acquire the basic technical skills required for aerospace technical work and learn English.

The jobs at ALSALAM are suited for the need for qualified Saudi youths to handle the technical problems of aircraft. Through this training, they will qualify in aerospace technical and vocational training.

+ www.alsalam.aero

CETEL UPGRADES EXTENDED C-BAND ON ARABSAT 5C

CETel, a German provider of global satellite, fibre and wireless enabled communications solutions, is upgrading its extended C-band service for Africa to meet the increasing demand in the raw material sector.

With more than 50MHz on Arabsat 5C extended, CETel delivers connectivity to rural areas in many African countries, especially Mali, Niger, Nigeria, the DRC and South Africa.

CETel MD Guido Neumann announced the upgrade in March 2017, saying: "CETel expands this customer network serving up to 200Mbps to critical and sensitive operations in the natural resources industry... the increased bandwidth demand is realised via a hub-based solution from our teleport in Germany."

Jointly, CETel and Arabsat deliver reliable and economic managed end-to-end services across Africa for oil & gas, mining and construction.

+ www.ce-tel.com

SSL uses next-gen design and manufacturing for SSL1300

SSL announced that it has successfully introduced next-generation design and manufacturing techniques for structural components into its popular SSL 1300 geostationary satellite platform. Its first antenna tower designed using these techniques, which include additive manufacturing – more commonly known as 3D printing – was launched last December on the JCSAT-15 satellite, which was designed and built for SKY Perfect JSAT, a world-leading Japanese satellite operator. The satellite, renamed JCSAT-110A, has completed in orbit testing and is performing according to plan.

"SSL is an innovative company that continues to evolve its highly reliable satellite platform with advanced technologies," said Dr Matteo Genna, CTO and VP of Product Strategy and Development at SSL. "Our advanced antenna tower structures enable us to build high-performance satellites that would not be possible without tools such as 3D printing."

Strut-truss tower structure.

The optimised strut-truss antenna tower used on JCSAT-110A consisted of 37 printed titanium nodes and more than 80 graphite struts. The strut-truss design methodology is now standard for SSL spacecraft.

+ www.sslmda.com

INTELSAT ACQUIRES EQUITY STAKE IN KYMETA CORPORATION

Intelsat announced that it has acquired an equity stake in Kymeta, and that Intelsat CEO Stephen Spengler has joined Kymeta's board of directors.

Spengler said: "Intelsat is developing and supporting the innovative new technologies that will unlock new applications for our sector. The demand for fast, reliable broadband connectivity requires innovation in-orbit and across the entire satellite ecosystem to unlock new growth opportunities. Our partnership with Kymeta provides a real game changer and a high-performance, cost-effective alternative for the industry. As noted by our increased equity stake, we value our partnership with Kymeta and look forward to capturing exciting opportunities in fast-growing new vertical markets together."

"This investment further solidifies the KALO bundled services offering by providing a global high-throughput network for our easy-to-purchase services packages, in tandem with our commercial product release of Kymeta mTenna and KyWay. We are excited to have Intelsat as an investor in Kymeta," said Dr Nathan Kundtz, founder, President and CEO, Kymeta.

+ www.intelsat.com

Stephen Spengler, CEO, Intelsat.

GENERAL ATOMICS AWARDS CONTRACT TO HUGHES

Hughes Network Systems announced that its Defence and Intelligence and Systems Division (DISD) has been awarded a contract by General Atomics Aeronautical Systems (GA-ASI) to provide satellite communications on the type-certifiable Predator B (TCPB) remotely piloted aircraft (RPA) system. This provides the basis for the UK's Protector programme.

A variant of the proven multi-mission Predator B, the new SkyGuardian aircraft will provide next-generation capability, integrating enhanced safety and reliability systems that will enable RPA flight within civilian airspace, along with an increased payload capacity.

Working with GA-ASI, Hughes is upgrading the aircraft's satellite communications system with customised airborne Hughes HM series modems. The advanced modems will enable a significant increase in data transfer rates, employing an enhanced waveform that ensures resilient and secure communications when operating in challenging environments.

The new aircraft is designed to be compliant with NATO and UK airworthiness requirements, supporting easy integration into segregated and non-segregated civil airspace operations around the world.

+ www.hughes.com

Iridium installs go past 500 aircraft

Iridium announced that its Safety Voice service, used for air traffic communications, had been adopted by more than 500 aircraft as of February 2017. The service provides aircraft operators with an alternative to existing HF radio systems, replacing them with a secure satellite-based option for long-range communications.

In August 2015, the Federal Aviation Administration (FAA) distributed an Information for Officers (InFO) notice alerting aircraft operators of the modifications required to comply with Policy Letter-106, which outlines how aircraft may operate with one HF radio and one satellite communications (SATCOM) platform over the West Atlantic Routing System (WATRS). The Iridium Safety Voice service features a dialling system requiring multiple user authentication steps for in-flight communications, in addition to a call priority system, ensuring urgent communications are not interrupted.

Over the past few years Iridium has seen substantial adoption of its aviation services, with an increase of over 100% in active airframes using the Safety Voice service between 2015 and 2017.

+ www.iridium.com

Iridium's Safety Voice service has been installed in more than 500 aircraft.

EUTELSAT BROADBAND BOOSTS SPEEDS AND DATA ALLOWANCE

Eutelsat Broadband has announced an improved range of Tooway Business satellite broadband services designed to meet the needs of SOHO, SMB and corporates located across large parts of the MENA and Europe. The new services include boosted download speeds from 22Mbit/s to 30Mbit/s and an increased data allowance package up to 500GB per month.

Tooway Business offers broadband packages with a wide range of data allowances, including a new 500GB a month package and a host of flexible B2B features including public IP addresses, business hour protection and a full array of customisable options.

Tooway Business is ideal for organisations based in locations where fixed line services are slow or unavailable and for critical applications such as disaster recovery or back-up. Vertical industries already taking advantages of Tooway Business satellite solutions include energy and utilities companies with remote installations as well as public and private security firms for surveillance.

+ eutelsatbroadband.com

INTELSAT AND ONEWEB ENTER AGREEMENT FOR MERGER

Greg Wyler, Founder and Executive Chairman, OneWeb.

Intelsat and OneWeb announced that they have entered into a definitive combination agreement, pursuant to which Intelsat and OneWeb will merge in a share-for-share transaction.

Intelsat and SoftBank Group Corp (SoftBank) also entered into a definitive share purchase agreement, pursuant to which SoftBank will invest $1.7 billion in newly issued common and preferred shares of the combined company. Both the merger and the SoftBank investment are subject to, among other conditions, successful completion of debt exchange offers to certain existing Intelsat bondholders as well as receipt of certain regulatory approvals.

The complementary strengths of Intelsat and OneWeb, combined with the investment by SoftBank, are intended to create a financially stronger company with the flexibility to aggressively pursue new growth opportunities resulting from the explosion in demand for broadband connectivity for people and devices everywhere.

The debt exchange offers together with the proceeds of the SoftBank investment are intended to reduce Intelsat's debt by approximately $3.6 billion, assuming the minimum level of participation in the debt exchange offers is achieved.

Either party can terminate the agreement and SoftBank can terminate its investment if the debt exchange offers have not been successfully completed within 90 days of the date of the agreement.

It is expected that, upon the admission of third-party limited partners to the SoftBank Vision Fund and subject to receipt of all applicable regulatory approvals.

+ www.intelsat.com

+ oneweb.world

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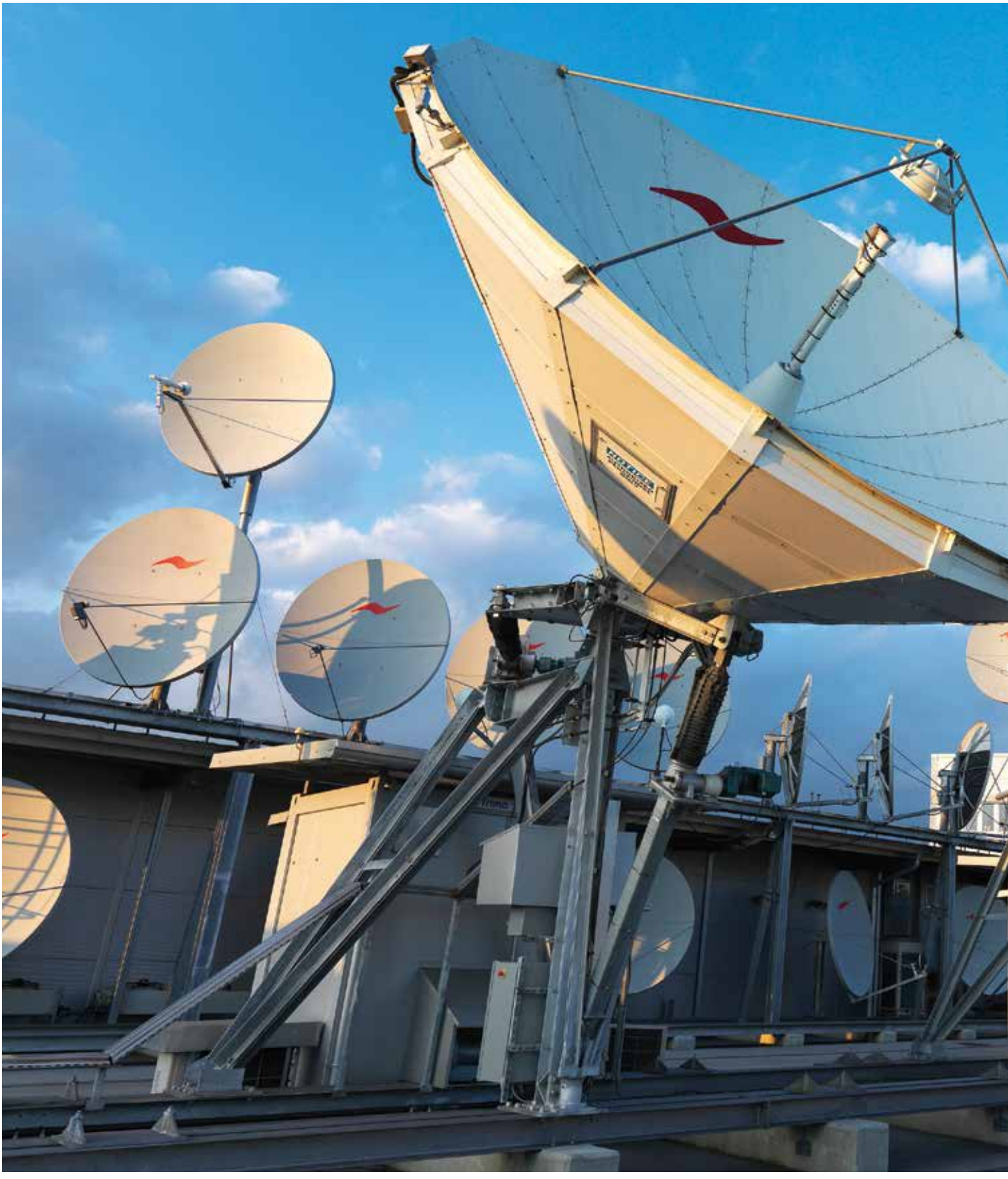
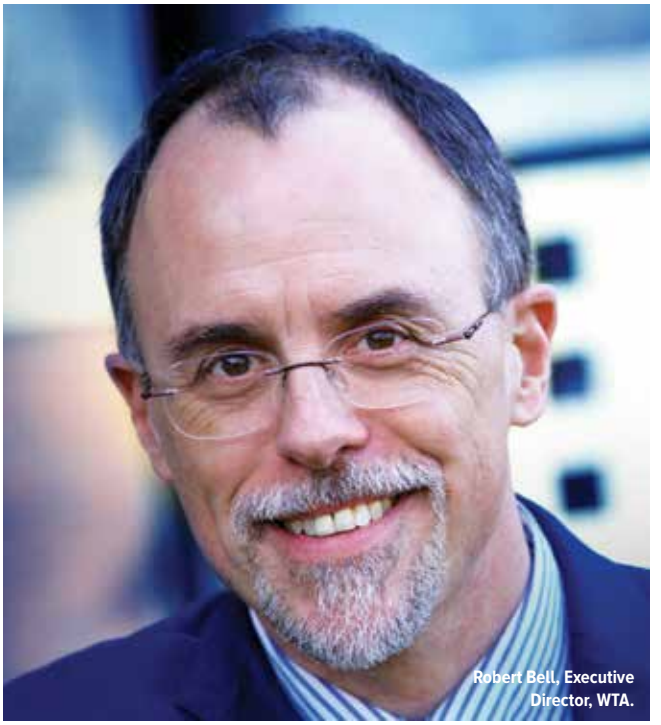


Smart **Evolution**

Teleports have evolved from working with analogue infrastructure to SDI and now IP infrastructure. The core reason has been to increase efficiency while remaining competitively priced


Robert Bell, Executive Director, WTA.


David Andres, Business Development Manager at Santander Teleport.

Teleports have evolved at a rapid rate from simple infrastructure providers to outsourced providers of complex managed services. In media, they assemble programme streams from multiple inputs, originate channels and distribute through multiple paths including satellite, fibre and internet.

There is still the need to service the allotted spectrum, which remains in C-band, Ku-band and most recently Ka-band. As the frequency goes up, the profile accuracy of a teleport's antenna becomes more stringent. It is most unlikely that an antenna profiled for C-band can work for Ku- or Ka-band, whereas an antenna profiled for Ka-band has a good margin of accuracy for Ku-band and C-band operation.

Roger Boddy, CEO, Global Teleports, says: "Over the past decade, there has been a growth in smaller hub antennas for operation in Ka-band, each determined by the question of whether or not they should be multi-band to support Ku- and C-band, therefore influencing the components of the teleport."

"It is essential that a teleport has its own staff to maintain the day-to-day operational capability of the teleport. Some functionality can be outsourced where work can be scheduled, for example cleaning of antennas and structural maintenance. Having said all that, both the availability and the ability to switch to redundant equipment in the event of a failure is an important necessity in meeting contractual service level agreements."

Tomas Lovsin, CTO at STN teleports, thinks the first change was the move of old analogue infrastructure, specifically RGB video and analogue audio, to serial digital interface (SDI), and more recently the transition from SDI-based infrastructure to IP-based solutions.

"IP-based infrastructure offers more flexibility and much easier maintenance as well as operations costs compared to SDI. Ethernet switches have proven to be considerably more user friendly than the use of SDI routers," says Lovsin.

Robert Bell, Executive Director at WTA, says media-centric teleport operators are guiding broadcasters into OTT services and providing advanced automation that turns OTT streams into revenue.

"On the data side, teleport operators design, install and manage networks in every satellite vertical market and far beyond. The UK's largest teleport operator also delivers video programmes to the London Underground," adds Bell.

All our experts agree it is necessary to have a highly specialised in-house team to run the teleport and protect it from downtime 24x7.

Lovsin explains: "The advantage of having own in-house tech-support and engineering is of course the response time in case of unforeseen problems or issues that a teleport can and does encounter. While it is of paramount importance for a teleport

> **"When a network is oversubscribed, quality problems multiply, including latency, jitter and slow overall speeds. Quality providers carefully manage demand and capacity, using technologies that provide their customers with flexibility on demand"**
>
> ROBERT BELL, Executive Director, WTA

to have service agreements signed with all the major hardware and/or software providers, it still takes time for a provider to act. If a teleport has skilled engineers to operate, maintain and service the equipment on its own, not only does this help with the servicing, but also does significantly shorten the response time to mitigate the possible errors and rectify the problems."

When it comes to things like latency and jitter, any well designed teleport infrastructure should be designed to minimise these and many other things. Over-subscription is obviously an issue, but there are many more.

David Andres, Business Development Manager at Santander Teleport, explains some of the other causes of latency.

"There are other factors, such as how the teleport connects to the outside world, whether it is through a high-tier ISP or a lower standard connection; wrong choice of carrier parameters on a VSAT network; the type of equipment used at the remote end – lower performance modems are often an issue, since these cannot cope with high packets per second ratios and they are not able process enough TCP sessions. To provide a service with good standards, there is a minimum quality required and a minimum investment to make. Operators and service providers that only consider cost in their decisions suffer from unhappy customers."

To provide a service with good standards there is a minimum quality required, and a minimum investment to make. Operators and service providers that only consider cost in their decisions suffer from unhappy customers"

DAVID ANDRES, Business Development Manager, Santander Teleport

Teleports generally operate mission-critical networks for business and trunk networks for consumer communications service providers that in turn sell retail services.

In mobile and transportation markets, they often also manage the network nodes, whether they are cellular base stations, ships or oil platforms.

Bell says: "When a network is over-subscribed, quality problems multiply, including latency, jitter and slow overall speeds. Quality providers carefully manage demand and capacity, using technologies that provide their customers with flexibility on demand."

"There is a never ending problem in the marketplace between performance and price. Customers who insist on buying the lowest price in return for promises of high performance can expect to get what they pay for. Quality operators strive to optimise networks to provide high performance at the lowest attainable cost, and they tend to keep their customers rather than seeing them come and go."

Boddy adds: "Today's market demands best quality at least cost. Offering CIR sacrifices contention at the expense of dedicated capacity. Conversely, a least cost-effective service can be offered with contention at the expense of CIR. Whereas traditional satellite service tariffs were based on CIR, the new breed of high-throughput satellites (HTS) offer charging on the basis of how much is used rather than how fast it was delivered. This presents an opportunity to apply a mathematical algorithm that allows a sharing of throughput without overselling the capacity."

Best practice is to make sure end users know what they are buying into. There are many virtual teleports (VNO) today acting to resell from a real teleport. Each VNO is offered a portion of capacity to resell, often with scant understanding of the limitations. This has led to many adopting a 'white goods sales mentality', with sales promoted regardless of network capacity.

STN Teleport in Slovenia.


Tomaz Lovsin, CTO at STN Teleport.


Roger Boddy, CEO, Global Teleports.

Many feel this is the prime cause of over-subscription, leading to congestion.

Certifications

Bell explains that WTA's Teleport Certification standards were developed by a committee of teleport operators to cover nine key areas of facility design and six key areas of operating procedure, for a total of 170 individual data points.

The Teleport Certification Programme provides four levels of certification, from Tier 4 to Tier 1.

Each level reflects a set of clear and objective standards for facilities, technology and operating procedures. Certification at one of these levels indicates, at a minimum, that the teleport complies with the standards of that level.

Andres says: "Certification standards serve as a guideline to differentiate quality standards among companies offering products or services. Companies may apply for industry-wide quality certifications such as ISO 9001-9908 and/or more industry-specific certifications such as the WTA teleport certification. Companies applying will provide information answering to questions relating to their facilities, and secondly management processes that describe how well the company is managed to serve their clients."

"Over the past decade, there has been a growth in smaller hub antennas for operation in Ka band, each determined by the question of whether or not they should be multi band to support Ku and C band, therefore influencing the components of the teleport"

ROGER BODDY, CEO, Global Teleports

Any certification – ISO, WTA and the like – has value. The question is how these certifications benefit a teleport. Lovsin thinks both ISO and WTA standards have been made first and foremost to benefit companies. ISO standards are more general, whereas WTA certification has been specifically adopted for teleports. He feels WTA certification gives the end customer a certain guarantee that the service provided meets expectations.

Value Proposition

So how do operations, staffing, processes and capital expenditure change in a fibre, wireless and HTS world? Moreover, how does the teleport maintain its value proposition in competition with terrestrial carriers and data centre operators?

Boddy says teleports have indeed traditionally been used for fixed satellite operations, but increasingly they are serving mobile communications for ships at sea, tracking of land vehicles and, most recently, aeronautical applications.

"It should not be overlooked that teleports are gateways to national infrastructures often extending a last mile connectivity to places that fibre and fixed line radio links cannot reach. As such, teleports must interconnect with fixed line radio and fibre back bone infrastructures, but the operations staff must also be appropriately skilled to manage these systems.

"This goes back to the first question addressing the degree of outsourcing to

define the OPEX and CAPEX budgets of the teleport. Proper planning preventing painfully poor performance (P6) will apply to the component structure and infrastructure of the teleport to accommodate these interfaces. Finally, the optimum teleport infrastructure is IP-based. As such it will naturally accommodate the triple play service requirements of various customer applications. Teleports also offer a unique point to multipoint capability that is unmatched by terrestrial carriers and data centre operators," he explains.

Andres says it is clear that teleport operators are very competitive in providing services where terrestrial infrastructure is expensive and difficult or not possible to deploy, or where quick deployment of connectivity is required.

"Many teleports like Santander Teleport in Spain are built to very high standards to serve critical services, since these become hubs that connect multiple satellite connections to the terrestrial world. Therefore, well managed teleports are able to provide connectivity services with very high SLAs. This is key to the most critical services."

According to Bell, it has been many years since teleports were satellite-only facilities. As the meeting point between the digital highway and skyway, they play an essential role in connecting different, often incompatible, technologies and transmission paths.

"IP-based infrastructure offers more flexibility and much easier maintenance as well as operations costs compared to SDI. Ethernet switches have proven to be considerably more user friendly than the use of SDI routers"

TOMAZ LOVSIN, CTO, STN Teleport

"A full-service teleport today is a combination data centre, network operations centre, satellite uplink hub, fibre network and provider of distribution services over the internet, and its services include the design and operation of complex, hybrid, managed networks. As HTS becomes an increasingly important satellite architecture, they are serving as gateways and integrating by-the-megabit capacity into their service offerings for customers.

"Teleports compete on their comprehensive understanding of digital technologies and transmission technologies. It has been said that if you can get an IP-based data or video network to operate with high efficiency over satellite, you know more about transmission and information technology than just about anyone else. That will be the enduring competitive advantage for the industry," concludes Bell. PRO

Oilfields of the Future

The slump in oil prices has caused the industry to drastically trim its operational force, with nearly 440,000 people losing their jobs. However, satellite connectivity is not something to skimp on, our experts say

The digital oilfield has been evolving for over 30 years, driven by developments in software and smart hardware designed to improve operational efficiency, optimisation, decision-making, collaboration and integration into production planning. High-performance satellite networks help the oil & gas industry develop new modes of operation by providing supervision of drilling and production, instant collaboration with support staff located anywhere on the globe, efficient utilisation of manpower and monitoring of critical processes.

Ronald van der Breggen, CCO, LeoSat Enterprises, says: "High-speed data links to operating bases, along with data sharing among numerous stake holders and video-enabled services, allows operating bases to be connected in real time to the control room in the field and have access to any number of remote experts around the globe."

Providing rig workers with the communications capabilities to help improve safety goes a long way to achieving health and safety goals. At the same time, providing business tools that deliver reliable connectivity to enable them to communicate with headquarters and supply chain partners, and to carry out regular business-related activities even when out of reach of alternative networks, helps make day-to-day activities proceed more smoothly.

> **"What is however very clear is that the highest quality bit, i.e. low-latency, high-capacity, ultra-secure and easy to set up anywhere in the world, will be the bit that is least affected by any price pressure"**
>
> RONALD VAN DER BREGGEN, CCO, LeoSat Enterprises

Gavan Murphy, Director of Marketing, EMEA at Globalstar, says: "Reliable, resilient connectivity also helps alleviate the stress we all experience when we need to make an urgent call or send a vital email, yet no matter how hard we try, we simply can't get a stable Wi-Fi or 3G/4G signal. To add to the safety imperative, access by the emergency services while on a rig at sea requires specialist support such as an air ambulance. All told, remote crew require a communications system they can trust, rain or shine, 24/7, and that enables an always-on link with colleagues on land. And when there's an emergency, crew need to know they can summon rescue."

"A satellite-based communications solution offers the only viable communications lifeline. Being able to stay in touch with home boosts morale and welfare among crew who are away for extended periods of time. They need an easy way to call friends and family which is low-cost, so they don't feel they need to wait for a special occasion to make contact."

So, how has the drop in oil prices changed the satellite industry? Even though communications are essential, are companies looking for cheaper communications?

According to Shahrokh Khanzadeh-Amiri, Director of Sales, Middle East and North Africa, Intelsat, it's too early to call a bottom, but with price hovering around $50 per barrel, he is seeing some segments returning to production and starting to think about how to support new operations.

He says: "The energy sector depends on satellite for critical commercial infrastructure in both boom times and during periods of uncertainty, especially as the search for new sources of energy takes operations to more and more remote locations on land and at sea. Efficient, cost-

Ronald van der Breggen, CCO, LeoSat Enterprises.

Kevin McCarthy, VP of Market Development, Newtec.

Michael Manson, Sales Manager, Telenor.

Shahrokh Khanzadeh-Amiri, Director of Sales, MENA, Intelsat.

effective communications support critical applications, and while operating costs are a consideration, ultimately the choice in network infrastructure comes down to three things: consistent performance even in remote areas, scalable throughput in high-demand areas, and resiliency and security to provide confidence in daily operations."

Michael Manson, Sales Manager at Telenor, thinks that, like all aspects offshore, the price of communications is continually being assessed to find the most cost-effective solutions.

He says: "This need to reduce costs has led to the oil & gas industry being more receptive to new innovative ideas and technologies which would help achieve savings. Given the downturn in the industry and availability of personnel crew, welfare is not as high a priority as when availability and retention of skilled staff was paramount. Crew welfare would typically be addressed through the provision of a separate low-cost contended solution. Ka-band and Thor 7 would provide an ideal solution for crew welfare due to the low cost and smaller antenna needed."

Van der Breggen goes further to say that clearly the collapse of this industry, which has taken 440,000 jobs in the process, has had an impact on the investment dollars spent on data-communication services. Though the market is bouncing back, Bloomberg predicts that only a half to two thirds of those jobs will come back, due to more efficient drilling rigs and increased automation.

"The energy sector depends on satellite for critical commercial infrastructure in both boom times and during periods of uncertainty"

SHAHROKH KHANZADEH-AMIRI, Director of Sales, MENA, Intelsat

"So while things may be bad now, for telecommunication companies the oil & gas market will come back with a vengeance. Requests for bandwidth will be higher than ever before, and that brings us to pricing. With new capacity coming online driving prices down, the increase in demand might offset that to a certain degree.

"What is however very clear is that the highest quality bit, i.e. low-latency, high-capacity, ultra-secure and easy to set up anywhere in the world, will be the bit that is least affected by any price pressure. At LeoSat, we are confident that we have that highest quality bit and therefore never have to lead any downward price spiral. We simply have too many unique and valuable attributes when compared to either fibre or any type of HTS satellite, particularly for oil & gas."

Kevin McCarthy, VP of Market Development, Newtec, thinks most IT departments are under pressure to control costs, even as demand for bandwidth continues to grow as a result of data and crew welfare applications. He feels the key is for service providers to have an offering that minimises costs while maximising availability, efficiency, scalability and flexibility.

"Crews rely on cost-effective, dependable, high-speed communications to access their preferred internet services and stay in touch with family and friends. For this, it is vital to have a highly efficient and flexible VSAT platform which minimises capacity costs and enables service priorities to be adapted on the fly, depending on available bandwidth," he says.

Murphy says there is unlikely to be wholesale abandonment of satellite communications networks, even in the face of unstable oil prices. The business benefits of satellite communications are clear

and overarching, and no real alternatives can deliver comparable capability.

"We in the satellite industry have for many years been motivated to develop flexible and highly capable solutions, often involving multiple technologies, which deliver the maximum value for money for our customers. From the Globalstar point of view, we have seen game-changing innovation from our worldwide network of value-added resellers. They have successfully teamed satellite communications with other technologies including GSM, GPRS, RFID and other kinds of network architecture to deliver seamless multi-technology networks which use least-cost routing. These hybrid solutions are delivering long-term value."

Moving Forward

Looking forward, McCarthy says that in the oil & gas context, the combination of increased M2M connectivity from smart pipelines and the shifting nature of crew communications towards video-based applications means satellite solutions need scalability that caters for all requirements, from a few sites on a traditional satellite beam to global networks serving thousands of sites across different beams or satellites.

In order to enhance the role of satellite in oil & gas, what is required is "availability, efficiency, scalability and flexibility which is crucial for the oil & gas sector, and this can be achieved with a unique combination of satcom technologies like those onboard our Newtec Dialog platform. These satellite technologies, such as DVB-S2X, Mx-DMA, FlexACM, clean channel technology and cross-layer optimisation, can generate bandwidth savings. In addition, they provide the options of prioritising services on the fly and reliable and efficient datacasting."

"New satellites and hardware are allowing higher data rates and more information to be transferred between offshore installations and onshore bases"

MICHAEL MANSON, Sales Manager, Telenor

Manson says the industry faces an oversupply of capacity in certain regions, which has forced prices down dramatically over the past 24 months. In addition, VSAT faces competition from 4G and LTE services in areas such as the GoM, North Sea. New MEO constellations and future LEO services also add uncertainty to the future of traditional GEO satellite services.

Manson says: "New satellites and hardware are allowing higher data rates and more information to be transferred between offshore installations and onshore bases.

"New technologies and extended coverage through such initiatives as polar orbiting satellites need to be considered when oil and gas prices rise and exploration commences in the Arctic regions, which cannot be serviced by traditional GEO satellites."

Speaking on industry challenges, Amiri says cyber threats continue to increase, and the oil & gas industry faces a high degree of risk due to the nature of the business as well as growing use of bandwidth by crew, which can introduce access points to a network not related to corporate operations.

"We have to consider all of the applications being used on the network, and every part of the hybrid networks that serve remote operations will need to be secured for our customers. Intelsat understands the importance of securing a network in order to protect the valuable

VSAT installation onboard an oil rig.

Globalstar Spot Gen3.

Gavan Murphy, Director of Marketing, EMEA at Globalstar.

data being exchanged. We have invested considerable resources building a strong cyber posture, because our role in the world's infrastructure is very far reaching and our customers receive this security overlay as part of the services we provide.

"With the oil & gas sector increasingly relying on an always-on connectivity, the satellite industry must work on ensuring easier access to the technology, enhanced performance that responds to these growing requirements and better economics. Our efforts need to be focused on maximising satellite's traditional advantages of reach, ubiquity, reliability, point to multi-point capabilities and security, while delivering higher performance paired with better economics."

Van der Breggen thinks a very common challenge in increasingly modern rigs is that they produce enormous amounts of data to ideally be reviewed in near real time. Up to now, transportation of the data for analysis has traditionally been through either daily helicopter flights back to operations sites or by connecting to a satellite network. Transporting data daily via helicopter incurs very high costs, and existing satellite networks cannot handle the bandwidth and speed requirements to move large amounts of data quickly.

"The challenge of data transportation and connectivity in the oil & gas sector has been resolved with the development of a unique low-Earth orbit data network solution which combines the speed of fibre with the ubiquity of satellite. Conceived by two former Schlumberger executives with a long history of working with the challenges of data transportation in the energy sector, LeoSat's data network is comprised of a constellation of up to 108 low-Earth orbit communications satellites, all interconnected through laser links, creating an optical backbone in space which is about 1.5 times faster than terrestrial fibre.

"Using optical inter-satellite links and operating in polar orbits at an altitude five times closer to Earth than MEO and 25 times closer than GEO allows LeoSat to provide an ultra-low latency, high-throughput and global data network. This advanced system architecture is also able to encrypt and logically separate the data as it flows through the system, providing secure end-to-end communications with no terrestrial touch points," says van der Breggen.

"It is vital to have a highly efficient and flexible VSAT platform which minimises capacity costs and enables service priorities to be adapted on the fly, depending on available bandwidth"

KEVIN MCCARTHY, VP of Market Development, Newtec

In conclusion, van der Breggen says the world in general is increasingly inter-connected, cloud-based and data-driven, and this is equally important for the oil & gas sector. Bandwidth requirements continue to rise with the demand for always-on connectivity, and operators continue to look at how satellite technology can improve operational efficiency.

"Oilfield operators will benefit from a network that is not only completely secure and reliable, but delivers data faster than on any terrestrial or satellite network. Combining the speed of fibre with the ubiquity of satellite means LeoSat is creating a new satellite paradigm, shifting the role of satellites in the oil & gas sector from a last resort option to a first choice for data transportation," he concludes. PRO

Zain Group appoints new board of directors

Zain Group announced that it held its annual Ordinary General Assembly at the company's headquarters in Shuwaikh, Kuwait. The meeting saw the election of the group board of directors for the next three years.

The newly elected board of directors met immediately after the election and appointed Mohannad Mohammed Al-Kharafi as Chairman of Zain Group, Bader Nasser Al-Kharafi as Vice-Chairman and CEO of Zain Group, and Scott Gegenheimer in a new role as CEO of Operations.

During the General Assembly, Zain Group reported an increase in net profit of 2% year-on-year to $519 million, reflecting earnings per share of $0.13. Zain Group's customer base grew by 3% during the year, reaching more than 47 million customers. Chairman Asaad Ahmed Al Banwan explained that Zain's financial results were affected by social unrest and security risks.

www.zain.com

Zain Group's headquarters in Kuwait.

UAE RANKS AS THE GLOBAL LEADER IN FIBRE-TO-THE-HOME PENETRATION

The UAE had the highest Fibre to the Home (FTTH) penetration in 2016 of all its global counterparts, according to leading industry body FTTH Council. The council published its annual report recently, highlighting the UAE with coverage of 93.7% compared to Qatar (87.9%), Singapore (85.4%), South Korea (79.8%), Hong Kong (73.7%) and Japan (53.9%).

The UAE was in the category of countries with a FTTH penetration of over 40%. There were 11 countries in this category.

Saleh Al Abdooli, CEO, Etisalat Group, said: "This achievement was only possible due to the long-term vision of the UAE leadership of development and modernisation. Etisalat has worked in line with this strategy, investing more than AED 28bn in the network infrastructure. This has led to the launch of innovative services meeting the growing demand and changing requirements of our customers across the country and making the capital the first city globally to be covered with a fibre optic network."

"With network enhancement and expansion, Etisalat has also focused on investing in innovation and next-generation technologies and services. This is in line to provide the best customer experience to our subscriber base and position our UAE leadership on a global map in the ICT sector as well as other sectors."

www.etisalat.com

www.du.ae

ETISALAT NIGERIA MULLS EXITING MARKET

Etisalat's Nigerian affiliate is in talks with local banks to renegotiate the terms of a $1.2 billion loan it took out nearly four years ago to expand its network in the country. This comes after missed payments by the company.

Ibrahim Dikko, Vice President for regulatory affairs at Etisalat Nigeria, said Etisalat missed payments due to an economic downturn in Nigeria, a currency devaluation there and dollar shortages on the country's interbank market.

"We are in discussions with our bankers and have been for quite a while. They have not taken over the business and we are hoping that we can resolve the issue and find a way to renegotiate terms," Dikko told Reuters.

Emirates Telecommunications Group (Etisalat) owns a 40% of its Nigerian affiliate, which accounted for around 3.7% of the group's revenue in 2013.

www.etisalat.com

5G – The New Kid in Town

The two biggest technology players for promoting 5G as a standard are Nokia and Ericsson. We look at the new platforms they employ for enabling this future tech

NOKIA ENTERS NEW ERA WITH 5G FIRST

Nokia has developed a solution that will allow operators to rapidly address the huge demands of connected people and industries. Nokia 5G FIRST comprises its radio access network (RAN), including Nokia AirScale massive MIMO adaptive antennas, packet core and mobile transport solutions, as well as a full service offer using Intel architecture and the Intel 5G modem for initial deployments starting in 2017.

With the introduction of 5G FIRST, operators will gain a first-to-market advantage based on early specifications. In addition, Nokia will use the lessons learned through real-world deployment to contribute to final 3GPP standardisation of the technology.

While each operator has its own timeline for moving to 5G, some leading providers are eager to take advantage of the extremely high capacity and low latency connectivity it promises to deliver. To meet early adopter demands, Nokia will make its commercial 5G FIRST end-to-end solution available in the second half of 2017.

Samih Elhage, President of Mobile Networks at Nokia.

The radio access network components of 5G FIRST comprise new Nokia massive MIMO adaptive antennas for 3.5GHz, 4.5GHz, 28GHz and 39GHz frequency bands, the AirScale System Module, AirScale cloud RAN technology and software. Nokia has upgraded its AirScale and AirFrame platforms to 5G based on specifications developed by the KT Special Interests Group (KT SIG) and Verizon 5G Technology Forum, and the platforms will be adapted to 3GPP as standards develop.

Leveraging Nokia's end-to-end network capabilities, 5G FIRST also incorporates the multi-access Nokia Cloud Packet Core and the Nokia Shared Data Layer as part of a cloud-native core architecture to deliver the flexibility, massive scalability and performance operators need to rapidly and cost-effectively deliver 5G services. A comprehensive array of mobile transport offerings from Nokia address the critical capacity, reliability and latency requirements of the 5G era.

Nokia will work with operators to meet their customers' unique needs. Leveraging its long history of Nokia Global Services and Bell Labs Consulting expertise, the company has extended its 5G Acceleration Services to include 5G transformation consulting, 5G phase one network design and 5G cross-domain architecture services.

5G FIRST is underpinned by technical specifications outlined by the Verizon 5G Technology Forum ecosystem. As a proof point, Nokia is working with Verizon and Intel to deliver advanced 5G services to homes in select Verizon markets such as Dallas, enabling next-

generation video and entertainment services or other applications in the future, such as remote, in-home healthcare.

Ed Chan, Senior Vice President – Technology Strategy and Planning at Verizon, said: "Leveraging the Verizon 5GTF partnership specification, Nokia's 5G FIRST will accelerate the commercialisation of 5G services to our customers. We are excited to partner with Nokia to bring 5G to the pre-commercial pilot cities in 2017."

Samih Elhage, President of Mobile Networks at Nokia, said: "We are able to leverage our breadth of expertise to deliver a true end-to-end 5G FIRST network and services solution. Working with operators such as Verizon, we can help them tailor deployments to meet their own customers' unique demands and capitalise first on the opportunities this will bring. And we can leverage the technology to work with industries to identify new uses for 5G now under the 5G community programme, which will in turn open up even more opportunities for our operator customers."

Asha Keddy, Vice President and General Manager of Next Generation Standards, Intel Communications and Devices Group at Intel, said: "5G marks an historic inflection point for the industry, and early investments in cloud and core networks, radio technologies and compute platforms are fundamental for realising the transformative potential of 5G. Nokia's adoption of the recently announced global Intel 5G modem for use in its upcoming platform called 5G FIRST is a great example of our innovative collaboration and progress in helping operators accelerate 5G tests and commercial deployments."

"Working with operators such as Verizon, we can help them tailor deployments to meet their own customers' unique demands and capitalise first on the opportunities this will bring"

SAMIH ELHAGE, President of Mobile Networks at Nokia

Malik Saadi, Managing Director and Vice President, Strategic Technology of ABI Research, said: "Nokia 5G FIRST features all fundamental building blocks that are necessary for a 5G deployment. The technology will allow operators to bulletproof their 5G strategies/implementations even before standardisation has been finalised."

As a next step in a new technology collaboration with Intel, Nokia will leverage the Intel 5G modem for initial deployments of 5G FIRST to deliver ultra-broadband to the home using fixed wireless access as an alternative to existing fibre deployments.

Nokia will continue to expand development of 5G fixed and mobile applications working with companies in the 5G community as part of the ng Connect programme.

ERICSSON BRINGS FORTH 5G CORE SYSTEM

Ericsson has introduced a 5G platform for the needs of first movers in 5G. Communications are rapidly moving toward data-heavy applications like virtual reality and augmented reality. In light of that, Ericsson is now marketing with solutions to enable today's networks to evolve smoothly to the next generation of networks.

Ericsson's new 5G platform comprises the 5G core, radio and transport portfolios, together with digital support systems, transformation services and security. Preparing for 5G opportunities represents a huge opportunity for operators.

Ericsson expects that in 2026, there will be a $582 billion market opportunity globally as telecom operators leverage 5G technology for industry digitalisation. For operators, this represents potential to add 34% growth in revenues in 2026. In a forthcoming study, Ericsson found that for operators the manufacturing and energy/utilities sectors are the biggest opportunity for revenues created or enhanced by 5G.

"With this launch, we introduce our 5G platform to support the beginning of a huge change in network capabilities, allowing our customers to offer more advanced use cases and new business models to their customers. It is an important milestone enabling operators to continue their evolution journey to 5G," said Arun Bansal, Head of Business Unit Network Products at Ericsson.

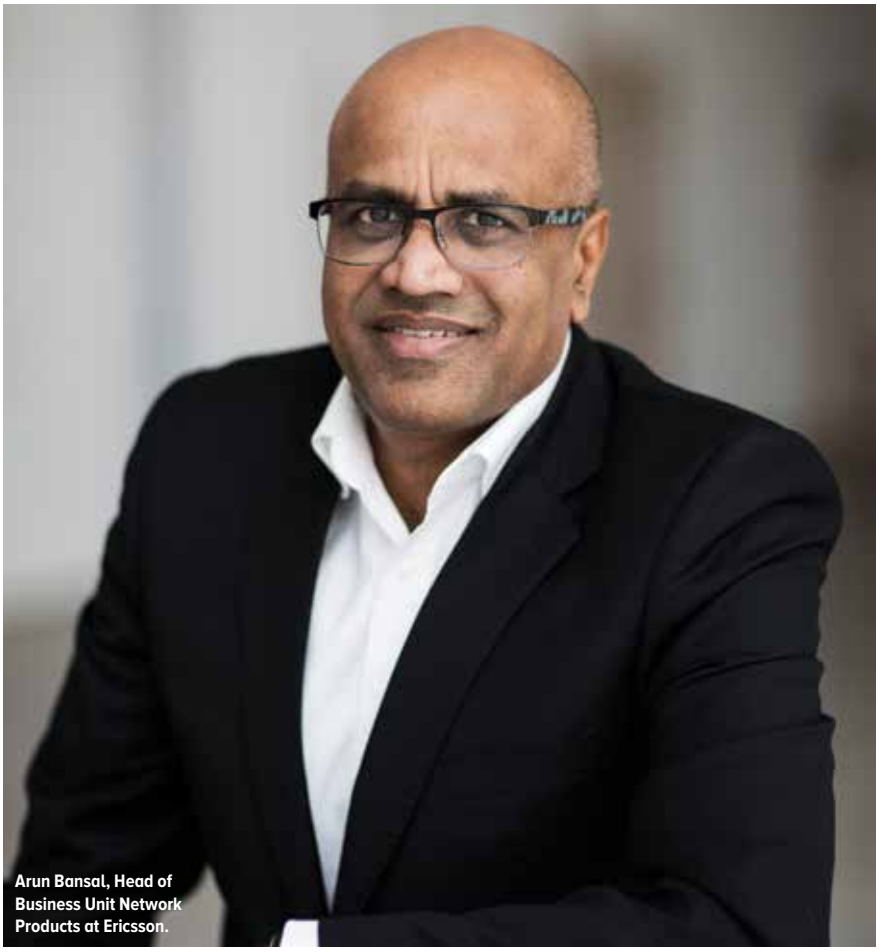
"We are pleased with the progress Ericsson is making in advancing 5G technology commercially," said Roger Gurnani, Chief Technology Officer, Verizon. "Our customer trials with 5G technology in 11 cities across the US is an important step in accelerating the path to next generation of wireless services."

At the core

Ericsson launched its first 5G Core System capable of 5G use cases based on network slices. Network slicing allows an operator to provide dedicated virtual networks with functionality specific to the service or customer over a common network.

Already today, this enables some early 5G use cases for telecom operators to capture growth opportunities. Thus, Ericsson is now introducing additions into a number of areas of its 5G core system and applications:

- Federated network slices for 5G roaming extends this concept to a visited network. This technology will make it possible for an operator to provide a network service globally, ensuring enterprises do not need individual agreements with different operators for a global service experience.
- Network slice management to automate the set-up of service connections and to secure service quality, to save costs and to gain fast time to service.
- 5G policy and user data for network



Arun Bansal, Head of Business Unit Network Products at Ericsson.

slices to ensure users get the right service quality and have data integrity.

- Distributed cloud to facilitate short latency applications, such as real-time face recognition, by moving applications and workloads closer to the access. In addition, the 5G-enabled packet core will allow full separation of control and user data, as well as unprecedented capacity and user data rates.
- 5G transformation services to ensure the migration of the network and operation from legacy to 5G core, virtualised and based on an automated operational model.

One proof point has been successfully demonstrated by Deutsche Telekom, Ericsson and SK Telecom. The three have jointly built and demonstrated the world's first intercontinental 5G trial network where network slices were made available in the other operator's footprint.

"We introduce our 5G platform to support the beginning of a huge change in network capabilities, allowing our customers to offer more advanced use cases and new business models"

ARUN BANSAL, Head of Business Unit Network Products at Ericsson

New additions build on the foundation where the journey to 5G has already started, with virtualisation, where hardware-based functions are put on cloud infrastructure platforms as data centres. Network Functions Virtualisation (NFV) and Software Defined Networking (SDN) will be used for networking and programmability, bringing ultra-scalability, programmability and automation to the networks, and Ericsson's current portfolio of User Data Management, Evolved Packet Core and IP Multimedia Subsystem is put in the cloud to support new use cases.

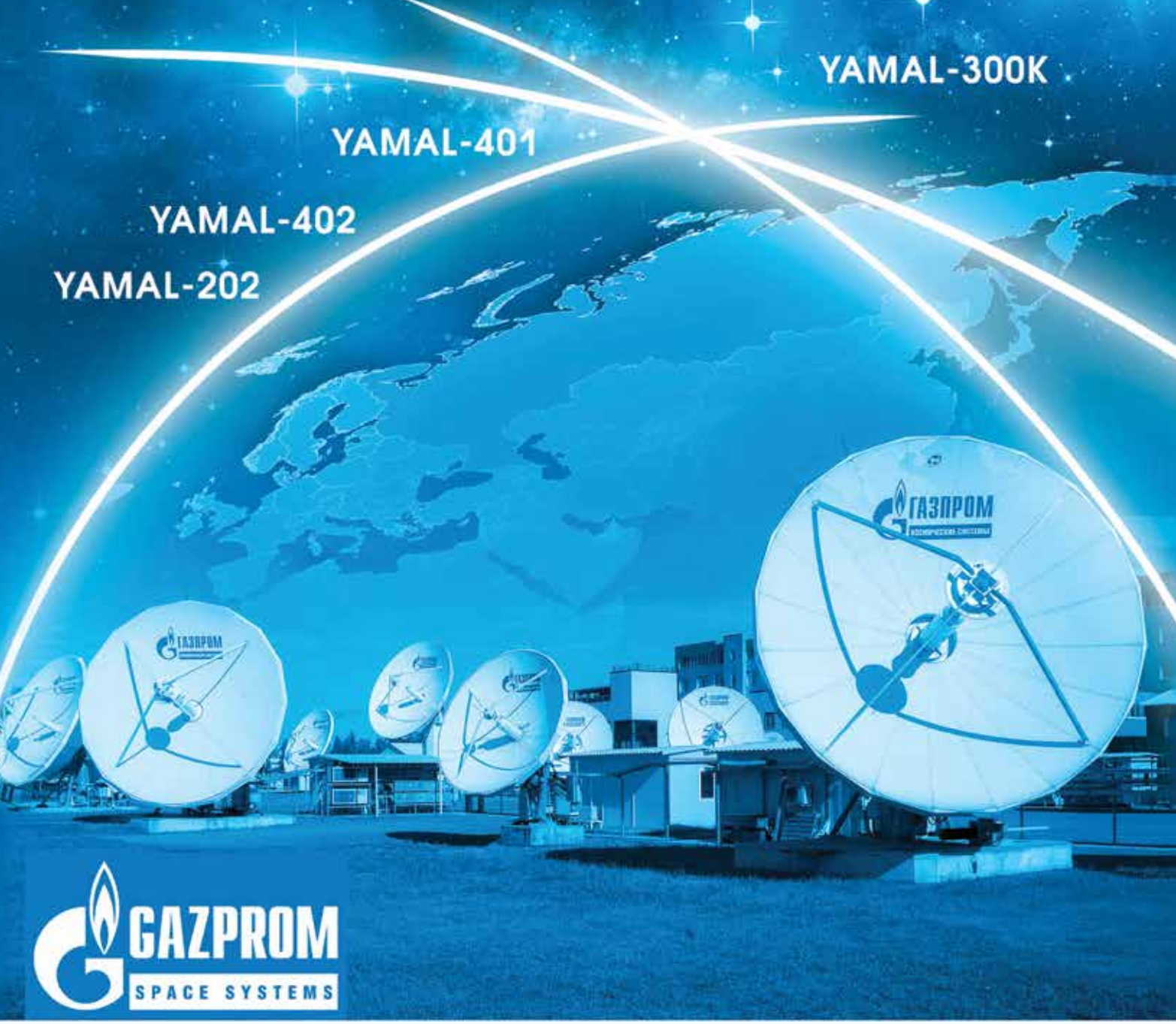
Dimitris Mavrakis, Research Director, ABI Research, said: "Ericsson's new product launch is a firm demonstration of its technical expertise in 5G and NFV, adding significant value on top of its existing core functionality. It indicates technology maturity for NFV and 5G core and federated network slicing is a radical forward-looking concept, opening up for new business models opportunities."

In radio and transport, Ericsson adds mid-band and high-band 5G New Radio (NR) radios to the world's first 5G NR radio, which the company launched last year. Having radios available for all frequency ranges will bring benefits of 5G communications globally. The 5G radio portfolio will be the first to support the new standardised 5G fronthaul interface (eCPRI).

The support of these new business opportunities and new applications will require delivering terabytes of data throughout the network. To ensure the needed network transport capabilities, Ericsson also introduces optimised transport solutions. It delivers a MINI-LINK enabling speed of 10Gbps and new rail-mounted fronthaul and router products, enabling zero footprint.

Ericsson will also be delivering new innovations on the road to 5G via the LTE networks and 1Gbps LTE solutions. New products complement the award-winning Ericsson Radio System and will increase the energy and spectrum efficiency of 4G networks and app coverage improvements. In addition, new radios will create fast 1Gbps LTE networks.

Daniel Staub, Head of Joint Mobile Group, Swisscom, said: "Ericsson's new 5G portfolio opens up for new opportunities. As we are taking our first steps towards 5G, Ericsson's new wideband four-transceiver radio will help us produce even more speed on 4G." PRO



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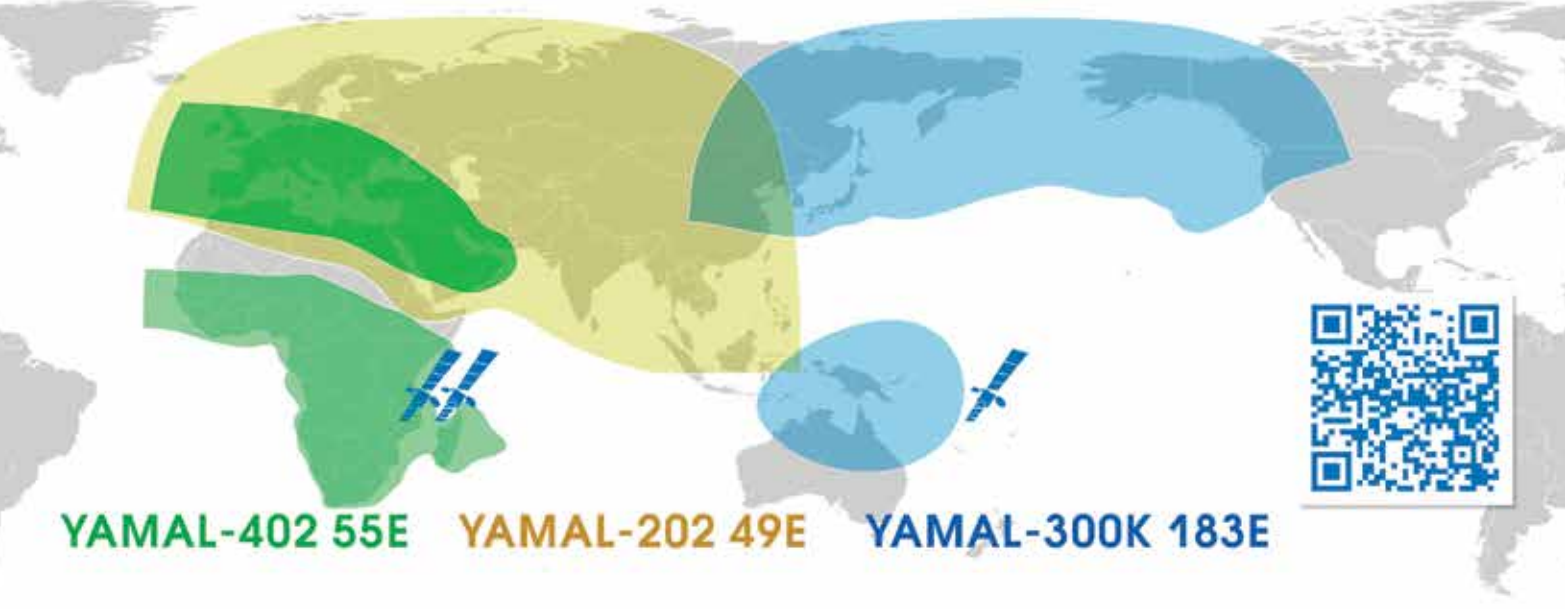

Head over to **Asia**

CommunicAsia 2017 will add brand-new zones for start-ups and data security, as well as having companies showcasing AR, VR, Smart Cities and IoT

Visitors at the CommunicAsia show at Marina Bay Sands, Singapore.

"We are expanding our markets with a strong focus in Asia, and having recently established a sales and support office in New Delhi, India, exhibiting at CommunicAsia seemed inevitable in our progress"

HANNU VUNNEL, Marketing Director at CryptoGuard

As Asia continues down the path of digital transformation and its cities get increasingly connected, CommunicAsia and EnterpriseIT 2017 will add brand-new feature zones to address the growing need for data security and the budding start-up culture in the region. In addition, the event will also see a bigger augmented reality (AR) and virtual reality (VR) segment as the show grows to occupy the whole of Marina Bay Sands for the first time.

With the Cybersecurity Market Report predicting worldwide spending on cyber security to top $1 trillion for the five-year period from 2017 to 2021, Asia seeing a record $23.4 billion in start-up funding in the second quarter of 2016, and worldwide revenues for the AR and VR market expected to reach $162 billion in 2020, the new zones are timely additions to the event that will be held 23-25 May 2017 at the Marina Bay Sands, Singapore.

Key trending technologies and network infrastructure that are the pillars of smart cities, businesses and lifestyles, such as borderless broadband, Internet of Things, cloud and data-centric solutions, satellite communications and enterprise mobility, will continue to be featured prominently at CommunicAsia and EnterpriseIT 2017.

"As cities and their populations become smarter and more connected, the amount of data they produce also increases. As reported by Cisco Systems' latest Visual Networking Index, the Asia Pacific region will drive 45% of the world's mobile data traffic by 2020, and global IP traffic will increase nearly threefold over the next five years with the number of devices connected to IP networks exceeding three times the global population during this same period," said Victor Wong, Project Director for Communications Events at organiser UBM SES. "CommunicAsia and EnterpriseIT will provide first-hand access to the latest in constantly evolving technology and new disruptive innovations needed to ensure the sustainable growth of smart city ecosystems and the security of data that flows through them."

Innovations at CommunicAsia and EnterpriseIT 2017

Exhibiting at NXT@CommunicAsia, the event's showcase of transformative technology, is CryptoGuard, a Swedish developer of content protection. The company, which has experienced substantial growth in recent years, will be demonstrating its DRM platform and new OTT solution CryptoLITE as well as its proven advanced CAS platform.

"We are expanding our markets with a strong focus in Asia, and having

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recently established a sales and support office in New Delhi, India, exhibiting at CommunicAsia seemed inevitable in our progress," said Hannu Vunnel, Marketing Director at CryptoGuard. "We are looking forward to further strengthening our position in the Asian market, and at CommunicAsia2017, CryptoGuard hopes to be recognised by major players as a leading innovator for content security."

In today's volatile business climate, there is a pressing need for digital transformation across vertical industries. The event puts a big focus on technology to enable smarter businesses, and allow visitors to learn about and source solutions that are aimed at improving efficiencies and revenue.

Also returning to CommunicAsia for the third time is Aarenet AG, which provides encrypted WebRTC audio and video conferencing in HD quality for telecom service providers. The company will be introducing its enhanced Cloud PBX solutions including a Cloud Contact Centre, and a host of other enhancements to existing products and services.

"Aarenet AG first exhibited at CommunicAsia2015, where we received great success in business development activities for our company," said Bao Vo, Regional Director at Aarenet AG. "We strongly believe that CommunicAsia is the premier infocomm tradeshow in the Asia Pacific region due to its excellent infrastructure in Singapore, its modern facilities, and the fact that the event attracts patrons from almost all carriers and telecom service providers regionally. We are looking forward to exhibit at CommunicAsia2017 and the new prospects it will bring."

"Aarenet AG first exhibited at CommunicAsia2015, where we received great success in business development activities for our company"

BAO VO, Regional Director at Aarenet AG

SatComm, which boasts Asia's largest gathering of more than 160 satellite communications companies, is another integral part of the event. Taking place on Level 1 of the Marina Bay Sands, SatComm will showcase satellite solutions that will enable upcoming technologies such as 4K and IoT to support smart city developments.

CommunicAsia2017 Summit

With the heightened pressure and push for seamless integration of technology, analytics and connectivity, the CommunicAsia2017 Summit is set to augment and ultimately revolutionise today's entire ecosystem. Taking place throughout the event, the Summit will cover topics such as the Internet of Things, Security of Things, Smart Cities, Digital Talent Analytics and Broadband.

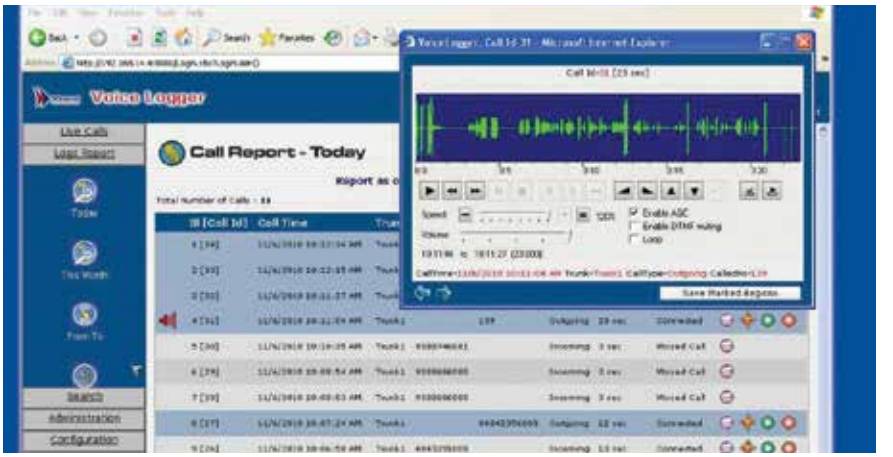
As usual, BroadcastAsia2017 will run alongside CommunicAsia2017, but at the refurbished Suntec Singapore. This change in location will allow both shows to grow and accommodate even more exhibitors and technology. Regular shuttle buses will be available to transport visitors to and from both shows. PRO

Xtend to showcase **entire range of services**

Xtend Technologies will showcase customer service oriented solutions at CommunicAsia 2017. This year, Xtend will exhibit a tamper-proof call recorder/ voice logger, an IVR toolkit, call centre solutions and a call billing system, designed to help businesses increase operational efficiency and empower customer service.

Xtend Voice Logger is a multi-channel analogue/digital/VoIP recording solution that helps to supervise, record and review all incoming/outgoing calls and audio communication in an organisation. The tamper-proof product offers scalable architecture, seamless PBX integration and advanced capabilities to record audio from analogue, digital and VoIP trunk/extension lines.

"Xtend Voice Logger is an effective tool that supports analogue, digital, VoIP, radio/wireless, radar, ATC and marine communication recording. The user-friendly browser interface is accessible from any desktop/laptop and provides numerous reporting features that are extremely helpful for officials to monitor



and assess interactions. Using the recording solution, any type of small, mid-sized and large enterprises can keep secure and accurate record of voice and non-voice communications in an efficient manner," says Bijumon Antony, Regional Business Developer – APAC, Xtend Technologies.

Other products include the IVR Toolkit, a rapid application development toolkit for implementing IVR, conferencing systems and other telephony applications..

Xtend Call Centre Solutions is a powerful and advanced computer telephony integrated software solution designed to automate the inbound and outbound calls in an organisation. The cost-effective communication toolkit manages call centre peak loads through efficient call handling, interactive voice response system (IVRS) and automatic call distribution (ACD).

TACO to bring **antenna expertise** to the show

TACO will return to CommunicAsia this year and will be showcasing its wide range of multi-element, multi-connector VHF/UHF Air Traffic Control antennas. Lightweight but rugged, and built for reliable communication in demanding, long-term fixed ATC, tactical defence, land and naval applications, the multi-radio connection of these omni-directional antennas substantially reduces costs, interference, installation time, and visual signature.

The military antennas are designed to be lightweight and compact, specifically for military applications. These models minimise space and lend themselves to tactical transportable use in the most hostile environments.

TACO also makes sectional models like the ATC military dipole antennas which eliminate the need for a separate support mast, reduce stowage length for tactical applications, and simplify transport and set-up. Four VHF and UHF frequency configurations are available with up to three connectors.

TACO's civil aviation models are also commonly seen in most commercial airports across the United States. Its rugged FAA-focused D5000 Series is available in various arrays or single element varieties. Many VHF and UHF frequency configurations are available with up to three connectors.

Other shipboard models include the D2000 series, which is a double clamp design increasing stability.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Best of the **Show**

We look at a very interesting panel during the GVF Satellite Hub Summit, followed by what some of the core exhibitors showcased at CABSAT this year


Alessandro Caranci, Vice President Sales and Business Development, Networks and Connectivity, Telespazio.


Nile Suwansiri, CCO, Thaicom.


Dr Mohaned Juwad, Senior Manager, Spectrum Policy, Intelsat.


Freddie Caldwell, Sales Manager, Paradigm Communicaions Systems.


Majdi Atout, Vice President of Sales, Middle East, iDirect.


Soheil Mehrabanzad, Vice President, Hughes.

The GVF Satellite Hub Summit carried an interesting panel on HTS and how to leverage advancing technologies and scale services to evolve larger and emergent markets. The panellists were:
Nile Suwansiri, CCO, Thaicom;
Dr Mohaned Juwad, Senior Manager, Spectrum Policy, Intelsat;
Alessandro Caranci, Vice President Sales and Business Development, Networks and Connectivity, Telespazio;
Majdi Atout, Vice President of Sales, Middle East, iDirect;
Freddie Caldwell, Sales Manager, Paradigm Communicaions Systems;
Soheil Mehrabanzad, Vice President, Hughes.

Moderator: How viable is HTS as a business with competition and competititve prices?
Nile Suwansiri: It's not business as usual, especially from the last two years. With the falling margins of satellite operators and the constant price decline, as well as overcapacity, what we're seeing is everyone is going to have to make a move. You cannot stay status quo, unfortunately a lot of satellite operators still have the traditional business model of broadcasting. They really have to shift their gear and get into broadband. When you get to the broadband play, it really depends whether you want to hedge your bets. Intelsat is hedging their bets by using GEO as well as the up-and-coming non-GEO HTS constellations. Furthermore, because of this price decline – and a lot of it is coming from price expectation rather than the real price – when Viasat goes out and says it is going to build the 1TB satellite, even though it's not built yet, the price is already in the customer's head, that is if you want to buy HTS it is the launch price, divided by 1TB. Even though if it will be delivered in the future or not, that's the expectation. Also, the expectation comes from the terrestrial side as well. 4G fibre causes a price expectation. I think from our perspective, selling just pure bandwidth as a satellite operator is not sustainable. No one is going to invest 200-300 million dollars and launch a satellite, have it in orbit for 15 years and expect a payback of less than 10 years. It is almost a model where shareholders are not going to buy into that anymore. After four years, our shareholders are going to question whether it would still be sustainable and current. I think what you will see a lot of, besides mergers and acquisitions, is a lot of partnerships between operators trying to find their core by shifting up and down the value chain, because the value chain is collapsing. This is a scenario that will come up in the next two years.

Dr Mohaned Juwad: Although the challenges that were presented are valid, I think they are all easily overcome. There is mitigation to overcome this. The fundamental challenge has to do with innovation. The satellite industry needs innovation, and I think that is happening. As Intelsat, I can speak for my company by saying there is a cross-segment of different services we can provide. We work across broadcast, enterprise, VSAT, maritime

and mobility. Now, with the merger with Oneweb where we have a GEO and non-GEO constellation, we're able to do more. With the coming of 5G, satellite is being innovative and being involved in IoT. Besides autonomous cars, there is technology like phased array antennas which open doors for new applications. The key word is innovation – the more innovative we are, the more successful we will become.

Moderator: What are the challenges that will be faced by the ground infrastructure community?

Alessandro Caranci: I think innovation is very prudent. Our job is more difficult because we have to innovate before something is launched. We have to understand in advance what will happen with new technologies. I personally have some ideas. One is that satellite cannot be the unit means of the relation. It has to be more integrated into our work. The second is that in my opinion, the biggest problem for satellites is not the pricing. Last, connectivity is very important for the different satellite operators, but it is not important for satellite to be compared with other technologies. We will never beat fibre, so it is important for a satellite operator to be more efficient, and our role will become to complement other technologies, and this is what we have to do. From my point of view, I want to be part of the alliances and partnerships with teleports and my knowledge, in order to help satellites who were previously selling MHz and now need to sell Mbits/s. This is the role we want to play in this new scenario. If I have to compete against a satellite operator for connectivity, I have to integrate with different connectivities. The customer has a service and does not want to know whether I am using satellite or 3G or 4G. Hybrid services will be one of the answers for the future.

Freddie Caldwell: The work we are doing with broadcasters are a lot of different solutions that we manufacture ourselves. In broadcast, it's trying to combine 4G and satellite services. I'm sure this will expand beyond the broadcasting world soon. It's a reality of not just where we're going, but it's already where we're at in terms of a hybrid solution.

Majdi Atout: I think you are trying to address that satellite manufacturers like iDirect or Hughes should combine our technologies with Wi-Fi and GSM so that you can switch over to be competitive by combining satellite and other technologies, so that you can bring it down to the lowest cost for the customer. Hence you will be competitive in your offering. We also have different types of technologies that we can combine, and the satellite manufacturers are not the best to understand how best to integrate this. I think reaching the consumers is not just through satellite, but only till we reach the level when it becomes easy to use for the end user. Antenna technology is evolving, but it will take time for that technology to reach a real consumer. Whether it is enterprise or consumer, at the end of the day it is about when you can integrate with GSM operators or others providing other services, where satellite then becomes part of the backbone. I do believe, in areas where there is little reach, satellite operators help GSM operators to come to service markets.

Soheil Mehrabanzad: I think we are on the same page. In the ground segment you have the transport mechanism, which then leads to different layers of the solution, and then you have different applications, and that's how we use it. We have a different terminal for GSM and any other application that needs to get through.

Yahsat and XSAT **sign strategic partnership**

Yahsat announced the start of a long-term strategic partnership with UAE communications solutions company XSAT FZE at CABSAT. Under the agreement, XSAT is committed to capacity on Yahsat's upcoming Ka-band satellite, Al Yah 3, to be launched later this year.

The two companies signed the agreement during the second day of CABSAT, the largest cable, satellite, broadcast, content and communications event for the Middle East, South Asia and Africa regions.

Farhad Khan, Yahsat CCO, said, "We are delighted to be partnering with XSAT for our satellite broadband service, YahClick. This agreement is a great example of the strength of home-grown companies working together to provide improved services to customers. It also demonstrates our commitment to offering our customers flexibility, combined with the highest levels of technical support and extensive satellite broadband coverage."

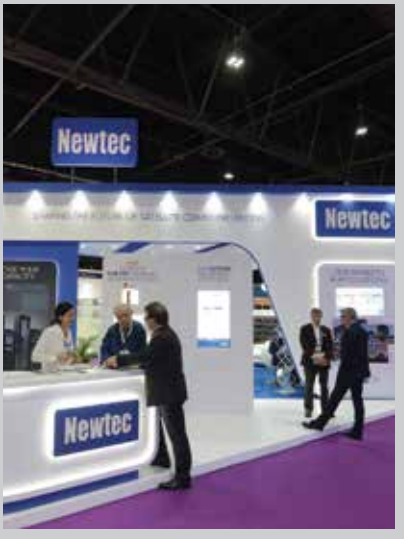
The new partnership forms part of YahClick's VNO service. The benefits are expansive and include the ability for XSAT to leverage high-speed and economical capacity from YahClick's network; full control and management of allotted capacity; and the ability to commission, control and monitor its own remote sites while designing and configuring its end-to-end IP network.

Eutelsat 7/8-degrees hot for HD in MENA

New data from Eutelsat Communications shows that the trend towards HD broadcasting is accelerating in MENA, reflecting consumer appetite for an enhanced viewing experience.

Speaking at the CABSAT Convention in Dubai, Ghassan Murat, Vice President of Business Development and Strategy at Eutelsat Dubai, said: "Eutelsat is dedicated to accompanying the uptake of HD and a diversity of free-to-air channels on our satellites. Our 2016 survey in MENA confirmed the pole position of the 7/8° West neighbourhood we share with Nilesat, which serves 52.3 million homes, up from 49.7 million in 2014. A new wave of growth enabled by the EUTELSAT 8 West B satellite has seen an almost 50% hike in HD channels over the last year, further consolidating 7/8° West as the place to be in the Middle East and North Africa."

Newtec introduces **wideband modems**



At CABSAT, the launch of the MDM2210 and MD3310 IP satellite modem completes Newtec's DVB-S2X wideband modem portfolio, joining the MDM5000 satellite modem. These modems are beneficial to end users in vertical markets such as consumer, enterprise, cellular backhaul, government and mobility.

Kerstin Roost, Strategic Marketing and Public Relations Director, Newtec, said: "The support of wideband for upcoming HTS satellites is key, and the latest transmission to send that over satellite is DVB-S2X. All of our modems support DVB-S2X, and the good thing is that as an operator if you're not ready today, you could still buy the technology and do a software upgrade."

NorthTelecom presents entire portfolio at show

NorthTelecom once again participated at CABSAT, to showcase its products and solutions in internet over satellite, broadcast and most importantly its maritime services.

CEO Hadi Nazari said: "We provide any kind of connectivity and solutions to our valued partners. At NorthTelecom, we are really growing very fast in oil & gas and maritime, as well as broadcasting. A big portion of our revenue comes from these two major verticals."

With its headquarters in Dubai, NorthTelecom sees a lot of value in participating every year at CABSAT, the main satellite event in the region. This is the company's seventh year doing so.

Arabsat to launch new birds; thinks LEO

Arabsat participated at CABSAT once again this year. As an active member of the Satellite Interference Reduction Group, Arabsat sponsored the IRG workshop in the presence of many broadcasters in both the public and private sectors on Monday 20 March at the Address Hotel in Dubai.

Arabsat will be launching three new satellites through subsidiary Hellas Sat.

Khalid Balkheyour, President and CEO of Arabsat, said: "We're very keen to be at CABSAT to showcase our new programmes and new procurements. We have three satellites in production. One is set to launch on 28 June, and is a satellite for our subsidiary Hellas Sat. There are two more that will launch at the beginning of next year. This will add to our fleet and we will have 10 satellites in orbit. However, this is not the whole story. In these satellites we will be providing high-throughput services to our customers, which will help expand their business and reach."

Arabsat has also issued an RFP for one more satellite, currently in the evaluation stage. Balkheyour said it will be a state-of-the-art bird with all the best technology in the industry. It will also be a high-throughput satellite,

co-owned by a partner and dedicated for aviation services and broadband. It will have coverage all the way from Africa up to Europe, including the Middle East.

"Furthermore, we are also considering an investment, either directly or indirectly, in a LEO satellite concept to enhance our business, as well as go with the trend in the international industry. We are also focusing on our hotspot at 26-degrees which we share with our partner EshailSat," said Balkheyour.

Asiasat promotes Asiasat 9 at the show

Asiasat was once again at CABSAT this year, to promote its Asiasat 9 satellite, to be launched in early Q4. The payload on the satellite is predominantly Ku- and C-band. It also has a small Ka-band payload, used to bring into use frequencies rather than an actual payload that will be commissioned.

Asiasat is now in the process of building and commissioning two more satellites, Asiasat 10 and Asiasat 11. These will have a much bigger Ka payload.

Barry Woolston, Asiasat CCO, said: "One of the main reasons we are at CABSAT is to meet our customers and to reinforce the relationship. We have a new CEO, Andrew Jordan, and I have joined newly as the CCO, therefore it is an opportunity for us to come out and meet these people."

"We're here is to promote Asiasat 9, which is a replacement for Asiasat 4, which still has many years left, but we've decided to replace it early with a more powerful, bigger satellite. We have some great capacity and great customers, and some of them have wanted to buy more capacity."

Woolston explained that Asiasat is big enough to compete on a regional basis, while at the same time small enough to be flexible. The message Asiasat is sending out to its customers is that the operator has some great capacity, great orbital locations and great technology.

Apstar touts growth; promotes Apstar 7

Apstar was promoting its satellite Apstar 7 at CABSAT this year. However, along with selling capacity in the Middle East, it has also been concentrating on selling to customers with demand in Asia Pacific. The company is also set to launch three more satellites.

Huang Baozhong, Executive Vice President, Apstar, said: "We intend to have three more satellites in the next two years. Next year we will launch two satellites and the year after, one more. Then we will have a fleet of seven satellites, and I would say right now we are in a leading position in the satellite industry, not only in Asia but in other regions too."

Baozhong said the company is financially very strong and among the very few satellite operators that have produced positive growth.

"We have a very low debt level, perhaps the lowest in the entire industry, and we have had an average growth rate over the last ten years of 15%. We also invest in the industry heavily. In the last eight years we have invested $1.1 billion, and we bought altogether nine satellites, both new and used.

"Financially, people are selling capacity very cheap. This is not going to be sustainable. Those who are keen to sell cheaper today, will disappear some day later. We are not part of that," he added.

Intelsat promotes Epic^{NG}

Intelsat has already launched its first Epic^{NG} satellite, IS33, and is set to launch two more soon. At CABSAT, the operator showcased the higher efficiency and quality of HTS, and how it can help customers across different verticals.

Jean-Philippe Gillet said: "What is really exciting for us is that we've been talking about our next-generation high-throughput satellite that we call Epic^{NG}. This is really the time where we deliver and we can really see how we are performing, and test it in real case.

"IS33, our first Epic^{NG} satellite, was launched over the region in August. It was operational in January. We have now transitioned all of the services of the previous satellite to the new satellite, and we are now starting deployment."

Datamena presents Media Cloud at CABSAT

Datamena was present at CABSAT this year to showcase its new Media Cloud service. This service was created specifically for broadcasters as a cloud-based pay-as-you-go solution.

Abou Moustafa, VP, Enterprise Managed Services and Datamena Commercial, said: "We started CABSAT with a unique proposition for broadcasters and the media, which is the Media Cloud. We have a solution for a feed that can be broadcast, edited, archived and played out end-to-end over the cloud. For what it would take a regular studio nearly 12 months to complete can now be done in two to four hours over the cloud. It is in Full HD, and we can broadcast it over any media."

The Media Cloud service is software independent, with no CAPEX or initial commitment. The customer can use it as a pay-as-you-go service. Datamena is leveraged as a transit zone to provide these services to the region.

"We are satellite agnostic, so whichever customer is looking for coverage through any position, we can deliver it. Our preference is customer experience and customer requirements," added Moustafa.

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Counter **Drone Measures**

Riyadh Al-Adely, MD at SkyStream, speaks about how dangerous rogue drones have become, and the measures in place to keep them in check

Drones are beautiful devices, and have opened the doors to applications we have never thought about. People can use drones to inspect oil pipelines, as well as for shooting videos and numerous other applications. As a result of the price levels, they are very easy to access for anyone. Today there are a massive number of drones worldwide. This makes it very difficult to control them. Even though countries have installed regulations, they are still difficult to account for. This becomes a challenge and creates threats for security and privacy. If they are near an airfield they can create problems for traffic.

This is why we have launched Counter Drone. Sometimes, in conflict zones like Iraq, terrorists use drones to carry loads. This has created the need to treat these challenges and eliminate the threats. The challenge is the drones are very small, and detecting them is difficult. During the last two years we have been looking at a lot of problems, but have not found a company with a full suite of solutions that can detect and treat. We also haven't found a company that can treat all kinds of drones.

There are different kinds of drones – drones controlled by remote control, drones controlled by GPS, drones that use their own gyros, with the help of inertia. This makes it a real challenge to treat them.

We managed to partner with five German companies well known in the defence sector, and we built a solution with three phases:

Detection – We can detect a drone by either listening to the frequency of a remote control or using X-band radar. This uses bursts, where we eliminate all the bursts and we can tell it is a drone through the micro-doppler effect of the propellers. We can also use an acoustic system tuned to detect the sound of propellers, or use HD cameras.

"In conflict zones like Iraq, terrorists use drones to carry loads. This has created the need to treat these challenges and eliminate the threats"

RIYADH AL-ADELY, MD, SkyStream

Identification – Once the drone is detected, we need to identify if it is friendly or not. If it is not friendly, then we need to compare it to a database to identify what sort of drone it is.

Treatment – After identification, if we have resolved to treat the threat, we use selective jamming – you don't want to jam all the signals, just that particular threat. If this fails, we attempt to jam the GPS signal. Once we jam it, we predict the drone will move randomly, so we simulate a similar signal to the onboard GPS, which is called spoofing, and push the threat to a safe zone. If this too fails, we use a new technology called HPEM which simulates lightning, which affects semiconductors. With a concentration of that power, we can destroy the semiconductor circuit and hence kill the drone.

Military networks demand secure, reliable and easily scalable solutions that support voice, video and data communications. SkyStream provides solutions that can be rapidly deployed and enable large, mobile groups of personnel to communicate and share information anytime, anyplace. Its solutions provide a flexible, scalable, highly reliable and high-capacity service. The company has worked closely with leading military VSAT technology providers to provide a number of solutions for military applications, including but not limited to customised Communication on the Move (COTM) and Communication on the Pause (COTP). With a strong local presence in the Middle East and Afghanistan, SkyStream's staff can provide a fast, effective service to support operations in often harsh and challenging conditions. PRO

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