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TECHNOLOGY INTELLIGENCE FOR THE SATCOM MARKET

MIDDLE EAST

FORGING AHEAD
A look at the growth of ABS since its inception ten years ago

IBC2016 HIGHLIGHTS
A review of what was easily the biggest IBC yet

FUTURE READY

Teleports need to become future-ready to work with HTS satellites and the ever increasing demand for bandwidth

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Thank you Amsterdam

Welcome to the October edition of *SatellitePro ME*. Last month we were walking the halls of IBC and boy was it lovely to meet you all. The futuristic technology on display and the deals signed, were just mind blowing. It never fails to amaze me how the show has grown year-on-year. There were 55,796 attendees and the exhibition featured over 1,800 exhibitors, including 249 companies at their first IBC.

In other news, this month's issue addresses the elephant in the room when it comes to teleports. With technology advancing at a rapid pace, teleport operators need to be on top of their game to handle high throughput satellites and the growing demand for bandwidth. Equipment needs to be more efficient than ever and quality of service must be maintained at all costs, with proper certification in place for end users to get the most bang for their buck. The need to be future-ready is an expensive affair, but one that must be undertaken, and soon. This will separate the players that are in the game, from those who will die out.

I'm sure you'll also enjoy reading about how ABS has grown to be an operator that was in its infancy 10 years ago, to one of the leaders in the satellite sphere, commanding 30% year-on-year growth. Mohamed Youssif, CCO of ABS speaks in an exclusive interview with *SatellitePro ME* about how the company overcame the hurdles in its path to come out on top.

Finally, I strongly encourage you to nominate for the *ASBU BroadcastPro Selevision Summit and Awards*. There are three satellite categories, and nominations can be submitted at www.broadcastpromeawards.com. Save the date - November 15.

I wish you a wonderful October. 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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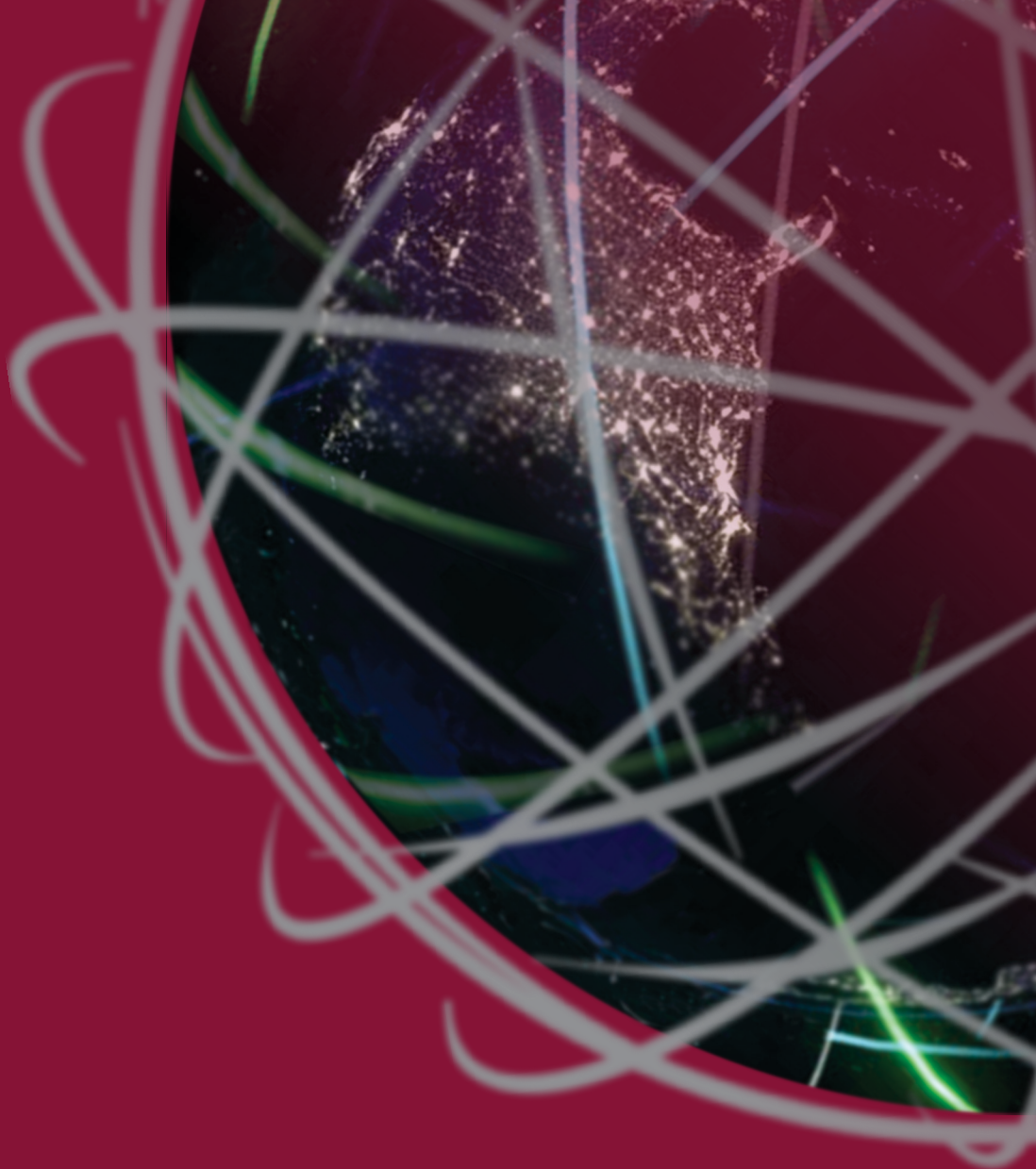

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Thuraya and IEC Telecom co-exhibit at OPV Middle East

Thuraya and IEC Telecom co-exhibited at the upcoming Offshore Patrol Vessels Middle East 2016 conference in Bahrain. On display were a number of solutions from Thuraya's range of mobile satellite voice and broadband devices that provide ease of use, value, quality and efficiency. The line-up of terminals included the Thuraya Orion Edge and Thuraya SF2500, which offer voice and data IP connections that allow users to access navigation charts, weather data and satellite images reporting on their position, or keep in touch with their headquarters or remote offices.

Fahad Kahoor, Director of Market Development at Thuraya, said: "Offshore patrol vessels are intended to carry out a range of missions such as maritime security, border control, routine patrols, anti-smuggling, counter-piracy and fishery protection, as well as effective disaster relief. Therefore, clear, uninterrupted connectivity is vital to achieve these tasks, and Thuraya's easy-to-install marine terminals are the perfect solution."

Fahad Kahoor, Director of Market Deployment, Thuraya.

Operating over Thuraya's network, Thuraya terminals help ships serve as remote offices while ensuring the welfare of their onboard crew by delivering reliable and efficient data and voice capabilities. The SF2500 is a voice satellite terminal that combines voice capabilities, crew calling, GPS tracking, geofencing and SMS services in a compact package designed for small and medium-sized vessels. The Thuraya Orion Edge is a broadband terminal specifically designed for the harsh maritime environment.

Nabil Ben Soussia, GM of IEC Telecom in Middle East and Kazakhstan, said: "With the expansion of Thuraya's maritime portfolio, we have even more of a selection of high-quality equipment and services to offer customers – vital equipment that keeps crew of navy vessels connected with colleagues, family and friends while away at sea."

+ www.thuraya.com

C-COM RECEIVES $1.2M IN ORDERS

C-COM Satellite Systems announced that it has received $1.2 million in orders in the last 30 days from its resellers in Europe, South America and Asia.

Almost all these orders are for C-COM's new-generation iNetVu Ka-band series antennas, which have been certified for use on a number of High Throughput Satellites (HTS), reflecting a growing acceptance for the newest and most advanced products from C-COM.

These antenna systems are fully compatible with a number of next-generation satellite modems and will be used in multiple vertical markets.

"Our next-generation Ka- and Ku-band antenna systems are setting a new price/performance standard in the industry and are gaining worldwide acceptance by satellite operators and our global partner network," said Leslie Klein, President and CEO of C-COM Satellite Systems.

+ www.c-comsat.com

DUBAI TO HOST PRELIMINARY FORUMS FOR UNISPACE+50

The UAE Space Agency will host two high-level preliminary forums for the UNISPACE conference in Dubai throughout 2016 and 2017, in collaboration with the Mohamed bin Rashid Space Centre (MBRSC). The forums are to be led by the United Nations Office for Outer Space Affairs (UNOOSA) and the Committee on the Peaceful Uses of Outer Space (COPUOS), in preparation for the UNISPACE+50 conference in 2018.

+ www.unoosa.org

+ www.space.gov.ae

SPEEDCAST LAUNCHES MARITIME EMAIL SOLUTION

SpeedCast International has launched a new maritime email communication solution called SpeedMail+, based on GTMaritime's flagship new maritime email platform. SpeedMail+ combines SpeedCast's unrivalled global VSAT and L-band network with the full suite of GTMaritime's services, including email, file transfer and anti-virus applications, for today's communication requirements of the maritime sector.

"Our partnership with GTMaritime reinforces SpeedCast's continued dedication and investment to the maritime industry. SpeedMail+ will be seamlessly integrated into our global L-band and VSAT network. SpeedMail+ enhances our capability to deliver cost-effective and dependable email, file transfer and anti-virus services to the Maritime MSS market," said Dan Rooney, Maritime Product Director at SpeedCast.

+ www.speedcast.com

+ www.gtmaritime.com

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Information

15 November 2016 | Habtoor Grand, Dubai, UAE
Summit: 10am - 4pm | Awards: 7pm – 10pm
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Viasat and Eutelsat expand satellite internet for Aviation

ViaSat and Eutelsat Communications continue to execute on their strategy to deliver high-quality satellite-based internet connectivity to the commercial airline market in Europe, with a new service contract for SAS, Scandinavia's leading airline.

SAS is equipping its short- and medium-haul fleet to offer on-board Wi-Fi speeds of at least 12Mbps to each passenger, to ensure that time spent on board is more productive and enjoyable with streaming TV, music and films.

ViaSat will be the prime contractor to the airline, making available its vertically integrated in-flight internet system, inclusive of providing supplemental type certificates (STCs), wireless IFE system support, passenger-facing access portals and an end-to-end service that will leverage connectivity from Eutelsat. The connectivity service uses KA-SAT, Eutelsat's high-capacity Ka-band broadband satellite whose service area spans Europe and the Mediterranean Basin.

+ www.eutelsat.com

BRUNO CATTAN JOINS EUTELSAT AS TERMINALS DIRECTOR

Eutelsat has appointed Bruno Cattan as head of its newly-created Terminals and Systems Division in the company's Technical Department. The division will drive the development and industrialisation of new products and services for the video market and take the leading role in the design of ground infrastructure for future High Throughput Satellite systems, including competitively-priced user terminals.

Bruno brings to Eutelsat his vast expertise as a technical director in media and telecom innovation.

He joins Eutelsat from Canal+ Overseas, where he managed the technical and digital teams in Paris and coordinated teams in subsidiaries in Africa, Asia and French overseas territories.

He began his career in the mobile industry at Motorola and Nokia and is a graduate of France's Ecole Polytechnique and Telecom ParisTech.

+ www.eutelsat.com

UAESA TO PARTICIPATE IN THE 67TH IAC

The UAE Space Agency is participating in the 67th International Astronautical Congress (IAC), which will take place at the Expo Guadalajara in Mexico, from 26 to 30 September.

The UAE Space Agency will use the platform as an opportunity to share experiences, challenges and insights in space research, technology, education and regulation.

+ www.space.gov.ae

+ www.iac2016.org

SPACEX LOSES SATELLITE IN LAUNCH PAD EXPLOSION

Eutelsat has issued a statement regarding the loss of a satellite that was to be managed by Eutelsat and Facebook to cover Sub-Saharan Africa. The satellite exploded on the launch pad of the SpaceX Falcon 9 rocket in Cape Canaveral on September 1.

In collaboration with Facebook, Eutelsat had contracted a multi-year agreement to lease the satellite's Ka-band payload covering Sub-Saharan Africa, with a view to launching broadband services from early 2017.

Eutelsat remains committed to growing broadband in Africa and will explore other options to serve the needs of key clients ahead of the launch of its own full High Throughput African broadband satellite, due in 2019.

The impact on revenues is estimated to be around $5.6 million in FY 2016-17, $16.7 million in FY 2017-18 and $28-33.5 million in FY 2018-19. Attendant savings in operating costs will partially mitigate the impact on the EBITDA margin.

+ www.spacex.com

Kernisan named President of Arianespace's U.S. subsidiary

Arianespace announced the promotion of Wiener Kernisan to President of its U.S. subsidiary, Arianespace, Inc., effective September 26, 2016. In this new capacity, Kernisan will guide Arianespace's customer, industry and governmental relations for this important international operation, and will also remain directly engaged in sales activities across the U.S. and Canada, which is an extremely significant market for launch services.

Established in 1982, Arianespace's Washington, D.C. operation is a key part in the company's network of offices across the globe. Nearly one-fourth of the launch services contracts Arianespace has signed since its creation in 1980 are with U.S. customers, and over half involve U.S.-built spacecraft.

Wiener Kernisan, President, Arianespace U.S.

Kernisan brings more than 35 years of experience in the commercial launch and satellite sectors to his new role. With a broad background in leadership positions at a U.S. spacecraft manufacturer and a European satellite operator, he came to Arianespace, Inc. as its Vice President, Sales and Marketing in 2000.

Before joining Arianespace, Kernisan worked for over six years as Launch Systems and Spacecraft Systems Engineering Manager at SES in Luxembourg.

+ www.arianespace.com

BOEING SATELLITE TO EXPAND BROADBAND IN AFRICA

Boeing will build a 702 satellite, called GiSAT, with a new digital payload offering twice the capacity of previous digital payload designs.

Global IP will use the satellite to deliver streaming media, digital broadcast and other communications services to Sub-Saharan Africa. With a coverage area encompassing 35 countries and 750 million people, GiSAT will deliver higher data rates at lower costs than previous satellites serving this part of the world.

"Our vision for GiSAT is to provide end users with connectivity and services that are affordable, rich in local content and truly broadband in nature," said Bahram Pourmand, CEO, Global IP. "With the ability to reconfigure the GiSAT on-board processor, the Boeing digital payload will allow us to broadcast different channels to different beams from different locations, providing better service to broadcasters, mobile operators and ISPs."

"Boeing's latest digital payload – the most advanced design in the industry – offers greater flexibility for Global IP's customers," said Mark Spiwak, President of Boeing Satellite Systems International. "Boeing is committed to driving innovation in satellite technology so that our customers can bring the benefits of reliable, high-speed communications to people across the globe."

Scheduled to enter service in 2019, GiSAT is designed to operate with more than 10 gateways in Europe and multiple gateways within Africa.

Privately owned Global IP was founded by three satellite industry veterans with 75 years of combined experience providing satellite products and services in emerging markets. The company CEO, Bahram Pourmand, was until recently Executive Vice President and General Manager, International Division of Hughes Network Systems LLC.

+ www.boeing.com/space

CPI ASC SIGNAL DIVISION RECEIVES CONTRACT FROM NORTHTELECOM

The ASC Signal Division of Communications & Power Industries LLC (CPI) has been awarded a contract for four 7.6m C and Ku-band capable antennas from North Telecom. The antennas will be installed at one of the company's teleports with an emphasis on enhancing the company's offerings to a range of vertical sectors in the Asia-Pacific region. According to ASC Signal, the four antennas will incorporate ASC's Next Generation Controller (NGC). The award includes training services for the NGC controller.

NorthTelecom, which operates multiple teleports, provides satellite internet access, point-to-point solutions, private, networks and hubs on a variety of platforms include iDirect (TDMA, SCPC), SCPC and DVB-S2. With its teleport backbone in Europe and Asia, the company provides a range of services, including broadcast, maritime and satellite trunking.

Along with VSAT internet services, the company provides capacity for these different operating sectors, as well in support for the oil and gas industry and ISPs worldwide. NorthTelecom also provides virtual network operations to help its clients offset the cost of fixed satellite infrastructure investments.

+ www.northtelecom.com

STC contracts Intelsat for VSAT solutions

STC has extended its relationship with Intelsat to use the company's satellite solutions to support operations for the largest oil & gas producer in Saudi Arabia.

Under a multi-year agreement, STC, the largest telecom operator in Saudi Arabia, will use connectivity provided by Intelsat 10-02, located at 1° West, to provide satellite services to the oil & gas sector in the Kingdom of Saudi Arabia.

In 2016, STC and Intelsat continue to expand their relationship to support the growth of the VSAT sector in the Kingdom of Saudi Arabia. The telecom operator uses multiple satellites in Intelsat's Globalised Network to provide high-quality broadband networking for corporate customers in the banking, government and oil & gas sectors operating throughout the Middle East and Asia.

"The operations of oil & gas companies are important to Saudi Arabia and the global economy, and reliable broadband communications are a vital part of the sector's daily operations," said Walid Al Wabel, GM, Operations Management, STC.

+ www.intelsat.com

+ www.stc.com.sa

FRANCE IX ANNOUNCES A STRATEGIC PARTNERSHIP WITH BICS

France-IX has announced a strategic partnership with BICS, a leading international wholesale solution provider. It enables networks in the Middle East and Africa that peer on the France-IX Marseille or Paris Internet Exchanges to peer remotely in the other cities in the most cost-effective and direct way, reducing the time to market for members from weeks to days. Carriers, ISPs, CDNs and other networks based in Paris or Marseille looking for fast and secure internet connectivity to the MEA region can use France-IX convergence hubs and connect seamlessly through BICS.

France-IX offers internet peering services to over 320 networks in Paris and Marseille. Focusing on its core aim to federate the internet in France by interconnecting its members locally, France-IX has met market demand for interconnection between its Paris and Marseille-based digital gateways to the Middle East and Africa by partnering with BICS.

BICS' remote peering solution provides an affordable method for communication service providers of all sizes to expand their network footprint.

+ www.franceix.net

THURAYA, XTRA-LINK TEAM UP FOR DUBAI-MUSCAT YACHT RACE

Keith Murray, Thuraya Product Manager, Maritime.

Thuraya Telecommunications Company and long-standing service partner Xtra-Link will join forces to co-sponsor the 25th Silver Anniversary Yacht Race from Dubai to Muscat in November.

The dates of the race were announced at a press conference held by the UAE Sailing & Rowing Federation, in association with Oman's Ministry of Sports Affairs, at the Dubai Offshore Sailing Club. The race is officially recognised by the Royal Ocean Racing Club (RORC).

+ www.thuraya.com

+ www.xtra-link.com

NEWTEC ANNOUNCES VIRTEL AS LOCAL DISTRIBUTOR

Newtec has announced that Virtel has become a distributor of Newtec technologies.

The Dubai-based distributor has already carried out its first large stock order, delivering professional broadcast modulators and modems and VSAT equipment, which will be used for a range of applications and in bigger multiservice networks.

Virtel is currently authorised to distribute VSAT and broadcast equipment to customers, which can then obtain satellite service through independent operators. As the company already has a large supply of stock, Virtel will also now be able to supply Newtec equipment to internet service providers, satellite operators and system integrators.

+ www.newtec.eu

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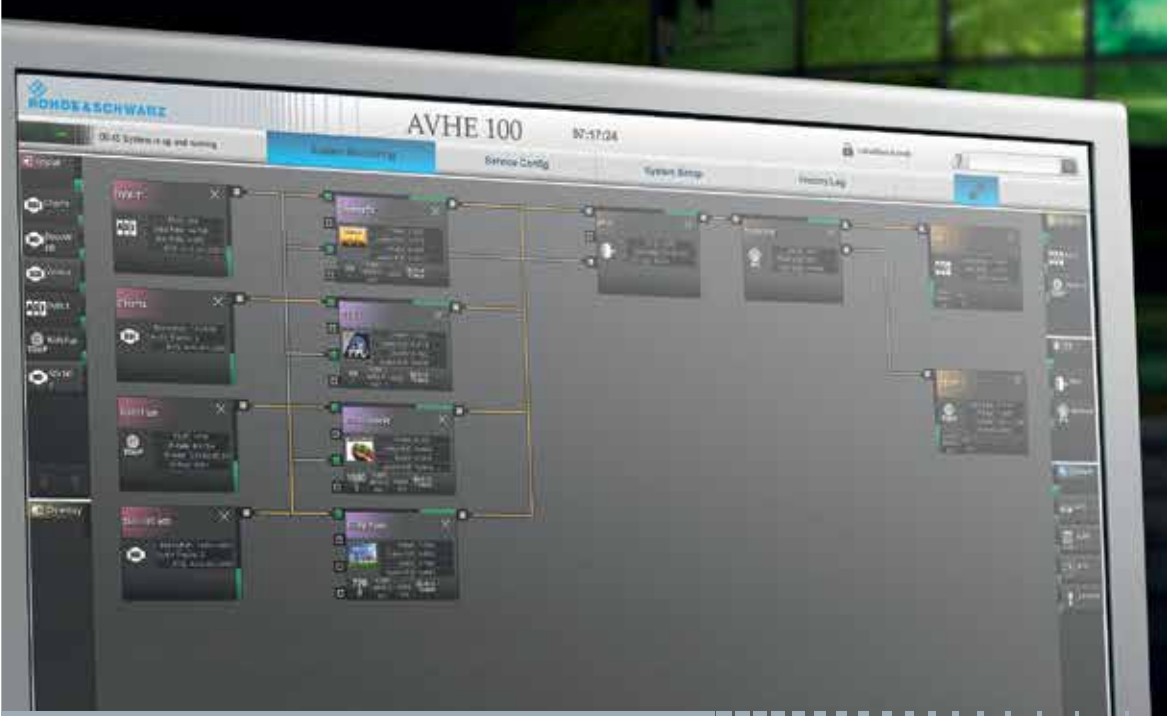

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Future ready

With more teleports coming up all over the world, a certain QoS needs to be maintained in order to offer customers bang for their buck. The question is whether current infrastructure is efficient enough and future-ready to work with HTS satellites and ever increasing demand for bandwidth

With the teleport industry busier than ever, a lot of manufacturers have been introducing new equipment to keep up with new technology, such as HTS satellites. Es'hailSat is coming up with a new teleport in Qatar, and the past few years have seen others like Horizon Teleports develop new teleports.

Some teleports have their own staff and engineers on hand, trained to work with the equipment on the ground. In other cases, running the teleport can be outsourced. One of the clear advantages of having your own tech support and engineering is control of service quality. In-house capabilities allow extremely high reactivity and focus, for on-time delivery of services and quality that matches customer expectations.

However, Jose Sanches Ruiz, Director of Service Operations, Eutelsat, says: "Developing internal capabilities has a cost in technology and talent that may be beyond the range of all players and may not be needed for all functions. The first decision to make is to find the right balance between in-house and external operations. The decision has to be taken looking at the critical business activities, those that are absolutely essential and allow the operator to control service quality. The second is to build the right organisation with skilled and motivated staff, infrastructure, tools and processes. For the outsourced activities, the key is to find the right partners, define the level of dependence and the quality control mechanisms. In some cases, it may make good business sense to develop competence in-house and then outsource."

Having trained staff on-site can be a huge advantage in being able to deal with problems immediately. This is particularly the case for tech support matters where the dependence on computing increases with technology in line with Moore's Law. However, by the same principle, dedicated IT staff are an overhead that may be better outsourced, depending on budget priorities.

Roger Boddy, CEO, Global Teleports, says: "For an engineering-based company not to have its own engineers would seem to be a contradiction. Engineering

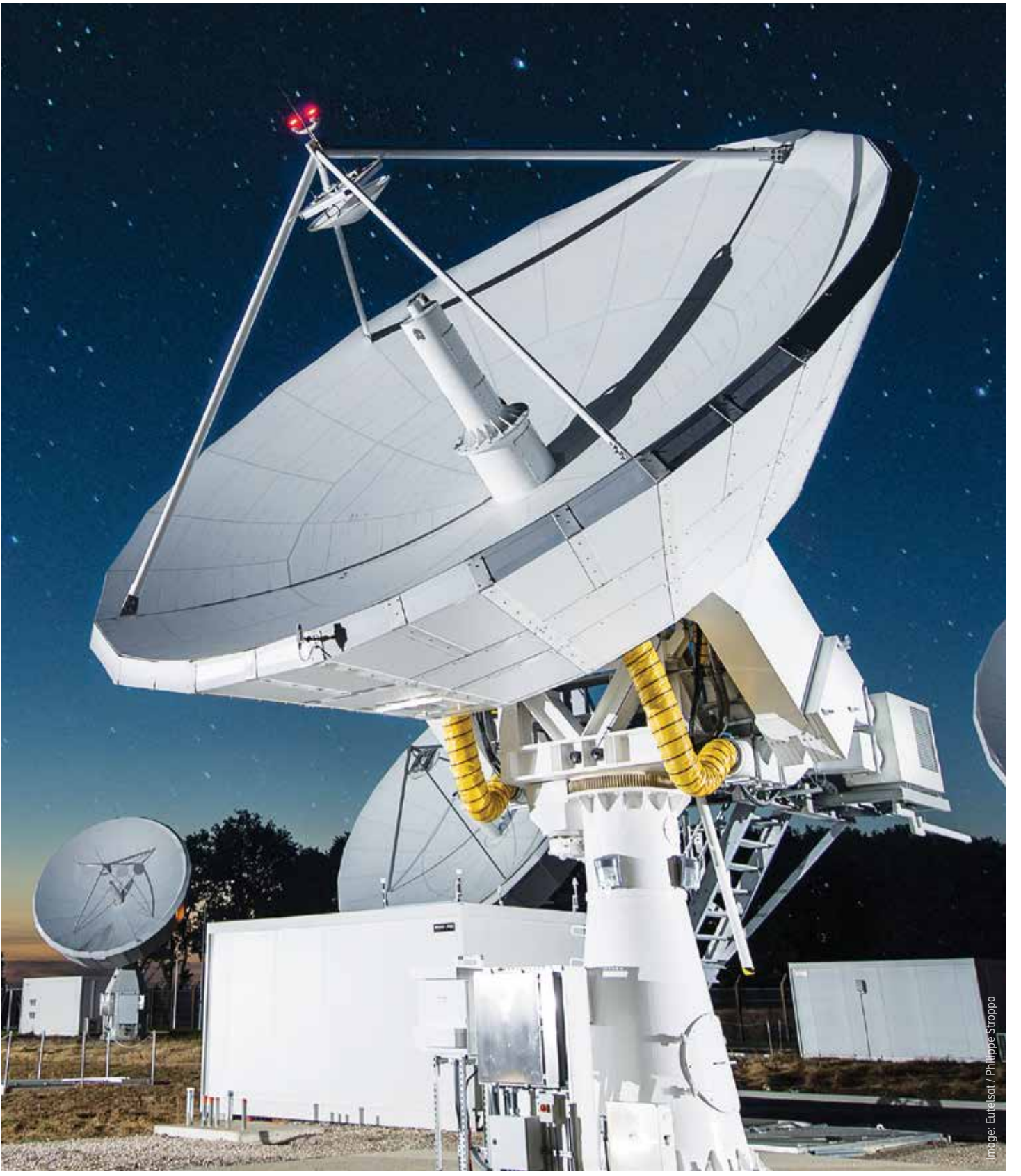

Image: Eutelsat / Philippe Stroppa

excellence is what differentiates one company from another. Having said that, there is an argument to support outsourcing of product-specific expertise which is often available from the supplier/manufacturer as part of a good supply contract. In this regard, there are classic illustrations of companies being taken over and shedding what appears to be an engineering overhead to show an improved balance sheet to investors. However, this is often seen to have been a false economy when engineering expertise has to be brought in under consultancy."

One of the major issues witnessed by teleports is the effect of fluctuations in the speed of data transmission, or jitter. This can make network performance poorer and is often the result of oversubscription. There are however methods employed by teleports to keep jitter to a minimum.

David Andres, Business Development Manager at Santander Teleport, thinks a well-designed teleport infrastructure should be designed to minimise latency and jitter, among many other things.

"Oversubscription is obviously an issue, but there are many more that will affect these parameters, 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; or 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 to 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."

Boddy thinks the setting up of a network exposed to jitter requires some form of plesiochronous or elastic buffering at the network boundaries. Jitter is not so much caused by variations in the speed of transmission as by poor synchronisation of the transmitted stream.

"We measure bit error rate and frame errors as a function of the 'goodness' of a digital transmission link. These errors are caused by interference, which may be caused by timing errors between the A and B ends of the link. To avoid this, telecom operators are required to maintain a reference standard timing source that is synchronised to the National Physics Laboratory's caesium clock. Where the caesium standard is not available, the secondary standard is rubidium. Failing that, modems can be set to synchronise their transmitted signals from the incoming receive path, but this must be limited to no more than three reiterations. Where maintained on-site, reference-standard oscillators must be stored in a temperature controlled and shockproof environment, often 30 feet below ground where the temperature is stable.

"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

"Latency is a measure of the delay from launch of a transmitted signal to its being received at the remote end of a link. As electromagnetic transmissions travel at the speed of light, latency is not a major problem in the near field but can be significant over long distances. In the same way we recommend the use of appropriate buffers to counter the impact of jitter, we advocate the use of buffers to take account of calculable latency. In this case, rather than place these buffers on the network, it is better to put them into the application software where they can be set to accommodate the impact of excess latency."

Many teleports offer their customers committed information rates (CIRs). Since oversubscription is common for all internet access methods, many ISPs only make an 'up to' speed promise without committing to a real rate. So what is considered the right practice?

According to Andres, far too many satellite services are offered without

David Andres, Business Development Manager, Santander Teleport.

Jose Sanches Ruiz, Director of Service Operations, Eutelsat.

Roger Boddy, CEO, Global Teleports.

commitment to quality. A lack of common standards makes it difficult to differentiate among a multitude of providers, which makes it hard for service providers with high standards of quality to differentiate themselves.

Boddy says CIR is typically on offer within traditional satellite services or within HTS systems where the client can buy dedicated capacity. It is not common on satellite systems that offer service from a shared pool of capacity.

"Without dedicated capacity, it is impractical to offer CIR. On the other hand, HTS has made it possible to offer fixed downlink and uplink transmission rates with tariffs based on the throughput enjoyed per month. Offering an 'up to' speed is a cop-out and compromises the integrity of the service provider. For Global Teleports, it is our normal practice to offer CIR on dedicated capacity."

As with all industries, a certain baseline is imperative to setting a standard. Certification and checks for teleports are generic, but the WTA has been working for almost two years on developing a reference standard for the sector. Their certification programme was launched a year ago.

Ruiz says: "The most common are ISO 9001 and ISO 27001 for Quality and IT Security respectively, though others could also be applicable. So far there is not a specific certification for teleports, and some operators have been looking at other sectors, searching for applicable references. Data centres (certification of the Uptime Institute) have been a good example, but despite some similarities, teleports and data centres are not necessarily the same."

"For an engineering-based company not to have its own engineers would seem to be a contradiction. Engineering excellence is what differentiates one company from another"

ROGER BODDY, CEO, Global Teleports

"There is a substantial difference between the generic certifications and the WTA one, and other specific certifications and accreditations. The first are a framework that allows companies to define a policy, implement it and control it. But these standards do not dictate specific criteria to be fulfilled to certify the capabilities of a teleport to deliver teleport services. The WTA certification does not claim to replace these generic certifications, but to complement them, setting up the standards for operators to know the elements in their infrastructure, organisation, security and operations that are essential for their customers."

With more teleports popping up around the world, these certifications will go a long way to allowing customers to choose which operator they feel is best suited for the task at hand. Moreover, with so much data being exchanged, the growth of IoT is imminent.

"The Internet of Things is here today, and the satellite-connected part of it alone may be worth $2.3 billion by 2024," says WTA Executive Director Robert Bell. "The burning question for our business is how all these talkative things will be connected, and how teleport and satellite operators can gain a piece of this massive opportunity."

According to Andres, the Internet of Things will become a huge market from which the satellite business will benefit in specific verticals or applications.

"Initially, I envisage that most IoT

Eutelsat's teleport in Rambouillet, France.

Image: Eutelsat / Philippe Stroppa

"Technology evolves very fast. We anticipate more software-based solutions and virtualisation. Teleports will need to adapt to IT transformation. In parallel, bandwidth will significantly increase, notably with the next generation of HTS satellites"

JOSE SANCHES RUIZ, Director of Service Operations, Eutelsat

applications will require low bandwidth and small terminals. As the satellite industry progresses, if we can provide low-cost connectivity using small terminals then the opportunity is huge. The new LEO satellite constellations and flat panel antenna technologies can give us the opportunity to break these entry barriers. At this current time, I think that MSS terminals are more suitable to this type of market, but this is dominated by three or four large players with their own teleports and a closed network."

So how does the teleport maintain its value proposition in competition with terrestrial carriers and data centre operators? Moreover, what will the successful teleport of the future look like?

Ruiz says: "We live in a connected world where the need for access to networks is essential. Terrestrial and satellite has always grown in parallel. Satellite technology evolution facilitates the delivery of services where terrestrial cannot reach and for extended areas like broadcast. Teleports are the bridge between satellite and ground. They need to have good connectivity to both satellite and fibre, and they need to be ready to support new services.

"It is always difficult to predict what would be the type of teleport we will see in a few years. Technology evolves very fast. We anticipate more software-based solutions and virtualisation. Teleports will need to adapt to IT transformation. In parallel, bandwidth will significantly increase, notably with the next generation of HTS satellites."

Boddy thinks the teleport maintains its value proposition against terrestrial carriers and data centre operators simply because satellite has the USP of point to multipoint and multipoint to point link capability, whereas terrestrial networks are point to point and data centre operators operate at fixed geographic sites. Both of these need the flexibility of satellite to complete their networks. He says the successful teleport operating company of the future will need to be mobile, agile and ready to embrace change.

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.

"For the foreseeable future, the teleport will continue to be, at its core, a gateway between the satellite and the terrestrial networks. From there, the teleport operator needs to adapt to become a service provider with focus on specific verticals and grow beyond what is purely a provider of satellite services. Most customers want applications, not connectivity of one type or another. They are connectivity agnostic and have little interest about the technology in the background. Transforming the company from being purely a teleport to becoming a multi-network operator capable of providing the best solution to each need is one strategy to follow. Becoming an aero or maritime communications provider is another strategy. While satellite is at the centre of these markets, these also require end-to-end solutions beyond the satellite link," concludes Andres. PRO

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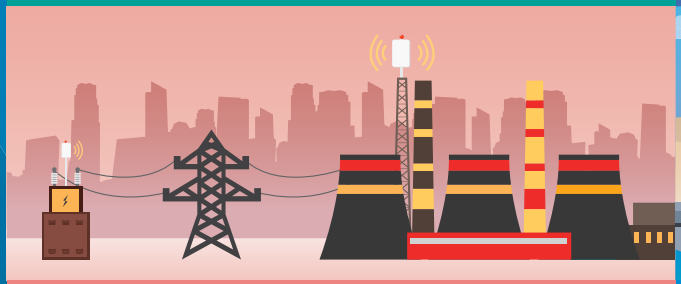
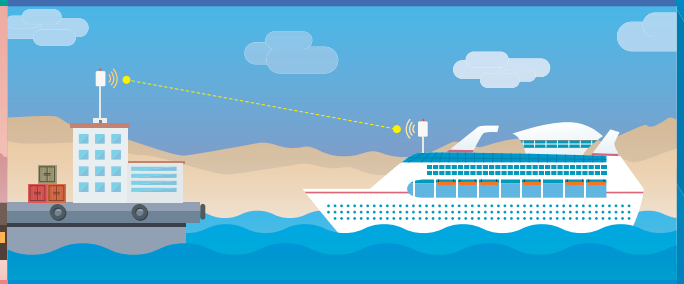
APPLICATIONS

Connecting remote locations to operator POPs

Reliable connectivity in adverse climatic conditions



Safe to deploy in hazardous locations



Off-shore wireless links

Forging **Ahead**

In an exclusive interview with Mohamed Youssif, COO of ABS, Clayton Vallabhan finds out how the company has gone from strength to strength since its inception 10 years ago

Tell me a little about the history of ABS, and how the company has progressed over these 10 years.
ABS was established by entrepreneur Tom Choi in 2006, and since its inception the company has been growing exponentially. ABS has transformed from a new entrant as a single satellite operator to become a global satellite player. We have seven satellites in orbit and expanded across the Americas, Europe, Middle East, Africa, Asia Pacific and CIS/Russia. It is one of the fastest growing satellite operators in the world, averaging close to 30% year-on-year growth rate, outperforming the industry. The company has grown from a small team into a diversified workforce of 200 employees with worldwide offices. This includes a sales team and office in Dubai to support the Middle East and neighbouring countries, as well as a local teleport facility in Dubai serving customers around the globe. ABS is managed by one of the largest European private equity companies, Permira Funds.

What problems have you encountered along the way, and how were they resolved?
One of the key hurdles faced by ABS is the availability of orbital slots and associated spectrum rights. We have been very successful in overcoming some of the challenges associated with the ITU frequency coordination process, by strategising a two-prong approach. Firstly, we secured spectrum rights through a leasing arrangement from Intersputnik for use of its orbital slots and associated filings that are already coordinated. Secondly, in parallel, we started making our own filings through the ITU Administration of Papua New Guinea. With their extensive expertise in the field of frequency coordination and spectrum management, we have overcome many of the barriers in securing spectrum rights at a number of its orbital slots. As a result, within a very short period of time, ABS has managed to deploy a number of satellites at its primary orbital locations. Furthermore, we have more orbital slots available to accommodate our future expansion plans.


Mohamed Youssif, COO, ABS.

"We are planning to expand our fleet with ABS-8, -9 and -10 satellites, to enable us to continue to serve our customers with capacity and comprehensive services well into the future"

MOHAMED YOUSSIF, COO, ABS

With a fleet of seven satellites, what are the plans for the next five years?
ABS continues to focus on providing its core solutions and seeks ways to expand its portfolio of services. We are planning to expand our fleet with ABS-8, -9 and -10 satellites, to enable us to continue to serve our customers with capacity and comprehensive services well into the future. For ABS-8, we aim to potentially restart the project again early next year for financing, and to redesign the satellite.

The Middle East and Asia are markets well served for both video and enterprise network services. Latin

America and the Pacific regions have diverse geographies and economic climates and tend to favour more innovative and competitive solutions. ABS looks forward to serving these diverse emerging markets with sustainable solutions for now and into the future.

How are things going since the launch of ABS-2A?

ABS-2A is equipped with an all high-powered Ku-band payload of 48 high performance transponders. It features five regional beams connecting MENA, Africa, South Asia, Southeast Asia and Russia, with exceptional coverage. ABS-2A will be co-located with ABS-2 at 75°E and will deliver enhanced video capabilities and data for telecommunications and government services.

ABS-2A will expand our premium DTH neighborhood at 75°E, and will offer our customers expansion capacity and in-orbit redundancy for their growing DTH businesses. We see video networks starting to bleed over from one market to the next as end customers start to demand the widest range of content.

What are the plans for ABS 3A?

ABS-3A features 48 C- and Ku-band active transponders (96 x 36MHz equivalent) and is equipped with high performance beams to support rapidly growing markets. It is a new pillar for high- profile broadcast contribution in MENA, Africa, Europe and the Americas, as well as servicing high-growth data, video, mobility and government applications.

Most of the capacity of the wide MENA beam was pre-sold even before the satellite was launched. Satellite system integrators and satellite operators have committed to large amounts of capacity for multiple years to support their current and projected expansion. Verticals such as VSAT, video contribution and video distribution are among some of the applications being used on this wide Ku-beam covering the whole of the Middle East.

"Most of the capacity of the wide MENA beam was pre-sold even before the satellite was launched. Satellite system integrators and satellite operators have committed to large amounts of capacity for multiple years to support their current and projected expansion"

MOHAMED YOUSSIF, COO, ABS

It has also opened up doors to support European service providers and to challenge established operators who have historically dominated the market. The extensive broad European and pan-African C-band coverage in a single beam provides huge prospects for European service providers who wish to leverage their European teleports.

Similarly, the Ku-band wide beams of Europe and Africa have extended new possibilities for video distribution across Europe and pan-Africa. We have made significant progress in this sector across these markets, with many well established broadcasters as well as launches of new DTH platforms in Africa and Bangladesh via ABS-3A.

For the US market, video and data still are the dominant applications, but interestingly we are seeing mobility as one of the highest growth applications from US customers for both the commercial (aeronautical/ maritime) and government sectors.

ABS secured landing rights for ABS-3A into Brazil in late 2015 and is working with a number of customers to expand their video distribution and data networks in both C- and Ku-band. We have already begun to deliver satellite services in Brazil and other South American countries. PRO

The launch of an ABS satellite.

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10.000+ Satellite & Telco Execs

B2B

Operators to Clients
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Launchers to Industry
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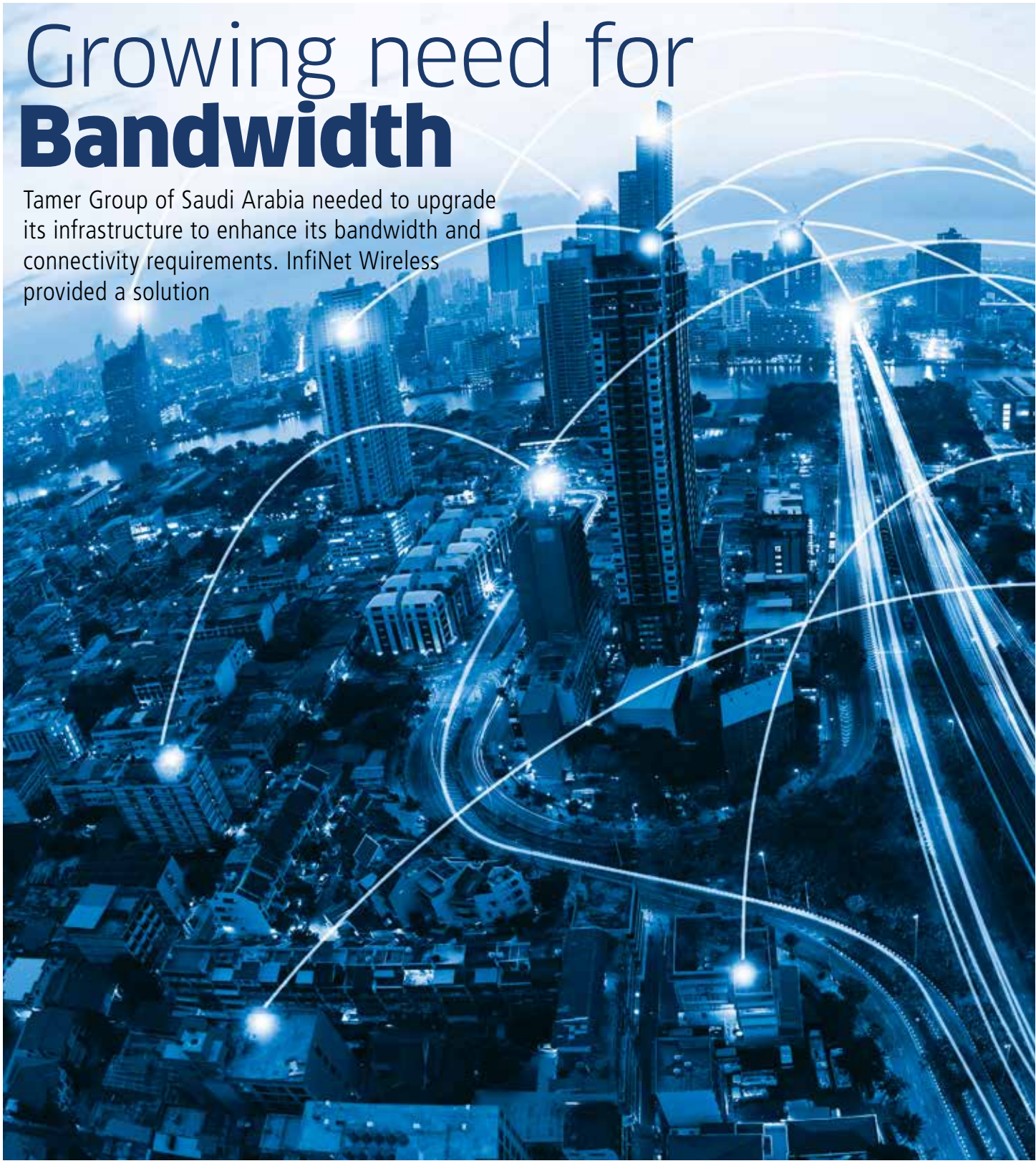
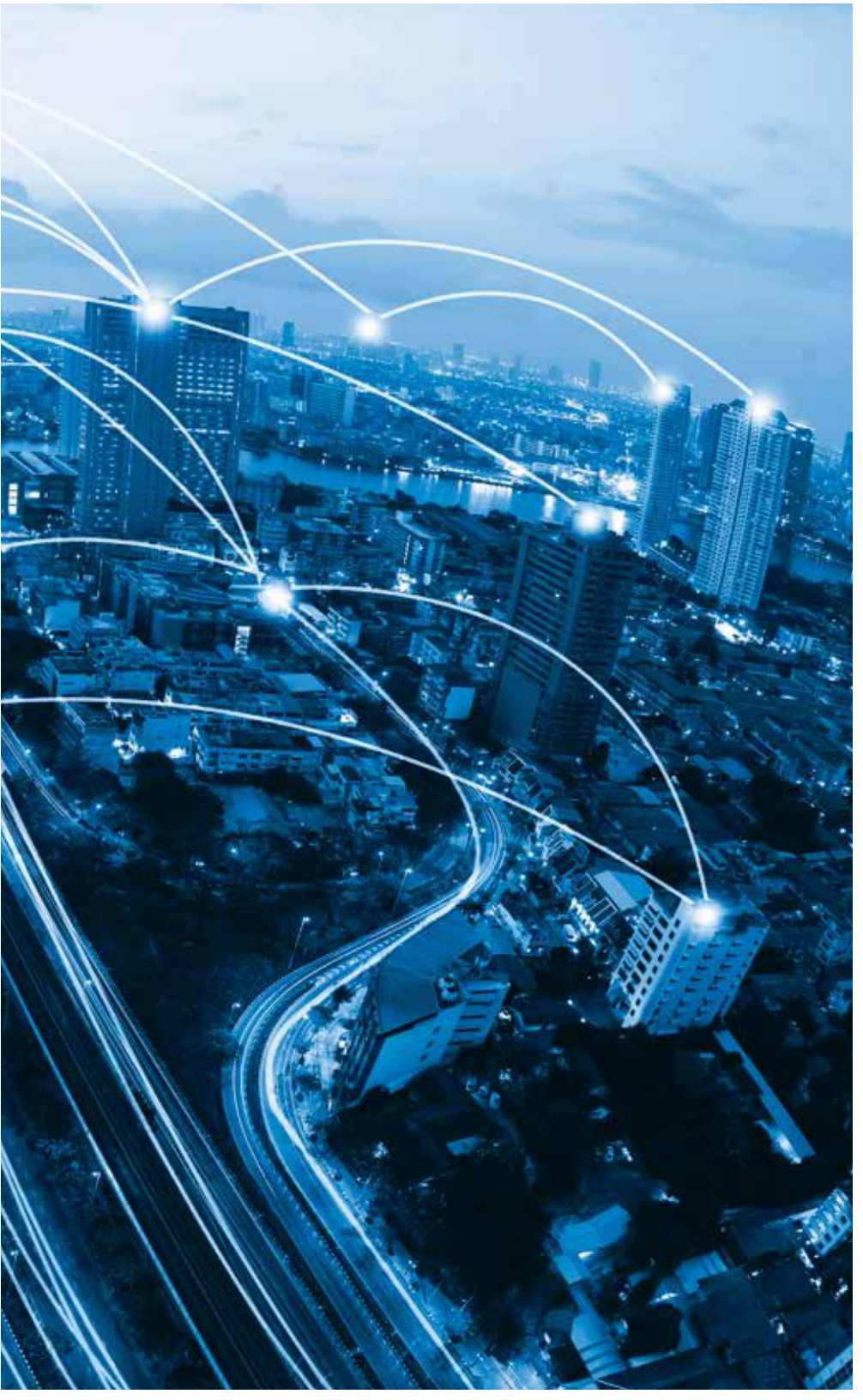
Growing need for **Bandwidth**

Tamer Group of Saudi Arabia needed to upgrade its infrastructure to enhance its bandwidth and connectivity requirements. InfiNet Wireless provided a solution





Founded in 1922 and headquartered in Jeddah, Saudi Arabia, Tamer Group is a healthcare, beauty care, prestige products and fast moving consumer goods company that is focused on meeting the growing needs of the Saudi and Middle East communities. The Group's core activities are import, distribution, promotion, marketing and manufacturing.

Need for a reliable, high-bandwidth network

Over the past few years, Tamer Group has seen its business in Saudi grow exponentially and in an effort to support this growth, the Group has opened several new facilities across the Kingdom. In Jeddah in particular, between the location of some of the new offices and the significant increase in the number of users, the Group's incumbent wireless network was proving to be unreliable and could not provide the bandwidth necessary to support the business.

"It was clear to us that upgrading our wireless infrastructure was going to be critical to the future growth of the business. One of the big challenges we faced was the topography and the distance between our head office and the remote branches; many of the locations are about 30-40km apart. So deploying a wireless network that was reliable and stable in these harsh conditions was at the top of our priority list. In parallel, we needed to ensure that the new wireless network could provide high bandwidth that would not only support

"In parallel, we needed to ensure that the new wireless network could provide high bandwidth that would not only support the existing business needs but also be future-proofed"

MOHANNAD AL JAMMAL, Head of IT Operations and Network Infrastructure, Tamer Group

the existing business needs but also be future-proofed for demand over the next few years," said Mohannad Al Jammal, Head of IT Operations and Network Infrastructure at Tamer Group.

Performance – The Deciding Factor

When it came to selecting a vendor for the new wireless network, the decision to go with InfiNet was an easy one. As Al Jammal explains, "After conducting our due diligence and evaluating a number of vendors, we finally narrowed it down to InfiNet and just one other vendor. After some initial comparative testing, it was apparent to us that the performance of InfiNet's solutions was unrivalled. The deciding factor for us was the ability of the InfiNet solution to provide reliable high bandwidth connectivity in harsh conditions and over large distances."

Working with United Horizons, InfiNet's partner in Saudi Arabia, Tamer Group conducted a POC at just one of the sites. Confident in the results, they then went ahead and deployed InfiNet's InfiLINK 2x2 5GHz PRO & LITE family of products across all 20 locations in Jeddah. For the critical connection between their data center and head office, Tamer Group deployed the R5000-Omx model as it could support speeds of up to 300Mbps over the 50km distance. For connections between all other sites, Tamer Group deployed the R5000-Smn and the R5000-Lmn products.

"In addition to offering superior performance, the beauty of the InfiNet solution is the ease of implementation. The entire deployment process took just three to four working days and was managed completely and professionally by United Horizons," commented Al Jammal.

Worth the Investment

One of the biggest benefits of the InfiNet solution has been the ability for Tamer Group to transmit significant volumes of business-critical data between their various sites. They currently depend on the InfiNet solution for exchange synchronisation of their Storage Area Networks (SANs) in their data centre and disaster recovery sites. Another benefit has been the long-term cost savings. As Al Jammal explains, "The upfront investment for the InfiNet solution, when compared to other technologies, is slightly higher as obviously there are a lot of hardware costs. But over the long term, the TCO is much lower. Implementing the InfiNet solution has also saved our IT resources a lot of time, as it has significantly reduced the amount of effort required to manage and maintain the network. While we do have the ability to monitor several parameters like performance, availability, bandwidth and transmission on a day-to-day basis, we have a service contract in place with United Horizons to take care of any problems with the network."

"I am extremely pleased with the InfiNet solutions – the reliability and stability of the network has allowed us to deploy and support several business critical processes. Based on our experience with InfiNet, I am confident that as we expand our operations, we will rely on InfiNet solutions for our wireless network infrastructure." PRO

Infinet Wireless' family of products.

Requirements
- Reliable and stable network
- High bandwidth over large distances
- Cost-effective solution

Solution
- InfiLINK 2x2 PRO 5 GHz
- InfiLINK 2x2 LITE 5 GHz

Benefits
- Ability to transmit business critical data over long ranges at high speeds
- Lower Total Cost of Ownership (TCO)

"The entire deployment process took just three to four working days and was managed completely and professionally by United Horizons"

MOHANNAD AL JAMMAL, Head of IT Operations and Network Infrastructure, Tamer Group

WORLD SPACE RISK FORUM

UNLOCKING BUSINESS IN SPACE

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The World Space Risk Forum (WSRF) is the largest specialist gathering of its kind, bringing together satellite operators, manufacturers, space agencies, risk managers, brokers, underwriters, lawyers and capital providers to network and learn more about the threats we face as an industry. For this year's conference, to be held in Dubai from 2nd to 4th November, the theme is "Unlocking Business in Space".

The WSRF provides a forum to understand risk implications from new technology and innovations and ways to mitigate these risks. We expect more than 400 attendees worldwide for far-ranging discussions on topics including manufacturing and design innovations, regulatory and legal trends and implications, cyber and space debris risks, access to capital and impact of technology and new applications.

Join us for the world's leading space risks conference at The Fairmont The Palm, Dubai. More information and registration: www.worldspaceriskforum.com

What a **Show!**

This year's show drew more than 55,796 attendees over the six days of the conference and exhibition, from more than 160 countries. Read on for some of the highlights

This year's IBC was a great success. The show drew a record number of attendees, totalling 55,796 over the six days of the conference and exhibition. This crowd included executives from more than 160 countries.

"IBC really is the only forum that attracts a global audience, the most comprehensive exhibition and the best thought leaders to spark the debate," said Michael Crimp, CEO of IBC. "IBC, above all else, is about bringing people together to share knowledge and to do business. It is clear, from the buzz around the whole show, that this has been a great year."

The exhibition featured over 1,800 exhibitors, including 249 companies at their first IBC. One important addition to the feature areas in the exhibition was the IBC IP Interoperability Zone, an initiative to push forward open standards in new connectivity.

Reflecting the state of the industry, the conference took transformation as its theme. That was also reflected in the IBC Leaders' Summit, the behind-closed-doors programme for 150 C-level executives. The conference programme was reorganised this year to provide a clearer, more readily navigated structure and a focus on the content value chain. Across the five days, 435 speakers took part in more than 100 sessions.

"IBC really is the only forum that attracts a global audience, the most comprehensive exhibition, and the best thought-leaders to spark the debate"

MICHAEL CRIMP, CEO, IBC

The audience also witnessed an 'out of this world' acceptance speech at the IBC Awards Ceremony. NASA received the Judges' Prize, and IBC was thanked in a special message from astronaut Kate Rubins in the International Space Station.

"The continuing success of IBC is down to the hard work of a lot of people, staging an event that is relevant and engaging across the whole of our transforming industry," concluded Michael Crimp. "We continue to evolve, and I am confident that next year's IBC – our 50th anniversary edition – will be even better. I look forward to welcoming you back to Amsterdam, 14-19 September 2017."

ATCi Introduces **Simulsat 7A** at IBC2016

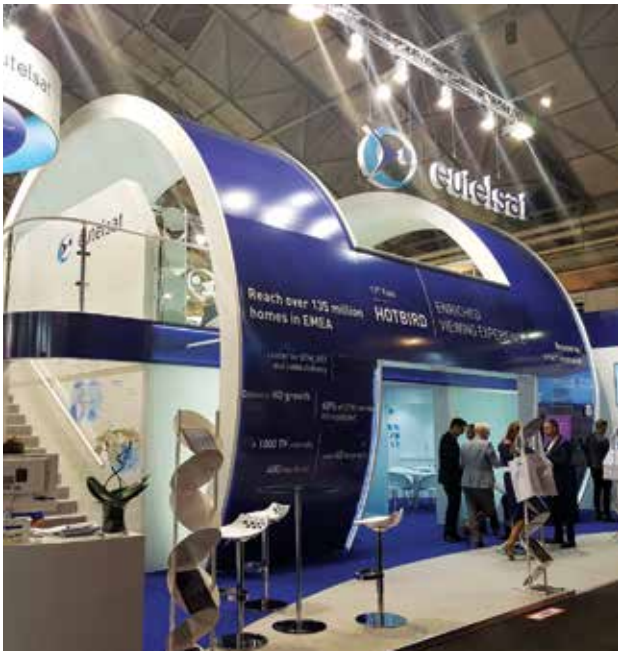
ATCi announced the introduction of the new Simulsat 7A at IBC. Sales and Product Manager Anthony Graves said the market reception and feedback has been outstanding. "We have already done several installs for high-profile customers who demand the very best antenna performance available."

The Simulsat product line eliminates the need for multiple parabolic antennas, otherwise known as antenna farms.

The savings are apparent from reduced installation, real estate, fibre/coax and maintenance costs. Also, additional channels can be added by simply peaking another feedhorn in the antenna feedbox. The Simulsat product lines are capable of receiving signals from up to 37 C- and Ku-band satellites.

Anthony Graves commented, "Our customers love the ability to see up to 75 degrees of satellite arc with one antenna, plus the cost savings and coverage for future growth is tremendous. There isn't another multibeam antenna in the marketplace that can compete with the new Simulsat 7A price and performance."

Eutelsat and MultiChoice Africa sign **nine-year contract for African expansion**



Eutelsat Communications and MultiChoice Africa, one of Africa's prominent video entertainment companies, announced at IBC in Amsterdam the signature of a nine-year contract for the expansion of the MultiChoice DStv platform at Eutelsat's 36° East video neighbourhood. The new contract for one transponder reinforces the longstanding relationship between MultiChoice Africa and Eutelsat and will further anchor 36° East as a premier location for digital video entertainment services in Africa.

Tim Jacobs, MultiChoice Africa CEO, said: "Thanks to the additional capacity booked with Eutelsat, we will be able to accelerate our services and live up to our brand promise of delivering a great customer experience through providing the best possible video entertainment service in Africa marked by quality and choice. We look forward to strengthening our cooperation with our longstanding satellite partner."

Michel Azibert, Chief Commercial and Development Officer at Eutelsat, added: "This contract further anchors our cluster of high-power satellites at 36° East as a point of reference for broadcasting in Sub-Saharan Africa and our longstanding relationship with MultiChoice Africa, a video company that is a hallmark for quality and creativity."

Newtec and Arabsat announce new partnership at IBC2016

Arabsat and Newtec announced an expansion of their partnership at IBC this year, enabling optimised solutions for broadcast and telecom customers.

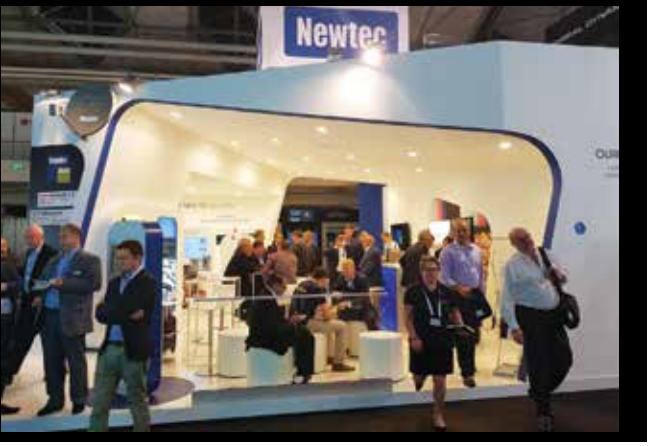
The new contract will see Newtec provide Arabsat with its Newtec Dialog multiservice platform to enhance the operator's direct-to-home (DTH) services, as well as its offerings in government and telecom markets.

Newtec Dialog is a multiservice platform which enables tailored services and guarantees optimal modulation and bandwidth allocation, whether it is used to provide enterprise, consumer broadband, cellular backhaul or mobility services. Newtec's solution for Arabsat also incorporates its pre-distortion technology, Equalink, which can provide an additional 15% of data traffic in the same satellite capacity.

"As well as offering very efficient technology, the pre-sales support and training and certification programme Newtec provides means the company was the perfect choice of partner for upcoming projects," said Arabsat CEO Khalid Balkheyour.

The Newtec training and certification is professionally run by experienced engineers familiar with the challenges Arabsat and its customers face, and includes a comprehensive online examination programme and online renewals. The certification is recognised globally and will ensure Arabsat gets the most out of the Newtec equipment installed.

"As a leading satellite operator, proven solutions which will enable optimised services for its customers are incredibly important for Arabsat, and we are delighted to have been able to meet the requirements for Arabsat's next-generation services," said Serge Van Herck, CEO of Newtec.



HISPASAT and Media Broadcast Satellite to **distribute TV throughout EMEA**

Spanish satellite and telecommunications operator HISPASAT announced at IBC that it has reached an agreement with German telecommunications service provider Media Broadcast Satellite to provide television distribution services throughout Europe, North Africa and the Middle East (EMEA).

In doing so, Media Broadcast Satellite joins the teleport operators that already offer HISPASAT's solution of Shared Digital Platforms from the 30° West orbital position; and Media Broadcast Satellite strengthens its activities in the B2B market based on new DVB-S2 platforms and competitive infrastructure on a Spanish satellite operator.

The heart of the platform is located at Media Broadcast Satellite Teleport in Usingen, Germany, with its extreme security and reliability standards, probably one of the safest teleports worldwide.

HISPASAT is thus offering a great opportunity for all audiovisual content producers seeking to distribute their signals either direct-to-home (DTH) or indirectly. By

transporting these signals through cable leads or terrestrial broadcasting, the Spanish operator allows producers to optimise transmission not only in terms of power, but also in terms of bandwidth consumption. HISPASAT's Shared Digital Platforms facilitate the transmission of individual audiovisual channels within digital multiplexes, sharing the carrier with other television operators. This allows its customers to take full advantage of the power of the satellite transponders, even if they are not used entirely.

Christian Fleischhauer, Head of Media Broadcast Satellite, stated: "With this highly competitive video and data distribution platform, our customers are able to deliver content within the footprint of HISPASAT in EMEA at outstanding conditions and performance."

General Dynamics unveils **Gen IV SOTM terminal**

General Dynamics SATCOM Technologies introduced its fourth-generation (Gen IV) SATCOM-on-the-move (SOTM) antenna terminal at IBC this year.

The new terminal delivers private, secure voice, video and data satellite communications for users remotely located or where there is limited access to a satellite network infrastructure. Ruggedised for the most challenging operational environments, General Dynamics SOTM terminals maintain connectivity with satellite networks using the terminal's trusted gyro-stabilisation, which provides high pointing accuracy.

"The new GEN IV SOTM design leverages our broad design history and

expertise, enhanced by user feedback from field operators and rigorous environmental testing," said Mike Guzelian, Vice President of General Dynamics Mission Systems.

Feedback from military users helped design and develop the new Gen IV model. It features improved reliability by increasing mean time between failures and eliminating cooling fans, to improve airflow within the antenna terminals. The new model is also 16% lighter, giving terminal operators the opportunity to carry additional equipment or increase agility and efficiency when on the move.

General Dynamics SOTM products come in a variety of sizes and configurations, and the latest model is built on the success of previous versions. The range of models enables customers to install the antennas on ground vehicles, maritime vessels and aircraft.

ETL showcases **Hurricane series at IBC**

ETL Systems showcased new RF technologies with a focus on flexibility and customisation at this year's IBC. Among them were ETL Systems' new Hurricane series switch matrix/router. The ultra-compact Hurricane Matrix, which provides 64x64 routing in a compact 4RU chassis, allows the operator to select input and output modules that can be mixed and configured to exact earth station requirements within the same matrix.

"ETL's range of 26 L-band matrices is more than double that of its nearest competitor, catering for the individual requirements of each customer. They provide broadcasters with flexibility, efficiency and reliability in the allocation of antenna feeds to receivers," said Andrew Bond, Sales Director at ETL Systems. "This helps them keep track of global broadcasts and receive feeds from their reporters at live events like this year's Olympic Games in Rio."

The Hurricane's compact design eliminates the need for additional chassis for fibre receiver modules and LNB powering, as it can all be integrated within the matrix. This makes it the most compact matrix in the market with inclusive LNB powering.

Alongside the Hurricane, visitors to ETL's booth at IBC could see the StingRay RF over fibre link range. StingRay provides a high-performance solution for transmitting RF signals across sites, and downtime is minimised by dual redundant, hot-swap power supplies. The range now includes ultra-wide dynamic range modules for HTS signals, 10MHz reference timing modules, and 1+1 and 4+1 redundancy configuration options, providing additional resilience for uplink and downlink transmissions. For longer distance transmissions over fibre, ETL has introduced CWDM (coarse wavelength division multiplexing), which can transmit eight wavelengths on a single fibre cable up to 50km with low loss.

ETL also launched a new range of component products for Global Positioning System (GPS), timing and synchronisation, as well as a new range of outdoor IP65-rated StingRay modules.

"IBC brings together major players in the broadcasting industry and it is a place where we can facilitate a real discussion about the future of the industry," said Andrew Bond, Sales Director, ETL.

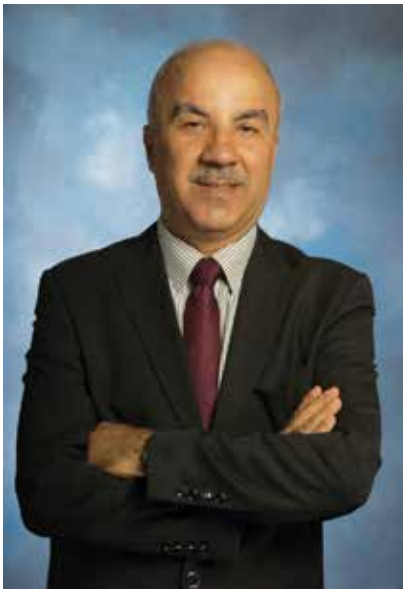
NOORSAT showcases **broadcast technology**

NOORSAT offered delegates the opportunity to view the very latest advancements in broadcast technology at IBC. The team was able to meet and network with existing and potential customers and discuss technological developments with the people making them happen.

The viewing habits of millions are rapidly changing as people look for much more from their viewing experiences. No longer is linear TV the only option; the rise of VoD and interactive TV has completely changed the experience from a customer perspective. The broadcasters that use satellite capacity to reach their customers are evolving with their clients' demands and require more from their service provider than ever before. They seek managed services that can enable them to offer the full range of broadcast services. NOORSAT is focused on meeting the changing expectations of its customers and is constantly tuned into market developments.

Now in its tenth year of business, NOORSAT provides users with highly reliable direct-to-home (DTH) TV services from the only two hotspots serving the Arab world. NOORSAT also provides satellite capacities to serve the increased demand for all other types of telecom services, including video, telephony and internet. The company's state-of-the-art teleport and broadcast centre enables the company to provide the very highest quality services, including occasional use TV, playout and turnaround services, with absolute dedication to its customers.

CEO Omar Shoter commented: "At NOORSAT, our priority is to remain at the cutting edge, so that we may provide the very best infrastructure and services to our customers. IBC is an important event in the satellite calendar, as it allows us to meet with the industry and with our customers to discuss topics that matter to them. It also gives us a good idea of where the industry is heading and how we need to adapt to meet future demands."



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Rafael Grossman
Healthcare Futurist, Technology Innovator and Surgeon, US
World's first Google Glass surgeon

TUESDAY 18
FINANCE & INTELLIGENT CITIES

James Baresse
Former CTO, **PAYPAL**
One of the leading minds behind the biggest fintech disruptor

Jonathan Reichental
CIO, **CITY OF PALO ALTO**
How to transform into a number one digital city in the world

WEDNESDAY 19
RETAIL & EDUCATION

Paul Clarke
Chief Technology Officer, **OCADO**
Becoming the world's largest online grocery store using AI & robotics

Assine George
CIO, **UNIVERSITY OF WESTERN AUSTRALIA**
Mapping a path to the most connected campus & pioneering the future of learning

THURSDAY 20
ENERGY

Keith Kaplan
CEO, **TESLA**
Industrial revolution 4.0 - how do you integrate cyber autonomy in everyday lives

Pascal Dauboin
R&D and Innovation Director, **TOTAL**
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Tech **Showstoppers**

GITEX 2016 promises to be one of the largest tech events on the planet, with around 146,000 professionals from across the region participating. The show runs October 16-20

Motorola to showcase **MOTOTRBO Capacity Max**

Motorola Solutions will be showcasing its latest MOTOTRBO Capacity Max system in collaboration with its largest MEA distributor, Tabbara Electronics, during GITEX Technology Week 2016 at DWTC.

The demonstration of the Capacity Max system will take place at Gulfcomm Za'abeel Hall, booths ZH20 and Z-J21. The MOTOTRBO Capacity Max trunked radio system is built on a distributed architecture for voice and data. Control is centralised, but traffic routing is optimised to minimise cost and maximise performance. Capacity Max goes beyond the core interoperability of the DMR standard to bring enhanced functionality. Features and applications such as digital emergency, call queuing prioritisation and over-the-air programming give users the tools to make their businesses successful.

MOTOTRBO Capacity Max makes it easy to grow a system as needs evolve. A system can support up to 15 sites with up to 3,000 users per site. Up to six additional data repeaters per site can be dedicated to support intensive data use for texting, GPS location updates and other applications such as personnel management and alarm notifications.

Compatible with Motorola's wide portfolio of MOTOTRBO radios, users have the flexibility to tailor the solution.

DVCOM to redefine UC at GITEX

DVCOM Technology announced that it will be participating at GITEX Technology Week 2016, to showcase the new products its vendor partners have launched in the market.

The VAD that distributes products, solutions and services from vendors including Digium, DrayTek, Yealink, Yeastar, 2N, Loway, Milesight and XCALLY is returning to the 36th GITEX to promote new products in networking, unified communications and collaboration, conferencing, security and audio visual conferencing.

Renjan George, Managing Director, DVCOM Technology, said the company is delighted to be returning to GITEX this year, the eighth year that it has participated at the Middle East's largest IT exhibition. During GITEX, DVCOM has planned a host of activities together with all the vendors it represents. "Most of the vendors we have in our stable will be present at our stand and channel partners, end user customers and visitors will be able to interact with experts from DVCOM and vendors," he said.

"In addition, we will be showcasing and demonstrating solutions like XCALLY Omnichannel Contact Centre solution, Yeastar's new S-Series VoIP PBX, DrayTek's latest LTE embedded and IEEE802.11ac routers, and the new touch display version of 2N Helios IP Verso."

Yealink enhances its videoconferencing solutions with the new VC120-12X Room System and video collaboration software like VC Desktop and VC Mobile App, making it a comprehensive solution for enterprises.

George added that this year's GITEX participation is special for DVCOM because the company will also be launching INTACT, its in-house enterprise-level customisable unified communication portfolio. "We are excited at the prospects of INTACT and how the brand complements the existing vendor brands we have."

He explained that for DVCOM, GITEX is an important platform not only because it brings the company together with its vendor and channel partners to interact, but also because it is the perfect avenue where the entire Middle East IT industry engages, exchanges ideas, innovates and finds solutions to some of the challenges the regional IT sector is facing. "We have been participating at GITEX for over eight years now. Essentially, the main motivation is to offer our channel partners a platform where they can bring their end user clients to experience the solutions we supply in the market hands-on."

"This year, we have a full packed line-up of partner and end user client meetings, and we will be launching a few new products from our vendor partners. We want to utilise our participation at GITEX to introduce these offerings, raise awareness around our solutions offerings and promote DVCOM Technology as one of the leading value added distributors in the Middle East."

ALE to demonstrate PALM at the show

With the new ProActive Lifecycle Management cloud-based service application, Alcatel-Lucent Enterprise business partners and customers are able to see Alcatel-Lucent Enterprise switches and controllers on a customer's network through a single, secure web portal.

ProActive Lifecycle Management (PALM) works in conjunction with Alcatel-Lucent's OmniVista 2500 Network Management System. Business partners and customers can get a complete view of the network in one click, gathering model number, serial number, MAC address and the operating system version of Alcatel-Lucent Enterprise LAN and WLAN products securely via the cloud. These details correlate to the product lifecycle, both software and hardware, and include warranty and support entitlement status. PALM is an optional feature that can be enabled through OmniVista 2500, running on a customer's network, to push ALE network equipment information to ALE's secure cloud-based infrastructure. Once enabled, only maintenance and support information is securely transmitted via HTTPS to the ALE

infrastructure – no customer-related details such as IP addresses or traffic is sent.

Business partners can simplify a customer's support process and help reduce risk by ensuring the latest version of operating system and active support service contracts are in place through these automated tools, rather than the typical time-consuming manual process in use today. Customers can simplify their network infrastructure budget planning via the easy-to-use interface that quickly identifies which devices or services need to be refreshed or upgraded.

Philippe Bletterie, Lead for Network Solutions Marketing, ALE, said: "ProActive Lifecycle Management brings automation to otherwise manual processes to help our customers and partners improve overall network operations."

InfiNet Wireless to introduce InfiLINX XG 1000

InfiNet Wireless has announced its participation at GITEX Technology Week 2016, where the company will unveil the InfiLINK XG 1000, the latest addition to its already comprehensive product portfolio.

Designed specifically to meet the backhauling needs of wireless internet service providers (WISPs) and enterprise backhauls for applications like digital oilfields, the InfiLINK XG 1000 is able to provide throughputs of up to 1GB/s over the air in 5GHz licence-free frequency bands, effectively doubling the capacity of InfiNet's previous highest performing product, the InfiLINK XG.

Commenting on this latest product release, Kamal Mokrani, Global Vice President of InfiNet Wireless, said, "InfiNet

is committed to staying at the forefront of the global wireless industry, continuing its close partnership with various channel partners in the Middle East region and bringing to its customers the very latest wireless technologies, to not only satisfy their growing demand for high-bandwidth connectivity but to also add significant value to their own business models. Our innovative product portfolio and flexible business approach have earned us a reputation second to none and contributed to our company becoming the de-facto choice for many service providers from all sectors of the industry."

In addition to the InfiLINK XG 1000, InfiNet Wireless will also launch an extended range of its award-winning InfiLINK XG models.

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Sky High **Connectivity**

Global coverage and innovative satellites propel SES into a new age of air travel

Satellites are shaping a new age of inflight connectivity. New satellite technologies are covering the globe in layers of high-powered, ubiquitous bandwidth, capable of connecting devices on both commercial and business aircraft carrying millions of passengers. From real-time turbulence-avoidance capabilities at the pilot's fingertips, to a curated and personalised inflight passenger experience – global satellite ubiquity is on the verge of unveiling a new realm of possibilities.

SES innovation is boosting demand by investing billions in fortifying its global, robust, reliable, and secure satellite network to accelerate the exciting new growth and cost-saving opportunities in one of the most dynamic industries on earth – aviation. Now airline passengers travelling at 500 miles per hour and 30,000 feet in the sky enjoy high-speed broadband thanks to satellite-enabled connectivity. SES's ubiquitous global coverage, with high throughput

"In this new age of connectivity a record 3.6 billion airline passengers will board over 40 million commercial flights worldwide in 2016 and 65% of today's travellers would choose to access entertainment services on their own device"

GLOBAL TERMINALS
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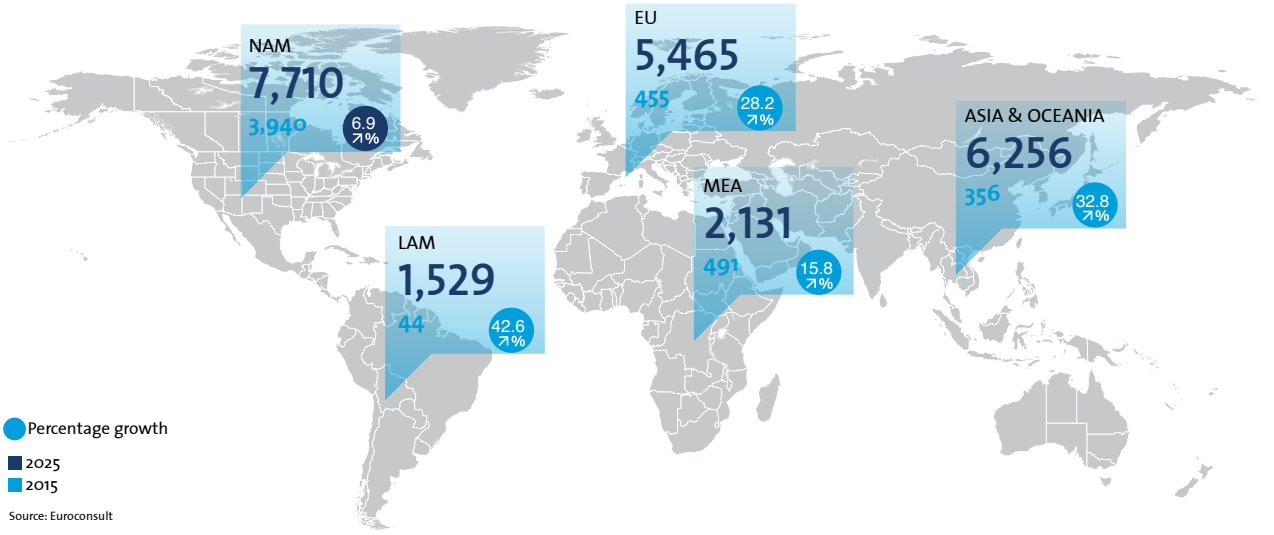


beams placed over the busiest of 50,000 air travel routes in the world, has resulted in a compelling inflight connectivity (IFC) offering ideal for delivering connectivity to all airlines across the world.

The procurement of SES-17 is SES's next strategic step in serving the aviation market. SES's first and next generation Ka-band high throughput (HTS) satellite is yet another differentiator enabling SES to provide varied connectivity solutions to customers seeking mobility connectivity. This new addition to the SES fleet will significantly augment SES's global coverage and ability to deliver a band-agnostic seamless network, meeting the exponential connectivity needs of the airline passengers of tomorrow.

Soaring demand for inflight connectivity

Global IP traffic will nearly triple over the next five years, and by 2020 smartphones are expected to generate 30% of the total IP traffic. In this new age of connectivity a record 3.6 billion airline passengers will board over 40 million commercial flights worldwide in 2016 and 65% of today's travellers would choose to access entertainment services on their own device.

The majority of these passengers will expect to connect to high-speed Wi-Fi, stream video entertainment, text, and catch up on email and social media just like they do on the ground. In fact, more than half of the world's airline passengers say the availability and quality of inflight Wi-Fi is increasingly a factor in their airline choice when booking a flight.

MORE THAN 50% of airline passengers say the availability and quality of inflight Wi-Fi is increasingly a factor in their airline choice

Passenger demand for IFC is soaring, with aviation growing to one of the largest ever market users of satellite capacity.

Responding to this demand, the number of connected commercial aircraft is expected to grow from 5,300 in 2015 to 23,100 in 2025. Airlines in Latin America, Europe, the Middle East and North America are connecting aircraft at staggering rates. Inflight connectivity is more available today in North America than anywhere else, where 80% of the world's connected aircraft are currently flying. In the next decade the largest growth, however, is expected across the Latin America region, where the number of connected aircraft is projected to balloon from 44 in 2015 to 1529 by 2025.

In this climate of booming capacity demand SES is growing its fleet to deliver top quality service. SES already serves three major inflight connectivity providers: Global Eagle Entertainment (GEE), Gogo, and Panasonic Avionics. The most recent agreements with these customers secured dedicated HTS capacity aboard three advanced hybrid satellites (SES-12, SES-14, SES-15) set to launch in 2017. SES-14 in particular will serve the increased demand expected in Latin America, mentioned above.

Recognising the complexity of addressing the fixed/mobile broadband market, SES has taken a multi-band, multi-orbit, multi-system architecture approach which provides inherent flexibility and advantages. With the announcement of the procurement of SES-17 – SES's first fully HTS Ka-band Geostationary Orbit (GEO) satellite – SES revealed that the fourth major inflight connectivity provider, Thales, will be the key anchor customer and utilise the capacity to deliver high-speed broadband throughout the Americas. SES-17 is a step-change ushering in a new era of connectivity in the skies. By being band-agnostic SES is leading the way to ubiquitous coverage that can serve the unique requirements of aeronautical demand.

The personalised passenger experience

More than 80% of airlines today are focused on, and investing in, a personalised passenger experience. Most airlines and airports are already serving their passengers in ways that were not possible

just a few years ago. While still on the ground passengers can conveniently check in, board the plane, track their baggage, and monitor connecting flights. Now, thanks to satellite connectivity, this kind of service fed by connectivity is moving to the sky. Airlines looking to differentiate themselves are providing an array of connectivity services after take-off.

Today's Inflight connectivity packages are as varied as the airlines offering them. There are free Wi-Fi offerings, pay per use, and package services. Some carriers opt for fully-curated bouquets of cached movies, TV shows, music and games, coupled with live television, OTT video streaming and social media delivered via satellite.

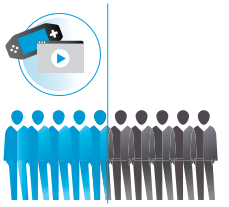
Beyond entertainment, each passenger's inflight preferences are being securely transmitted and stored, allowing airlines to offer up a far more personalised travel experience. Flight attendants can now provide passengers with up-to-the-minute connecting flight information, real-time credit card processing, and even inflight meal choices based on passenger profiles. Cabin crews can also send inflight reports of a broken passenger seat or cabin cargo bin latch in need of repair, in order to schedule a timely maintenance fix upon landing.

Airlines are extending the connected journey seamlessly inflight, with a full course of satellite-delivered Wi-Fi offerings and cached content, including bite-sized news and sports updates periodically refreshed via satellite. Passengers are so enamoured with inflight entertainment (IFE) that seven out of ten would like to order their meals through the IFE system. Nearly half are willing to pay for internet and entertainment services, and 72% prefer watching movies and TV over sleeping on long-haul flights

Airlines are implementing inflight connectivity systems primarily to provide a better passenger experience. However, carriers are increasingly intent on leveraging their inflight connectivity to drive cost savings, safety, and operational efficiencies across their fleets. Airlines realise that the connected pipes they have installed on their planes are now capable of delivering data communications between flight, cabin, and ground crews, in addition to real-time analytics that can optimise flight operations like never before.

"Beyond entertainment, each passenger's inflight preferences are being securely transmitted and stored, allowing airlines to offer up a far more personalised travel experience"

MORE THAN **80%** airlines today are investing in a personalised passenger experience



NEARLY **half** of passengers are willing to pay for internet and entertainment services

The connected aircraft concept may still be in its infancy, but the technological leap forward is already playing a key role in getting the smart plane down the runway. Powerful HTS systems, smaller next-gen IFC aircraft antennas, sophisticated on-board modems, the global deployments of electronic flight bag (EFB), and cockpit integration solutions, have all worked together to land the plane of the future in the present.

Setting the Pace with Time to Space

Game-changing developments in satellite architectures are enabling demand for aero connectivity to evolve at a velocity unimaginable just a few short years ago. Satellite operators, IFC service providers and airlines are well positioned to meet unforeseen market shifts with the availability and adaptability of high-speed capacity. The global breakout of HTS capacity, with 20 times the bandwidth of conventional satellites, is accelerating the global delivery of enhanced inflight Wi-Fi services, creating a lower total cost and driving up adoption rates in established and developing markets. Delivered across multiple bands, from multiple orbits, the high octane capacity is a big step toward the ubiquitous coverage necessary to facilitate connectivity anywhere. SES goes further by augmenting this capacity with end-to-end solutions that are tailored to the specific needs of customers.

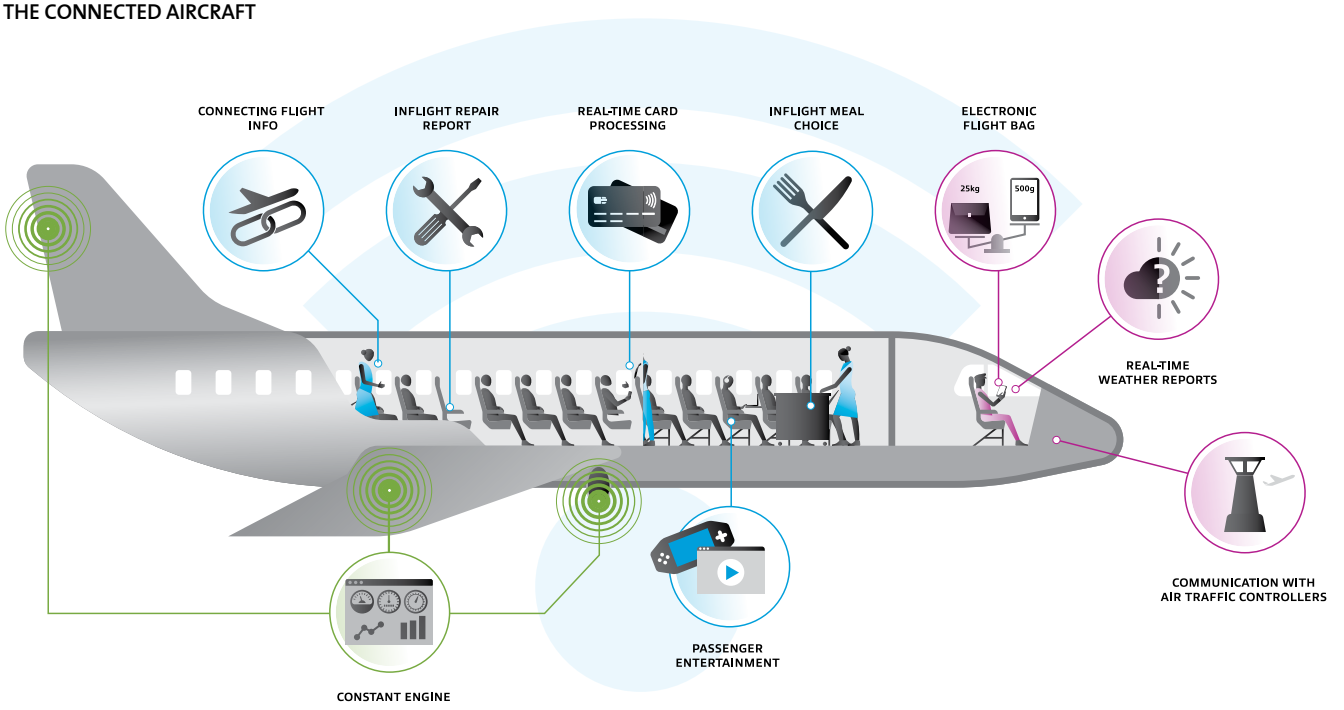
SES is actively involved in the development of revolutionary Ku and Ka-band HTS satellite architectures, providing massive gigabit and terabit capacity levels when and where needed. Expected to debut in 2017, the real power of this new breed of electric, software-defined spacecraft is not only speed to market, but flexibility.

SES is investing billions in expanding its already robust, scalable network of 50+ GEO satellites. The future SES fleet will be made up of C, Ku, and Ka-band, and HTS satellites, which feature high-powered spot beam and wide beam coverage capable of delivering fast, reliable, and secure mobile broadband.

The procurement of SES-17 represents the next dramatic step toward this goal for SES. SES's first GEO HTS satellite in Ka-band is a next-generation satellite that will be interoperable with O3b satellites, and enable SES the flexibility to track the peak usage of airplanes on different routes and at different times of the day. This brand new satellite will characterise SES's organic growth to incrementally serve the connectivity needs of airlines passengers travelling across the Americas and Atlantic Ocean routes.

Another vital aspect of the HTS network that SES is investing millions in is the ground infrastructure architecture. SES already operates a diverse base of ground terminals as well as an extensive network of teleports and hub assets around the world. All of which are interconnected by MPLS and fibre. HTS satellites require a complementary ground segment though, and so half the investment in HTS capability in space actually happens on the ground. In preparation for the first HTS satellite launch in 2017 multiple gateways and antennas

THE CONNECTED AIRCRAFT



have to be built in order to efficiently serve the enterprise, government and mobility sectors with new levels of flexibility in everything from payload design to capacity reuse. New super nodes and teleports are the brains behind the intelligent and automated routing of data and HTS capacity, which enables connected aircraft worldwide. This enables the distinctive customised solutions SES provides that meet the exact specifications of each different situation and customer.

SES's acquisition of O3b Networks and its growing complementary fleet of Medium Earth Orbit (MEO) Ka-band HTS satellites is expected to further transform inflight connectivity with a unique GEO/MEO solution. O3b has already revolutionised the connected cruise ship passenger experience, with its fibre-in-the-sky offering that delivers up to 1.6 Gbps of throughput per beam at a low latency (tiny delay) of less than 150 milliseconds. Another eight satellites are scheduled to join the scalable O3b constellation in 2018/2019. Successful O3b aero connectivity demonstrations for the US Government have quickly attracted the interest of airlines and inflight connectivity service providers.

"Connecting people in the air is not just about what satellites are invisible in the sky above them, but also about the infrastructure on the ground. The interplay between these elements is the key to success"

SES and O3b are also collaborating closely on the development of a new flat, electronically steerable ground-based antenna optimised for O3b's MEO Ka-band HTS satellites and ultimately SES's GEO fleet. The innovative antenna solution could allow enterprises, governments, and airlines to tap the unprecedented benefits of a combined GEO-MEO HTS offering in the near future. As a complete ecosystem the SES fleet in GEO, O3b's in MEO, and the infra-structure on the ground will come together to lead the way in connectivity for mobility solutions.

Conclusion

The future of connectivity is not about one big idea or one big satellite. It requires open minds, systems designed to adapt to new possibilities and a clear focus on very specific market needs. Delivering successful inflight solutions is not about GEO or MEO satellites, but the definition of the value chain and the application at the customer and user's end. Connecting people in the air is not just about what satellites are invisible in the sky above them, but also about the infrastructure on the ground. The interplay between these elements is the key to success, and that is why SES is investing equally in the infrastructure it is building both in space and on the ground, in order to deliver uncompromising quality in the air. By developing technologies, and applying them with precision, new markets ferment and grow into powerful economic drivers. By applying a global approach that is customer focused and scalable SES distinguishes itself in this competitive new market place, fuelling the new phenomenon of connected passenger, aircraft and ship. PRO

Whitepaper by SES

Moving towards **Decentralisation**

Mahdi Mehrabi, CTO, NorthTelecom, discusses how the satellite market is moving from being centralised to decentralised, and the impact this will have on applications in the industry

Using satellite communication for commercial purposes has been around for a while, but we are witnessing a huge transformation in the telecommunication industry, where the satellite market is still relatively niche.

Several elements, particularly for today's market, have a significant impact on the commercial satellite industry as part of the space segment and telecom arena. We use satellite to serve the telecom market, and any development in the telecom industry will eventually reach our industry. We are expected to adopt new trends as fast as we can and apply them to our business model commercially, as well as our infrastructure technically, and this is exactly where the challenges are raised.

Following the crowd isn't always the right way of going about things. We should adopt the right strategy while taking the commercial and technological aspects into account.

The commercial satellite market is moving from its centralised era to a more decentralised ecosystem. Teleports or uplink facilities which used to be centralised in some parts of the world are witnessing a change towards being more decentralised.

There are some inevitable elements about this transformation, with regulation one of the most remarkable. Many countries have been increasing restricted regulation for terminating traffic outside their sovereignty, and terrorist threats around the world have beefed up this type of regulation and concern.

Apart from regulation, there has been an emergence of many other applications forcing the teleport to decentralise. Such applications include banking, private networks, VOIP and more. Adding to all this is satellite technology moving to smaller beams, so-called spot beams, and consequently smaller terminals either in remote locations or teleports. This has a significant impact on the future of teleport structure and operation.

Future challenges include how to manage a wide teleport network operation. What will be the best strategy for this concept? Having everything in-house and duplicating infrastructure, or moving towards a more collaborative and partnership-centric model?

"Many countries have been increasing restricted regulation for terminating traffic outside their sovereignty, and terrorist threats around the world have beefed up this type of regulation and concern"

MAHDI MEHRABI, CTO, NorthTelecom

Cost-benefit analysis is always key in every business, taking market trends into consideration, and the sharp decline in capacity and service prices will be another chief challenge for teleport applications. They still have to expand the network and increase CAPEX to comply with new technologies and trends.

We need to think about whether it is technically and financially viable in such a niche market to spread our operations to every corner of the world, or whether we should seek collaboration and strategic partnerships to share resources. The incumbent players need to think about changing their position from being just an uplink provider and infrastructure management, to being more of a technology provider and selling expertise into an emerging market.

One of the main technological challenges in the satellite industry is how to adopt all these new trends in the telecom market and apply them to satellite connectivity, while still taking all the technological and technical constraints into consideration.

The main question is: Where are we really standing today? Are we ready by all means to grab even a small piece of the massive IoT cake and bring it to our portfolio? What about our infrastructure and supply chain – which part of IoT will be more feasible to implement in satellite networks? Is there any room for satellite connectivity to approach the IoT concept, or shall we approach more specific areas where IoT applications have no access to traditional terrestrial networks? It's important to question whether we should think about hybrid topology where satellite communication can help the outreach of concepts like IoT and complement the connectivity concern hand in hand with other technology. PRO

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