ISSUE 49 | MARCH 2016

SATELLITE PRO

TECHNOLOGY INTELLIGENCE FOR THE SATCOM MARKET

MIDDLE EAST

CABSAT

PASSING THE TORCH
Michel de Rosen speaks about his six-year reign at Eutelsat

QATAR AT THE FOREFRONT
Ali Kuwari on building Qatar's first teleport

Making the connection

VSAT helps broadcasters deliver TV channels to remote and unconnected territories

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Our first satellite, Es'hail-1, was successfully launched on 29 August 2013 and our second satellite, Es'hail-2, is expected to launch at the end of 2016. Both satellites will be co-located at the 25.5°/26° degrees East hotspot neighborhood.

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Time to Meet

Welcome to the March edition of *SatellitePro ME*. I'm sure you'll enjoy reading this issue. It's packed with all you need to know about CABSAT and The GVF Satellite Hub Summit. Also in store are some exclusive interviews with Eutelsat's outgoing CEO Michel de Rosen and Es'hailsat's CEO Ali Kuwari speaking about Qatar's plans to build its first teleport.

With CABSAT beginning on 8th March, we're geared up for what promises to be a great show. It's always exciting to meet the entire industry under one roof, and my adrenaline shoots through the roof whenever I encounter all of the technical marvels that our industry has been able to achieve.

I'm sure HTS is going to be a hot topic this year, and with the launch of Intelsat's first EPICNG satellite, competition is definitely getting fierce. Even though Eutelsat's Quantum is a few years away, it promises to be a force to reckon with. This industry is so vibrant and loves taking risks, mainly because they're a solid gamble, and the end result is phenomenal.

All it takes for a dream to be realised is a vision and the ability to chart the course no matter how unsympathetic the terrain; and I'll tell you one thing, that's what we thrive on.

If you haven't got in touch with me to book a suitable time for a catch-up at the show, please do so soon. I'd love to hear about what your organisation is up to, and how we can mutually play a part in its success.

I wish you a wonderful March. 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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"There is of course an ever growing demand for VSAT where no direct connectivity is possible, including planes, trains and vehicles"
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"The growth of data spurred by the availability of 3G and 4G technologies and the explosion of social networking is creating significant traction"
Semir Hassanaly, Director, Newtec
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"We have to ensure that there is a positive commercial impact for our customers in terms of Etisalat offering a better VSAT service at cheaper pricing"
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"Our goal is to contribute to the development of a knowledge-based economy and a communications-based society in Qatar "
Ali Kuwari, CEO, Es'hailsat
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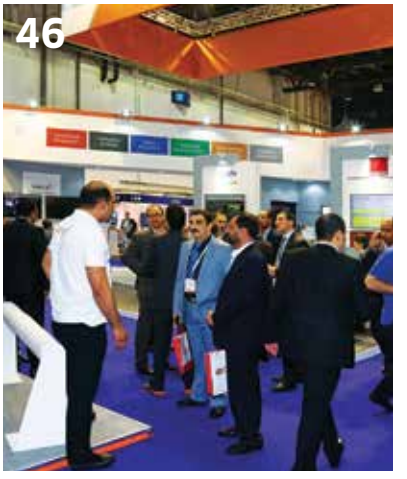

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Information

November 2016
Summit: 10am - 4pm / Awards: 7pm – 10pm
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SSL appoints new Genna as CTO

SSL has announced that Dr Matteo Genna has assumed the role of Chief Technology Officer. Dr Genna's strong systems engineering and product development background, along with his visionary perspective, have advanced SSL's capabilities, both in its core communications satellite market and in its growth market, with innovations in robotics, small satellites and advanced systems for space infrastructure and exploration.

"Dr Genna brings a critical combination of technical expertise, business leadership and vision into the future of space technology," said John Celli, President of SSL. "As CTO he is driving our focus on flexibility and standardisation for GEO satellites, in addition to developing new platforms for our next-generation space missions."

Dr Genna joined SSL nearly 20 years ago as a systems engineer in the Research and Development group, where he contributed to advancing the design of SSL's highly successful 1300 satellite platform, which celebrated its 100th launch last year. He has contributed to a broad range of innovations, ranging from avionics to electric orbit raising, keeping the 1300 at the forefront of today's technology.

Dr. Matteo Genna, CTO, SES.

+ www.ses.com

ARABSAT ORGANISES 8TH TELECOM FORUM

Arabsat organised its 8th Telecom Forum in Cyprus February 10-11, 2016 to strengthen its professional and operational association with customers. This event was addressed by Marios Demetriades, the Minister of Transport, Communications and Works of Cyprus, and provided a platform for Arabsat's customers, technology and service providers to share their views on the latest technological trends.

Mueid Al-Zahrani, Arabsat's CTO, commented: "This occasion is a unique opportunity, as Arabsat will be presenting its future fleet and newly launched satellite, BADR-7, to industry that contains Ku-band, Ka/Ku strap and Ka payload providing coverage over Middle East North Africa, northwest Africa, central Asia and South Africa respectively. Arabsat will take advantage of the Cyprus venue and will show Hellas-Sat Teleport facilities to its esteemed customers."

+ www.arabsat.com

Eutelsat 65 West A built by SSL.

Xxxx xxxxxxxxx

EUTELSAT 65 WEST A ARRIVES IN KOUROU

Eutelsat has announced that its EUTELSAT 65 West A satellite arrived in Kourou on 6 February and is on track for launch on 9 March by an Ariane rocket. Lift-off of the 6.5 tonne satellite is scheduled for 9 March at 05:22 GMT.

Built by Space Systems Loral in California, EUTELSAT 65 West A is a tri-band satellite designed to target fast-growing markets across Latin America.

Its high-power Ku-band payload will enable DTH reception of digital and HD channels across Brazil with 60cm antennas, and facilitate corporate connectivity in Central America, the Caribbean and the Andean region.

EUTELSAT 65 West A also features a transatlantic C-band coverage for cross-continental video contribution and distribution, and a multi-spotbeam Ka-band payload that will promote broadband access across Latin America, notably Brazil.

+ www.eutelsat.com

SDA members to benefit from geolocation support

As part of a continued drive to improve the integrity of satellite services, the Space Data Association (SDA) has announced the launch of a new geolocation support service for its members. Geolocation is an important process used to identify the geographical origin of transmissions to a satellite. It requires specialised measurement equipment located around the globe, managed and operated by skilled engineers.

"The SDA is actively pursuing its policy of information exchange and cooperation in order to ensure quality of service for the satellite communications community," commented Mark Rawlins, Chairman of the Space Data Association. "In offering this service, we will be able to help our members resolve interference issues quickly and efficiently. Interference is an industry issue. A problem affecting one member today may affect another tomorrow!"

+ www.space-data.org

Mark Rawlins, Chairman, SDA.

NORTHTELECOM EXPANDS TO APAC

NorthTelecom has announced that it is expanding its facilities to the APAC region. The company will now be able to bridge East to West and offer more cutting-edge services and solutions to the global market, said Mahdi Nazari Mehrabi, Managing Director, Asia and CTO NorthTelecom.

"We are investing in a new facility and capacity in Singapore to serve the APAC region.

"These investments will allow NorthTelecom to extend its leading edge and forefront solutions and services into Asia and the Pacific market in the coming months. We are very delighted to extend our cost-effective and reliable services and solutions to our partners in this part of the world."

The new facility will be equipped with state-of-the-art ground equipment as well as a highly qualified and competent team on the ground.

+ www.northtelecom.com

CUBIC COMPLETES ACQUISITION OF GATR

Cubic Corporation announced it has received final Hart-Scott-Rodino regulatory approval and completed its acquisition of GATR Technologies (GATR), a manufacturer of next-generation deployable satellite communication terminal solutions based in Huntsville, Alabama. Cubic completed the acquisition of GATR on February 2, 2016 for a purchase price of $232.5 million.

GATR Technologies will operate within the Cubic Global Defense business unit and greatly expands the company's footprint.

+ www.cubic.com

Bradley H. Feldmann, President and CEO, Cubic Corporation.

SPEEDCAST AND GAZPROM TIE UP TO CONNECT AFRICA

SpeedCast has announced a new agreement with Gazprom Space Systems to expand satellite communications services in Africa. This partnership allows Speedcast to use capacity on GSS's Yamal-402 Ku-band satellite to provide high-performance services to global oil & gas companies across Africa.

Customers will benefit from the high performance and excellent look angles for Africa offered by the Yamal-402 satellite. With the uplink based in Germany, customers will be able to land their traffic directly into Europe, taking advantage of high-speed interconnection throughout Europe.

Further, Germany's excellent standards of infrastructure and advanced data security laws will ensure the highest levels of security for sensitive data.

+ www.gazprom.com

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YAMAL-402

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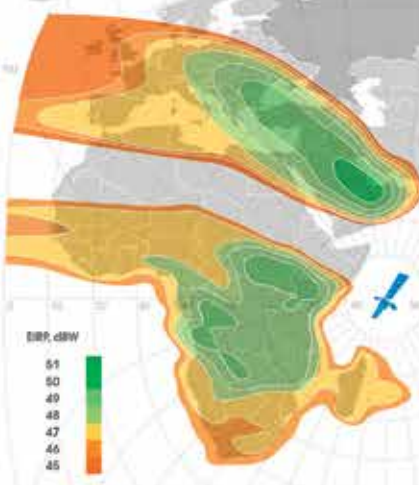

Yamal-402 (orbital slot-55 East) in operation from Desember 2012
European Beam 4 transponders per 54 MHz
Southern Beams 8 transponders per 54 MHz

MBRSC participates in the Middle East Geospatial Forum

Mohammed bin Rashid Space Centre (MBRSC) participated in the Middle East Geospatial Forum 2016 and GIS and Remote Sensing Annual Scientific Forum (GRASF 2016). The forum aims to exchange experiences and bring together specialists in the fields of GIS and Remote Sensing, to showcase the best practices in spatial geography. Engineer Adnan Al Rais, Manager of Business Development Office of MBRSC, delivered a keynote address at GRASF, highlighting the Centre's initiatives and projects to support Dubai Smart City initiative, through the use of remote sensing techniques, space applications and other related projects.

Eman Al Tunaiji, Engineer in the Applications Development and Analysis at MBRSC, also participated in a panel discussion at GRASF entitled 'Smart Municipalities and Smart Cities', during which she discussed the SAFIY project and how it would serve municipalities and smart cities in providing information on the different infrastructure of buildings, road networks and transportation, in addition to vegetation and water.


Salem Al Marri, Assistant Director General for Scientific and Technical Affairs, MBRSC.

Salem Al Marri, Assistant Director General for Scientific and Technical Affairs, MBRSC, said: "MBRSC was honoured to participate in the Middle East Geospatial Forum 2016 and GRASF 2016. Middle East Geospatial Forum is a leading event that represents an important addition to the agenda of international events held in Dubai.

"Dubai is a leading model among the world's cities in this regard, especially after the completion of transforming the emirate into a smart city and laying the necessary institutional and legislative foundation and frameworks to be proactive in the implementation of advanced strategies and methodologies in the management of cities."

+ www.mbrsc.ae

INFINET WIRELESS SHOWCASES INFILINK XG AT MWC

InfiNet Wireless unveiled the most advanced version of its product, the InfiLINK XG, at this year's Mobile World Congress which was held in Barcelona from 22-25 February, 2016.

As the most spectral-efficient sub-7 GHz point-to-point wireless broadband solution available in the marketplace today, the InfiLINK XG is a record-breaking and innovative Point-to-Point solution based on the high power Software Defined Radio (SDR) platform developed entirely by InfiNet's engineers.


Kamal Mokrani, Global Vice President at InfiNet Wireless.

It is a brand new and innovative design, offering a significantly improved spectral efficiency of up to 14bps/Hz – a level never achieved by other wireless vendors, as well as a capacity surpassing 500Mbps in just 40MHz of spectrum.

The InfiLINK XG is also quickly becoming the ideal solution for LTE Small Cell transport networks in restrained urban and smart city infrastructures.

This new breakthrough was made possible through a number of software developments which enabled further support in providing IEEE1588-based timing transmission. In addition to this, InfiNet's R&D team also improved the XG's Non-Line-of-Sight (NLOS) capabilities by designing a series of "extra-robust" modulation-coding schemes, as well as removing a number of air transmission overheads, consequently increasing the throughput by up to 20%.

+ www.infinetwireless.com

INTELSAT ANNOUNCES NEW CFO

Intelsat S.A. has announced that Jacques Kerrest has joined the company as Executive Vice President and CFO, reporting to Intelsat CEO Stephen Spengler. Kerrest will be responsible for the leadership of Intelsat's financial operations, including capital markets, accounting, treasury, financial planning, investor relations and corporate development. He will be a member of the company's Management Committee and will begin his duties on February 1, 2016.

Intelsat CEO Stephen Spengler said: "Jacques brings a wealth of experience to Intelsat. He has a strong track record of leading the finance organisations of large, complex and global corporations. His deep financial expertise in the telecom and media sectors will provide new perspectives within our management team. I have confidence that his financial acumen, corporate finance background and sector knowledge will play an instrumental role in shaping our financial priorities and in the attainment of our operational and long-term strategic goals."

Kerrest joins Intelsat from DPC Data Inc, where he served as President.

+ www.intelsat.com

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SES pushes for 5G during the GSMA Mobile World Congress

SES announced during the GSMA Mobile World Congress that it is fully committed to the swift deployment of the 5G mobile networks. SES actively promotes satellite as an essential building block for a global, profitable and inclusive 5G deployment. In order to cope with the tremendous growth of data demand, including 5G requirements, a combination of terrestrial and satellite wireless technologies is needed. Satellites play a key role in allowing the seamless extension of 5G services, by providing connectivity on the sea, in the air and to remote land areas.

"5G must be a seamless integration of different network technologies," said Karim Michel Sabbagh, President and CEO of SES. "No single technology will be able to cope with the data challenges that networks are facing. Only a smart combination of infrastructure will be able to meet the constantly growing demand."

+ www.ses.com

Karim Michel Sabbagh, President and CEO, SES.

STN ANNOUNCES NEW GM

STN has announced that Anver Anderson has joined as the new General Manager of the company, with the responsibility of implementing on-going and new initiatives including global sales, marketing outreach and team development.

Anderson has a history within the industry with decades of experience leading internationally diverse, multi-cultural and multi-disciplined business teams on a global basis.

+ www.stn.eu

Anver Anderson, GM, STN.

ONEWEB AND AIRBUS DEFENCE AND SPACE CREATE ONEWEB

OneWeb and Airbus Defence and Space have announced the creation of OneWeb Satellites. The new equally owned joint venture will design and build the 900 satellites of the OneWeb constellation, which will offer high-speed internet with global coverage. The joint venture will be led by Brian Holz as CEO.

OneWeb Satellites will also be able to build satellites, platforms and equipment to be marketed by Airbus Defence and Space to other operators of future constellations.

"We are benefiting from Airbus Defence and Space's manufacturing and assembly knowledge as we look to initiate services," said Matt O'Connell, CEO of OneWeb. "As we build out the constellation, besides its very reliable satellite performance heritage and technical support, Airbus brings design for manufacturing capability into this operation, which is key to achieving both our short-term and long-term goals."

+ oneweb.world

YAHSAT AND TIM IN DISCUSSIONS FOR KA-BAND SOLUTIONS

Marcio Tiago, Yahsat Country Director for Brazil.

Yahsat has been in discussions with TIM around the use of its Ka-band satellite over Brazil, commencing in 2017. The objective for TIM is to capture the benefits of the high spectral efficiency and substantial cost savings delivered through Ka-band solutions, enabling 3G and 4G coverage using high-speed satellite links. Yahsat's Ka-band capacity will be delivered via its third satellite, Al Yah 3, providing coverage to over 95% of the Brazilian population.

+ www.yahsat.ae

+ www.tim.com.br

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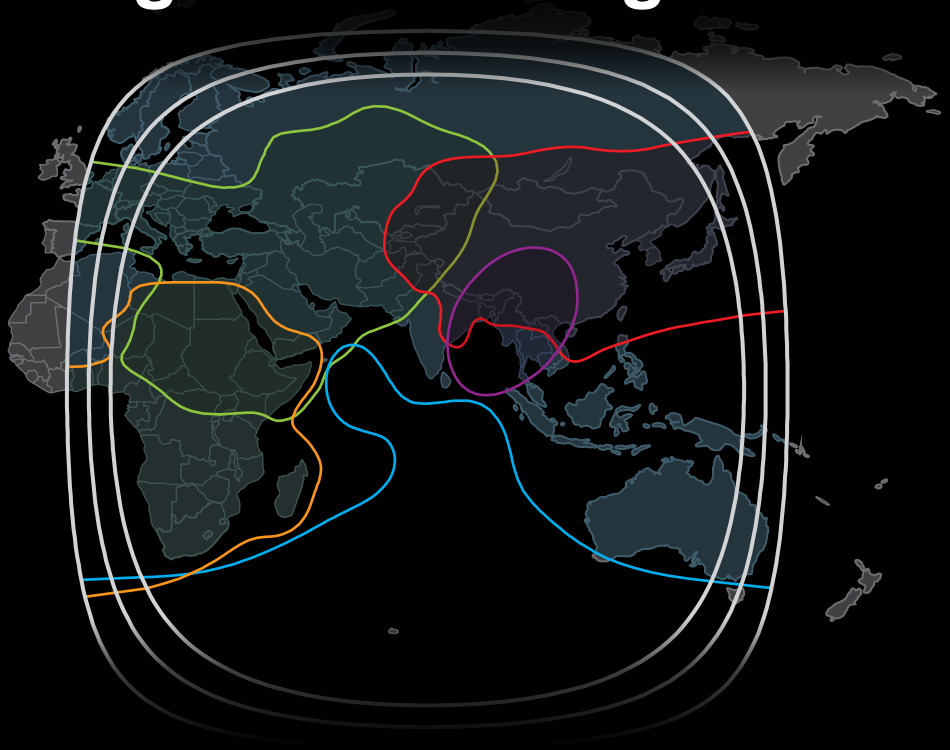

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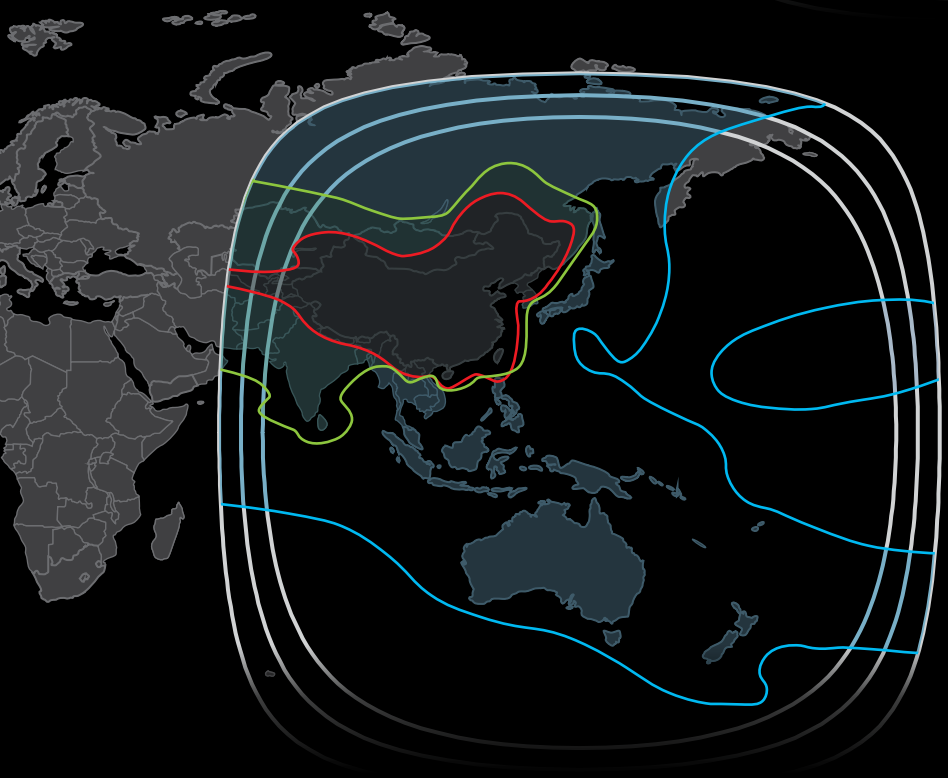

C-Band

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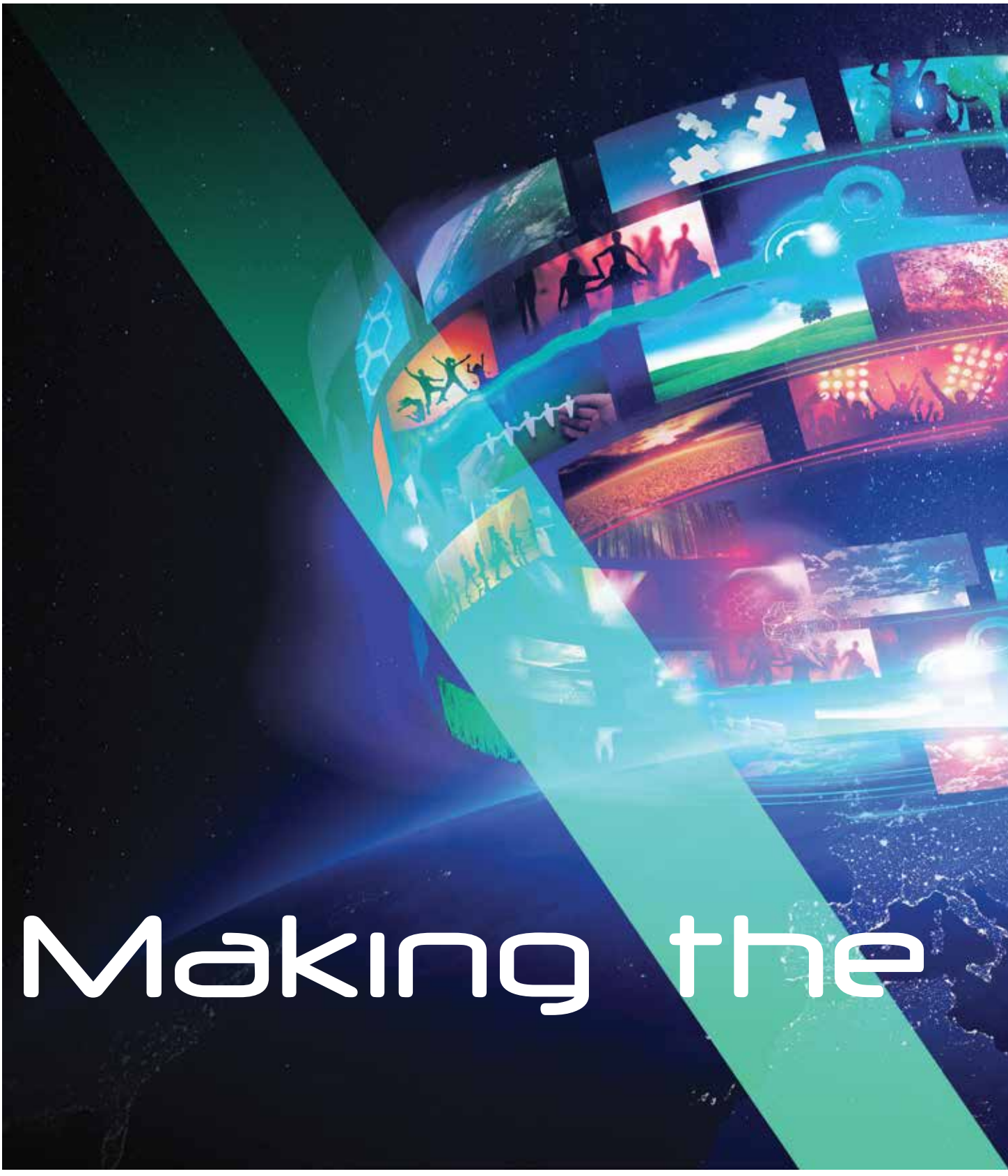

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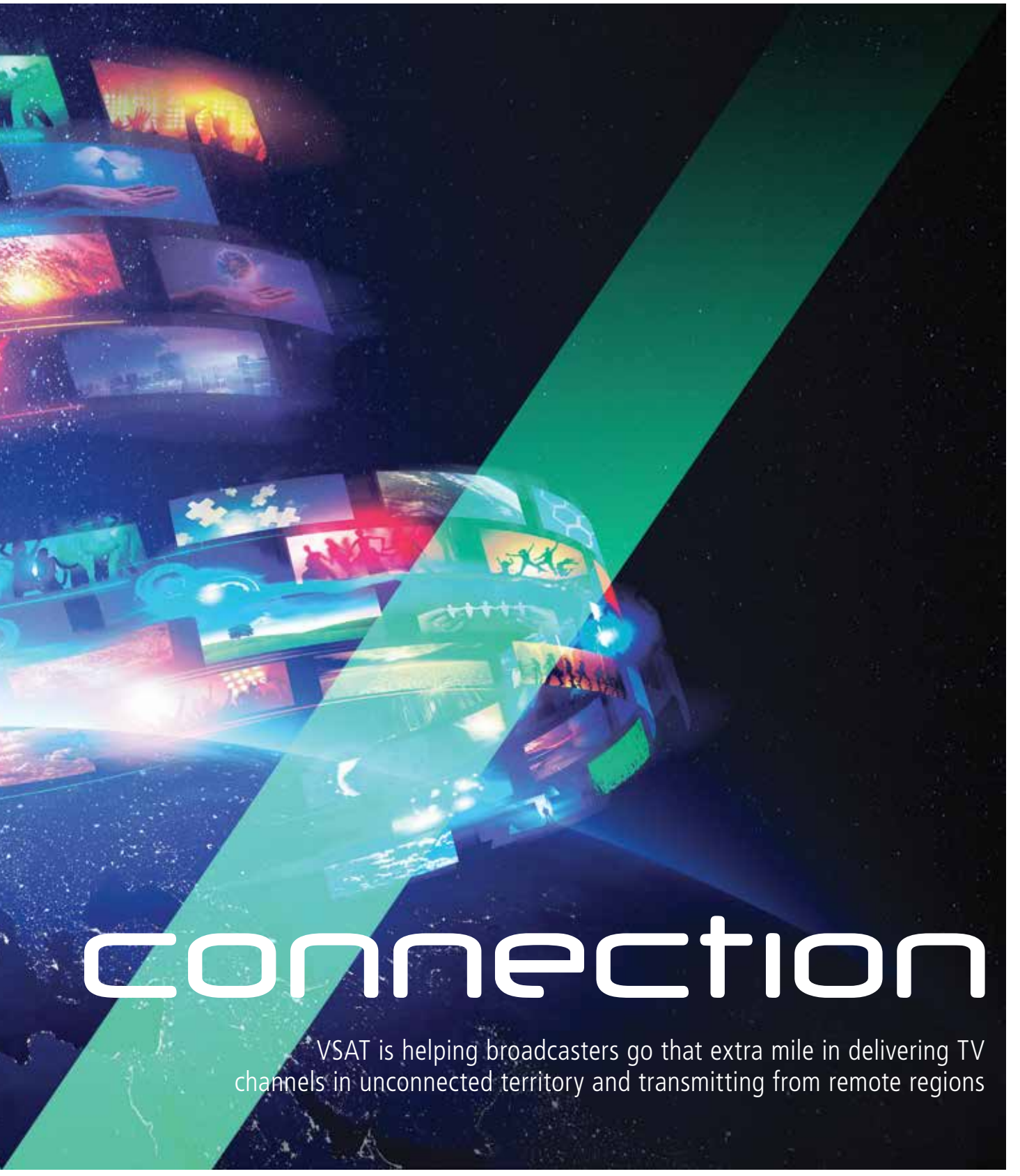

connection

VSAT is helping broadcasters go that extra mile in delivering TV channels in unconnected territory and transmitting from remote regions

The term 'bridging the digital divide' has been common currency in the telecommunications arena for a number of years, concerning both the complete lack of broadband internet access for 'unserved' populations and the limited narrowband access to IP services for 'underserved' populations. It can apply to the more rural parts of developed counties, but still, primarily, it concerns the developing regions of the world.

Martin Jarrold, Chief of International Programme Development at the Global VSAT Forum (GVF), says that in the build-up to the ITU World Radiocommunications Conference in Geneva in November 2015, research confirmed that VSAT earth stations/ ground segments – particularly satellite services delivered over VSATs operating in the C-band part of the spectrum – are essential for continued socio-economic development across developing nations. They are also needed for development facilitated by accelerated internet access for enterprise, for governments and for communities. This is only achievable with satellite.

Satellites orbit the Earth, and receive and transmit signals from space. This allows a VSAT network operator to quickly deploy services to any point on the Earth's surface where IP services are required, including vessels on the sea and offshore oil fields. The only requirement is connectivity to an electrical source.

"There is of course an ever growing demand for VSAT where no direct connectivity is possible including planes, trains and vehicles"

JACK BUECHLER,
VP Business Development, Talia

Jack Buechler, VP Business Development, Talia, explains: "Electrical power is required to power the VSAT, but now there are many methods of generating enough power using sources such as solar cells to charge batteries, which in turn are used to power the VSAT equipment. Once the VSAT is deployed, users have access to many different types of services, including internet services."

With a constantly growing appetite for data, VSAT solutions must deliver higher throughput, and this is starting to happen with the implementation of high throughput satellite (HTS).

It's difficult to give specific speed rates, since up and down link rates can vary enormously with VSAT connectivity. The governing factors deriving these speeds of service are frequency selection, antenna size and quality and service provision. Invariably, though, HTS constellations are coming closer to levels which are comparable with terrestrial networks.

"Some of the current satellites provide seamless global broadband at downlink speeds of up to 50Mbps and uplink speeds of 10Mbps using small VSAT terminals. The advent of HTS networks has led to demand on the VSAT component manufacturers to create products which can operate at these higher frequencies and support faster data rates. The exciting part is that this access to faster data rates opens up numerous new and great ways to use satellite communications in many market areas.

"Now that all three Global Xpress satellites are fully commissioned, broadband access will be available via VSAT anywhere in the world, with the exception of the polar regions. This delivers a service that no other satellite constellation today can provide, meaning that a ship or aircraft could circumnavigate the globe and almost never be without broadband access. There are also a number of more regional satellites that have a similar ability to provide high-speed services," says Ulf Sandberg, Managing Director of Paradigm.

From the point of view of the user, internet speeds over VSAT will vary according to the particular proprietary service offering they are using and according to the service level agreement (SLA) and committed information rate (CIR) in their service contract. Hence, across a competitive marketplace these

VSAT dishes at a satellite Earth station.

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Martin Evans, SIS Live, IP Sales Manager.

Jack Buechler, VP Business Development, Talia.

speeds will vary, as will the associated costs of various levels of service.

Jarrold says it is more straightforward to address the issue of satellite throughput levels, which are improving substantially. Indeed, projections on the characteristics of the next generation of HTS – sometimes identified as ultra-HTS – shows throughput levels projected to soon exceed 300Gbps. This will feature continuing reductions in throughput costs per bit and costs per transponder, higher EIRP and more payload accommodation, higher payload densities and lower mass per transponder, together with more aggressive frequency reuse schemes to enhance capacity and the adoption of DVB-S2x to increase throughput, power, frequency and coverage flexibility.

So what is the role of VSAT in broadcast? Martin Evans, IP Sales Manager at SIS Live, says: "It is predominantly for providing connectivity for ISDN communications talkback or for uploading edited video or streaming a multicast programme to additional territories not covered in main broadcast transmissions. It is also used in cases where the customer wants to take advantage of lower-cost TDMA technologies."

Buechler says VSAT in broadcast provides IP connectivity, and hence IPTV is just one of many IP applications that VSAT will support. Typically, a video source such as the output of a camera is connected through a video encoder to convert the video into an IP stream. This IP stream can then be connected directly into the VSAT for onward transmission. Reception of IPTV signals is the converse. An IP stream is received by the VSAT. The VSAT then passes the IPTV stream to a decoder, a set-top box or PC for example, for display.

VSAT in broadcast mostly uses highly transportable flyaway terminals which can be quickly and easily deployed and operated by one person. These are then primarily used to communicate sports and news contributions back to studios for editing and broadcasting to the users, either by satellite, terrestrially or via the internet.

Sandberg says: "Paradigm's Hornet100, YellowJacket65 and Swarm45 are all transportable terminals which provide a range of streaming video speeds and operational flexibility whilst being easy to set up in the field. The rapid deploy flat panel Swarm45, for instance, will have you pointed and on the air in a few minutes, whilst the Hornet100 provides the maximum possible data throughput for a 98cm portable terminal."

However, broadcast through VSAT can be marred by interference. New ground equipment being manufactured allows different techniques to be incorporated to mitigate interference and increase efficiency.

Sandberg further adds that terrestrial use of the Ka-band frequency is still very low

"Some of the current satellites provide seamless global broadband at downlink speeds of up to 50Mbps and uplink speeds of 10Mbps using small VSAT terminals. The advent of HTS networks has led to demand on the VSAT component manufacturers to create products which can operate at these higher frequencies and support faster data rates"

ULF SANDBERG, Managing Director of Paradigm

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compared to use of C-band and Ku-band, which will minimise interference on the Ka-band spectrum. Consequently, at a terrestrial level, operators can mitigate the chance of interference by solely using Ka-band for VSAT.

"Challenges caused by weather when operating on the Ka-band spectrum can also be mitigated with advances in adaptive modulation and coding techniques. These can change the modulation and FEC of an RF carrier on the fly and thus react to changing weather conditions. Should rain fade affect the condition of the link, the system will automatically change the parameters to avoid loss of signal. This has greatly improved the Ka-band signal reliability in the face of deteriorating weather conditions.

"The industry is also starting to collectively use carrier ID to combat interference from unauthorised users, unintentional or not. This is a system whereby all broadcast transmission terminals will be identified by their carrier ID, allowing any interfering terminals to be quickly located," explains Sandberg.

Once identified and located, interference from rogue carriers can be quickly and easily fixed.

"Frequency reuse results in greater satellite throughput and therefore lower operational and in-orbit costs per Mbps.

"Now that all three Global Xpress satellites are fully commissioned, broadband access will be available via VSAT anywhere in the world with the exception of the polar regions. This delivers a service that no other satellite constellation today can provide"

ULF SANDBERG, Managing Director of Paradigm

These terminals are generally lower power and operate into defined network hubs; this leads to less risk of interference," adds Evans.

Other challenges to VSAT operators come from fibre providers. With increasing bandwidth in constant demand for end users, telecom providers keep extending their fibre networks.

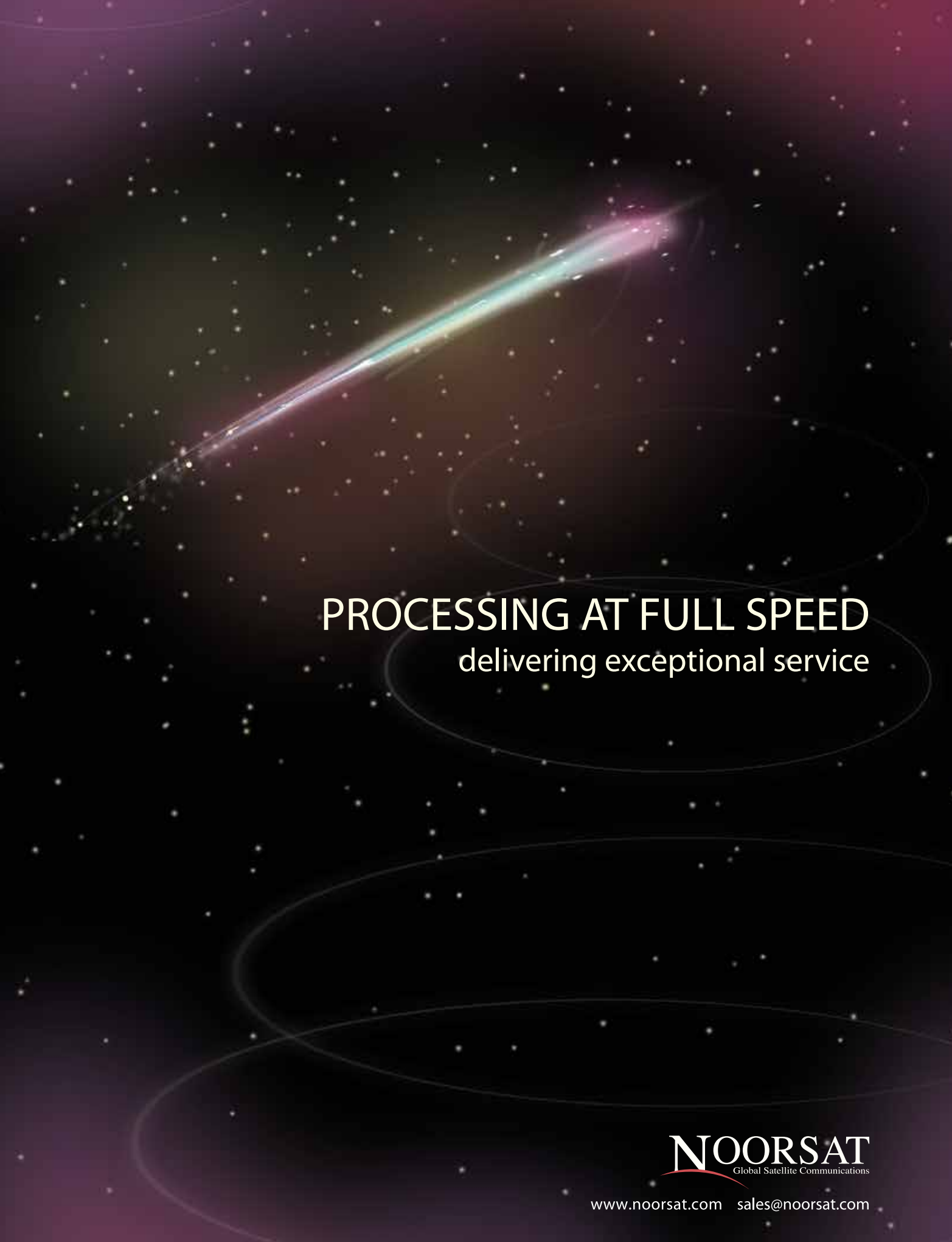
Buechler explains that 20 years ago, Africa was a fibre desert. Today, fibre is widely deployed across the continent, with VSAT now not required. He thinks, however, that VSAT services can be complementary to fibre.

The second challenge comes from mobile phone usage. The success story of the mobile phone industry and specifically the mobile data sector of the industry has hit the VSAT market. Increasing bandwidth through the use of LTE, 4G, 3G and even 2G has required increasingly more bandwidth. The financial gains of this success have been invested in fibre to rural areas, at the cost of VSAT deployment.

"We see VSAT as being very complementary to fibre. Talia provides services to fibre providers where they have no coverage. Talia provides VSAT as a backup to fibre in case of fibre failure. Talia is still able to deploy VSAT services much faster than it takes to dig a fibre trench, install and commission such a service. Typically Talia will install a VSAT within 24 hours. VSAT equipment and the bandwidth associated with it has been falling in price over the past 20 years. This still makes it a viable alternative to some other technologies. There is of course an ever growing demand for VSAT where no direct connectivity is possible, including planes, trains and vehicles," concludes Beuchler. PRO


Paradigm Connect 100T GX Terminal.


Ulf Sandberg, Managing Director of Paradigm.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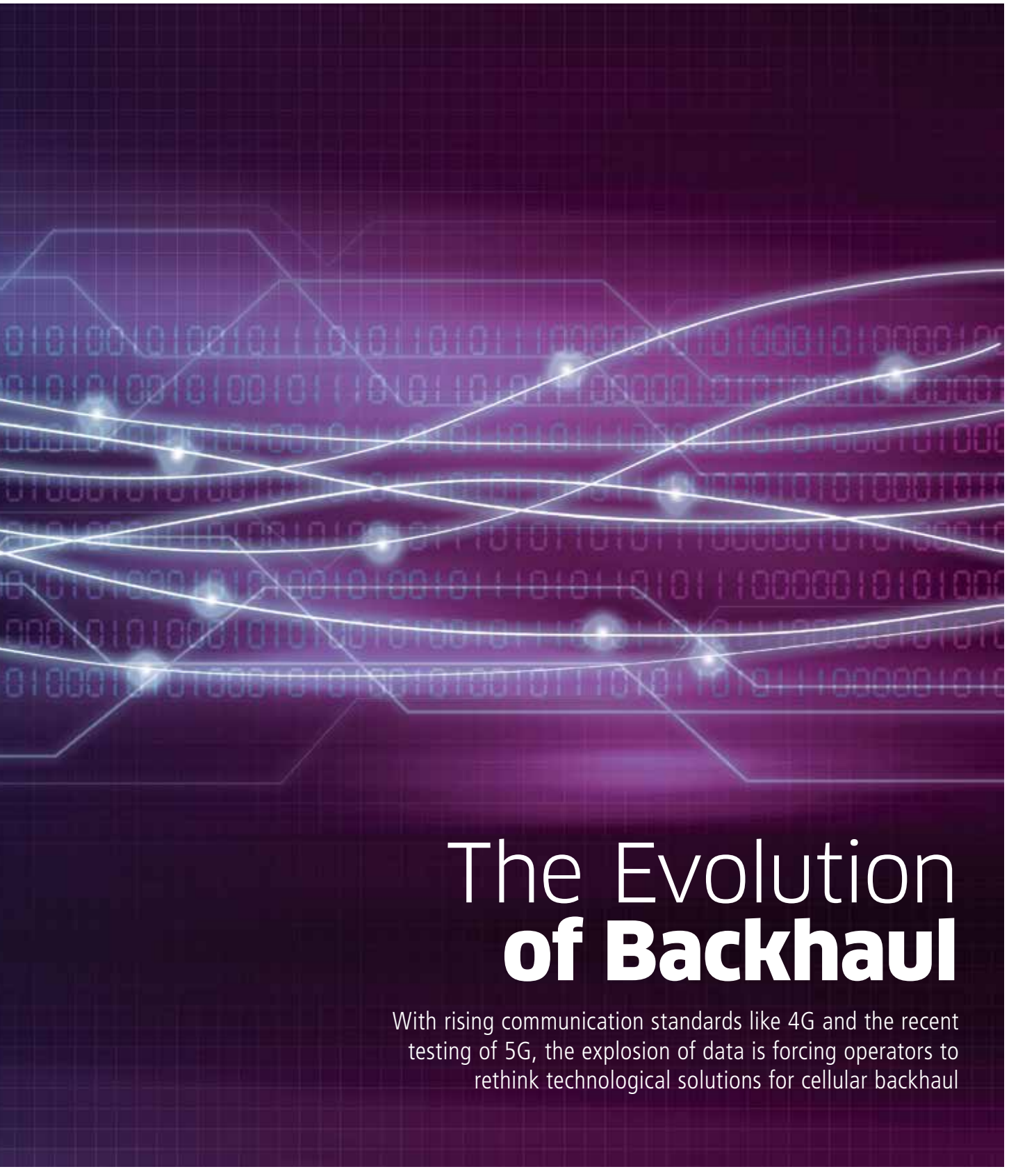

The Evolution **of Backhaul**

With rising communication standards like 4G and the recent testing of 5G, the explosion of data is forcing operators to rethink technological solutions for cellular backhaul

Semir Hassanaly, Market Director, Cellular Backhaul and Trunking, Newtec.

Hussein Oteifa, GM, Commercial , SES Middle East.

The rise of data over mobile has spurred the adoption of higher communications standards such as 4G/LTE. Even though these standards have not yet been implemented everywhere, they will soon enter new markets, and standards with even higher capacity like 5G and beyond will follow. Moreover, advances in HTS have slashed bandwidth costs by up to 70%, creating a cost-effective alternative for delivering broadband while reducing OPEX.

Semir Hassanaly, Market Director for Cellular Backhaul and Trunking at Newtec, says that backhaul through satellite has traditionally expanded in rural and remote areas in emerging markets, where the availability of devices and affordability of cellular communications are important limiting factors.

However, the growth of data spurred by the availability of 3G and 4G technologies, newer smartphones and the explosion of social networking are creating significant traction in those regions as well. The enhanced user experience possible with 4G over satellite is no stranger to this shift. Consequently, the landscape for mobile backhaul through satellite is changing significantly, with technology helping to provide affordable, quality mobile data services.

The increase in mobile data traffic is set to continue, with the Middle East and Africa leading growth. According to Cisco, the MEA region will have the strongest mobile data traffic growth of any region, with 72% compound annual growth rate (CAGR) through 2019.

"The growing data traffic has led to increasing demand for higher transmission efficiencies. When advancements in satellite technology such as high-throughput satellites (HTS) are factored in, it is clear that the way mobile operators assess the viability of satellite as an option for cellular backhaul has been completely turned on its head. Satellite-facilitated cellular backhaul, with the aid of advancements in satellite technology such as HTS, is now one of the most cost-efficient options available to mobile operators," says Hussein Oteifa, GM, Commercial at SES Middle East.

"In order to fully optimise the increased bandwidth brought about by HTS, we recently launched SES Plus, our new satellite data network. Our first Plus product, Enterprise+ Broadband, was launched across five markets in Africa in November 2015"

HUSSEIN OTEIFA, GM, Commercial at SES Middle East

Oscar Garcia, Senior Vice President, Business Marketing at Etisalat UAE, says that as an incumbent telco operator, Etisalat has to keep up with local technology trends. Many customers who were just using conventional GSM voice services and 2G services for SCADA-type applications are now demanding 3G and 4G services, due to an increase in bandwidth demand on the applications.

"We specifically see a strong demand coming from the oil and gas vertical in the region, where OPCOs are moving their services to clouds and automated solutions. Offshore sites which are already covered by mobile voice services are now demanding high throughput data services on mobile, extended through the same channels.

"We constantly have to evolve to keep up

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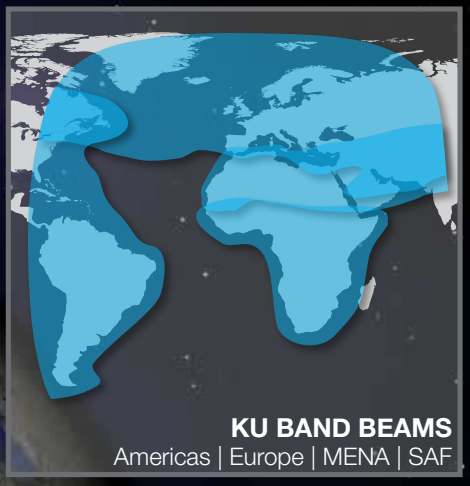

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Satellite rendition courtesy of the Boeing Company

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with customer demand in the market, and to do that we are constantly upgrading our platforms and looking at new compression techniques that can be introduced over satellite links. We are also looking at new vendors and technology that is available in the market that could help us use bandwidth more efficiently, and reduce the overall TCO for our customers. On top of this, we have to make our offering competitive, to ensure that the customer is not breaking the bank to subscribe to essential services," explains Garcia.

Backhaul services traditionally have been used primarily by fixed and wireless telecoms and ISPs, as a readily available means to connect remote sites at the edge of a network to a base station, to provide national network connectivity, and as backup for a terrestrial network.

The largest markets for cellular backhaul are developing regions in Asia, Latin America and Sub-Saharan Africa. Governments in Oman and Egypt are also accelerating the national rollout of terrestrial networks in order to fulfil universal service obligations. Mobile operators are turning to satellite operators to ensure that they provide 100% coverage over the country, especially over remote and inaccessible parts of these countries.

Mobile network operators (MNOs) are the largest customers of backhaul capacity in Latin American markets, as they procure capacity directly from satellite operators, says Oteifa. However, in the Middle East and Africa, VSAT service providers and third-party technology providers are the largest customer segment, as MNOs often outsource mobile tower management.

Jean-Philippe Gillet, VP, EMEA Sales at Intelsat, thinks the introduction of HTS will be a major game changer in the backhaul market; costs for bandwidth will fall and performance will be enhanced.

"Intelsat Epic^{NG} has the potential to significantly reduce the cost per bit for our customers. For example, advances in ground equipment that we are driving means base stations that can access the improved performance delivered by Intelsat EpicNG can be set up more quickly and easily. And by cutting the amount of power required to operate these stations, including developing solar-powered options, reliability will increase while cost will be reduced. These improvements mean wireless network providers can focus investment dollars on developing new services and applications rather than on their network."

Oscar Garcia, Senior Vice President, Business Marketing, Etisalat, UAE.

"We have to ensure that there is a positive commercial impact for our customers in terms of Etisalat offering a better VSAT service at cheaper pricing and reducing the overall TCO for our customers"

OSCAR GARCIA, Senior Vice President, Business Marketing, Etisalat, UAE

Garcia agrees, saying HTS will have a huge impact on the overall pricing to the end user, and that it is only a proportion of the overall cost of the conventional band for the satellite space segment.

"There are two things we have to consider as an operator. One is the investment in updating our back-end platforms to support HTS. This may not require upgrading our antenna arrays and the uplink chain. However, the actual platforms that will be utilised to extend HTS services will be required at our teleports, and there is a huge investment that would go into that area. Etisalat is already part of certain initiatives by leading vendors where we have already deployed these test platforms at our teleport, and we are already testing the platforms with our vendors to ensure once HTS coverage is available over the region, we will be ready to extend these services.

"In parallel, we have to ensure that there is a positive commercial impact for our customers in terms of Etisalat offering a better VSAT service at cheaper pricing and reducing the overall TCO for our customers," adds Garcia.

Oteifa of SES says that for mobile operators looking to grow their subscriber base in either sparsely populated rural areas or geographically challenging terrain, satellite offers the most attractive solution. HTS is not only transforming the business of cellular backhaul, but the increase in bandwidth capacity is lowering the cost of transmission dramatically, allowing customers to not only enjoy cost savings but also explore innovative new business opportunities.

"In order to fully optimise the increased bandwidth brought about by HTS, we recently launched SES Plus, our new satellite data network. Our first Plus product, Enterprise+ Broadband, was launched across five markets in Africa in November 2015. The plug-and-play offering allows service providers to tap into our HTS capacity while lowering their CAPEX investment. With up to 1Gbps connectivity and 99.5% service availability, Enterprise+ is a competitively priced flexible connectivity platform with pay-as-you-go options to ensure the service can go live quickly. We are also looking at rolling out Plus products across other market segments such as aeronautical, maritime and government in the near future," says Oteifa.

There are many challenges in backhaul.

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The world of mobile has always been fast evolving, with huge investments at stake. Hassanaly explains that competition is fierce, with often more than four mobile operators fighting for the same markets. Profitability is hence challenged. Many mobile operators have looked into outsourcing their operations and selling their towers in order to focus on their core business, which is selling voice and data plans.

Manufacturers have to be creative in proposing financing and revenue sharing options, in order to win the business and allow mobile operators to upgrade their infrastructure so as to cope with increasing subscriber needs. There is therefore a big impact on satellite backhaul: it has to be extremely efficient in order to save bandwidth through spectral efficiency and dynamic bandwidth features, preserve quality of service, and provide quality of experience in order to alleviate the inherent satellite delay.

Gillet says: "The main challenge is that wireless network operators are in a constrained OPEX and CAPEX environment and delaying or reducing the scope of planned network expansion projects. But they are still seeking ways to serve their end users. They need infrastructure options that don't result in large CAPEX commitments today – or in 10 years as demand grows. Satellite operators offering a closed solution in which they dictate the hardware that must be used are at a disadvantage. Improved efficiency, backwards compatibility and open architecture gives wireless network operators more choice as they evolve their infrastructure, increasing ARPU while also having the ability to address changes in demand."

Innovations being made today in orbit and on the ground are addressing these challenges. HTS solutions will meet the needs of wireless network operators, and Intelsat EpicNG is unique due to an architecture that enables the incorporation of HTS into operations seamlessly without having to change equipment. Intelsat EpicNG also features a digital payload that allows connectivity in any bandwidth increment and from any beam to any beam.

Jean-Philippe Gillet, VP, EMEA Sales, Intelsat.

"For a wireless network operator with an established, successful C-band business, they can integrate high-powered Ku-band spot beams from the existing C-band"

JEAN-PHILIPPE GILLET, VP, EMEA Sales, Intelsat.

"For customers integrating HTS, this means uplinks and downlinks can be connected regardless of location within the footprint. For a wireless network operator with an established, successful C-band business, they can integrate high-powered Ku-band spot beams from the existing C-band hub into the network, to maintain service quality for customers operating in areas of high demand. Intelsat 33E, which will cover the EMEA region, is scheduled for launch in Q3 of 2016, and because Intelsat EpicNG is backward compatible, customers can start rolling out upgrades now," concludes Gillet. PRO

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Passing the **torch**

On March 1st, Eutelsat's Michel de Rosen handed the reins to his successor Rodolphe Belmer who is now the new CEO of the global satellite operator. In an exclusive interview with *Clayton Vallabhan*, Michel de Rosen speaks about his six-years at Eutelsat

Rodolphe Belmer, CEO, Eutelsat.

"Eutelsat has been present in the MENA region for 25 years. Our focus on broadcasting in the region really shifted gear 10 years ago with tailor-made satellites and the transformation with Nilesat of the 7/8° West video neighbourhood. Today, over 52 million homes in North Africa and the Middle East are equipped for reception of more than 1,200 Arabic and international channels broadcast at this key neighbourhood. In addition to steady investments, we opened an office in Dubai to be near our customers and keep our finger on the pulse of trends in the Middle East"

MICHEL DE ROSEN, Chairman, Eutelsat

***SatellitePro ME*: What were the key highlights for Eutelsat in 2015?**
de Rosen: 2015 reached a climax in the summer, with the launch of our EUTELSAT 8 West B satellite, a new star for broadcasters in the Middle East and North Africa. Launched on August 20, this satellite is a high-performance platform for regional broadcasters in the MENA region, particularly in the context of increased take-up of HD and the emergence of Ultra HD. Eighty channels were added onto the new satellite on the heels of its launch, making it quite a success story. Hitting the milestone of over 6,000 TV channels across our global fleet is also a source of great pride for Eutelsat. We continue to consolidate our position as a premium operator for the global broadcasting industry and are contributing to shaping the video ecosystem of the future, including with new solutions delivering interactivity.

***SatellitePro ME:* TV is still the lion's share of Eutelsat's activities. What are your key activities in the MENA region?**
de Rosen: Eutelsat has been present in the MENA region for 25 years. Our focus on broadcasting in the region really shifted gear 10 years ago with tailor-made satellites and the transformation with Nilesat of the 7/8° West video neighbourhood. Today, over 52 million homes in North Africa and the Middle East are equipped for reception of more than 1,200 Arabic and international channels broadcast at this key neighbourhood. In addition to steady investments, we opened an office in Dubai to be near our customers and keep our finger on the pulse of trends in the Middle East. One clear trend we are witnessing is increasing consumer appetite for improved image quality. More and more channels are catching the HD train that will soon be followed by Ultra HD.

Another issue of paramount importance is combatting TV piracy. Piracy impacts all stakeholders in the region and causes heavy losses to the industry and the economy. As a member of the MENA Anti-Piracy Coalition we are part of an industry effort to address all forms of piracy that impact the sector. Many of our customers and partners are collaborating

Eutelsat 8 West B.

in this group to raise awareness about piracy and its effect on the TV industry.

SatellitePro ME: **Eutelsat announced that it has sealed a deal with Facebook? What should we expect from the new venture that you are taking up with this giant web company?**
de Rosen: Broadband enables users to reap full personal and professional benefit from the Internet, including emailing web-browsing, downloading, videostreaming, teleconferencing etc. All these applications can be difficult or impossible to run with classic low-speed connections, as is the case in Africa. The agreement we have with Facebook is to share the broadband capacity on a satellite to be launched in a few months. For Eutelsat, the capacity will enable us to focus on serving small and medium companies as well as high-end individual users in Africa. For Facebook, this satellite capacity represents a technology investment to enable cost-effective broadband access to unconnected populations. Facebook plans to work with local partners across Africa to utilise satellite and terrestrial capacity to deliver services to rural areas. This agreement has given a lot of visibility to satellite and to the particular relevance of geostationary satellites in the global broadband map including to Silicon Valley companies. Beyond the deal with Facebook, we are also investing in a dedicated High Throughput Satellite to be launched in 2019 that will provide broader coverage of entire sub-Saharan Africa,

SatellitePro ME: **Do you see broadband as a long-term opportunity?**
de Rosen: In terms of momentum, this is the application in the satellite market that will grow the most over the coming ten years. Why is that? Firstly, demand is absolutely huge. Every human being wants to be connected and billions are still waiting. 160 million Africans are connected to the Internet today, a figure expected to rise to 600 million by 2020. Satellite won't serve all this growth, but it will have a share, combined with other technologies. In terms of supply, High Throughput Satellites are transforming the competitiveness of satellite broadband and they are getting more powerful and more flexible. They can keep up proudly with terrestrial infrastructure and will be vital for ensuring that we can build inclusive digital societies.

SatellitePro ME: **How is the 'New Space', in other words the LEO and MEO systems, changing the dynamics of the industry?**
de Rosen: We are closely monitoring the LEO world. We declined last year to invest in the OneWeb initiative as we considered the risks were too high and that we would not be able to create shareholder value.

We believe that geostationary satellites hold tonnes of opportunities in broadband, video, IoT, government services and other applications. Significant advances have been made over the last five years, with a new high water mark last year with the order of the Eutelsat Quantum software-driven satellite. With the significantly reduced cost per megabit afforded by the next generation of High Throughput Satellites, operators will be able to reach many more users, both with consumer and enterprise profiles. I think it would be a huge mistake to define 'new space' as LEO, and paint GEO with an 'old space' brush. New space is GEO, LEO and MEO and innovation can be found in more than one orbit! PRO

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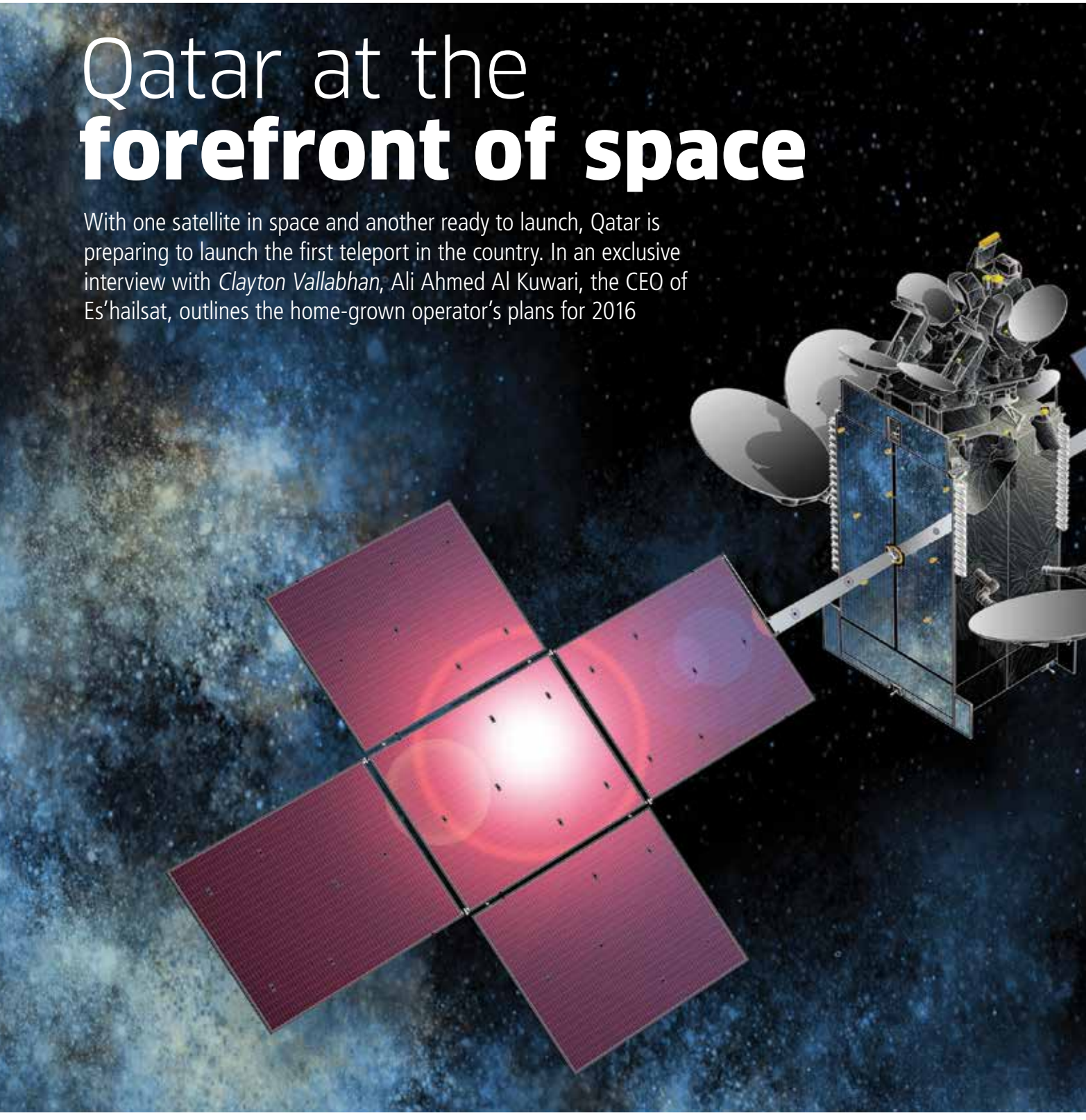
Qatar at the **forefront of space**

With one satellite in space and another ready to launch, Qatar is preparing to launch the first teleport in the country. In an exclusive interview with *Clayton Vallabhan*, Ali Ahmed Al Kuwari, the CEO of Es'hailsat, outlines the home-grown operator's plans for 2016



Qatar's first satellite, Es'hail 1.

The satellite sector in Qatar has been growing steadily since the birth of Es'hailsat in 2010, which meant less dependence on the other satellite operators traditionally serving the market. Moreover, with large TV conglomerates like Al Jazeera and beIN having Qatari interests, it was only natural for the country to invest in building its own satellite, and more recently a teleport.

Qatar is constructing its own teleport on a 50,000sqm site north of Doha. Given the enormous size of the project, it is split into multiple phases with construction of the technical buildings for telemetry, tracking and command (TT&C) and hub services to be completed by Q1 2016. Fit-out with systems and equipment for the technical building is to commence immediately after.

Phase 1 of the construction also includes redundant and diverse fibre connectivity to major broadcast networks in Qatar and to the international fibre gateway. The teleport will be ready to support services for customers as early as the middle of 2016. Phases 2 and 3 of the project will include a corporate office, an antenna farm and a support building for customers, which will be completed by early 2017.

The new teleport will be a state-of-the-art facility providing capacity management and a wide range of services such as uplink, downlink, contribution, multiplexing, encoding, playout and broadcasting, tailored for customers and business partners. The teleport will also provide back-up studios for TV channels and serve as a disaster recovery facility for broadcasters. The site will be

"Our goal is to contribute to the development of a knowledge-based economy and a communications-based society in Qatar"

ALI AHMED AL KUWARI, CEO, Es'hailsat

connected to the key media broadcasters in Qatar and to the international fibre gateway by means of a redundant, dedicated and diverse fibre optic link.

Ali Ahmed Al Kuwari, CEO of Es'hailsat, says that besides building satellites and a teleport, it is really important to grow the local space industry in Qatar.

"Our goal is to contribute to the development of a knowledge-based economy and a communications-based society in Qatar. In addition to building the communications infrastructure, we are also investing in and developing local talent through training programmes with satellite manufacturers and providing scholarships for students to study satellite communications. In 2013, we initiated a capacity-building and development programme with our first satellite, Es'hail-1. Four engineers from Es'hailsat completed a 26-month intensive training programme with SSL in California, designed to provide the engineering staff with the ability to specify, oversee the manufacture of, launch and operate commercial communications satellites.

"We have continued this programme for Es'hail-2 with our trainee engineers at Mitsubishi Electric Company (MELCO) in Japan. In addition, we have sponsored a number of Qatari students who have enrolled in degrees specialising in satellite communications at the University of Surrey in the UK. Having satellite knowledge and operational experience plays a vital role in greater self-reliance and therefore sustainability of the space industry in Qatar," says Al Kuwari.

Ali Ahmed Al Kuwari, CEO, Es'hailsat.

"We have sponsored a number of Qatari students who have enrolled in degrees specialising in satellite communications at the University of Surrey in the UK"

ALI AHMED AL KUWARI, CEO, Es'hailsat

Furthermore, Es'hailsat has been conducting educational outreach programmes throughout 2015 by taking Es'hailSat Ambassadors out to a number of schools in Doha to tell the story of Qatar's first satellite. Students can hear what it takes to design, build and put a satellite into space and learn how important satellite networks are for everyday life.

As for Es'hail 1, Al Kuwari says it continues to go from strength to strength, demonstrating the value of the operator's offering in terms of technical capabilities and performance, but also in terms of independence and security of content.

"In addition to providing transmission for established news, sports and entertainment channels, a growing number of Arabic channels are choosing Es'hailSat to launch in the MENA region. Qatari cultural channel Al Rayyan and Al Araby Television Network, a London-based platform for Arab youth, talent, energy and aspirations, both recently launched HD channels exclusively on Es'hail-1."

With subscriber growth of 34% since starting transmission on Es'hail-1,

Es'hailsat educating students about the future of space technology.

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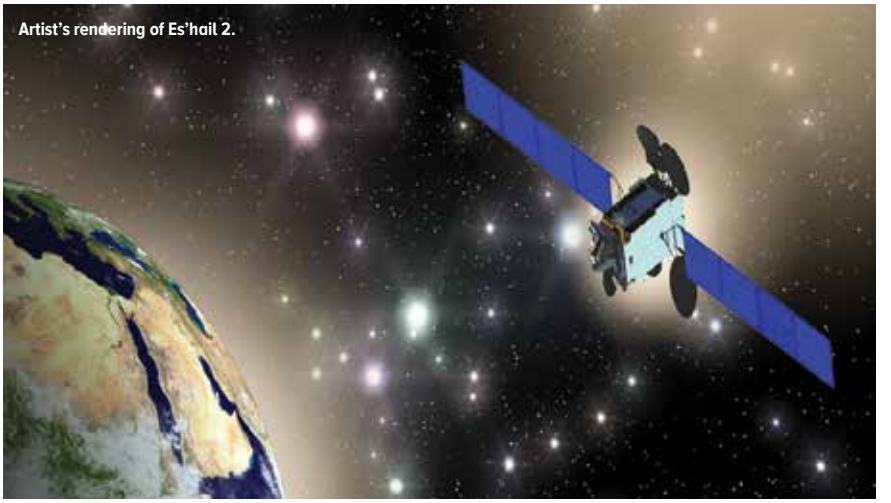
BeIN Sports recently launched new HD entertainment channels, seeking to diversify and expand its audience with new content including film, entertainment and travel, lifestyle, kids and documentary programming. Al Jazeera too has commenced transmission of a new bouquet of HD channels on Es'hail-1, making 25.5-degrees East truly a hotspot for quality.

The operator has also recently begun trialling VSAT services. Commercial rollout will commence soon, and a number of customers are in the final technical evaluation stages. Es'hailsat hopes to finalise the details and roll out these services throughout 2016. The bandwidths being considered are from 4Mbps/2Mbps to 140Mbps/6Mbps.

"We recently announced a major development and collaboration agreement with Ooredoo that allows both companies to work together on a range of new satellite and world-class communications services for Qatar. Demand for VSAT services has risen sharply in recent years, particularly in remote locations such as deserts and coastal areas. Our partnership with Ooredoo helps drive home-grown innovation and stimulate the development of a full portfolio of solutions to support VSAT business," says Al Kuwari.

Es'hailsat has been seeing a growing demand for Ka-band services across the MENA region, especially in hub-based solutions and mobility services. In 2015, it developed a Ka-band hub in Doha which provides flexibility to service providers, allowing them to choose a style of engagement and commitment to suit their business needs.

Through the hub's high-tech infrastructure, managed service providers (MSPs) can provide telecom solutions that support a range of satellite-based data communications applications, ensuring their customers benefit from flexible and efficient technologies providing higher compression with lower latency, as well as encryption, WAN optimisation and bandwidth optimisation for OPEX savings. The main services provided by the new Es'hailSat hub are internet services, VoIP services and corporate network connectivity.



Artist's rendering of Es'hail 2.

Es'hailsat signing a contract with Ooredoo for VSAT services in the country.

Es'hailsat is also on its way to additional premium satellite capacity in MENA, with the expansion of its fleet of satellites. Es'hail-2, a second high-powered, advanced satellite, will continue to boost broadband delivery, broadcasting and global connectivity for Qatar, the entire MENA region and beyond. In August 2015, Es'hail-2 completed a significant milestone – Critical Design Review (CDR) – permitting the spacecraft to move into the assembly phase and remain on schedule for a Q4 2016 launch.

"Demand for VSAT services has risen sharply in recent years, particularly in remote locations such as deserts and coastal areas"

ALI AHMED AL KUWARI, CEO, Es'hailsat

"Passing CDR validated that Es'hail-2 will meet our requirements and perform as expected for our customers and stakeholders. Es'hail-2 will provide high-quality, premium DTH content across the Middle East and North Africa from the 26-degrees East TV hotspot," explains Al Kuwari.

"Es'hail-2 is a high-powered, advanced satellite with both Ku-band and Ka-band capabilities to provide TV distribution, telecoms and government services. The satellite footprint covers the Middle East

Signing the contract for the launch of Es'hail 2 with SpaceX.

and North Africa and will be positioned at the 26-degrees East hotspot location. Es'hail-2 will have a payload of 20 Ku-band transponders and 12 Ka-band transponders with fixed spot beams."

Es'hail-2 will provide continuity and expansion services for anchor broadcast customers on Es'hail-1, such as beIN SPORTS and Al Jazeera Media Services. In addition, Al Kuwari says a number of MENA broadcasters and communications providers have expressed interest in Es'hail-2 capacity; the operator will be announcing these nearer the launch. To support Qatari national interests, Es'hailsat will also be supporting capacity and service requirements for Qatar's government agencies.

As secure transmissions continue to be of paramount importance in MENA, Es'hailSat is working closely with the IRG (Interference Reduction Group), underlining its commitment to reduce and eliminate satellite interference and provide a secure transmission network for customers.

"Passing CDR validated that Es'hail-2 will meet our requirements and perform as expected for our customers and stakeholders"

ALI AHMED AL KUWARI, CEO, Es'hailsat.

The IRG has a number of accomplishments, including the widespread adoption of Carrier ID in time for the 2012 Olympics, resulting in satellite operators achieving interference-free Olympics transmission. With Qatar hosting the 2022 World Cup, the operator encourages its customers to use Carrier ID as part of the cooperation within the IRG community.

Both Es'hail-1 and Es'hail-2, scheduled for launch in 2016, have been designed with advanced anti-jamming capabilities to meet the needs of the MENA market.

With the country abuzz with all these developments, the main aim remains to raise general awareness of the field of space and satellite communications and to promote and foster space technology development in Qatar. PRO

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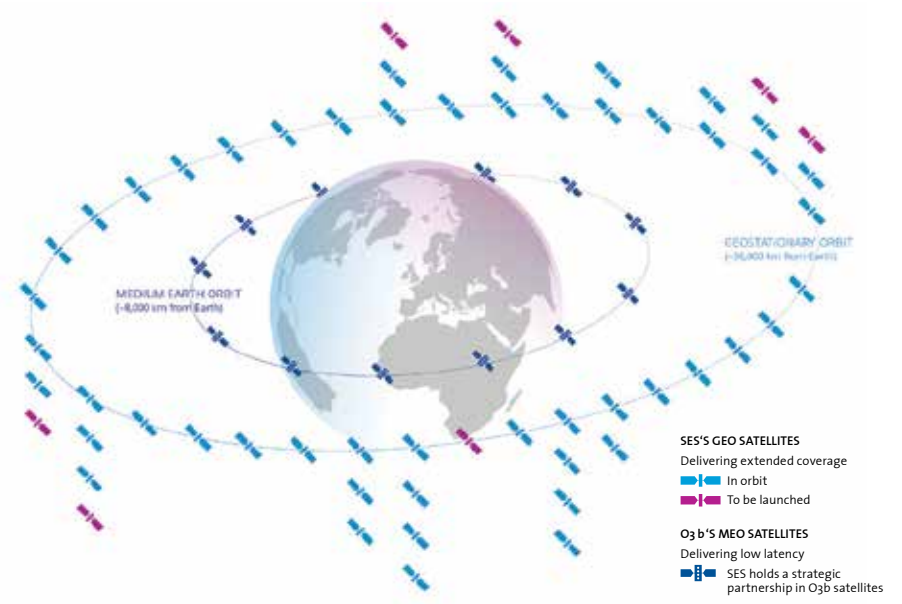
GEO and MEO – A complementary constellation

SES and O3b Networks offer an essential advantage to customers with a complementary satellite constellation

Space is a crowded place, some say, and the closer you look from Earth the more crowded it might appear.

A cluster of more than 1,000 satellites orbits at several hundred kilometres above Earth's surface in the so-called Low Earth Orbit (LEO). They serve the weather and earth observation tasks, and fulfil multiple purposes, from private and civil to research and military applications. The International Space Station (ISS) – close to 400 kilometres – and the Hubble telescope – our eye into deep space at 559 kilometres – are amongst these LEOs. O3b'S MEO SATELLITES

Delivering low latency SES holds a strategic partnership in O3b satellites There are thousands and thousands of kilometres to go through before encountering the Medium Earth Orbit (MEO), at 8,000 kilometres. Beyond that, the next sign of civilisation is far above, at 36,000 kilometres: the Geostationary Orbit (GEO), the second-most populated orbit after LEO. At GEO, there are over 400 large satellites in operation, travelling around the Earth at a speed of about three kilometres per second and thus appearing to be stationary from the Earth.



THE POWER OF GEO

The beauty of a GEO satellite lies in its ability to provide coverage over one third of the Earth's surface and to cost-effectively connect people and places. The success of SES is based on this. Providing coverage for entire continents and countries, SES's GEO satellites are perfect for broadcasting high-quality linear TV to millions of households, in HD and Ultra HD. From distributing live opera or pop music events to delivering breaking news or important global sporting events, GEO satellites such as the SES fleet are the ideal infrastructure to deliver content at an optimal cost.

Broadband connectivity via GEO satellites empowers communities in less-developed parts of the world, opening up new doors of knowledge that lead to economic development. They link multiple corporate sites worldwide, allowing thousands of employees working in remote offices to remain connected via broadband access and Voice over IP. They also, for example, connect oil and gas terminals, enable real-time monitoring of maritime wind-farms, and securely link banking terminals.

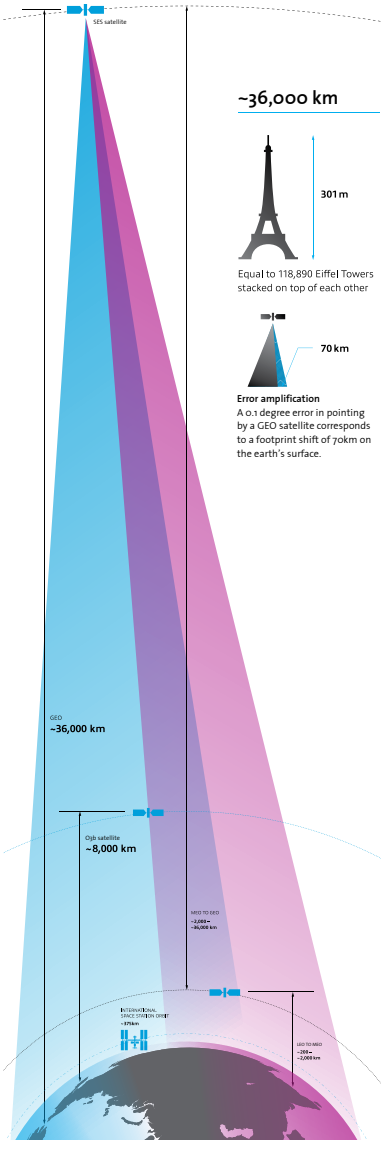
GEO satellites are further enhanced by an innovative satellite technology called High Throughput Satellite (HTS).

This concept sees a concentration of satellite power onto smaller, focused beams so that the satellite can increase power levels and data throughput. Since the same spectrum can be reused in beams that do not overlap, the amount of capacity that the satellite can carry increases significantly, hence improving the pricing for the capacity.

Satellite signals travel at the speed of light. A signal from a GEO satellite would

therefore take a quarter of a second for an up- and downlink – and twice as much for a two-way interactive exchange. This is a fraction of a second – a fraction, nevertheless. For large-scale TV coverage, this tiny delay is irrelevant. GEO satellites therefore offer powerful downstream connectivity for video and data transmission.

For time-sensitive applications, however, such as trading and banking, virtual desktops and medical imaging, where real-time or close to real-time transmission is crucial, this latency can affect applications' functionality. In these cases, satellite also has to be as fast as fibre. Fibre in the sky.



O3B NETWORKS: A STAR IS BORN

This is where the third orbit comes into play: the MEO. Less than one quarter the altitude of the GEO orbit, MEO reduces round trip latency from 250 to 60 milliseconds and thus delivers similar performance to fibre.

The terrific idea came to fruition in the autumn of 2007 when O3b Networks was founded. A unique new venture to offer high-speed connectivity from space: O3b's high throughput of up to 1.6 Gbps per transponder and low latency delivers fibrelike broadband to a wide range of customers and industries, ranging from ISPs, telcos and enterprises to government customers, in the emerging markets of the world. O3b operates a constellation of 12 mid-size satellites today, manufactured by Thales Alenia Space.

At its lower orbit, the O3b constellation moves faster than the Earth's rotation. MEO satellites are therefore not stationary to our eye and reception devices on Earth. Rising in the west, they pass overhead to disappear over the eastern horizon in a 360-minute cycle. Antennas on the ground track O3b satellites and hand over communications seamlessly from one satellite to the next.

Lower latency means that bits transit the system quickly, therefore supporting business applications that are latency sensitive. The close proximity to Earth also allows O3b to concentrate more power on its small beams. These beams can be easily repointed to cover new areas, hence offering flexibility to the markets.

The roaring success of O3b proves that the MEO satellites are driving a new era of connectivity. O3b already serves over 40 customers and has recently closed deals with some of the world's largest telcos. It has quickly become the largest operator in the Pacific Islands and has enabled eight mobile network operators to launch 3G and 4G mobile services. It serves blue chip customers like Shell, Royal Caribbean and Digicel. And even the military is interested: O3b is also working with SES's US Government Solutions unit, which serves the US military.

KEY FEATURES OF GEO AND MEO SATELLITES

	SES's HTS payloads	O3b's HTS satellites
High throughput	•	•
Low latency		•
Lower cost per bit	•	•
Flexibility	•	•
Bandwidth optimisation	•	•
Extended coverage	•	•

BROADER PORTFOLIO OF SOLUTIONS

	GEO Widebeam	GEO HTS	MEO (O3b)
Broadcast	•	•	
Enterprise VSAT	•	•	
Consumer Broadband		•	
Mobile Backhaul 2G	•	•	
Mobile Backhaul 3G/4G		•	•
Oil & Gas, Mining	•	•	•
Trunking	•		•
Aeronautical	•	•	
Maritime	•	•	•
Government	•	•	•

FORAY INTO NEW MARKETS: THE SMART SHIP

An impressive example of MEO satellite's new-found success is O3b's ability to serve the large cruise ships market.

At nearly 170,000 Gross Tonnes, a length of 350 metres and 18 decks, Quantum of the Seas is one of the largest vessels in the world and the home-away-from-home for almost 5,000 passengers.

The unique differentiator is an O3b beam which constantly follows this floating city as it sails through the oceans. O3b provides 300 times the transmission capacity of a standard cruise ship and delivers more bandwidth to Quantum than the whole of the cruise ship industry combined. With the massive bandwidth provided, passengers on-board the world's first "smart ship" are able to watch videos online, monitor their social media profiles, experience Xbox Live "blazingly fast" gaming and check their travel details, restaurants, on-board programmes and whereabouts of their luggage.

A new travel experience is born, and with it a new paradigm and an emerging, vibrant market. From now on, any cruise ship operator which wants to differentiate itself has to consider offering at least the same fibre-like connectivity.

And this is only the tip of the iceberg.

With the massive increase in connected and mobile devices foreseen over the next years, high speed connectivity with unbeatable efficiency is of paramount importance.

Ericsson says that by 2020, the world's population will use 24 billion connected

devices, with 6.1 billion smart-phone connections. Most experts see this resulting in an enormous demand for connected solutions in the automotive, health, consumer electronics and utilities areas which will eventually drive the revenue of mobile phone operators up to US$1.2 trillion.

SES SUPPLIES GEO AND MEO

In these highly contested new markets, the GEO-MEO combination gives SES an enormous advantage and a unique selling point.

Customers need to deliver connectivity to remotely scattered communities and, at the same time, provide massive bandwidth to more populated areas. They therefore need network architectures that correspond to both and cater efficiently to their diverse needs and the different characteristics of their offers, in terms of density, consumption, stability and mobility of their services.

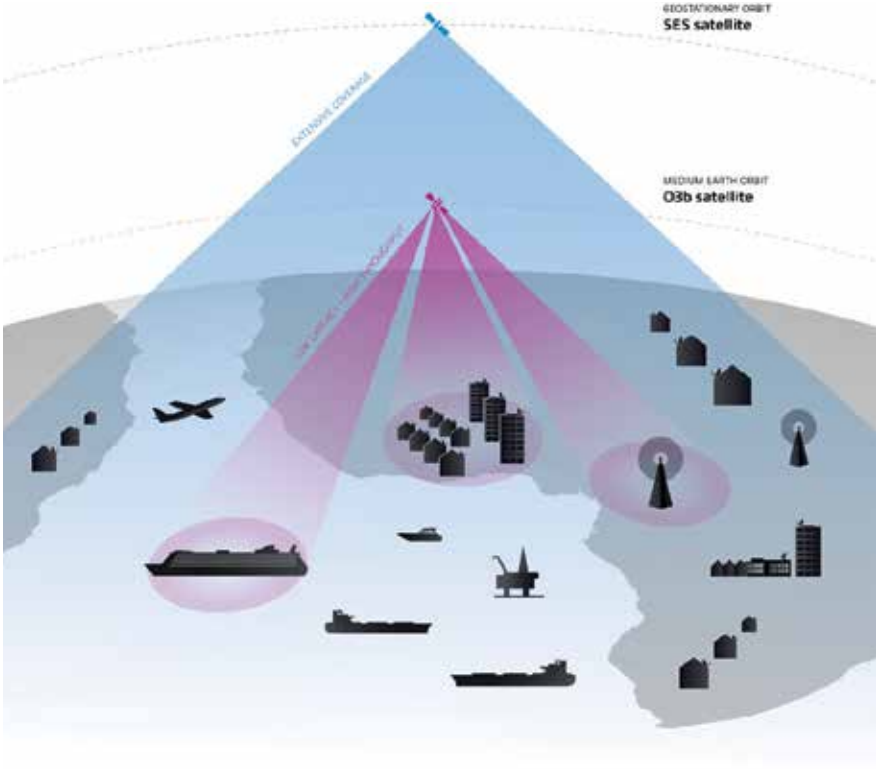
The combination of GEO widebeams, GEO high throughput beams and MEO high throughput and low latency spot beams covers wide footprints and focused regions simultaneously. This makes it an ideal proposition for customers to develop entirely scalable, versatile and hyper-efficient network topologies. The pairing could even pre-empt the customers' needs and give them a competitive edge that has never been possible before.

JUMPING ON THE GEO-MEO BANDWAGON

Smart first movers around the world are therefore jumping on the GEO-MEO bandwagon. One example is Jamaica-based telco network Digicel which

is providing communications to Nauru, Fiji, Tonga, American Samoa, Vanuatu and Papua New Guinea.

Digicel uses SES's reliable and comprehensive C-band beams to deliver regional connectivity across the Pacific Islands, but also taps into O3b's low-latency spot-beams to deliver fibre-like connectivity to more populous locations within Digicel's networks. In PNG, demand for O3b capacity originally rolled-out in July 2014 has quadrupled to almost 2Gbps – such is the appetite for broadband connectivity. Digicel's increasing demand for capacity clearly demonstrates the benefits of a combined GEO and MEO solution.



Then there's Democratic Republic of Congo (DRC) in Africa,a country of more than 70 million people, including 10 million in the capital city of Kinshasa. In the land-locked country, 500 Mbps of low-latency MEO capacity is used for delivering high-speed broadband services mobile backhaul services to connect both urban and rural hubs, while GEO capacity remains essential in connecting remote offices with their headquarters in Kinshasa and delivering TV channels across the country.

In Timor-Leste, India-based Bharti is using both MEO and GEO to meet the increasing demand for better mobile networks. The low latency and massive throughput of the MEO satellite enables Bharti to roll out 2G mobile services and new 3G services, while GEO capacity is critical in ensuring seamless connectivity.

Easter Island has also benefited from the rollout of O3b connectivity. Leveraging on both GEO and MEO capacity, Easter Island's local population of 6,000 and average of 80,000 tourists per year have reliable and faster broadband access, and now enjoy 3G and 4G mobile services.

TRANSFORMING THE CONNECTED LANDSCAPE

These examples show how SES and O3b, through their GEO-MEO pairing, are enabling customers to develop solutions that were unheard of and inconceivable just a few years ago.

The perfectly complementary match between GEO and MEO satellites, the scalability and flexibility of the two fleets enable SES and O3b to effortlessly cater to enormous and growing future demands.

We are on the verge of witnessing a steep connectivity demand curve over the next years and decade. Satisfying the emerging needs of untapped or unconnected geographies and segments does not saturate these markets, but instead fuels further demand and creates exponential growth.

The combination of GEO and MEO fleets is a technological breakthrough that is transforming the connectivity landscape. The essential advantage of the combined offering is the key differentiator in delivering reliable and fast Next Generation Data services across many different sectors and geographies.

It opens up new horizons for SES, its customers and markets. PRO

Source: SES

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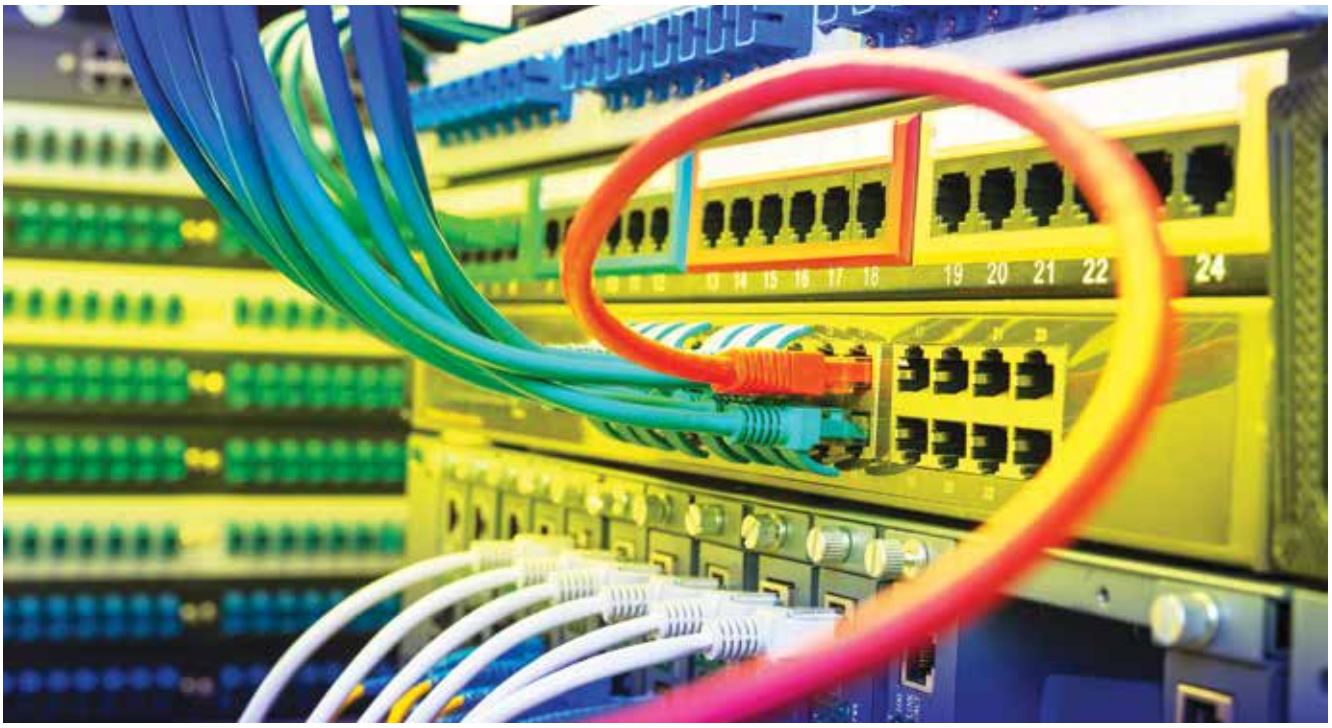

Remote broadcasting and IP

Remote broadcasting is leading to a transformation in the way broadcasts are handled including the ability to use IP circuits to carry television signals. The technology exists to deliver these signals so they arrive in synchronisation, with low latency and fewer buffering issues

PAC-12 is the broadcaster owned by a group of 12 large universities in the western United States. It covers all the college sports, and in a typical year broadcasts 850 live events.

What makes it unusual is that it does not use outside broadcast trucks. Small vans carry cameras and microphones to each location, together with small racks which convert each feed to an IP stream. These are carried over commodity IP circuits back to the broadcaster's headquarters in San Francisco, 2500km away from some of the venues.

At base there are three control rooms which are in almost constant use, swapping from sport to sport and venue to venue as the schedule demands. Directors and production teams stay in the comfort of their home base; camera operators and commentators travel to the venue to capture the excitement and the action.

"One of the visible benefits of remote production is the democratisation in coverage of sports which otherwise is rarely made affordable and practical by technology"

JOHN IVE, Director of technology and strategic insight at the IABM

High utilisation of expensive plant and reduced travel and accommodation costs lead to direct savings which PAC-12 estimates as $12k - $15k per event. For 850 matches a year, that is a staggering $12 million or more.

In 2014, VRT in Belgium was the rights holder for the FIFA World Cup, and wanted to create a sense of occasion around its coverage. It built a sports village in the centre of Brussels, including a temporary studio with room for a large audience. Rather than run hours of broadcasting from a truck, VRT decided to use standard enterprise IP circuits, plentiful in the city, to carry the 10 camera feeds, microphones, prompter links and talkback between the sports village and VRT's headquarters.

What has made this possible – and is

leading to a transformation in the way remote broadcasts are handled – is the ability to use IP circuits to carry television signals. The technology exists to deliver these signals in a deterministic way: they arrive in synchronisation, with low latency and few buffering issues.

In the past, contribution signals had to get back to broadcasters over dedicated circuits, either private wires (which were very expensive) or satellite links, which while being more flexible were also an additional layer of technology and cost. More recently, telcos have installed huge amounts of data capacity which is available at relatively low cost.

The gap was the huge reluctance of broadcasters to accept that IP circuits could provide the necessary resilience, security and low latency. These issues have now been largely overcome, with specialist technology providers like Nevion able to provide automated routing and switching between redundant paths fast enough to be invisible to the television viewer.

For high resilience contribution links it is common to use two completely independent physical paths for broadcast IP streams. Network management tools for broadcast content allow the two paths to be continually compared, allowing the receiver to switch packet-by-packet to the most robust signal. That gives latency with zero additional latency.

Once the video signal is encapsulated into IP packets it can be treated as any other network traffic, so it can be protected both by network security and by forward error correction, minimising the need to resend data which would also add latency. The technology to set up, monitor and manage IP networks is well proven by the telecoms industry, but it makes sense to put a broadcast-specific skin on the control layer, not least to give engineers confidence in the operation.

Geir Bryn-Jensen, CEO of Nevion, raises another advantage of IP circuits: you buy by the bandwidth not by the individual path, so you can make creative, technical and cost judgements on how to set up the service.

"In the digital age, there is no single definition of a 'broadcast quality' contribution link," he said. "For the most prestigious events you will not want to make any compromises and so would expect uncompressed HD (or more) from the venue to the broadcast centre. Other productions can happily accept a good mezzanine connection, and for yet another group more or less any signal is better than nothing."

IP contribution is now a standard technique. Even used with a conventional outside broadcast unit, it allows multiple feeds to be sent to the broadcaster, allowing packages to be edited back at base and to serve different audiences.

This is particularly useful where there are practical difficulties in providing a lot of technology and accommodation on location. The 2014 Winter Olympics in Sochi, Russia, is a good example. All equipment had to be trucked in to the inaccessible city, so many broadcasters – including the world's biggest Olympic broadcaster, NBC in the USA – edited content at their home bases. Editors could look into the servers in Sochi using browse resolution proxies, then just transfer the clips needed to conform the edits, minimising bandwidth requirements.

Also in 2014 the FIFA World Cup was held in Brazil, with extensive use of IP circuits for remote post production, and for multi-platform delivery. The peak streaming rate for online viewing was 6.9 terabytes a second (during the Argentina v Netherlands game): to meet this demand the streaming engines were cloud services provided by Amazon in Dublin, connected by high-speed IP circuits from Rio.

The football will have been used as a test-bed for the 2016 Olympics, also hosted by Rio. Many broadcasters will be looking to control costs by keeping post production staff in their home bases and drawing content from the Olympic broadcast centre via IP.

With widespread access to very big data bandwidths, either on private circuits or on bandwidth rented from telcos for the event, IP contribution is now simple and practical. Whether it is used to get a single feed back to base, multiple feeds for hybrid production or even to completely replace the outside broadcast truck is down to the preferences of the operator and the engineering team, and the economics and scale of the production.

John Ive, Director of technology and strategic insight at the IABM, summed it up: "Remote production may never be suitable for the biggest events, with 25 or more cameras. The cost of bandwidth begins to rival the cost of sending a truck.

"On the other hand, remote production makes it practical to cover niche sports, lower tier events and other content it would not normally be cost-effective to show. Sports channels can fill the schedule with live events, and more leagues and sports can be seen, building interest in them.

"Technology pundits sometimes talk about the democratisation brought about by the change in broadcast systems from bespoke hardware to software to services," he concluded. "One of the visible benefits of remote production is the democratisation in coverage of sports which otherwise is rarely made affordable and practical by technology." PRO

Source: CABSAT

John Ive, Director of technology and strategic insight at the IABM.


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What's hot at **CABSAT?**

This year promises to be the best CABSAT yet, with the heavyweights bringing their wares to the show and a lot of new companies attending, including M-Three Satcom, SMS Media China Satcom and IP Dish. The GVF Satellite Hub Summit will also draw on a list of respected speakers to discuss vital industry issues

GVF Satellite Hub Summit

The GVF Satellite Hub Summit at CABSAT 2016 will be presented over two days and will take place physically within the satellite area of the CABSAT exhibition, using a dedicated, purpose-built, centrally located and high-profile meetings facility. The Hub Summit will feature eight sessions, spanning 9th and 10th March. Two of these sessions from the first day are profiled here

From 1140 to 1315 the session 'Spectrum: Satellite and the Outcomes of the 2015 ITU World Radiocommunication Conference' will feature opening remarks from and discussion amongst the following distinguished panellists:

- Mitsuhiro Sakamoto, Head, Space Systems Coordination Division, Space Services Department, Radiocommunication Bureau, ITU
- Laith Hammad, Director, MENA, Access Partnership
- Patrick van Niftrik, Vice President, Spectrum Development, EMEA, SES
- Zahid Zaheer, Director, GMPCS Affairs, Thuraya
- Guido Baraglia, Director, sIRG
- Jawad J. Abbassi, Head of MENA, Government & Regulatory Affairs, GSMA

For the satellite industry much of the focus during 2015 was on the International Telecommunication Union World Radiocommunication Conference (ITU WRC-15). Preparations for the Conference were directed through the work of the Satellite Spectrum Initiative (SSI) – the GVF-led consortium of other (regional and national) satellite industry associations, and other stakeholder interests.

The SSI variously gathered and presented data, formulated analyses, developed arguments, built stakeholder alliances, and lobbied ITU member administration decision-makers for the protection of current satellite service access to spectrum in the C-band frequencies, and to oppose a global identification of C-band for International Mobile Telecommunications (IMT). The Satellite Spectrum Initiative was successful in its mission.

At WRC-15 the world's governments resoundingly affirmed a clear vision for the importance of many vital and irreplaceable services provided today over satellite. They had agreed on a clear framework for future access to satellite spectrum for innovative satellite communications, accomplished by agreeing to preserve and create new additional valuable spectrum for fixed and mobile solutions used to support a multitude of video, television and data services, to expand Internet access, and to bridge the 'Digital Divide' for billions of people around the world.

After lunch, from 1400 to 1555 the Hub Summit will again hear opening remarks and discussion examining 'High Throughput Satellites: Leveraging Advancing Technologies for Innovative Services – Mature, Evolving & Emergent Markets' with another panel of prominent experts:

- Jean-Philippe Gillet, Vice President, EMEA Sales, Intelsat
- Juriaan Hekking, Senior Sales Engineer, SES
- David Murphy, Chief Commercial Officer, YahSat

- Steve Gardner, Chief Technology Officer, ViaSat
- Imran Malik, Regional Vice President ME & APAC, O3b Networks
- Bart Van Poucke, Product Manager, Newtec
- Majdi K. Atout, Regional Vice President, Sales, MEA, iDirect
- Harry Formosa, Sales Director, EME, Avanti Communications

This session will examine the landscape of latest developments in the use of the latest high throughput satellite technologies to enhance connectivity and enhance the availability of key applications to support mission-critical programmes in various end-user markets, for example, mobile backhaul, energy, and government.

Next Generation Satellite Backhaul
What is the future of mobile backhaul? Mobile network operators (MNOs) want innovative backhaul architectures that are robust and flexible to accommodate shifting traffic loads on cell sites without massive bandwidth over-provisioning. Importantly, MNOs are looking at the segmenting of macro-cells into smaller (femto-, pico-) cells, a trend presenting new challenges for the satellite backhaul vendor.

Oil, Gas & Mining
In the energy and raw materials extraction industries connectivity to support mission-critical applications is a key industry requirement. Just as with oil & gas, mining for raw materials to support manufacture and advanced industrial processes is an inherently remote operation and the need for satellite and satellite-terrestrial hybrid communications solutions is a vital element to the growth and cost-effectiveness of the sector.

Government
Whether for intra-governmental communications, expansion of connected 'Digital Citizen' environments, provision of tele-health services, or for expanding access to education through distance learning, satellite communications is essential to society and community in many parts of the world.

Eutelsat exhibits **new satellite for MENA**

At CABSAT this year, Eutelsat is showcasing its newest resources and solutions to support customers, broadcasters, service providers, telecom operators and government agencies from across the Middle East and North Africa as they grow their business in the region and into the world.

The Eutelsat team is exhibiting in particular one of its newest satellites, EUTELSAT 8 West B, which was launched on 20 August by an Ariane 5 rocket and has joined Eutelsat's constellation at 7/8° West to take it to a new level of performance. With this new satellite, Eutelsat has stepped up its presence in the region by injecting fresh capacity into the broadcasting market and giving broadcasters a choice of frequency bands and coverage options.

Channels can benefit from increased power, more coverage options and higher in-orbit security, as well as a future-proof infrastructure for HD TV and Ultra HD.

In addition to footprints for broadcasting over the Middle East and North Africa, the new satellite reinforces Eutelsat's coverage of Africa and Latin America with a C-band footprint. This capacity will be particularly beneficial for global TV contribution, telecom networks, mobile backhaul and data networks.

Eutelsat is also showcasing its other key hotspots, notably its second flagship position, HOT BIRD, a key bridge for Arab communities in Europe. Operational since the 1990s, the HOT BIRD coverage encompasses Europe, the Middle East and North Africa. The EUTELSAT 7B satellite will also be showcased, as it is particularly suited to serving regional and linguistic markets in the region.

Ali Korur, CEO of Eutelsat's Middle East affiliate, says: "In the MENA market, the 7/8° West position we jointly operate with Nilesat is key, as it enables 250 million TV viewers in a vast region from Morocco to the Gulf to receive over a thousand channels with a single small satellite dish."

"Our newly launched EUTELSAT 8 West B satellite has added powerful new broadcasting resources to the position and is already pulling its weight, broadcasting over 80 additional channels. Working with many of the leading companies in the region, we see great potential for growth, exciting technical challenges and considerable scope for innovative solutions."

DEV showcases RF solutions

DEV Systemtechnik is at CABSAT this year, with the theme of "Expansion by Reduction."

On display is the company's ARCHIMEDES L-Band Distributing Matrix in 4RU for up to 64x64, with the most competitive cost performance ratio; its new 8^2 matrix switch in 1RU for signals up to 8x8 with LNB powering and an additional 9th monitoring output port; as well as the XTREME 256 Port matrix switch for symmetrical or industry-exclusive asymmetrical configurations.

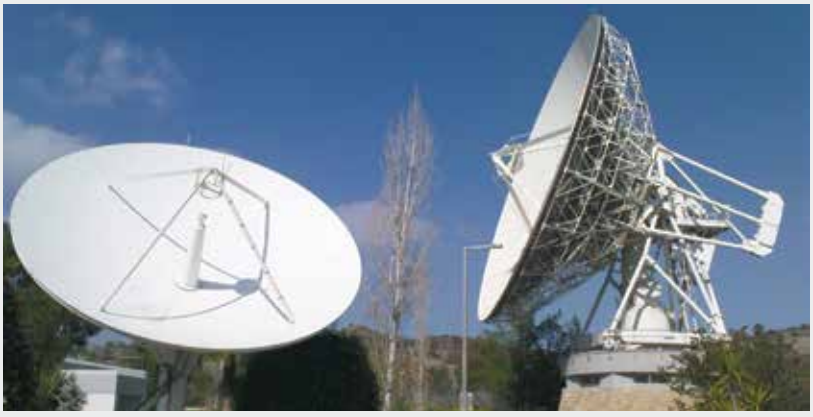
Also present is its range of Ka-band ready RF over fibre solutions that meet all signal transmission requirements for HTS and ensure the best RF transmission, increasing capacity, reliability and controllability.

"The sales of the L-Band Matrix Switch ARCHIMEDES topped our internal expectations by far," says Kai Honetschläger, Director Sales and Marketing at DEV Systemtechnik.

Many leading broadcasters ordered the up to 64x64 space-saving 4 RU ARCHIMEDES and the Quintech solution XTREME 256 Port Matrix, with up to 128x128. Customers refurbished their switching technology and upgraded their teleports or IPTV facilities in the Middle East, Africa, in Russia, in Australia and in central Europe. We are looking forward to further success with our 8^2Matrix."

DEV Systemtechnik works with satellite operators, teleports, earth stations and the broadcast and cable industry worldwide to provide superior RF solutions.

Cytaglobal brings teleport solutions to CABSAT



Cytaglobal is present at CABSAT and touting its solutions from its Makarios teleport in the eastern Mediterranean.

Cytaglobal, the international wholesale business unit of Cyta, the primary telecommunications provider in Cyprus, has developed an extensive undersea fibre optic cable network which connects Cyprus with its neighbouring countries and the rest of the world. The company operates an extensive satellite network with more than 50 major satellite antennas, providing connectivity with Intelsat, Eutelsat, SES, AsiaSat, ABS, Arabsat and other major satellite systems.

Makarios Teleport has been in operation since 1980 and is manned on a 24-hour basis for 365 days per year. The position of Cyprus in the eastern Mediterranean is a privileged location for satellite communications. Makarios Teleport offers full visibility of the geostationary arc, covering any satellite location between 33.5°W and 100.5°E with elevation angles greater than 10°. The climate in Cyprus, with extensive sunshine, low rainfall and mild temperatures, is also ideal for satellite operations.

Makarios Teleport is fully equipped to provide a wide range of satellite services, tailor-made to the requirements of its customers.

SMS Media partners with ATHENSA for CABSAT

SMS Media's partners PlayBox Technology EU and ATHENSA for CABSAT 2016. Visitors at the stand will be able to see the new line of PlayBox-certified turnkey servers for all types of customers and budgets. These are designed to work in perfect sync with ATHENSA software modules and offer the features you expect.

The EXEcutor turnkey servers can be managed remotely, from any place in the world, providing the level of freedom and flexibility needed in today's changing environment.

SMS Media provides high-level communication services for television and radio channels, offering distribution through satellite and leading cable operators. Besides the variety of services offered by SMS Media, its team works to future-proof its solutions by building new play-out centres in Europe and the region.

ND SatCom **pens satcom deal**

Frequentis and ND SatCom announce their cooperation for IP-based ATM-grade voice com-munication over satellite networks at CABSAT this year. Both companies commit to expanding their partnership to deliver highest voice quality through to dynamic delay compensation. As a result, a high availability solution will serve all future customers, in compliance with the standards of ICAO (the International Civil Aviation Organisation).

ND SatCom and Frequentis have been partners for the past few years and now expand this com¬mitment to create a new dimension of interconnected satellite and terrestrial networks, to ensure a first-class ATM-grade network solution with dynamic delay compensation, which is crucial for IP networks.

"ND SatCom stands for high quality, with secure turnkey and custom system-engineered communica¬tion solutions that fit exactly with solutions from Frequentis," says Dietmar Riedel, head of Business Development and Sales at ND SatCom.

"With our SKYWAN 5G we can not only provide high IP throughput and extreme packet processing rates, but also guarantee satellite jitter to be kept well below 10ms for radar and voice traffic in ATM networks," explains Michael Weixler, head of Product Management at ND SatCom.

"With extensive experience and expertise in design, integration and operation of ATM networks, Frequentis is providing communication and network systems with ED-137 compliance. With our VCX-IP network solution, market leading in dynamic delay compensation, we support highest voice quality in air traffic management," adds Stefan Galler, Product Manager for ATM networks at Frequentis.

Cobham Satcom brings Explorer to CABSAT

Cobham SATCOM's stand at CABSAT is playing host to some of the most sophisticated land mobile satcom terminals for media use available today. The company has developed a diverse portfolio of VSAT and BGAN terminals, which are used by newsgatherers and outside broadcasters globally. It is Cobham SATCOM's latest VSAT terminals, the EXPLORER 8100 VSAT and EXPLORER 3075GX that are getting the most attention at the show.

The 2015 launched EXPLORER 8100 VSAT is an industry first from Cobham SATCOM. Approved by Eutelsat, EXPLORER 8100 VSAT is the only stabilised 'Comms-On-The-Pause' VSAT antenna available. 'Dynamic Pointing Correction' ensures uninterrupted transmission on the Eutelsat Ka-Sat network when similar antennas would experience a loss of signal. By using technology developed for Cobham SATCOM's Maritime Antennas, 'Dynamic Pointing Correction' overcomes the challenge of link destabilisation resulting in transmission interruptions when the vehicle experiences sudden movements or rocks on its suspension when people enter and exit. The brand new EXPLORER 3075GX is another Cobham SATCOM industry first, as it can be used on both Inmarsat's new Global Xpress high bandwidth, Ka-band service and with an optional 'field conversion kit', also on the Eutelsat NewsSpotter service. It shares the same platform as EXPLORER 3075 with a ViaSat eTRIA configured for the KA-SAT NewsSpotter.

Asiasat introduces new fleet

This year at CABSAT, AsiaSat has introduced its expanding fleet of high performance satellites and its highest quality satellite solutions to the broadcast and telecommunications industries. Highlights are AsiaSat's broadcast platforms which are amongst the world's most-watched.

Operating at Asia's prime orbital locations, these platforms deliver 700 television and radio channels from the Middle East, Europe, South Asia, East Asia and International Networks. AsiaSat enables broadcasters and channel providers to deliver premium content instantaneously to all major Asian broadcast networks and pay TV platforms, serving millions of viewers across the Asia-Pacific region.

AsiaSat is also taking this opportunity to introduce its latest satellite AsiaSat 8 that is designed with a high-powered Ku-band Middle East beam customised for the provision of direct-to-home (DTH) television, data

broadcasting and broadband services. With its Ku-band TWTAs at 210 watts, the most powerful amplifiers ever launched in Asia, AsiaSat 8 offers high downlink EIRP up to 57 dBW across major cities in the region.

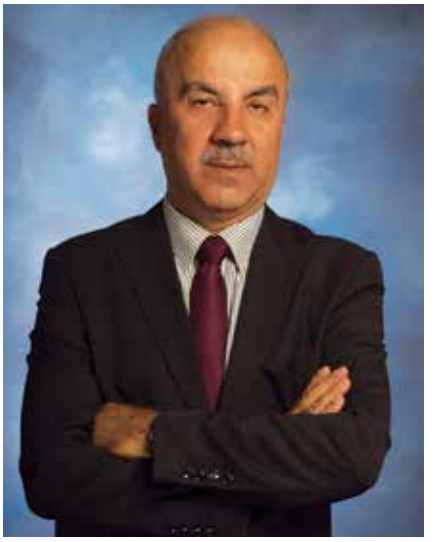
AsiaSat satellites' comprehensive C-band and high-powered Ku-band coverage also provides onnectivity for applications such as mobile backhaul, banking, and oil and gas.

Noorsat celebrates tenth anniversary at CABSAT 2016

For satellite service provider NOORSAT, CABSAT 2016 holds special meaning, as the company is celebrating its tenth anniversary. CABSAT is set to reflect the great appetite for satellite services in the region, which is experiencing increased demand for both Direct to Home (DTH) TV and non-video services.

As the first privately owned satellite service provider in the Arab world, NOORSAT has achieved a great deal in the last decade, and now carries over 300 TV and radio channels in both SD and HD quality, and delivers DTH TV services to over 50 million households. The company's satellite capacity and impeccable customer service is highly sought-after.

"NOORSAT has enjoyed ten years of steady growth," comments Omar Shoter, CEO of NOORSAT. "2016 marks an important milestone in the company's development and we are using CABSAT as a platform to reflect on our journey, our history and heritage, and to focus on the future at a time when there are so many exciting developments in our industry."



Since its establishment in 2006, NOORSAT has gained significant market share in the DTH TV market, as well as in telecom, video, telephony and internet services. NOORSAT boasts premium capacity on the NOORSAT 7 and NOORSAT 7B satellites, both located at Badr Al Nile at 7/8°West orbital position, and the NOORSAT 1 satellite located at Badr Al Arab at 25.5°East orbital position, the only two hotspots that serve the Arab world.

Over the last decade, NOORSAT has helped broadcasters embrace technological developments within the sector, enabling them to make a smooth transition from SD to HD. The company launched the very first real HDTV bouquet over the Arab world in 2009.

In addition, NOORSAT has consistently proved highly responsive to the market trends defining the future of satellite, such as the heightened demand for satellite data services across the Arab world. It continues to support Arabic broadcasters with capacity to backhaul their regional programming to Europe and beyond.

Shoter concludes: "Our extensive satellite capacity, modern ground infrastructure and in-depth knowledge of the region enable us to meet the increasing demands of this dynamic market and its future applications."

Newtec introduces **HTS VSAT modem**

As High Throughput Satellites (HTS) continue to open up new markets and push the limits of today's ground segment technology, CABSAT 2016 sees Newtec launch the industry's first high throughput VSAT modem supporting DVB-S2X.

With DVB-S2X on the forward link and Newtec's unique Mx-DMA return technology, the MDM5000 provides operators with an efficiency gain of up to 50%, thus reducing OPEX and CAPEX. This wideband modem is designed to get the most out of HTS transponders, while its two receive channels make it ideal for future mobility applications. Thanks to Newtec Dialog's Mobility Manager and the built-in Antenna Control Unit (ACU) communication protocols, moving from one beam to another becomes very easy.

Other applications which will benefit from the MDM5000 include medium sized enterprise networks, government applications, oil and gas, maritime and cellular backhaul. As the most recent addition to Newtec Dialog's product line, the MDM5000 complements Newtec's full range of modems, ensuring the optimal solution for every application and price point.

Visitors to Newtec's booth can also take a tour of the latest software release of the multiservice platform – Newtec Dialog 1.3.

Gazprom promotes Yamal

Gazprom Space Systems is participating at CABSAT for the tenth time at Booth ZH6-40, and is speaking about capacity on Yamal satellites, which in total amounts to 248 equivalent transponders of 36MHz.

The C-band payload of Yamal-202 at 49-degrees East has good coverage over Middle East and North Africa, and with its semi -global coverage (Europe, Middle East, North Africa, South and Southeast Asia) it is possible to arrange channels between informational and business markets in almost the whole Eastern hemisphere. This satellite is mainly used for organisation of broadband trunk channels and small or medium-sized networks for corporate and governmental customers. This satellite shall be replaced by Yamal-601.

The Yamal-402 at 55-degrees East provides Ku-band coverage over Russia, CIS countries, Europe, part of Middle East and Sub-Saharan Africa. Satellite antennas form four fixed beams – Russian, Northern, European, Southern – and one steerable beam. The interbeam connectivity between European and Southern beams is in great demand among our customers. It is used to provide communications services to operators of pay TV, corporate sector, governmental structures and NGOs. Around half the VSAT networks of diverse technologies and scale operate via this satellite in the EMEA region.

Santander touts its facilities at CABSAT

Santander Teleport is present at CABSAT and showcasing the facilities of its teleport in Spain.

An independent teleport operator offering satellite communication services in C-, X-, Ku- and Ka- bands for service providers, enterprise and government organisations in the maritime, enterprise and defence markets, it owns its own satellite teleport facilities in Spain, with access to a global terrestrial network, and works with partner teleports to provide global reach.

"We look forward to the annual CABSAT event to meet up with suppliers, partners and customers to find common ways to serve those companies in need of fast, efficient and reliable communications," says David Andres, Business Development Manager at Santander Teleport.

The teleport's services include uplink/downlink facilities, colocation of customer equipment, antenna hosting, connectivity to major PoPs and end customer sites, internet access, back-up / disaster recovery services, VSAT services, custom-designed solutions and specialised satellite-operator services like IOT, TT&C and RCM.

Andres thinks CABSAT is a fantastic event to meet industry peers and customers interested in the Middle East. The company's satellite teleport is ideally located in southwest Europe to serve the Atlantic and EMEA regions.

SES showcases mobility solutions at CABSAT

Next generation data and mobility solutions, innovation and humanitarian solutions are taking centre-stage at SES's CABSAT 2016 booth.

With nine satellites currently covering the Middle East, delegates visiting Stand ZE4-10, Zabeel Hall 4 can learn more about SES's new projects across the Middle East and find out how its next-generation solutions can help them extend their reach and explore new opportunities across the region and beyond.

Representatives are available to discuss new growth opportunities across the Middle East and what SES is doing to address the growing demand for comms on the move, while its

interactive Google Earth tool will enable visitors at the booth to explore new connectivity solutions to serve next-generation networks.

Visitors can also view Ultra HD at the SES stand and witness first-hand.

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Big Oil, **Bigger Data**

As the digital oilfield grows, Big Data focuses on solutions and services to store, manage, protect and analyse information

In the energy extraction industry, connectivity to support mission-critical applications is a key industry requirement. The oil sector is an inherently remote operation, and satellite and satellite-terrestrial hybrid communications solutions are vital to growth and cost-effectiveness.

Despite the negative impact of current market conditions and ongoing geo-political factors, we are still in the era of Big Oil, and as the digital oilfield of today increases in sophistication, we have Big Data, which focuses on solutions and services to store, manage, protect and analyse information extracted from the large volume of data generated by the oil industry. Much of this is generated from the rapidly expanding satellite communications/Machine-2-Machine (M2M) interface – which could maybe even be called Bigger Data. This requires the most robust of communications links.

The offshore oil and gas sector faces many challenges which arise from operating in some of the most dangerous, harsh and remote environments on Earth. The industry's commercial and operational centres require a range of means to communicate with exploration and production (E&P) rigs and platforms, and to draw information from computer applications, mission-critical equipment and other in-field infrastructure. Robust communication is an imperative, permitting key personnel to maintain all-round contact – field workers with senior operations management and expert decision-makers in other locations, facilitating the relaying of decisions and instructions based on data streams from such sources as drilling equipment, seismic sensors and security applications.

Mobility: Oil & gas companies are aligning their upstream business processes with mobile technology, applying mobile applications to aid communication and workflow and foster enhanced workforce productivity.

"The offshore oil and gas sector faces many challenges which arise from operations in some of the most dangerous, harsh, and remote environments on Earth"

MARTIN JARROLD, Chief of International Programme Development, GVF

Satellite-Terrestrial Hybrid Communications: As well as pure-play satellite-based communications, integrated satellite-terrestrial hybrid communications solutions play a vital role in providing essential connectivity and access to vital applications. Mission-critical operational success in the upstream E&P environment depends on access to the most efficient ICTs, and to the wealth of sophisticated applications these technologies bring to the disposal of the teams of geologists, geophysicists, drilling engineers and seismic data analysts. Massive amounts of disparate data in multiple formats (including GPS, acoustic, compass and other sensor data) are used for predictive analysis by widespread and remote experts who can see data as it is collected in real time, to determine the size and potential value of a payload before any actual drilling begins. This capability can significantly reduce the amount of time and other resources wasted on drilling sites that don't have a strong yield potential.

HTS and the New LEO Dawn: Multiple spot-beams and frequency reuse techniques bring the end user multiple advantages, including lower space segment costs per megabyte, higher throughput rate and greatly improved capacity availability. HTS technology has the potential to break satellite communications end-user vertical markets wide open to greater deployment of satellite-based solutions, particularly in the oil & gas sector. Additionally, HTS technology which uses medium earth orbiting (MEO) satellites instead of geostationary earth orbiting (GEO) spacecraft – such as the O3b constellation – brings the advantage of lower transmission/reception round-trip latency, significant to certain types of oil and gas E&P applications. PRO

Extend Your Reach Around The Globe.

Satellite Service Provider of choice for the Middle East, Asia and Africa.

HorizonSat is recognized as a key provider of satellite communications services in the Middle East, Asia and Africa. Supporting institutional clients in the fields of Telecommunications, Broadband, Corporate Internet and Broadcasting, HorizonSat attributes its success to its dedication in implementing solutions that leverage the latest satellite technologies and support through its 24/7 NOC.

To serve our clients more effectively, we have enhanced our service through our state-of-the-art teleport, Horizon Teleports, strategically located in Munich, Germany covering a look angle from 55 degrees West to 78 degrees East.

Horizon will continue to work closely with its customers, focusing on their objectives and creating solutions that ensure continued success in their mission critical applications.

CABSAT

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