ISSUE 35 | DECEMBER 2014

SATELLITEPRO

TECHNOLOGY INTELLIGENCE FOR THE SATCOM MARKET

MIDDLE EAST

AWARDING EXCELLENCE

The 2014 SatellitePro ME Awards acknowledges the massive efforts of the vibrant satellite community over the past year

Mr. Salaheddine Maaoui, Director General of ASBU presenting the trophy to Mr. Mohammad Al Haj, Chairman and COO of Gulfsat Communications Co.

GULFSAT Receives Top Honors at SATELLITE PRO MIDDLE EAST AWARDS 2014

EDITOR'S CHOICE AWARD

For broadcasting 2014 FIFA World Cup matches in high definition without interruptions or frequency interference .

ASBU PRESENTS
SATELLITEPRO MIDDLE EAST AWARDS 2014 WINNER
SATELLITEPRO EDITOR'S CHOICE AWARD
GULFSAT COMMUNICATIONS

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Oh What a Night!

The extremely successful BroadcastPro ME Awards gala was definitely a night to remember. All the industry's bigwigs were present, and had a fantastic time at the event. The special satellite segment of the award ceremony highlighted the movers and shakers in the satellite sphere, and celebrated the significant breakthroughs that they have made in an already competitive market. Read more about this on page 10.

The space and satellite community is immensely competitive, but it also comes together to learn from each other's business models and technology, and looks at how everyone can work together and get a slice of the pie. It's grown to become an industry that I am extremely proud to cover through this magazine, and one that never ceases to continue to amaze me. Spot beams, HTS, e-learning through satellite and the Charter that is helping aid workers as we speak, in trying to contain Ebola and get help to its victims. In fact, seeing the entire community come together at the BroadcastPro Summit and Awards was a thoroughly satisfying experience.

And so, with another year coming to a close, it's a time to reflect on all that we've done and how we can use that to make tomorrow a better place to live in. This doesn't just work with personal relationships, but business ones too. Scale your successes, learn from your failures and go out there and do what you do with a zeal that cannot be matched. Success comes to those that persevere in trying times. I'm reminded of an old Mexican proverb that states: "They tried to bury us. They didn't know we were seeds." We are the seeds, my dear colleagues and friends. Sprout! Have yourselves a lovely December, and warmest season's greetings to you all.

As always, I'd love to hear your feedback and comments on the magazine. Please send them through to me by email, or call the number in the panel to the left.

Clayton Vallabhan
Editor

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"SIncreased broadband penetration and low barriers to entry are helping the education sector in the Middle East enhance the education and entertainment experiences."
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NORTH TELECOM

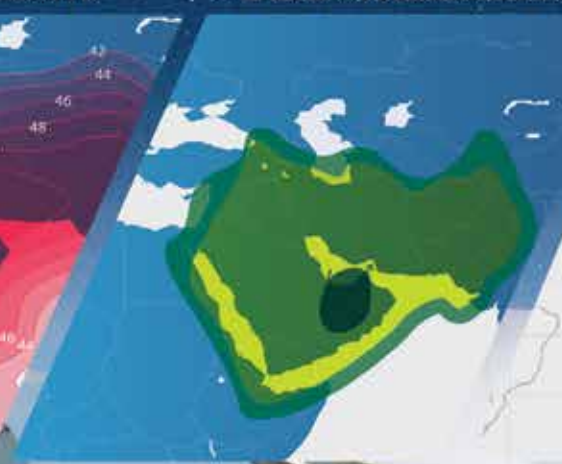
NorthTelecom

- Broadband internet
- Satellite capacity
- iDirect service
- MVSAT
- Teleport service
- Private network

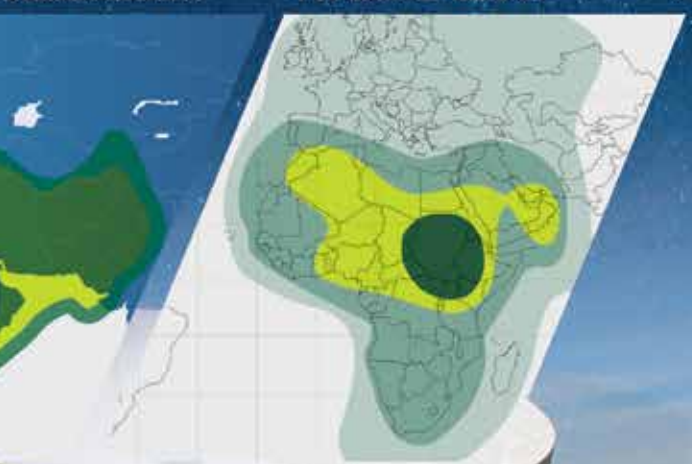
TV & Radio Broadcasting

ST-2 KU (K3 Beam)

Yahsat KU East Beam



Yahsat C-Band



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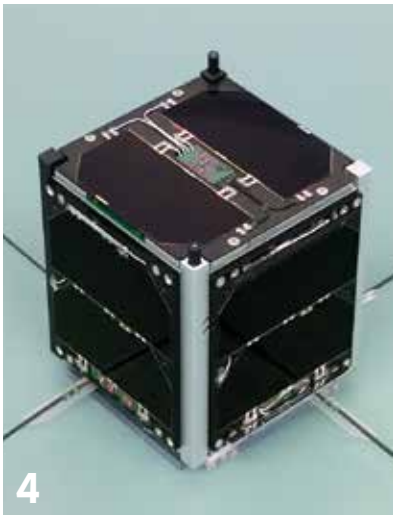

EIAST launches Nayif-1, the UAE's first CubeSat mission

EIAST, in partnership with the American University of Sharjah (AUS), launched the UAE's first CubeSat mission, Nayif 1, on November 4. A CubeSat is a nanosatellite offering hands-on experience to engineering students in the design, integration, testing and operation of a communications satellite.

The CubeSat is scheduled to be launched on board a Falcon 9 rocket by the end of 2015. A ground station will be built at AUS and operated by Emirati engineering students, responsible for mission planning and operations.

The CubeSat development programme aims to invest in and develop the capabilities of Emirati engineering students in space technologies. A group of Emiratis consisting of seven students from various engineering disciplines at AUS, including computer engineering, electrical

engineering and mechanical engineering, have been assigned to the project. Students will go through intense systems design and testing training and will partake in the programme as their Senior Engineering Design project, participating in the design, assembly, integration and testing of the CubeSat. Nayif-1 will carry out a 1U Communication Mission, with development taking place in AUS, EIAST's facilities and Delft in the Netherlands.

The project will be carried out in partnership with Innovative Solutions in Space, a leader in the development of space components and nanosatellite systems. EIAST will take on the role of integrator and ensure that all necessary processes are in place to preserve and build upon the experience gained. Its objective will be to put in place all the necessary infrastructure at the university for a CubeSat development programme between the implementation partner and AUS's Emirati students.

Nayif-1 will integrate engineering student expertise and capabilities with expertise, capabilities and resources from UAE industry, government and academia, which is a typical integration cycle in all KBEs, to build and launch the CubeSat mission.

+ www.eiast.ae

AIRTEL AFRICA BRINGS THURAYA SERVICES TO 12 COUNTRIES

Thuraya and Airtel Africa have announced the commercial launch of Thuraya's mobile satellite products and services across 12 countries in Africa. Thuraya's satellite phones, including the SatSleeve and IP+ broadband terminals, can now be purchased by Airtel's customers through the company's Africa's subsidiaries in Congo-Brazzaville, the Democratic Republic of Congo, Gabon, Ghana, Kenya and Zambia. Airtel intends to further expand into its five remaining markets.

Airtel Africa's customers will now have access to voice communication, messaging, their favorite social media apps and broadband internet through Thuraya's satellite solutions. The collaboration spearheads the convergence between satellite and mobile communications. Airtel Africa is the first and only African mobile network operator to offer instant ubiquitous 100% geographical coverage through terrestrial and mobile satellite connectivity as part of its portfolio of services.

+ www.africa.airtel.com

HILTRON COMPLETES TELEPORT FOR ALARAB

Hiltron has completed work on a new teleport for the Alarab News television station at the World Trade Centre in the heart of Bahrain's capital, Manama. Launching this year, Alarab News is a privately owned Saudi channel which aims to provide viewers with accurate, unbiased news and information from the region and around the world.

The newly installed system consists of seven fixed 2.4 metre Ku-band receive-antennas, a 3.7 metre C-band fixed downlink and a motorised 3.7 metre receive-antenna with a four-port C-/Ku band feed.

+ www.hiltron.de

GLOBECOMM COMPLETES VSAT NETWORK IN IRAQ

Globecomm has successfully completed a 158Mb VSAT network in partnership with one of the country's leading telecommunications suppliers, for a European-based client conducting oil exploration at sites in Iraq.

The network supports dedicated internet, data and voice connections to manage the complex exploration process and provide the crew with essential communications. The VSAT network is combined with 100Mb terrestrial microwave links in a managed service that includes a Cisco call manager telephone system terminating calls at the Globecomm Europe teleport in the Netherlands. The design of the dual-path network provides complete redundancy for all sites.

"The main exploration site alone has a crew camp that supports 5,000 people working and living there," said Patrick Visser of Globecomm Europe. "Communications services will be heavily used for both business and private purposes, and it has been engineered to guarantee a high level of quality and reliability."

+ www.globecommsystems.com

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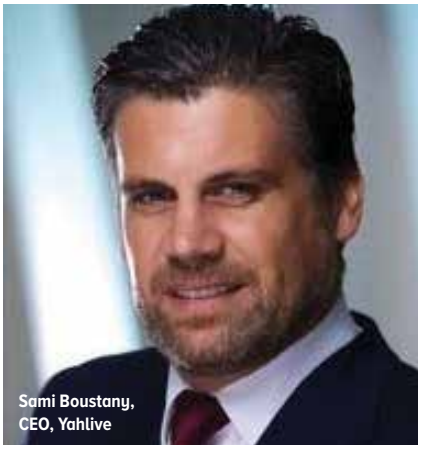
Babylon Media and Yahlive sign contract for transponder use

Babylon Media Company signed a contract for the lease of one transponder on Yahlive, the UAE-based satellite broadcasting company. With 13 TV channels already on Yahlive, including Korek TV and Kanal 4 TV, Babylon Media Company plans to add at least four more exclusive TV channels on Yahlive's East beam.

With the addition of these channels, Yahlive aims to cater to the Kurdish community living in Iraq, as well as across the East beam region – the Levant, GCC and Southwest Asia. Consequently, the partnership with Babylon is a demonstration of Yahlive's ongoing commitment to catering to diverse cultures and interests, supporting Yahlive's geographical and viewer traction.

Sami Boustany, CEO of Yahlive, said: "The partnership with Babylon is contributing to the continuing expansion of Yahlive's growing portfolio of channels and helping drive success in 2015. We are delighted to welcome on board the additional new channels that will serve and meet the needs of greater Kurdistan, a key audience for us. This is also further testament that Yahlive is becoming the satellite of choice for viewers in Iraq and across the region."


Sami Boustany, CEO, Yahlive

Salwan Zaito, CEO of Babylon Media Company, said: "We at Babylon Media are very excited on this new milestone for our company and the Kurdistan region as a whole. After much research, we found Yahlive to be the suitable partner for Babylon Media's television outlets in the 21st century. We are looking to make an international presence, and we believe that Babylon Media will become a household name in the coming future, with Yahlive as its partner."

+ www.yahlive.com

PILOT VSAT TERMINALS DELIVERED TO ES'HAILSAT'S HQ

Es'hailSat and Integrated Satellite Applications Technologies Ltd (iSat) have announced the delivery and installation of two pilot VSAT terminals at Es'hailSat's headquarters in Doha, Qatar, to enable the commercialisation of the Ka-band payloads on Es'hail 1.

Es'hailSat was established in 2010 to provide advanced satellite services to strategic stakeholders and customers who value communications independence, quality of service and wide geographical coverage. Es'hail 1, the company's first satellite, was launched in Q3 2013.

The installation of this new, specialised satellite communications equipment allows Es'hailSat to offer superior coverage and secure connectivity for business and government services across the whole MENA region.

+ www.eshailsat.qa

EUTELSAT AND SPACECOM CREATE UNIFIED NEIGHBOURHOOD AT AFRICA'S 16-17° E

Eutelsat and Spacecom have signed a partnership that will drive expansion of digital entertainment services in one of Africa's fastest-growing video neighbourhoods. The two companies have established a framework for cross-commercialisation of Ku-band capacity connected to the high-power African service areas of Eutelsat's EUTELSAT 16A satellite at 16° East and Spacecom's AMOS-5 satellite at 17° East. The combined channel line-up of both satellites already comprises over 100 free-to-air African and international channels that can be received by standard 80cm dishes in a vast footprint covering over 30 million TV homes located notably in Francophone

Africa and extending to Ghana and Nigeria.

Leveraging their combined knowledge of Africa's fast-growing broadcast markets, the two operators will pool their commercial efforts to ignite further growth at the 16-17° East position, which is already the leading DTH and free-to-air video neighbourhood in West Africa. In addition to improving the quality and effectiveness of broadcasting services, this agreement raises the bar for service continuity for broadcasters and will deliver viewers a larger channel line-up from one virtual orbital position.

Launched in 2011 and equipped with identical Ku-band African footprints, the EUTELSAT 16A and AMOS-5 satellites host free-to-air channels as well as pay-TV, DTT and free-to-view platforms for media companies, who are increasingly turning to satellites as the fastest and most competitive route to digital content delivery.

+ www.eutelsat.com

Es'hailSat سهيل سات

Qatar Satellite Company الشركة القطرية للأقمار الصناعية

Space to deliver your vision

Es'hailSat is a new satellite operator based in Doha, Qatar which owns and operates satellites to provide television, internet, corporate and government services across the Middle East, North Africa and beyond

Es'hailSat Key services include:

- TV broadcasting
- News gathering
- Business Communications and Corporate Networks
- Trunking and other Telecommunication Services.

الفضاء لتحقيق رؤيتكم

شركة سهيل سات هي أحدث مشغل أقمار صناعية بالمنطقة ومقرها الدوحة، قطر، والتي ستمتلك وستشغل عدة أقمار صناعية لتزويد خدمات البث التلفزيوني، والإنترنت والإتصالات لكافة القطاعات الحكومية والخاصة في مناطق تشمل الرقعة الجغرافية للشرق الأوسط وشمال أفريقيا وما ورائها.

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- تبادل البرامج الإخبارية
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Providing high quality, premium DTH content from the 26°E broadcast neighborhood

www.eshailsat.qa

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 26 degrees E hotspot neighborhood

سهيل ١، هو أول قمر صناعي للشركة، قد تم إطلاقه بنجاح في ٢٩ إغسطس ٢٠١٣م، ومن المتوقع إطلاق سهيل ٢ ثاني أقمار الشركة في أواخر ٢٠١٦م. وسيتم تشغيل كلا القمرين من نفس المدار الأكثر جاذبية للمشاهدة، ٢٦ درجة شرقا.

IBC Content Everywhere to debut in the MENA region

IBC Content Everywhere MENA takes place at the Madinat Jumeirah in Dubai on 20-22 January, 2015.

IP-connected smartphones, tablets and personal computers are altering the way we produce and consume media. IBC has therefore set up IBC Content Everywhere, a new series of global events that acknowledge that the future is going to be quite different from what has gone before. The events will cover all aspects of the emergent second screen and IP workflows, from rich media production to harnessing the power of data analytics, and they have been designed to be truly global.

The growth in the media sector in the region – mobile and broadband in particular – is impressive, making it a natural home for the show. Mobile penetration is now up to 109%, while Cisco estimates that Middle East mobile data traffic will grow 77% CAGR to 2017 – the highest growth for any region – and average mobile speed will reach nearly 3Mbps over the same period.

The exhibition features some of the main players pioneering technologies in the new digital spaces, while a high-level, three-day conference harnesses the input of visionary speakers and thought-leaders from around the world to examine the diverse implications and opportunities arising out of the Content Everywhere paradigm for the region and beyond.

+ www.ibcce.org

THURAYA AND DUBAI POLICE LAUNCH SOS SERVICE

Thuraya and the Dubai Police have announced the launch of the Thuraya SOS service. Thuraya XT handset users in the region can send a pre-programmed SMS with their GPS coordinates to the Dubai Police in times of distress or emergency. The service is crucial for users who are lost or require emergency care when in remote areas, such as in the desert or at sea, with limited or no connectivity.

Major General Khamis Mutar Khamis Al Muzainah, Commander-in-chief of the Dubai Police, said, "The Dubai Police is committed to enhancing our services to ensure the highest level of protection of our people. The launch of the Thuraya SOS service demonstrates our commitment to leverage innovative and reliable technology to ensure the safety and protection of our residents. Our collaboration with Thuraya has enabled us to save the lives of many people who were lost or required emergency care in remote areas. Although the UAE is a highly connected nation, people still need to be aware that there will always be areas such as the desert and the sea that do not have mobile connectivity. When travelling in such areas, having a Thuraya XT handset can save their lives if they encounter any emergency."

+ www.thuraya.com

SATELLITES HELP IN MANAGEMENT OF EBOLA

The International Charter for Space and Major Disasters was activated to assist in the management of the Ebola crisis in West Africa.

The Charter is an international agreement between space agencies to provide free satellite images in the immediate aftermath of natural or man-made disasters. It has so far responded to over 400 disasters in over 110 countries, but its activation in October 2014 was the first time it has been activated to assist with the response to a disease.

The recent Charter activation will allow the World Health Organisation to acquire satellite imagery of Sierra Leone and Guinea, which have seen a high number of Ebola cases. The epidemic has so far claimed over four thousand lives in West Africa, and people are still falling victim to the worst outbreak since 1976.

The satellite images provided will provide international teams with maps allowing them to better characterise where and how to deploy overseas medical staff and their support bases. The UK-built and -operated DMC2 is one of the satellites that has acquired images of West Africa, an excellent example of a satellite used to support international humanitarian efforts.

+ www.disasterscharter.org

NOVELSAT TECH ON AFRICASAT-1A GENERATES SAVINGS

MEASAT has announced that customers on the AFRICASAT-1a satellite will now be able to benefit from additional cost savings with the successful test of 64APSK modulation on the satellite's high-powered pan-African beam. The tests were conducted with the NovelSat NS3000 Professional High-Data Rate Satellite Modem, running NovelSat NS3 technology.

The use of NovelSat NS3 technology on the AFRICASAT-1a satellite enabled an increase in spectral efficiency levels of between 20% and 50%. Higher spectral efficiency allows more bits per Hertz, leading to higher bandwidth and thus reducing costs. The key application areas that will benefit are multiplexed IP trunking and voice backhauls for mobile operators, and point-to-point IP transit for Internet Service Providers.

"In regions where satellite capacity is still growing, bandwidth efficiency is key," said Dan Peleg, Vice President of R&D, NovelSat.

"MEASAT is delighted that AFRICASAT-1a is proven to support the industry's highest modulation standards," said Raj Malik, Senior Vice President – Sales and Marketing, MEASAT.

+ www.measat.com
+ www.novelsat.com


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ASBU PRESENTS
BROADCASTPRO MIDDLE EAST SUMMIT & AWARDS 2014

Awarding Excellence

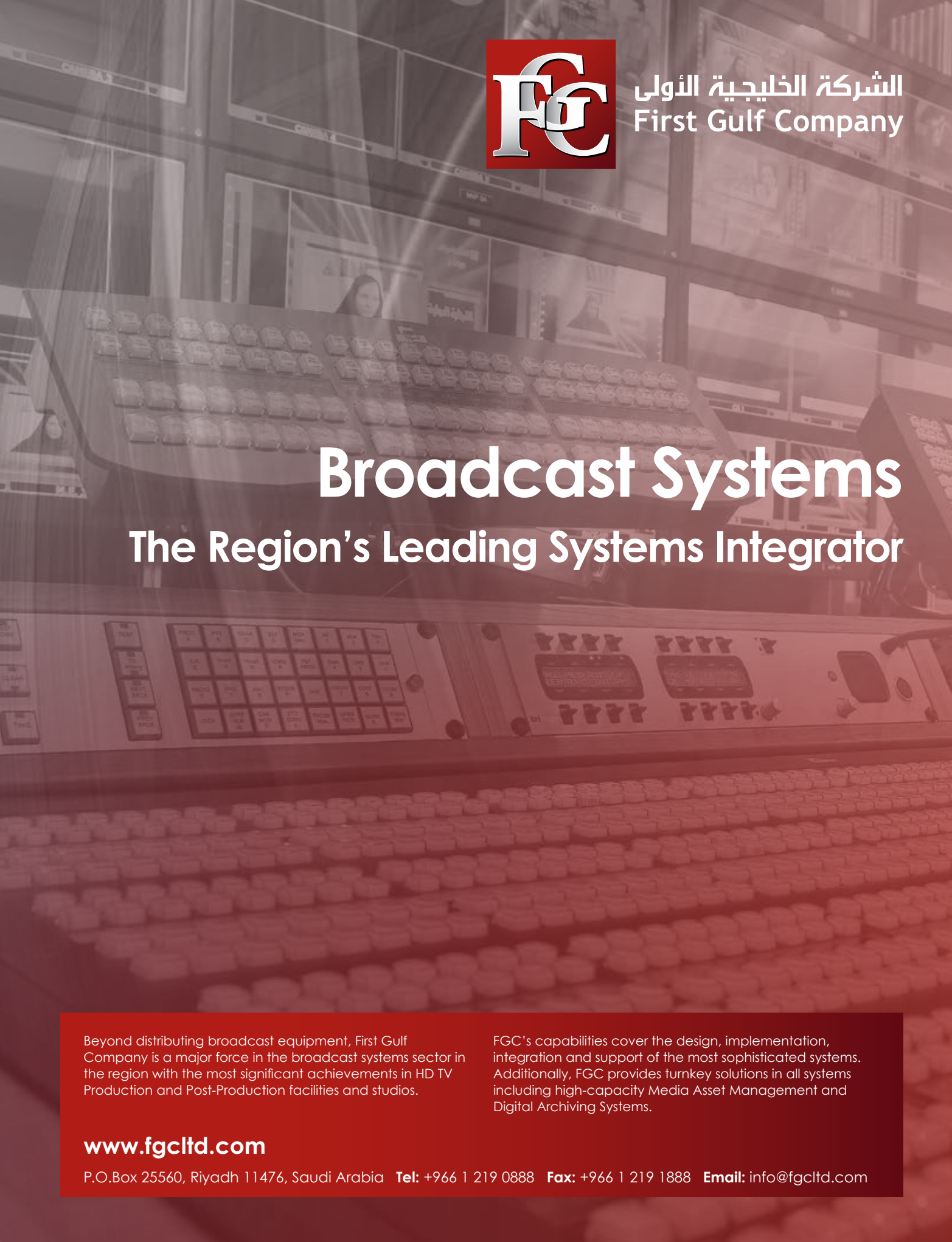
The satellite segment of the annual BroadcastPro ME Awards acknowledged the efforts of the very best players in the business; read on to see this year's winners

Satellite Operator of the Year
ES'HAILSAT

2013/2014 was a spectacular year for the Qatari satellite operator, following the successful launch of its first satellite in August 2013 and the start of its commercial services in December 2013. Es'hailSat is now working on designs to build its own satellite control centre in Doha, where future satellites will be operated by Qatari staff.

"We are very happy and honoured to receive this award. We really appreciate this, and the Es'hailsat team is very excited to receive this award. It will be very encouraging and motivating to keep up the good work."

SAIF MANSOUR AL KHALDI,
Satellite Projects Director,
Es'hailSat



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Outstanding Achievement in Satellite SES S.A.

SES delivered 45,000 hours of coverage across 12 different venues, using 10 different satellites for the 2014 World Cup. Broadcasters from around the world secured capacity aboard its satellites and used ground infrastructure to deliver the World Cup broadcasts to audiences throughout North America, Latin America, Europe, Asia, Australia and the Middle East.

"We feel very pleased and honoured. We're proud of what we've done and we're glad we contributed to the joy of people watching the games. We've just opened an office here to serve the customers in the Middle East and North Africa. SES uses its global expertise with local knowledge, and the aim is to expand more and have everyone enjoy our services."

HUSSEIN OTEIFA, GM, Middle East, SES

Editor's Choice Award

GULFSAT COMMUNICATIONS, KUWAIT

When beIN Sports acquired the broadcast rights for the 2014 FIFA World Cup, GulfSat immediately realised there would be a need for a full transponder to cater to the MENA region. It made advance plans by seamlessly migrating existing customers on the target transponder to alternate platforms and freed up an entire transponder for the client.

"It's a real pleasure to share such success tonight with all the audience, and I think such an award will empower and boost the energy to improve our services in the MENA market. We're really proud."

MOHAMMED ALHAJ,
Chairman, GulfSat

BroadcastPro ME Awards

Special Recognition Award
MOHAMMAD SHIHADAH,
CEO of Apptek, has given machine translation a whole new dimension. This award is a special recognition award on behalf of the ASBU BroadcastPro Summit and Awards to recognise and honour his contribution to human language technologies and how it is relevant to broadcasters.

Innovative Production of 2014
DUBAI MEDIA INC. – DUBAI WORLD CUP 2014
The promo for the Dubai World Cup 2014, produced entirely in-house by Dubai Media Inc., was unanimously chosen as the winner for the plot as well as its fine execution. The promo stood out for its superb production value and impact.

Best Studio Set of the Year
PRODUCTION HOUSE – ALARAB NEWS CHANNEL
Production House has delivered a rich variety of sets and camera positions in a relatively small space to Alarab News Channel. The video entry from Production House showcased a rich and contemporary design that used LED technology effectively to create beautiful effects.

Best Long-Form Production of 2014
CLACKET MEDIA – AL IKHWA
Syrian production Al Ikhwa, which was fully shot in Abu Dhabi, created a storm in the Arab world when it was broadcast during Ramadan, evoking both positive and negative responses to its rather controversial plot but the one thing that no one denies is the slickness of this production.

Best Long-Form Production of 2014
ETANA
ETANA is a company started by two brothers from Babylon, who have resorted to comedy to bring entertainment into the lives of the Iraqi people and have been very successful. Their submission included a lot of spoofs from some of the Western hits and seemed to be an instant hit with our judges.

2014 MENA Systems Integrator
QVEST MEDIA FZ LLC.
Qvest has won the respect of the Middle East market with its intelligent planning and excellent execution of projects across the region. It has undertaken projects in Dubai and Qatar and even Tunisia. It's latest project was the installation of the Alarab News Channel in Bahrain.

ASBU BROADCASTPRO ME 2014 Innovative Project Award
SKY NEWS ARABIA
The Abu Dhabi based broadcaster, which uses the networked resources of its many bureaus around the region to provide business continuity and disaster recovery. This award was almost unanimously chosen as the undisputed winner by all the judges.

Outstanding MENA OTT Initiative
GO BY OSN
OSN's Go OTT SVOD service, which gives viewers access to content from three major Hollywood studios including Disney, Paramount and Sony Pictures. It is compatible with all Internet providers, and is available on fixed, Wi-Fi, and mobile broadband across 24 countries in the MENA region.

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EIAST

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Best Telco/Broadcast Initiative

CHANNELSCULPTOR

This was the only nomination that included testimonials from several end users. ChannelSculptor's channel licensing and management service bridges the gap between telcos and IPTV providers. It manages IPTV operators licencing and their relationships with MENA TV channels.

ASBU BROADCASTPRO ME 2014 Technical Achiever

HAMAD ABDELRAZAQ, LIVE HD

Hamad has played a key role in shaping his company's technical roadmap. At LIVE HD, the production arm of ADM, he has undertaken several initiatives that have helped the company undertake even more live sporting events. He is the Head of Broadcast Engineering at LIVE HD.

Broadcast Project of the Year

ALARAB NEWS CHANNEL

While most of the entries were very traditional broadcast projects, Alarab TV's cutting edge installation combined all the buzzwords from production and MAM to HDTV playout, multi-platform live streaming and IPTV, making this star shine brighter than the rest. It's still in the trial phase but no project came close to this in implementation.

MENA Broadcast Trendsetter of 2014

SELEVISION

The judges unanimously chose Selevision for breaking new ground with its HbbTV offering, which is believed to be a first for the Middle East. What makes Selevision very special is the fact that the company is homegrown and a fine example of Arab expertise in bringing the best in terms content and technology.

CTO of the Year

DOMINIC BAILLIE, SKY NEWS ARABIA

Dominic Baillie's visionary ideas always offer a new perspective on things. Instead of using tried and tested, out-of-the-box solutions and relying heavily on systems integrators, he is always up for a challenge and willing to experiment and the company that benefits the most is the one he works for.

State Broadcaster of the Year

SAUDI BROADCASTING CORPORATION

SBC celebrated its 50th anniversary earlier this year. It invests more money than the broadcasters of several countries put together to ensure that the people living across its vast kingdom have access to television and radio. It is also slowly starting to invest more heavily in sport and drama.

Outstanding TV Programme of 2014

MOUSAMEH KARIM – OSN

This is a very special award for a one-of-kind TV reality show that has struck a chord with Arab viewers in the most special way. Collecting the award is George Kordahi, celebrity anchor and TV presenter with Khulud Abu-Homos, Executive VP of Programming & Creative Services, OSN.

Special Regional Project Award

MAZIKA

Backed by one of the largest regional online and mobile entities, this new music streaming service is one of the first digital music portals in the region with a large library of more than 25,000 songs in the Arab world. It offers mobile apps for different platforms to access playlists.

SkyStream

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Today Sky Stream has established itself as a leading provider of managed and turnkey VSAT solutions across the Middle East, North Africa and South-West Asia for customers engaged in the Marine, Military and Oil and Gas sectors. Sky Stream provides flexible solutions to meet the ever changing demands of its customers, including the design, build and operation of networks. Its state-of-the-art control centre and hubs are complemented by a highly qualified and experienced team of engineers, project managers and customer service personnel.

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The best of 2014 and what 2015 has in store

Jean-Philippe Gillet
Vice President, Europe, Middle East and Africa, Sales
Intelsat

A highlight is our relationship with Vodacom, who will be able to access Intelsat EpicNG capacity on Intelsat 33e. Intelsat EpicNG's higher throughput at a much lower cost per bit makes it an ideal platform to meet their end-user needs. It will enable Vodacom to expand their reach and deliver more reliable, secure and cost-efficient broadband connectivity to the broader SOHO/SME market in Africa. 2015 is about Intelsat EpicNG and delivering high powered, cost-efficient end-to-end satellite solutions. It will improve the business model in a way that unlocks new growth opportunities for our customers and applications for our sector.

Paul Brown-Kenyon
Chief Executive Officer
MEASAT Satellite Systems Sdn. Bhd.

The highlight for the company for 2014 was the successful launch of the MEASAT-3b satellite. Our largest and most advanced satellite to date, MEASAT-3b has now been co-located with MEASAT-3 and MEASAT-3a at 91.5E to make the orbital slot Asia's most robust and resilient orbital location. With 48 Ku-band transponders, MEASAT-3b will allow continued expansion of our DTH and VSAT customers across Malaysia, India, Indonesia and Australia.

In 2014, MEASAT also became the first Asian operator to distribute more than 50 HD channels via C-band. We were proud to support the launch of the HD segment in the region and continue to strive to provide a distinctive offering.

In addition to supporting our current customers with reliable communication services, in 2015 MEASAT will continue to focus on increasing the scale and reach of our network. In particular, we are focused on the development of MEASAT-3c for launch into an orbital slot at 91.5E in Q1 2016 and MEASAT-2a for launch into an orbital slot at 148E in 2017.

Ali Korur
Vice President
Eutelsat Dubai

2014 was a stellar year for Eutelsat in the Middle East, and we look forward to continuing the trend in 2015. The highlight for us was crossing the threshold of 50 million homes watching over a thousand channels broadcast by the Eutelsat and Nilesat satellites from the 7/8 West neighbourhood. This result emerged from a survey we commissioned that showed the exceptional dynamic of the television business in the Middle East and North Africa, and the key role played by satellites that now reach into more than nine out of ten homes.

2015 will mark another milestone, with the launch in the middle of the year of the EUTELSAT 8 West B satellite. Our objective is to take performance at 7/8 West to a new level, with new capacity and new features that help broadcasters grow and protect their business. The Middle East market is one of the most exciting in our global footprint, and our commitment is to working with the broadcasting community to take it to a new level with new pay-TV platforms, the continuing expansion of the viewing audience and the creation of new jobs in the Middle East broadcasting market and film production and distribution industries.

Bilal El Hamoui
Vice President of Commercial
Thuraya

This was a strong year for Thuraya, where we reported three consecutive years of growth. We broke new ground with the launch of the SatSleeve Android and deepened our mobile satellite broadband portfolio with the launch of four new terminals: the Orion and Atlas IPs for Maritime, and vehicular terminals IP Voyager and Commander. Our partnerships with Airtel Africa, Satcom Direct, Talia, TrustComm, ViaSat and Western Union enabled Thuraya to extend our reach into new markets and create new business opportunities across our coverage area.

We are looking to address market opportunities in maritime, BYOD and M2M. In 2015, we will be unveiling initiatives that will enable us to push the boundaries in satellite and terrestrial convergence.

Hussein Oteifa
General Manager, Middle East
SES

2014 was a landmark year for SES. Astra 2E, offering intra-regional connectivity in the Middle East, was operational as of early 2014. In the latter half of 2014, we opened the SES office in Dubai. The Dubai office is set to grow as we work in closer collaboration with our customers. Our investments in the Middle East – both in infrastructure and in a highly skilled team – enable us to expand further into the specific markets, most notably in KSA, where we see a growing demand for VSAT applications.

2015 sees the launch of our new satellite, SES-9, which brings comprehensive coverage over the Arabian Peninsula. It also brings dedicated mobility beams covering high-traffic routes from the Suez Canal to the Strait of Malacca.

Roger Boddy
Chief Executive Officer
Global Teleports

2014 has been a significant year for us, starting with the official launch of our new broadband service for commercial and domestic users, Vip3Play, in March 2014. Thanks to High Throughput Satellite technology, we can reach even the most rural of areas. We are now delivering services across the UK, Europe and Afghanistan.

Throughout 2015, we intend to expand our customer base across the globe. To better accommodate our new service, we have already expanded our UK operation into new premises, where we will be installing additional antennas and hub and network monitoring facilities to enhance our global service delivery capability.

Roger Franklin
Chief Executive Officer
Crystal Solutions

Crystal was pleased to see key players in the satellite industry move to build a stronger case to secure satellite spectrum. This initiative has growing importance as we move closer to WRC. For Crystal in particular, we launched our Video Metadata Analyser to assist operators with the increasing use and management of metadata.

In 2015, the conversation and planning regarding small satellites will come to the forefront. Determining how to successfully integrate the ground support systems into existing networks and efficiently managing them will need to be carefully considered.

Masood M. Sharif Mahmood
Chief Executive Officer
Yahsat

This has been a landmark year for Yahsat, as the company announced plans to launch its third satellite, Al Yah 3, in 2016. Within a decade of operation by Yahsat, this extends the company's commercial Ka-band coverage to an additional 17 countries and 600 million users across Africa and Brazil. Al Yah 3 will be an all Ka-band high throughput satellite, with a unique design that optimises cost, capacity, coverage and flexibility. As we head into the New Year, Yahsat will be heavily focused on the construction of Al Yah 3 in the US with Orbital Sciences Corporation. Alongside this, the company will also continue to explore new opportunities to expand YahClick broadband solutions. Already operational in 12 markets across the Middle East, Africa, Central and Southwest Asia, YahClick plans to launch in new markets next year and provide high-speed, affordable connectivity to businesses and households, even in the remotest of locations, from satellite Y1B.

Erik Ceuppens
Head of Satellite Communications
Airbus Defence and Space

We've installed four times as many new maritime VSAT customers as 18 months ago. We launched a new portfolio, AuroraGlobal, which benefits our maritime, land and government customers with flexible services on Ka-, Ku-, C- L-, X- and UHF band.

We launched a new maritime support initiative called the Field Service Alliance, ensuring fast local support globally.

We started transitioning to the latest iDirect Evolution iDX 3.2 software and X7 modem for maritime customers. The first X7 modems were installed on a fleet of 12 cruise vessels.

We launched new land services based on advanced Newtec technology. Terralink is a standardised, high-quality connectivity platform, featuring a range of services with dedicated bandwidth or guaranteed CIR.

For 2015, we need to service growing demand on Ku- and C-band and meet customer requests to switch to new HTS platforms. This flexibility is inherent in our AuroraGlobal portfolio.

We also need to find a natural owner for our commercial satcom business following the earlier Airbus Defence and Space announcement to divest the commercial satcom business.

Ahmed Hassan
Chief Executive Officer
Wiseband

2014 was a successful year for us as usual. Every year our growth rate is ever increasing. We have established our presence in KSA to respond to higher demand for our unique solutions and services and be able to give superior values, along with our promised response time within 15 minutes. In 2015, we are going to expand further in KSA and offer our superior services to various clients.

Martin Coleman
Executive Director
The Satellite Interference Reduction Group (IRG)

2014 was an eventful year for interference prevention! We merged the former Radio Frequency Interference – End Users Initiative (RFI-EUI) into IRG, helping us to better coordinate our efforts with the broadcasting community. The EUI gained ITU approval of the General Access Procedures.

Educating our industry about interference is vital, and throughout 2014 we conducted numerous Carrier ID tours at major tradeshows, walking participants through the process. As well as that, a number of new tools were developed by members to help mitigate VSAT interference, a major issue within our industry.

In 2015, we will continue to develop new tools, processes and standards enabling us to reduce satellite interference.

Through an extended IRG Workshop programme, we shall reinforce our initiatives and developments, through education and support.

Salem Humaid AlMarri
Assistant Director General for Scientific and Technical Affairs
EIAST

2014 was a highly productive year for us, where we were involved in signing an MOU with Satrec Initiative for global promotion and distribution of our DubaiSat-2 products. This year also saw the launch of several high-profile projects, which included the Advanced Aerial Systems Programme (the first of which is the High Altitude Pseudo Satellite (HAPS) system, in partnership with Airbus DS). We also launched the UAE's first CubeSat Mission, Nayif-1, and started the construction of the primary facility for the manufacture of satellites here in the UAE. We can also now claim that DubaiSat-2 is fully active and providing high-quality satellite pictures, as well as completing the design phase of KhalifaSat.

For 2015, we will be focusing on the primary facility for the manufacture of satellites, which is expected to be completed in the next few months. We will also be looking to move KhalifaSat to Dubai and continue exploring a variety of projects in advanced technology.

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Small cells and satellite: **making rural coverage pay**

In the densely populated urban areas of many markets, mature and emerging, cellular telephony has reached or is nearing saturation. Competition in these metropolitan markets is fierce and mobile operators are now intent on expanding their reach into remote and rural areas in a bid to drive further growth in subscriptions and revenues.

Historically many of these territories have been under-served by both fixed and mobile communications networks—a discrepancy that has caught the attention of national and international regulators and non-governmental development agencies. These groups are keen to see improvements in rural connectivity for the benefits that it brings to citizens and they are adding momentum to operator activities in outlying regions.

"Remote locations can often be difficult to access and costly to service. A macro NodeB with a tower high enough to provide wide coverage requires considerable construction work as well as a continuous power source"

Meanwhile in emerging markets where penetration is low overall, service availability is most scarce in remote and rural areas, restricting communication and economic improvement for the communities most in need.

Mobile operators therefore have two compelling reasons—the drive for further growth and the need to help bridge the digital divide—to expand coverage into rural and remote locations.

Unfortunately this is not a straightforward process. Remote locations can often be difficult to access and costly to service. A macro NodeB with a tower high enough to provide wide coverage requires considerable construction work as well as a continuous

power source; both of which are difficult to provision away from built-up areas.

This increases the cost for a deployment where operators may already be facing challenges in terms of the site's profitability.

Compounding this is the problem of backhaul; the cell site must be linked back to the rest of the network. Fibre is not always an option for backhaul in dense urban areas, let alone outlying regions, while microwave is limited by distance and factors such as line of sight.

So a solution is required that can keep deployment costs down, restrict the need for extensive civil works, limit the cell site's power requirement and guarantee high quality backhaul connectivity, all in the most remote of locations.

Small cells in combination with satellite backhaul offer just such a solution—one that can make these deployments profitable and yet one that many operators will perhaps not have considered.

Remote and rural: Demand is high

Deployment of mobile networks has, from the industry's outset, begun in densely populated urban areas. It was true with analogue systems and it has been true with every upgrade and improvement through to today's LTE networks. The reason is simple, these areas are centres of wealth and the density of the population affords the operators scale in their deployments.

Service uptake has accelerated dramaticallyin a relatively short space of time. It took more than 20 years for the first billion mobile subscriptions to be taken up but only a little over three years to add the second billion. Less than two years were needed to add the third billion and 18 months to add the fourth. Growth has more or less levelled out since then and Informa's WCIS Plus puts the global mobile subscriber base at 6.73 billion at June 2013.

This is close to the current world population but by no means does it reflect the true penetration of cellular service. There are some 25 markets – predominantly in Africa and Asia Pacific – where penetration is still less than 50%, for example; the global penetration figure is heavily skewed by saturation in advanced markets.

Informa is predicting that, by the end of 2016 global mobile subscriptions will be nudging eight billion—and a good portion of this future growth will be achieved by connecting end users in remote and rural locations.

The benefits of connectivity

Operators have traditionally approached remote and rural deployments with caution, wary of both the economic and technical challenges. Today, advances in technology are enabling solutions that address both sets of concerns. This is fortunate indeed, as governments and regulators are concerned with the end goal of connectivity rather than the means of its delivery, in both mature and emerging markets. And they are driving operators to make that connectivity a reality. In Germany and the UK, two of Europe's most advanced markets, certain LTE licences came with strict coverage obligations designed to improve rural connectivity. Winners of the German digital dividend spectrum were required to deploy in underserved rural areas before they were allowed to build out LTE in the more profitable urban centres. In developing and emerging markets the correlation between improvements in telecom service availability and improvements in key economic indicators has been well documented, and employed by the ITU, as well as national regulators and development agencies, to highlight the importance of improving remote and rural connectivity.

Mobile markets with sub -50% penetration at 1Q13

Market	Penetration at 1Q13 (%)
Burundi	33.58
Central African Republic	25.80
Comoros Islands	47.74
Cook Islands	44.86
Cuba	14.65
Democratic Republic of Congo	30.91
Djibouti	34.66
Eritrea	5.71
Ethiopia	24.63
Federated States of Micronesia	35.80
Madagascar	26.41
Malawi	31.39
Marshall Islands	29.19
Montserrat	45.24
Mozambique	44.48
Myanmar	6.30
Nauru	26.38
Niger	32.28
North Korea	8.20
Papua New Guinea	46.15
Somalia	48.10
South Sudan	26.03
Tonga	42.26
Turkmenistan	47.13
Tuvalu	45.00

In a 2005 paper exploring the impact of mobile telephony in Africa published by Vodafone, the authors asserted that a developing country with a ten per cent mobile penetration advantage over its neighbour between 1996 and 2003 would have enjoyed growth in GDP per capita that was 0.59% higher as a result. In research conducted with Deloitte, the GSMA sought in 2012 to assess the impact of 3G data services in 14 markets, developing and mature, concluding that a doubling of mobile data use would increase GDP per capita growth by 0.5%. The study also concluded that a ten per cent increase in mobile penetration brought about a 4.2% increase in productivity in developing markets.

And research is not limited to the mobile industry trying to prove its own worth. The Banco Central de Reserva Del Perú, published a paper in 2012 entitled The Effects of Mobile Phone Infrastructure: Evidence from Rural Peru. The paper's authors charted the effects on Peru's rural population of a dramaticexpansion of rural coverage between 2001 and 2007. Summarising their findings, the authors noted:

"The results suggest that coverage has a strong positive impact on cell phone ownership, hosehold wage income, assets and expenditures.

The magnitude of these effects are large, with wage income increasing by 57% and total expenditures by 61%. We find evidence that mobile phone coverage increases the income, assets and expenditures of rural customers."

Operators are either being pulled into rural areas by their need to grow revenues or being pushed by state agencies keen to improve the lives of rural dwelling citizens. The question is no longer one of 'if', it is one of 'how', and operators must find ways to overcome the challenges associated with remote deployments – and they must derive a profit.

Penetration of ICT services by region, ITU 2012 (per 100 inhabitants)

	Fixed telephony	Mobile telephony	Mobile B'band	Fixed B'band	Households	Individuals using the Internet
Africa	1.4	59.8	7.1	0.3	5.3	14.3
Arab States	9.4	101.6	14.3	2.6	29.6	33.7
APAC	13.2	83.1	15.8	6.9	28.6	28.8
CIS	25.9	158.9	36.0	11.3	42.1	46.4
Europe	40.2	123.3	50.5	25.8	74.0	71.2
Americas	28.6	105.3	39.8	16.0	56.0	57.2
Developing world	13.3	84.3	13.3	5.0	24.0	27.5

Source: ITU

Understanding the challenges

A November 2010 survey conducted by Informa Telecoms & Media found that cost was felt to be the biggest barrier to operators' expansion of rural coverage, followed by concern over the business case, the absence of an existing power source and security problems.

Responding to a subsequent survey question, in which the costs of rural coverage provision were broken out, 52% of respondents cited the cost of building backhaul as the greatest challenge involved in providing rural connectivity. Just under a third opted for problems with the business model, while just 6% cited the cost of the base station itself.

Backhaul is chief among operators' economic concerns in these scenarios and one might well ask why. The problem lies in the distances that must be covered. Fibre is the clear leader among backhaul solutions in terms of technical performance but it is not a realistic option for rural areas. The cost of provision for fibre has meant that it is still to be universally deployed for backhaul even in advanced, relatively compact and densely populated metropolitan markets, let alone in the remote and rural regions of emerging markets.

In coastal areas of African markets, the arrival of submarine cables has brought fibre to the shores, says Steve Good, vice president for network services at satellite operator Intelsat, but inland buildouts have been slow and generally unreliable. Fibre cuts, accidental and intentional, have further slowed progress.

The next most popular solution is microwave, but this is not without its own issues in remote areas. Microwave towers are large, and expensive to deploy and maintain. Over long distances operators will need to use multihop microwave and the installation of towers and sourcing reliable power in the intervening locations magnifies these issues.

Intelsat's Good reports that mobile operators will generally opt to use microwave in situations where up to three hops are required. Only where four or more hops would be needed have operators tended to find it more economically beneficial to use traditional satellite backhaul, itself a costly option.

"A 10% increase in mobile penetration can bring about a 4.2% increase in productivity in developing markets"

Base station costs might not have scored highly in Informa's survey of challenges to rural deployment but the capex outlay involved in deploying a macro cell site is non-trivial. When leading infrastructure vendor Ericsson deployed a cell site in the small riverside town of Belterra in Brazil's Amazon rainforest in 2009 it did so at a cost of $300,000, because the nation's operators did not want to take the risk.

Traffic levels when the site had been connected to the Vivo network and activated led Ericsson to calculate that ROI would have come inside six months had Vivo made the investment itself.

To illustrate the size of the rural connectivity problem in a market like Brazil, Sergio Quiroga da Cunha, who leads Ericsson's operations in Latin America, told Telecoms.com that the country would need to double its existing number of cell sites – which was in the region of 60,000 at the end of 2012 – in order to provide coverage to all of its remote and rural citizens.

Expanding coverage on a geographical basis like this requires a full size Node B and a very tall tower that maximises the reach of the site. This in turn requires significant earthworks, concrete and construction activity. Additional facilities are required to house the generator, which in turn needs feeding with fuel on a constant basis. Fuel is a valuable resource in remote and rural areas and generators are often targeted by diesel thieves. So security staff have to be employed and their effectiveness is often unpredictable at best.

If the costs for the Belterra deployment are typical then the investment associated with the kind of expansion that Quiroga da Cunha was talking about would run into many billions of dollars if Brazilian operators were to use macrocells to provide coverage.

But macrocells are not the only option available to operators looking to provide coverage to remote and rural areas. And fibre, microwave and traditional satellite are not the limit of choice for backhaul.

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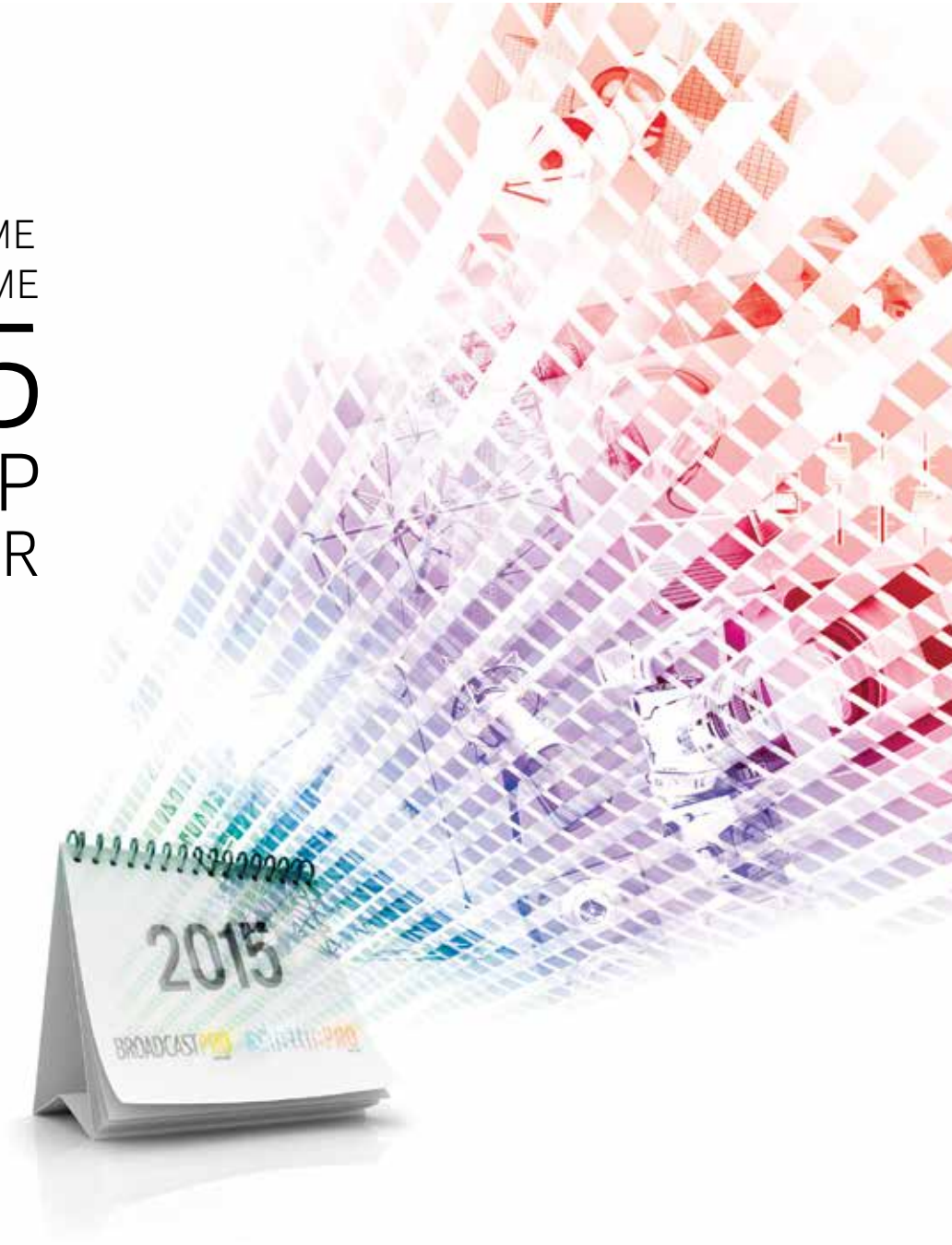

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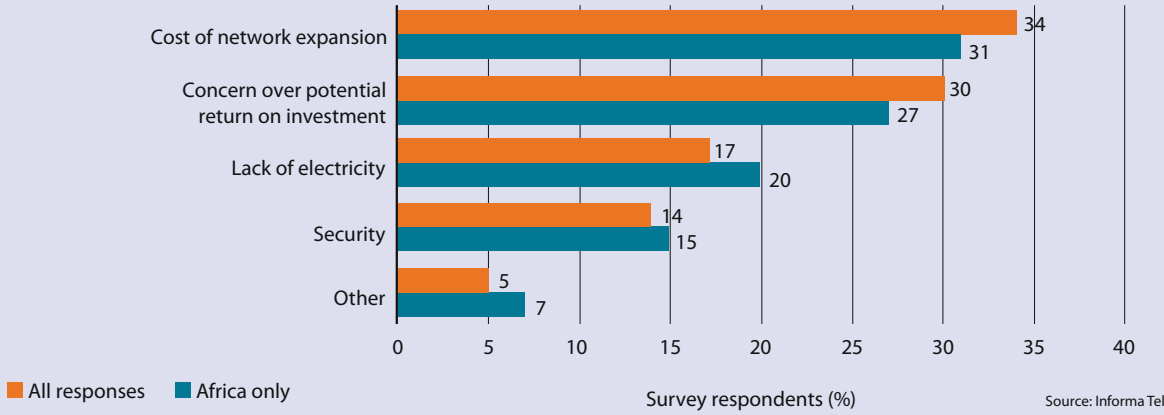
What is the biggest barrier to infrastructure expansion into rural areas?



Small cells and satellite: alternative solutions

Much of the focus on small cells in recent years has been on the domestic femtocell market. But public access small cells offer a convenient alternative to the significant structural and installation work required to deploy a macrocell in remote or rural positions, the problems associated with powering the cell site and the concerns around the business model that operators must face.

The use of small cells in remote and rural deployments could enable operators to look at their coverage requirements and obligations from a different angle, focusing on on the provision of connectivity to people rather than geographies.

"If you look at most rural communities they're usually pretty compact," says Richard Deasington, director of market development at iDirect. "A small village might be one kilometre square, with a couple of hundred houses and there will be a big gap between that village and the next one. A big macrocell will consume a lot of energy in providing coverage for livestock and not much else. The alternative is to place a small public access cell at the heart of each of these villages and backhaul using satellite from each location."

Obviously small cells are a great deal cheaper than their macro counterparts. They can be bolted to walls or poles and innovation around power consumption means that a solar panel is all that is required to keep them running. They also allow operators to judge deployment business cases on very specific locations and revenue opportunities.

Small cell specialist ip.access has made efficiency gains in its products such that a small cell with a 1-2 Watt transmitter can be powered by a solar cell, according to Dr. Nick Johnson, founder and chief technical officer. Such a cell could have a radius of one kilometre. A 32-user 3G cell deployed along these lines could support between two and three hundred subscribers, Johnson says.

"With that you have something that is free standing, has relatively low capex and near zero opex," he says. "It's very easy to deploy and also not vulnerable to the infrastructure issues that are inherent in these kind of rural deployments, where anything that has possible resale value can get stolen. If you can make it secure and reduce its vulnerability to the interruption of supply so that it is self sufficient in power, then that's a really powerful proposition."

It is not an entirely new idea. Japanese operator Softbank, one of the most committed small cell operators in the world, was recognised by the (then) Femto Forum in 2009 for its Niimi project which saw the operator deploy 3,000 small cells in rural locations throughout Japan.

Meanwhile, satellite has long been in use as a backhaul solution for remote cell sites, and economies of scale have brought capex costs well under control. Satellite coverage cannot be matched by other technologies and capacity can be provisioned extremely quickly. Historically the problem with satellite has been opex; the monthly cost of access has been off-putting for operators.

But the advent of High Throughput Satellite technology and innovation in the terrestrial infrastructure that controls the satellites themselves are changing the economics of satellite backhaul. Steve Good says that these new technologies have brought the point at which satellite becomes attractive relative to multihop microwave down towards two hops.

Combined benefits

Small cells are an attrative alternative to macrocells for remote and rural deployments, and High Throughput Satellites offers great improvement on legacy satellite technologies in terms of efficiency and cost. But it is only when the two solutions are deployed in combination that their potential can be truly exploited. Previously satellite backhaul for macro cells relied on Single Channel Per Carrier (SCPC), an architecture that keeps a satellite link open, consuming bandwidth, regardless of the volume of traffic being backhauled. This suited large cellsites where traffic volumes were high and traffic profiles comparatively uniform because backhaul was allocated to accommodate peak traffic.

But SCPC is inefficient where an operator is looking to backhaul a higher number of smaller sites with varying traffic, as it would be with a small cell deployment.

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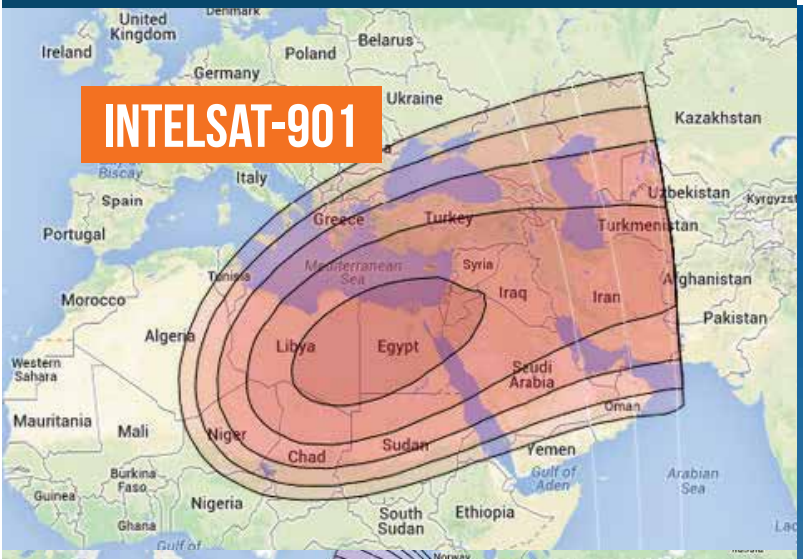

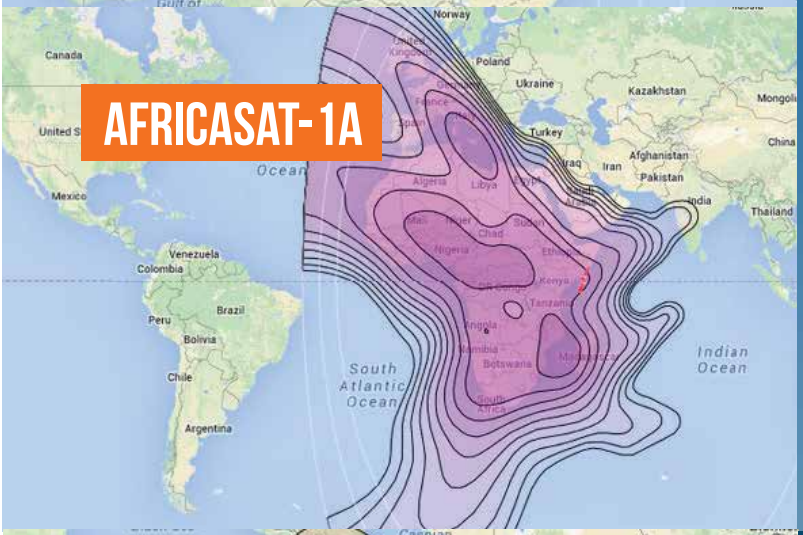

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A large portfolio of small cells, deployed to cover the specific locations of the addressable population, would generate very different traffic patterns than would a smaller number of macrocells. With far fewer users, each site is likely to be peakier, because a single call would represent a larger relative shift in traffic. For a deployment of small cells, a dynamic control system that offers immediate response to demand can drive efficiencies and cost savings.

Much as the current trend in advanced markets is towards data sharing plans that allow subscribers to apportion their data allocation to a range of devices, dynamic satellite control systems can deliver the bandwidth only where it is needed, making more efficient usage of a high value, high cost resource.

The iDirect satellite platform is one such system, explains Richard Deasington. "Our system sends a burst time plan to all satellite remotes, which tells them when to send their traffic so that they don't overlap," he says.

"The system communicates this burst plan to each remote site eight to ten times each second and that's the essence of this kind of network; it works on a bandwidth on demand basis."

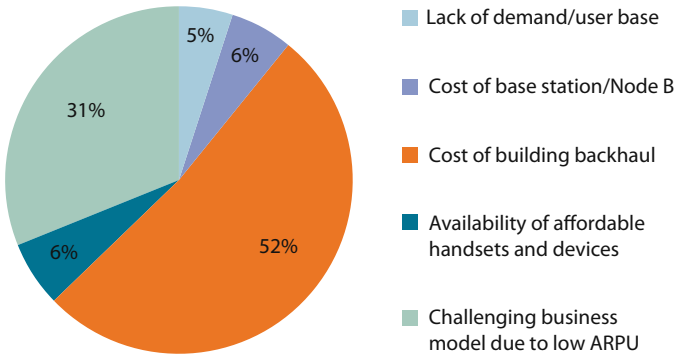
But architectural elegance and bandwidth efficiency are not the only benefits to such an approach. Public access small cells are extremely affordable, with a single unit likely to cost as little as $3,000 – in some cases less. As we have seen, a single macro NodeB deployment can run to hundreds of thousands of dollars and will generate substantial costs associated with installation and maintenance.

In remote and rural areas such a cell will be providing coverage over large, unpopulated expanses. A small cell can be installed and functioning inside a day, powered by sunlight and requiring no ongoing maintenance. And it provides coverage exactly and only where it is needed.

In combination with the reduction in satellite backhaul costs that will result from the increased availability of High Throughput Satellite systems, small cells could offer a significant cost advantage, as Richard Deasington explains: "With bandwidth being allocated ten times a second you can make a saving of between a factor of three and five on your bandwidth requirement. It makes a huge difference to be able to pool that bandwidth and you're then looking at a situation where the cost is a third of traditional satellite backhaul costs."

In such a scenario, mobile operators are only paying for the satellite bandwidth that they are using, and only providing the backhaul where it is needed, in real time, using infrastructure that is likely to pay for itself in days or weeks rather than months or years.

Which of the following do you think represents the greatest challenge in providing rural connectivity?



Source: Informa Telecoms & Media

Conclusion

The provision of communications services to people in remote and rural areas – data as well as voice – has become a political imperative across the globe. And saturation in dense urban environments is driving operators to look further afield for growth opportunities.

But operators face significant challenges to their business cases in remote and rural areas, particularly in emerging markets, where purchasing power is low. Traditional macro cell site installations are difficult to justify in sparsely populated regions and difficult to achieve in areas that are beyond the reach of key road and power infrastructure.

Backhauling sites in these areas is another difficult challenge. Physical links are impractical and even microwave over long distance becomes expensive and awkward to deploy.

Historically satellite connectivity has been viewed as too high-cost by operators for many deployments.

The use of small cells in combination with advanced satellite technology that allows for the dynamic allocation of bandwidth enables operators to provide coverage only when and where it is needed. In a survey carried out in 2012, Informa uncovered significant support for just such a model, despite it being a new concept to many of those surveyed.

Such solutions offer marked improvements in:

- Efficient use of satellite bandwidth;
- Cost of deployment for rural/remote cell sites;
- Power management and security for rural/remote cell sites;
- Cost of backhaul provision; and
- Speed of deployment

Satellite backhaul should no longer be dismissed out of hand as too expensive; in combination with small cells it represents an important tool for operators driven to provide coverage in sparsely populated remote and rural locations. PRO

Whitepaper by telecoms.com Intelligence

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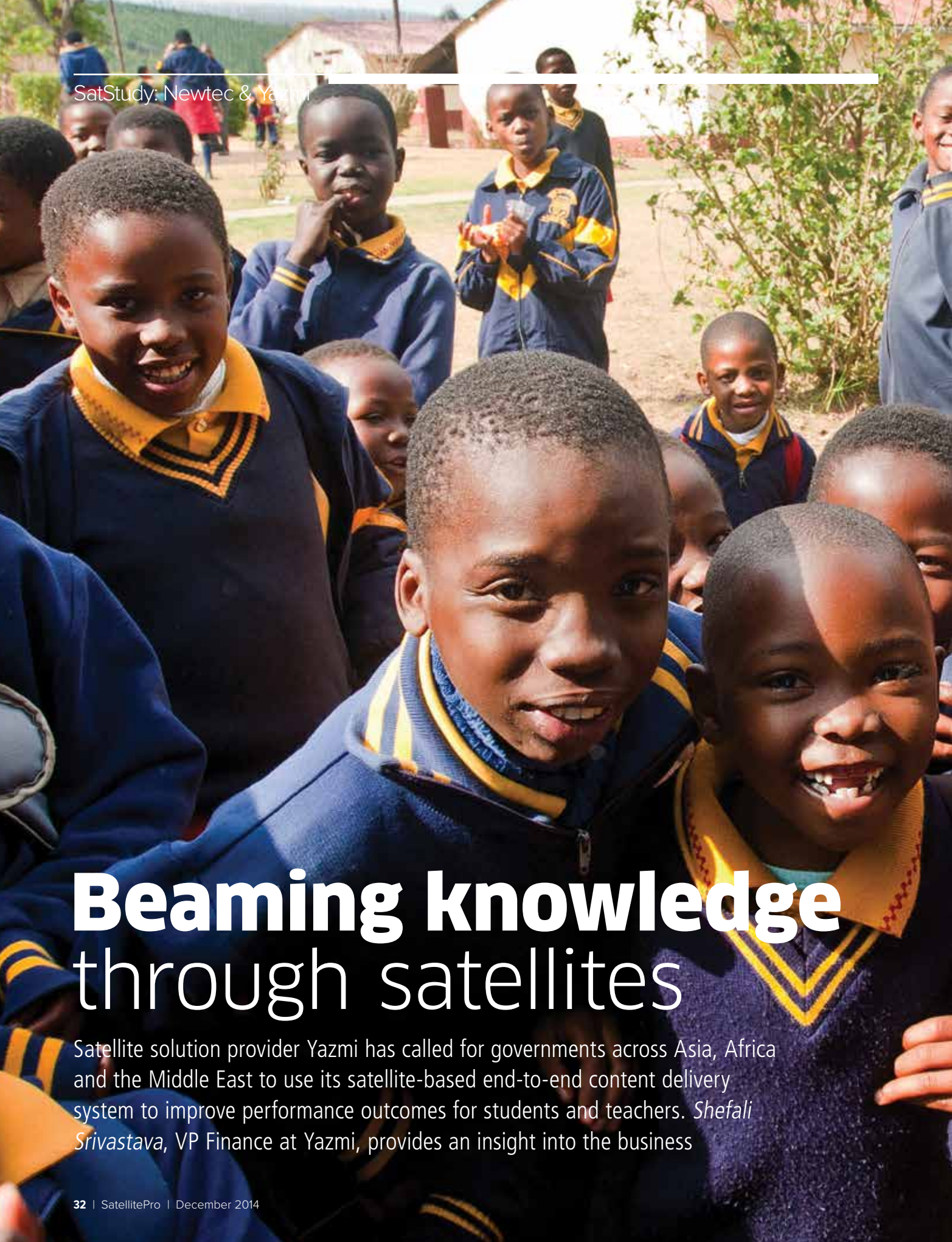

Beaming knowledge through satellites

Satellite solution provider Yazmi has called for governments across Asia, Africa and the Middle East to use its satellite-based end-to-end content delivery system to improve performance outcomes for students and teachers. *Shefali Srivastava*, VP Finance at Yazmi, provides an insight into the business

THE INFRASTRUCTURE: ISSUES WITH HARDWARE, INTERNET AND SECURITY

Rural, remote and low-income regions across Asia, Africa and the Middle East tend to have weak computing and internet infrastructure at school and at home. Governments are willing to invest in computer-aided learning tools to improve their educational systems, but the cost of desktop or laptop PCs limits the number of devices available for use.

Data service also adds to the total cost burden, as laying fixed broadband to schools in these areas is prohibitively expensive and cellular data fees can quickly add up to become a bigger cost than the devices themselves. Internet transmission over a 3G or less cellular network can be long and frustrating, and can also lead children to unhealthy and unproductive distractions and temptations.

THE YAZMI SOLUTION

Yazmi's solution uses Newtec's multicast technology to deliver content via satellite. The AfriStar and AsiaStar data multicasting satellites and the world's first truly satellite-enabled tablet, Odyssey. Yazmi sells tablets, small classroom servers, solar chargers and other accessories to governments for distribution to students and teachers. Access to a channel is then produced via satellite for the government, which can then transmit approved education content to all of its tablet users at zero cost.

The satellite service is capable of transmitting live group lectures from a remote teacher with accompanying slides or whiteboard work, along with digital textbooks and notebooks, educational apps, preparatory materials and other files. Each channel can transmit the equivalent of thousands of books and tablet-scale videos each month to all users. The Yazmi service can ensure universal access to learning materials as well as skilled teachers for more demanding subjects, regardless of location or local infrastructure.

The Yazmi solution also provides governments with the opportunity to deliver training and support to teachers through the satellite network. Just-in-Time coaching can improve the confidence and performance of teachers, while simultaneously reducing travel cost and lost teaching days. Courses can be delivered in subjects where teachers may feel less prepared, such as maths, sciences or advanced English, which can increase the number of lesson plans delivered and heighten student outcomes. In multi-grade classrooms, teachers can use live or taped lectures to deliver lesson plans to one grade while simultaneously teaching a separate lesson plan to another grade, reducing stress on the teacher and improving student results and satisfaction.

SATELLITES ARE THE SOLUTION

Yazmi believes satellites are the perfect candidates for e-Learning connectivity. With a satellite system in place, the possibilities are endless: lectures can be live streamed from any location, teacher training courses can be offered, and having a connected device for multimedia consumption gives students and teachers access to high-quality educational content.

Yazmi owns two geostationary satellites, one positioned over Africa and one positioned over Asia. Government customers receive access to the closest Yazmi satellite and send files or live streams via the internet to uplink stations. The uplink station sends the data to the satellite, which broadcasts the data on a specified channel.

The Odyssey Tablet

Using two orbiting L-band satellites, Afristar and AsiaStar, and satellite radio technology, Yazmi has developed the Android-based Odyssey tablet to be able to show high quality video, audio, text and geographical data, which can be broadcast to every tablet simultaneously or targeting specific groups.

The tablet has an integrated receiver module and is set up by the customer to only have access to that government's downloads, with other criteria such as grade, location and language of instruction. The satellite broadcasts data files, but only those receivers permitted to receive a specific file can receive it. Like radio or TV, a theoretically unlimited number of Yazmi tablets can receive data from the satellite and each tablet downloads at the maximum possible speed, regardless of the number of tablets simultaneously receiving the data.

Each Yazmi satellite has three beams centred on different regions, together covering a wide area. The AfriStar satellite covers all of Africa as well as southern Europe, central Asia, the Persian Gulf and as far as South Asia.

Each regional beam can provide up to 24 channels of 128kbps transmission speed, and Yazmi is working on a hardware upgrade to allow channels to be combined to achieve 256kbps data speed or higher. A customer purchasing at least 50,000 tablets would be allocated one 128kbps channel for its exclusive use. That channel could serve 50,000 tablets, or it could serve 50 million tablets without any impact on download speed.

A one-time service fee is bundled into the purchase price of the tablet. In return, the tablet receives unlimited downloads for as long as it remains in service. The cost works out to about one US dollar per month for an expected tablet service life of three years, or 75 cents if in service for four years, or 60 cents if in service for five years.

A single 128kbps satellite channel can transmit about 40GB per month. This means that the cost per GB of transmission is effectively as low as 2.5 cents per tablet. A 2G or 3G data plan would likely cost hundreds of times more each month per tablet and be unlikely to offer nearly as much data capacity.

Yazmi can be used to deliver live training as well as digital training modules to the teacher, so that he or she can learn at home or school and be better prepared and more confident in the classroom.

Yazmi relies on a customised version of Newtec's multicast content distribution software, TelliCast, to maximise satellite utilisation and ensure that students and teachers get only the content directly related to their needs when they need it.

"With a satellite system in place, the possibilities are endless; lectures can be live streamed from any location, teacher training courses can be offered and having a connected device for multimedia consumption can allow students and teachers alike to access and store high quality educational content"

WHAT IS TELLICAST?

Newtec's TelliCast is a multicast distribution software platform for the reliable distribution of files, directory structures and data streams. It consists of a server package (the official product name of the server is NOP1900 Multicast Software Server), combined with a set of software clients that can be installed on computers or embedded into a variety of receiver devices. For Yazmi, the result is a multicast allowing educational content to be distributed to a large number of recipients with only one single transmission, in a reliable, secured and controlled manner (like defined receiver group features).

FIRST ON THE MARKET

The Odyssey tablet is the only learning consumption device purpose-built for the educational needs of students and teachers in Africa, Asia and the Middle East. This new way of learning aims to provide a uniform quality of education, resulting in sustainable economic growth through a more educated and healthier community.growth through a more educated and healthier community. PRO

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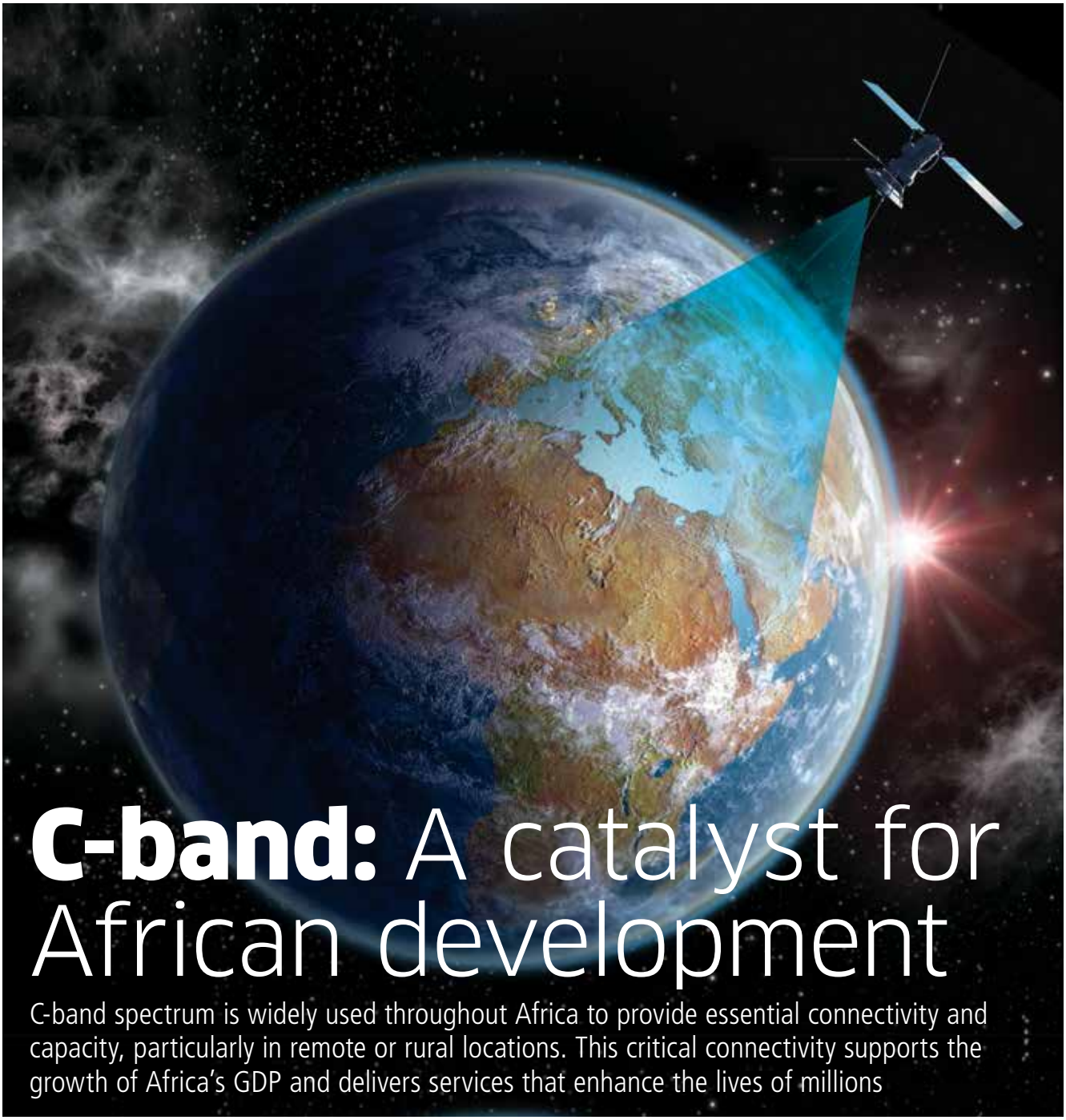

C-band: A catalyst for African development

C-band spectrum is widely used throughout Africa to provide essential connectivity and capacity, particularly in remote or rural locations. This critical connectivity supports the growth of Africa's GDP and delivers services that enhance the lives of millions

C-band's importance to the people of Africa and the satellite sector cannot be denied, but other parties seek access to the band. The International Mobile Telecommunications (IMT) community is targeting C-band in its quest for more spectrum, and an agenda item will address this request at the International Telecommunication Union's (ITU) World Radiocommunication Conference (WRC-15) in November 2015.

The operation of IMT services in C-band has the potential to cause excessive levels of harmful interference and might preclude future use of this band for satellite services. This could have a drastic impact on communications and critical services throughout the continent.

10 FACTS YOU NEED TO KNOW ABOUT

C-band

C-band spectrum for satellite services drives communications, business and quality of life in Sub-Saharan Africa

Angola, Democratic Republic of Congo & Nigeria Examples

Sustains Essential Communications throughout the Continent

1,800 +
C-band sites in Angola, DRC and Nigeria are used for rural connectivity

5 million
Angolans in the most remote places in the world depend on 150 C-band VSATs for rural telephony

80 million
Nigerians (or 16 million households) depend on C-band for access to TV content

Enables Critical Commercial Infrastructure

1,000
C-band sites in Angola, DRC and Nigeria enable connectivity for the oil, gas and mining industries

1,900
C-band VSATs in Angola, DRC and Nigeria support banking services for millions of citizens each day

20 million
Air passengers in Angola, DRC and Nigeria reached their destinations via air navigation services over C-band

Enhances Quality of Life through Connectivity, Education & Medical Care

50
C-band satellites over the region provide critical public services and connectivity for millions of Africans

11,500
University students depend on C-band via the pan-African e-project

100 million
Nigerians rely on 1,200+ C-band VSATs for health, education, water and more

300
C-band VSATs support the work of international organisations and NGOs in the region

Source: Euroconsult

For example, a number of important sectors providing services across Africa are reliant on C-band:

- The financial services industry uses C-band to connect bank branches, facilitating financial inclusion on a continent where – according to the World Bank – less than a quarter of adults have an account with a formal financial institution.
- Many African countries have identified small businesses as significant contributors to economic growth and job creation. Satellite provides cost-effective and robust broadband services for these users, helping them expand their endeavours and gain access to international markets.
- Governments use satellite communications for a number of essential services, including telemedicine and e-learning.
- Satellite provides secure communication channels for the public sector. During elections, C-band spectrum facilitates communication between voting stations and helps expedite the aggregation and transfer of ballots.


Annette Purves

In Nigeria, the C-band spectrum is pivotal to the country's lucrative television industry, with satellite assisting in providing capacity for earth stations. It is expected that Nigeria's entertainment and media industry will reach revenues of approximately $8.5 million by 2018 (PWC), with television advertising, subscriptions and licence fees providing $1 billion of that total.

Furthermore, more than 25 million mobile subscribers in the Democratic Republic of Congo (DRC) rely on C-band capacity to provide mobile and internet connectivity. Satellite is used to provide maximum reach and reliability and also serves as a back-up to fibre connections. Angola's oil industry uses C-band for VSAT communication on the west coast because the spectrum is resistant to rain fade, providing maximum reliability in an area prone to heavy rainfall.

C-Band Spectrum Cannot be Shared with IMT

Research conducted recently by Euroconsult in partnership with the European Space Agency has shown that sharing the spectrum with mobile wireless services will negatively affect satellite services, including public safety functions.

The interference that would be created by sharing could disrupt critical connectivity for global businesses, governments, relief workers and communities. This effect would not be immediate but would be felt over time as each country introducing these new services would need to take action domestically to make the spectrum available to mobile operators.

As part of its efforts, the IMT community is also promoting the idea that C-band satellite applications can easily be moved to other frequency bands, such as Ku- and Ka-bands. This is untrue:

- The large footprints of C-band are necessary for many regional mobile and fixed networks. No longer using C-band could result in a costly migration process that precluded services from being expanded to more remote regions in need of connectivity.
- In regions that experience heavy and sustained rainfall, Ku- and Ka-band are not as reliable as C-band. This could harm many of the networks in place, particularly those used for the banking and oil and gas industries. Any interruption in service could result in huge revenue losses, with a negative impact on the region's overall GDP.

The satellite community has undertaken a global campaign to engage corporations and the customers they serve. We strongly encourage those in the industry to educate customers, partners, regulators and government officials about the potential impact to their business and community. PRO

By Annette Purves, Principal, Regulatory Affairs, Intelsat

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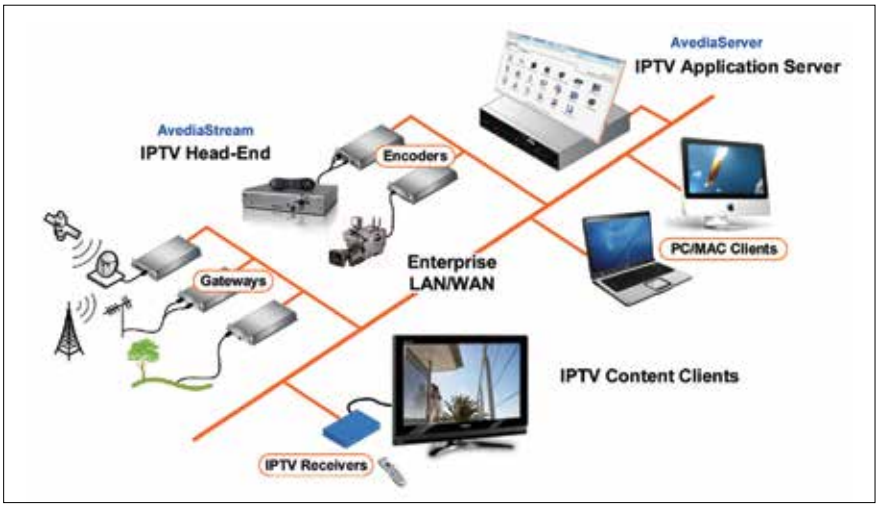
Professional IPTV Transforms on-Campus Life in the Middle East

by Eleuterio Fernandes, Middle East Sales Director, Exterity

In order to compete with global campuses, universities in the Middle East are increasingly deploying video distribution networks delivering multiple international channels in real-time. Although the size of the installation determines the specific IPTV system, security and robust delivery are key features that every campus requires.



According to Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2013-2018, internet penetration in the Middle East jumped 294% between 2007 and 2012. This increased broadband availability has opened up a clear path for widespread professional IPTV, as campuses throughout the Arab world start to implement video as part of their AV offering. Professional IPTV systems can be used for scheduled and recorded programming on campus, student announcements and administrative concerns related to viewing content from localised video sources. They also enable universities to offer high-quality programmes from international channels, including encrypted Pay-TV such as BeIN Sports.

Professional IPTV can be used in student accommodation, communal areas and cafeterias to deliver TV and video via a PC viewing client or standard TV using a set-top box. This is particularly important in educational establishments, as free-to-air and Pay-TV can be used for both learning and entertainment purposes. IPTV also enables faculty members to access scheduled and recorded programming or create subject-specific streams of content interspersed with student announcements or messages.

A robust professional IPTV system can process cable, online, satellite, terrestrial and other video sources, making it the only mechanism able to deliver all broadcast types without degrading the picture or quality of service. This means campuses can offer material from a wide variety of sources, enabling students to watch their favourite TV channels in their room and foreign language channels for educational and recreational purposes.

To ensure that they can deliver high-quality content, educational institutions need to comply with the content industry's security requirements. This means that the professional IPTV system they specify has to support encryption from end-to-end, including Conditional Access (CA), Digital Rights Management (DRM) and Hi-Bandwidth Digital Content Protection v2 (HDCPv2).

Support for CA and DRM is now commonplace in the TV industry. However, this only encrypts content at the source. By adding support for HDCPv2, professional IPTV vendors can secure content as it transits over the IP network. HDCPv2 protects communication over one or more links in a network and protects both wired and wireless communication between devices. Combined with CAS and SecureMedia encryption, support for HDCPv2 future-proofs the professional IPTV system and enables universities to deploy a single system for all their IPTV requirements without risking illicit re-sharing of high quality content by unauthorised parties.

Increased broadband penetration and low barriers to entry are helping the education sector in the Middle East enhance the education and entertainment experiences of its students, as institutions become better aware of the advantages of professional IPTV systems. This enables them to rival international institutions and means students in the region can receive state-of-the-art lectures and content in a single location, and even in their rooms. PRO

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