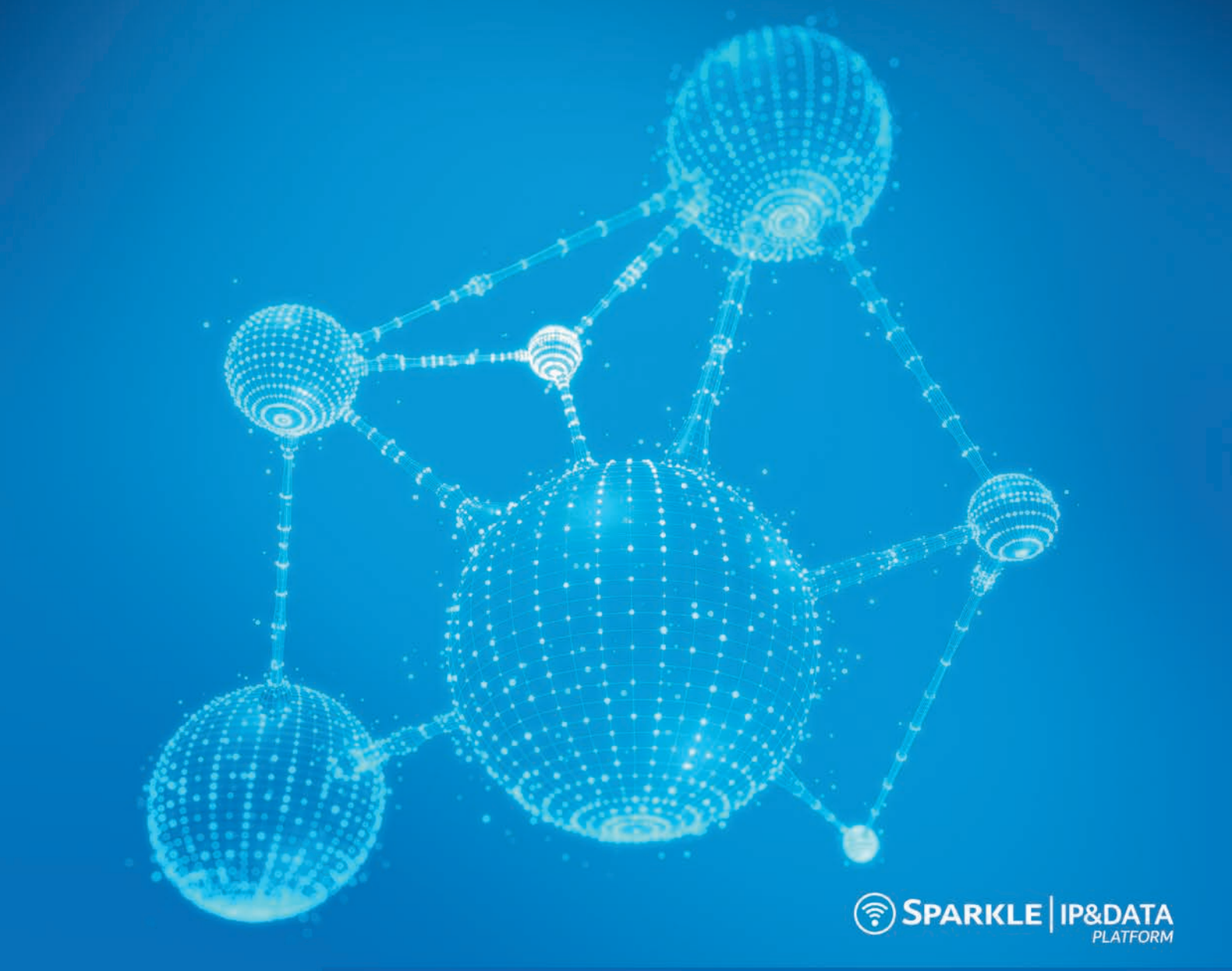
AUGUST/SEPTEMBER 2016
Volume 15
Number 4

northern african wireless COMMUNICATIONS

For comms professionals in north, west, east & central Africa

- Fibre in Africa – the story so far
- Wireless users in the banking sector
- Building Carrier Wi-Fi networks



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EDITORIAL:
Editorial director: **Rahiel Nasir**
Designer: **Alan McClenaghan**
Contributors: **Grant Marais**
Khetan Gajjar

ADVERTISEMENT SALES:
Senior sales executive: **Andy London**
andrewl@kadiumpublishing.com

Production & circulation:
Production: **Suzanne Thomas**
suzannet@kadiumpublishing.com
Tel: +44 (0) 1932 886537

Editorial enquiries:
Tel: +44 (0) 1932 886537
rahieln@kadiumpublishing.com

Publishing director: **Kathy Moynihan**
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So far, the "anomaly" that caused SpaceX's *Falcon 9* rocket to explode on the launch pad is not yet known. Both the vehicle and its cargo – Spacecom's *AMOS-6* – were lost in the inferno that rapidly engulfed the rocket just moments after it was cleared for lift-off.

Spacecom's *AMOS-6* lost as *Falcon 9* rocket explodes on launch pad

At 9.07 EST on 1 September, Spacecom suffered another blow as the SpaceX *Falcon 9* rocket that was due to carry its *AMOS-6* satellite into orbit exploded on lift-off.

While the launch vehicle and the satellite were both lost, the pad was clear and no human injuries were reported.

Spacecom is currently determining the cause of the anomaly that resulted in the explosion, but at the time of writing in September it had yet to make any further announcements regarding the investigations.

In the meantime on 5 September, the company issued a press statement which said that it was developing a plan of action following the loss of the satellite.

CEO David Pollack said: "Our programme includes, among other measures, exploring the possibility of procuring and launching a replacement satellite. Working quickly and efficiently, management is engaging with current and potential partners to move forward."

He pointed out that Spacecom will serve all of its current and future financial commitments. Some of the company's current Ku-band clients on *AMOS-2* that were to be relocated to *AMOS-6* will now be moved to *AMOS-3*. For others, the company said it is planning to help find capacity on other satellites or possibly on a satellite that will be relocated, either permanently or temporarily, to 4°W.

In collaboration with Facebook, Eutelsat had contracted a multi-year agreement to lease *AMOS-6*'s Ka-band payload covering sub-Saharan Africa, with a view to launching broadband services from early 2017 *(see News, Oct-Nov 2015)*.

Following news of the loss, Eutelsat said it remained committed to growing broadband in Africa and will explore other options to serve the needs of key clients ahead of the launch of its own full high throughput African broadband satellite in 2019. Facebook is also looking at alternative connectivity options.

Compensation claims

In papers filed with the Tel Aviv Stock Exchange, Spacecom stated that it was pursuing its rights for the return of money paid plus interest and agreed compensation for the delay in completing the construction of *AMOS-6* from Israel Aircraft Industries (IAI). The total, including a USD10m compensation fee, amounts to around USD205m.

In addition, the company said it had insured *AMOS-6* for USD330m, but the policy only covered the satellite for various periods after its launch while it was in orbit. As the loss occurred prior to the moment of launch, these policies were not used and were cancelled. As a result, Spacecom stated that it was entitled to a full refund of all sums paid by the insurers in respect of the satellite. These amount to about USD39m.

Furthermore, since SpaceX failed to provide its contracted services, Spacecom called for either the return of its USD50m fee or use this for a future satellite launch.

Meanwhile, the successful launch and operation of *AMOS-6* was one of the conditions attached to Spacecom's proposed merger agreement with Luxembourg Space Telecommunication *(see Wireless Business, p13)*. Spacecom said that together with LST, it is now examining the option to "repair the agreement and adapting it to the new situation".

AMOS-6 is the second satellite loss Spacecom has suffered since last year. On 21 November, the company lost all contact with *AMOS-5* which was launched in 2011 and served Africa from 17°E *(see 'Rocket Power' feature, Dec 2015-Jan 2016)*.

Iridium launch now delayed – News, p6.

Vodafone Egypt declines 4G license "in its current form"

Vodafone says it wants to launch 4G in Egypt as soon as possible but adds that "the conditions must be right".

The company was speaking after the Egyptian authorities offering of 4G licences failed to attract any bids from the country's three mobile operators.

In an online press statement issued 22 September, Vodafone said that after extensive analysis, its board of directors believe that the current terms and conditions of the 4G license do not serve the interests of citizens, and do not take into account the developmental dimension of the nation's telecom sector.

"The license does not offer sufficient spectrum to operate 4G services efficiently and in a way that would allow the Egyptian user to experience significantly higher speeds," said the statement. "Furthermore, the lack of available 4G spectrum could also impact the quality of 2G and 3G services being enjoyed by over 40 million existing customers. Accordingly, the board has decided to decline the 4G license in its current form."

The company said that it would be ready to acquire a 4G license if the terms and conditions were revised to encourage future investment in the development of Egypt's mobile industry. It added that it will work alongside the government to try and achieve this.

At the end of September, the GSM Association called for fresh talks between the Egyptian authorities and the country's mobile industry. Its chief regulatory officer John Giusti said: "We urge the Egyptian government to increase the amount of spectrum offered to mobile operators to facilitate the speedy rollout of 4G services in Egypt.

"The GSMA firmly believes revised license conditions arrived at through a transparent, consultative process with the industry, would better serve consumers and enhance the development of the telecoms sector in Egypt."

The association said it is "widely recognised" that a sufficient amount of spectrum is a necessity to justify investment into any new 4G network.

Yahsat and iDirect launch Virtual Network Operator satellite service

Yahsat and VT iDirect are working together to introduce VNO services across the existing footprint of *YahClick*, Yahsat's satellite broadband service.

Based on what's claimed to be the "industry changing" capability of VT iDirect's *Evolution* platform, Yahsat says the VNO offering will leverage the "high-speed and economical capacity" of *YahClick*'s Ka-band network.

It says service partners will be able to purchase their own bulk capacity which they can then fully manage and configure themselves to offer differentiated services. They will also be able to commission, control and monitor their own remote sites, while designing and configuring their end to end IP network.

The service partners across *YahClick*'s markets, along with the Yahsat and iDirect teams that are training them.

The new service is targeted to meet the high QoS demands of corporate and government customers. Yahsat says partners are empowered to create private networks, offer higher uplink speeds, and address market needs such as cellular backhaul, rural telephony, distance learning, etc.

It says that as well as benefiting from high throughput capacity using its *Y1B* coverage area, partners will not be required to pay any capex or upfront costs in order to operate as a VNO.

Other advantages are that partners receive capacity either as simple Mbps or Msps (mega symbols per second). In addition, Yahsat says the service is supported by a "simple" pricing structure that covers all aspects of the offering, including the provision of VT iDirect line cards, round-the-clock support, teleport charges, access to high-speed internet backbone, as well as satellite capacity.

Orange to accelerate mobile money services in Africa

With the recent receipt of Electronic Money Establishment (EME) licenses in Senegal, Mali, Côte d'Ivoire and Guinea, Orange claims it has further strengthened its position as a major player in Africa's mobile financial services (MFS) sector.

In 2015, the Central Bank of West African States published an update of the regulatory framework related to MFS. With the significant growth of mobile money services within the Economic Community of West African States, it encouraged telcos to obtain a license to operate as an EME in order to conduct their mobile money activities within a broader framework of responsibility.

Each EME is licensed by the Central Bank of its territory but remains an autonomous subsidiary controlled by the local operator.

Orange says its EME ensures the issuance, management and distribution of electronic money for *Orange Money*, and manages the compliance policy (previously, Orange's partner banks were responsible for the latter). The EME also coordinates requests to the Central Bank for the launch of new functionalities and monitors overall activity.

According to Orange, its licensed EME status gives it more autonomy and agility, enabling it to offer customers increasingly innovative services in a shorter amount of time.

The group has also set up a dedicated organisation to provide risk management for the business scope of the EMEs. Based in Côte d'Ivoire, the Orange Money Compliance Expertise Centre (CECOM) reports to the Orange Group and provides second level control for the *Orange Money* business. It serves Orange's EME subsidiaries, which provide first level control.

The operator added that CECOM will be staffed by a multidisciplinary team of experts with "advanced" skills in banking, telecoms and IT.

Delay for largest commercial satellite constellation

The launch of the first satellites that will form Iridium's *NEXT* fleet has been delayed.

In August, they were at Vandenberg Air Force Base being processed by SpaceX before their launch which was originally targeted for 12 September. But the loss of *AMOS-6* (*p5*) has reportedly created a "bottleneck" at Vandenberg, and Iridium said SpaceX is now aiming to get back on track for a launch in November.

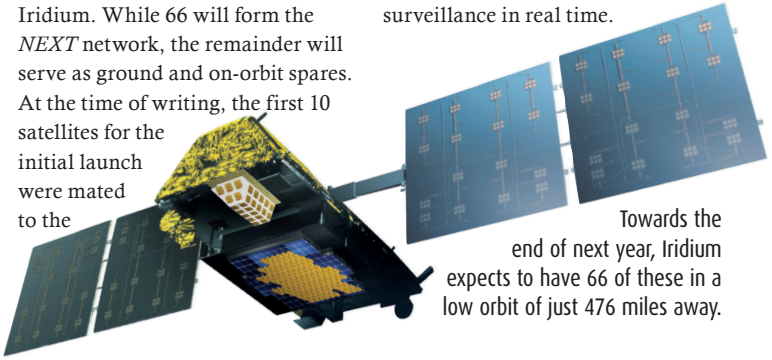
NEXT will comprise 66 cross-linked satellites in low-Earth orbit to deliver mobile voice and data coverage over the planet's entire surface, including oceans, airways and polar regions. Iridium CEO Matt Desch said: "This programme replaces the largest commercial satellite constellation in space with state-of-the-art technology and new capabilities, allowing Iridium to support the connectivity needs of today, as well as those yet to be imagined."

Each satellite in the *NEXT* constellation will link-up with four others to ensure a continuous and ubiquitous meshed connection. Iridium said having a large number of fast-moving spacecraft with multiple overlapping spot beams will minimise missed connections and dropped calls.

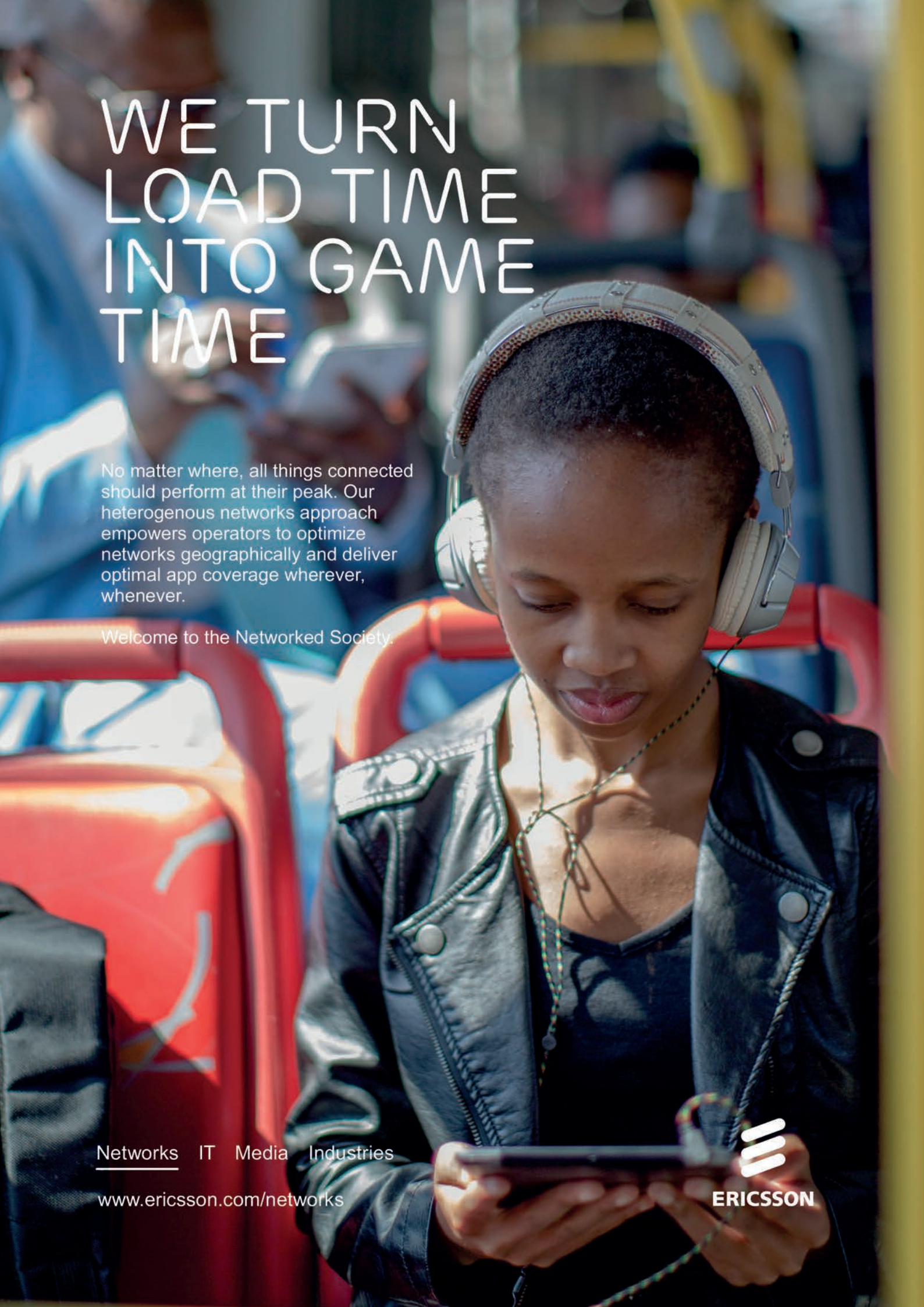
It added that with each satellite orbiting at just 476 miles (780km) away, transmission paths will be shorter and signal attenuation reduced.

Working with sub-contractor Orbital ATK, Thales Alenia Space will build a total of 81 satellites for Iridium. While 66 will form the *NEXT* network, the remainder will serve as ground and on-orbit spares. At the time of writing, the first 10 satellites for the initial launch were mated to the dispenser, and represent SpaceX's heaviest payload to date.

All 66 orbiters are expected to be launched by late 2017. Starting in 2018, Iridium said the constellation will enable Aireon's satellite-based system to provide global aircraft surveillance in real time.



Towards the end of next year, Iridium expects to have 66 of these in a low orbit of just 476 miles away.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European Space Agency backs ECO Wi-Fi concept

As part of its ARTES Partner programme, the European Space Agency (ESA) will contribute up to EUR10.7m in funding to support satellite operator Avanti Communications in bringing rural communities across Africa online.

ESA aims to provide affordable satellite broadband connectivity to 1,400 community sites across sub-Saharan Africa over the next two years using Avanti's recently launched *ECO* Wi-Fi hotspot initiative.

The solar-powered hotspots will be hosted at schools that will benefit from subsidised internet access. Consumers and local businesses within range of a hotspot will use the newly developed *ECO* mobile payment app to make micropayments for broadband credits which convert to data usage.

Avanti will partner with Newtec and a group of leading service providers, combining satellite, Wi-Fi and solar power, to deliver the programme. *ECO* MoUs have been signed with South Africa's Sentech and Ministry of Communications; Wananchi, Intersat and Imarasat in Kenya; and the Tanzania Education Authority.

Many other governments, service providers and other partners are said to have expressed support for the initiative. They include World Bank International Finance Corporation, Telkom Kenya, Internet Solutions, Safaricom, iWayAfrica, iSat Africa, MainOne, Nynex, TelOne, Quantis, and Discovery Learning Alliance.

"Through product innovation and a partner strategy we have found an economically viable way to deliver broadband to low income customers in rural Africa," said Avanti CEO David Williams. "Working with governments and local service providers, and with support from ESA, this first project is a significant step towards creating something that will address a need across the entire continent."

Avanti for sale – Wireless Business, p13.

SITA upgrades connectivity for airline

SITA, the global air transport communications provider, is to roll out faster, new generation connectivity across Kenya Airways' global network.

Through *SITA Connect*, the airline will have access to high-speed, secure connectivity, linking staff and offices around the world to Kenya Airways' central systems and applications to manage everything from reservations, check-in and boarding.

SITA says *Connect* is built on a network that is constantly updated and refreshed to deliver new features and support the latest technologies. It includes flexible connectivity options and seasonal subscriptions fully integrated with the company's cloud network.

Among its features, the platform interconnects customer sites via a dedicated VPN. It offers dedicated bandwidth, traffic prioritisation, and supports all types of access including fixed lines, Ethernet, satellite, xDSL, and 3G/4G.

Central to the delivery is SITA's *AirportHub*, a shared connectivity platform that is said to be already used in more than 300 airports in over 100 countries.

Kenya Airways says using SITA's common-use infrastructure eliminates the complexity of dealing with local telecom providers.

The airline's CEO Mbuvi Ngunze adds: "SITA, with its truly global footprint and experience, provided us with a world-class solution supported by a local presence in each destination, connecting even the furthest outstation to our hub in Nairobi."

Africa passes half-billion subscribers

More than half a billion people across the continent are now subscribed to mobile services, according to the GSMA.

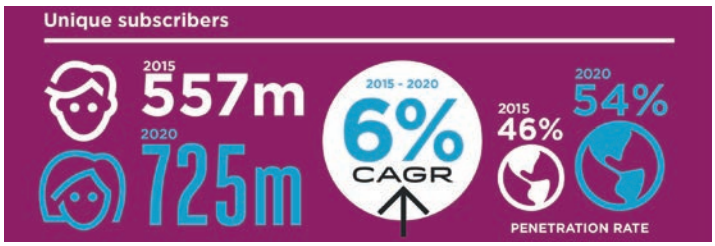
The *Mobile Economy: Africa 2016* study published at the end of July revealed that there were 557 million unique subscribers across the continent at the end of 2015, equivalent to 46 per cent of the population. The GSMA said this makes Africa the second largest but least penetrated mobile market in the world.

The region's three largest markets – Egypt, Nigeria and South Africa – together accounted for around a third of the total subscriber base.

Mobile broadband (3G/4G) made up just over a quarter of total connections (including M2M) at the end of 2015, but the GSMA expects this to be responsible for almost two-thirds by 2020.

The number of unique mobile subscribers is forecast to reach 725 million by 2020, accounting for 54 per cent of the expected population. The study also found that the use of mobile technologies and services across Africa generated USD153bn in economic value last year, equivalent to 6.7 per cent of the region's GDP. This contribution is forecast to rise to USD214bn by 2020, or 7.6 per cent of GDP.

Latest ITU report says billions of people are still offline – News p9.



Africa is now the world's second largest but least penetrated mobile market.

Flexenclosure has *eSite* deployments across Africa, such as this one in Morocco, but this is its first order in Gabon.

Energy Vision to use *eSite* in Gabon

Energy Vision has selected Flexenclosure's *eSite* for a hybrid power system rollout in Gabon.

Mauritius-based Energy Vision is a renewable energy services company for telcos, focusing on sites where the electricity grid is either unreliable or non-existent.

Its CEO Ofer Ahiraz says: "Our 'energy as a service' business model depends entirely on implementing power solutions we can trust to deliver exceptional performance at lowest possible cost, and that our customers can trust to maintain their network uptime."

The company will use the *eSites* to power cell sites for what's described as "one of the largest mobile operators in the world". The deployment will include 3.6kWp solar arrays as well as *eManager*. Flexenclosure says the latter is an all-in-one toolbox for site power infrastructure management, and includes remote monitoring, power optimisation, KPI reporting, and site logistics.

As well as supplying equipment, the vendor says it is working closely with Energy Vision on customising the *eSites*, and is also providing comprehensive on-site training and local implementation support during the network rollout.

According to Flexenclosure, *eSite* is a hybrid power system for off-grid and bad-grid cell sites delivering round the clock network uptime along with diesel-related cost savings of up to 90 per cent.

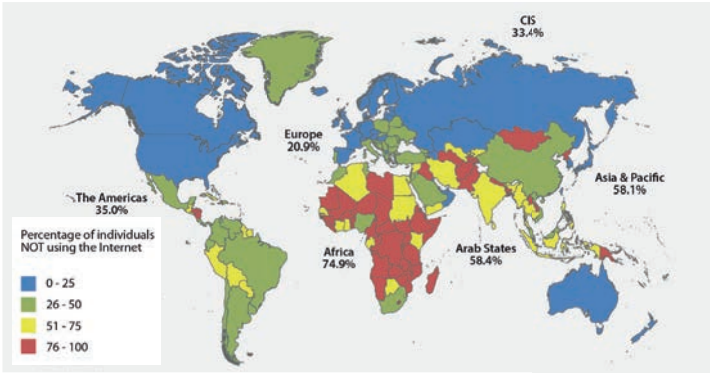
Digital divide: billions still offline

By the end of 2016, 3.9 billion people around the world will still remain cut-off from the internet, according to recent ITU data.

In its latest *ICT Facts and Figures 2016* report published in July, the union said that while almost one billion households in the world now have internet access, 84 per cent of them are connected in Europe compared to 15.4 per cent in Africa.

The report revealed that mobile phone coverage is now near-ubiquitous, with an estimated 95 per cent of the world's population (around seven billion people) living in an area covered by a basic 2G network.

It added that advanced mobile-broadband networks (4G) have spread quickly over the last three years and reach almost four billion people today.



The ITU forecasts that 3.9 billion people will still not have internet access by the end of this year. Almost 75 per cent of Africa's population will be non-users.

Globally, the ITU expects the total number of mobile-broadband subscriptions to reach 3.6 billion by end 2016, compared with 3.2 billion at end 2015. In developing countries, the number of subscriptions continues to grow at double digit rates, reaching a penetration rate of close to 41 per cent. But in Africa, the report stated that there are only 29.3 mobile broadband subscribers per 100 inhabitants.

The ITU also found that internet penetration rates are higher for men than for women in all regions of the world. The global internet user gender gap grew from 11 per cent in 2013 to 12 per cent in 2016. The regional gender gap is largest in Africa at 23 per cent, and smallest in the Americas at two per cent.

In terms of capacity, the report said that by early 2016, international internet bandwidth had reached 185,000Gbps, up from a low of 30,000 gigabits in 2008. But it also revealed that bandwidth is unequally distributed worldwide.

A lack of bandwidth remains a major bottleneck to improved connectivity in many developing and Least Developed Countries. The latter currently includes 48 nations of which 34 are in Africa.

MENA upgrades subsea network with Infinera

MENA (Middle East and North Africa) has upgraded its submarine cable system and can now rapidly deploy bandwidth in increments of 100Gbps.

A subsidiary of Orascom Telecom Media and Technology, MENA's undersea fibre connects Europe to the Middle East and South East Asia to provide wholesale capacity to global networks.

The operator is using Infinera's *DTN-X XTC Series* transport platform to integrate its subsea network connecting the Mediterranean and Middle East regions with its existing Infinera terrestrial network The vendor says the *DTN-X XTC-10* allows MENA to deliver 100Gbps of coherent transmission capacity via 500Gbps superchannels today, while supporting scalability to provide terabit superchannels in the future.

The high-capacity superchannels are made possible through the use of Infinera's photonic integrated circuits (PICs) that are said to be unique as they can deliver 500Gbps of transmission capacity from a single line card.

Is fibre overcoming Africa's connectivity challenges? Feature pp18-20.

Orange Egypt to use Nokia SDM for faster services

Orange Egypt will use Nokia's *Subscriber Data Management (SDM)* platform to enable the faster launch of new and customised services.

Based on the vendor's *One-Network Directory Server (One-NDS), SDM* will consolidate Orange Egypt's customer data – which were previously distributed across different systems in its network – into a single database.

It's claimed this will enable the operator to access subscriber data instantly across multiple applications. In addition, Nokia says it will help significantly reducing operating costs, as well as maintaining and evaluating subscriber data on one system instead of several.

The project also involves the introduction of Nokia's *New Technology Home Location Register, Home Subscriber Server*, and *NetAct* network management system.

The vendor claims the combination of these components enable management of subscriber data from a central location, leading to greater network efficiency, faster reporting and the creation of new services.

OPIC and Microsoft commit to wireless internet in Kenya

The Overseas Private Investment Corporation (OPIC) has disbursed its first funds to Mawingu Networks which specialises in delivering affordable internet into rural Africa.

OPIC is the US Government's development finance institution and has committed to financing a USD4.1m loan to Mawingu Networks which is providing solar-powered wireless internet across rural Kenya. The Nanyuki-based company was able to establish its current operating model using an initial grant in 2013 from Microsoft's *4Afrika* initiative and USAID.

Using a network of solar powered 'nomadic' wireless internet stations, Mawingu says it provides last-mile connectivity access to areas that cannot economically access the internet. OPIC's loan will allow the company to expand connectivity and provide off-grid internet access using TV white space (TVWS) technology.

"Mawingu's technology and ingenuity will make it possible to provide affordable, solar powered wireless internet to communities throughout rural Kenya," said OPIC CEO Elizabeth Littlefield. "Its extensive reach will connect many of these developing communities to the world wide web for the first time."

OPIC CEO Elizabeth Littlefield says Mawingu will connect many communities to the web for the first time.

Microsoft believes that the expansion will ultimately build Africa's knowledge economy by connecting more people to educational and advancement opportunities. Amrote Abdella, regional director for the corporation's *4Afrika* initiatives, said: "Our studies show that Mawingu's business model is affordable for consumers even in the least developed areas."

MTN refutes allegations

MTN has issued an official statement following various media reports alleging that it has improperly taken money out of Nigeria. In September, senator Dino Melaye told the Nigerian Senate that MTN had illegally repatriated USD13.92bn out of Nigeria from 2006 to 2016 "through four Nigerian Banks and a serving minister of the Federal Republic of Nigeria". The Senate agreed to investigate the matter. In the meantime, MTN Nigeria CEO Ferdi Moolman said: "The allegations made against MTN are completely unfounded and without any merit."

Combating device fraud

The GSMA and the World Customs Organisation (WCO) will partner in the fight against the counterfeiting and fraudulent trading of mobile devices. The GSMA's mobile device database and the WCO's IPM mobile platform will be integrated. This will give customs officers global, real-time product information on devices, enabling them to assess the authenticity of device shipments as they cross borders. The move is intended to improve cross-border trade procedures, assist with the rapid detection of counterfeit goods, and secure the international trade supply chain.

TV exclusive for Arabsat

Arabsat has exclusively launched the Mauritanian TV bouquet in the Middle East, North Africa and Europe on board *BADR-4*. Thanks to its "excellent" footprint which covers the entire region on the same frequency and using a minimum receive dish size, Arabsat says the satellite will contribute to the delivery of Mauritanian broadcasting to large numbers of viewers. *BADR-4* was launched in 2006 and orbits at 26ºE from where it delivers services via Ku-band.

App2Chat puts telephony into "palm of the hand"

What's claimed to be a new and innovative telecoms solution for enterprise users will also be distributed in Africa.

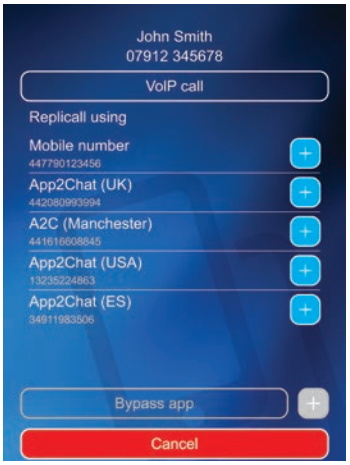
App2Chat was unveiled by UK-based The Pink Telephone Company at the end of last year. So far, it has been launched in Spain, Cyprus and Germany, and is claimed to have proved popular with more than 3,500 businesses. The expansion into Africa will be the first time it has been distributed outside of Europe.

App2Chat is an office telephone system on a mobile. Pink Telephone claims the service has all the features of a PBX system, and offers the full functionality of a desk phone including voicemail, call forwarding and transfer, recording, conferencing and more.

App2Chat is compatible with all smartphones running *Android* and *iOS* smartphones. Pink Telephone says it works over 3G and 4G mobile networks worldwide, and offers optional Wi-Fi connectivity for office working and overseas roaming.

According to the firm, what sets *App2Chat* apart from other enterprise class telephony apps is its "unique" ability to place the power and functionality of a traditional office desk phone into the palm of the hand.

Price is also said to be a differentiator. Pink Telephone says the service costs around GBP0.30 per day and does not require any upfront investment.



App2Chat works over 3G and 4G networks worldwide, and is claimed to have all the features of an office PBX system.

"One stop shop" MEA backbone solution

Networks in Africa and the Middle East that peer on the Marseille or Paris internet exchanges will now be able to peer remotely in each city in the most cost-effective and direct way.

The move follows a strategic partnership agreement between France-IX and international wholesale solution provider BICS.

Carriers, ISPs, CDNs and other networks based in Paris or Marseille looking for fast and secure internet connectivity to the MEA region can utilise France-IX's convergence hubs and connect seamlessly through BICS.

France-IX says it offers peering services to more than 320 networks in Paris and Marseille, while BICS claims its network offers a "truly" global footprint with 112 POPs worldwide in addition to local support. BICS adds that it also has full access to 20 submarine cables covering all key international routes including EIG, AAE-1, SeMeWe-3, SeMeWe-4, SAT-3/WACS and SAFE.

The companies claim their partnership provides increased bandwidth granularity with increments as small as 100Mbps, deployment times as fast as two business days, and cost savings of up to 50 per cent per month. They say this is because customers will only need a single cross-connect to a single France-IX port, and the activation of one service with BICS.

SEACOM adds peering in Europe and Africa

SEACOM has become the first African carrier to peer at Netnod in Stockholm. Netnod is an independent, non-profit IXP that operates five IXPs in Sweden and Denmark.

"The majority of internet traffic into and out of Africa goes to Europe, which is why we're investing in connectivity on [that] continent," says Mark Tinka, SEACOM's head of engineering.

"We are the only African carrier with a direct physical presence in Stockholm, which means that we can help our service provider and network operator clients deliver a superior level of service to clients connecting to internet services in Scandinavia."

SEACOM's head of engineering Mark Tinka says most of Africa's internet traffic comes from and goes to Europe.

Over the last few months, SEACOM has been expanding the list of European IXPs at which it peers. It has recently added France Internet Exchange (France-IX) in Paris to PoPs it now has in Europe's five busiest centres for internet traffic: Stockholm, Amsterdam, London, Frankfurt and Marseille.

Marseille is said to one of the key landing points in Europe for most of the marine cables coming in from Asia, Middle East and Africa.

SEACOM has also added new internet exchange points to its roster of peering agreements in Africa. They include Kampala (UIXP), Nairobi (KIXP) and Durban (NAPAfrica).

The firm says all these new peering agreements will further enhance the performance and reduce the latency its clients will experience when they connect to web services in Europe and across Africa. It also claims its IP transit network now offers African service providers direct connectivity to a range of small, medium and large partner networks in Europe.

Internet Society reveals why African internet growth is slow

Simply having internet access and availability are not enough to get people online, according to research carried out by the Internet Society.

In its *Promoting Content in Africa* report published at the end of August, the society said that while significant improvements have been made in internet infrastructure, especially in mobile networks, internet adoption rates are slowing in many countries because users lack compelling reasons to connect.

The study revealed that content and services are the main factors in making the internet desirable, especially when the subject matter is relevant and in a language that users can easily understand. It said that in sub-Saharan Africa in particular, local language content is key to bringing new users online, as many are not comfortable reading in English or French.

The sub-Saharan countries studied by the Internet Society included Rwanda, Kenya, Tanzania, Nigeria, Senegal and Ghana. It found that the majority of international and locally developed content is hosted outside these countries, typically overseas in Europe and the US, resulting in slow internet speeds and higher access costs. In Rwanda for example, the study said that of all websites using the .rw domain name, only a small fraction are hosted locally in the country.

The society also pointed out that monetising mobile content remains a major challenge. It said the region faces a combination of barriers, including the inability to pay and receive payments for mobile apps, which serve as a major channel for content distribution in most African countries.

Bastiaan Quast, Internet Society fellow and co-author of the report, said: "Faster and better internet access can help entrepreneurs create new local content including services and apps, but developers face barriers when it comes to payment mechanisms in order to monetise content."

With a lack of a payment mechanisms, the society says users may not be able to purchase content, and even if they could, the developer may not be able to receive the payments. Such restrictions extend further to an ability to receive payments for advertising and for local entrepreneurs to raise funds to develop new innovations.

Furthermore, it said problems with advertising payouts are exacerbated by the fact that most major advertising platforms do not support any African languages (except Arabic). In some cases, the study found that even the placing of ads in a supported language such as English or French on pages that are primarily in a different language (e.g. Swahili) is expressly forbidden.

Bastiaan Quast said entrepreneurs face barriers when trying to create local content.

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Vestberg goes as Ericsson reports dismal second quarter in 2016

Hans Vestberg has stepped down as Ericsson's president and CEO with immediate effect. His departure was announced on 27 July and came amidst shareholders reportedly calling for him to go following poor results for the second quarter of this year.

Vestberg leaves Ericsson after 28 years, the last seven of which saw him at the company's helm. EVP and CFO Jan Frykhammar will replace him until a successor is found, while Carl Mellander has been appointed acting CFO.

Board chairman Leif Johansson said: "In the current environment and as the company accelerates its strategy execution, the Board of Directors has decided that the time is right for a new leader to drive the next phase in Ericsson's development."

Just a week before announcing Vestberg's departure, Ericsson revealed its 2Q16 figures *(see company results table, below)* and reported an 11 per cent drop in YoY sales. It said further actions have now been initiated as part of a cost and efficiency programme which targets a new annual run rate of operating expenses (excluding restructuring charges) of SEK53bn in the second half of 2017.

Jan Frykhammar – Ericsson's current EVP and CFO – will take over as CEO until a successor to Vestberg is found. Frykhammar has apparently told the board that he is "not aspiring" to permanently take on the role.

Writing the CEO's comments in what has now turned out to be his final earnings report for Ericsson, Vestberg said: "Negative industry trends from the first quarter have intensified, impacting demand for mobile broadband, especially in markets with a weak macro-economic environment."

In sub-Saharan Africa, sales for the company's Networks, Global Services and Support Solutions divisions decreased by 13 per cent YoY. Ericsson said the decline was mainly due to a lower level of investments, impacted by lower oil prices, and the ramping down of a sizeable mobile broadband project in South Africa. The company said the floating of the Nigerian currency resulted in a devaluation of more than 40 per cent in June, and this also impacted investment decisions negatively.

However, it added that mobile broadband sales increased somewhat as certain markets are investing in network improvements and introducing 4G.

Spacecom and Luxembourg Space Telecommunication to merge

Spacecom, the operator of the *AMOS* satellites, has announced that it will merge with Luxembourg Space Telecommunication (LST), a Luxembourg company and subsidiary of Beijing Xinwei Technology Group.

Following the signing of the agreement in August, Spacecom said LST will acquire, by way of triangle reverse merger, the full share capital of the company for USD285m. It said the price reflected a premium of 41 per cent to Spacecom's average stock price during the past month.

The company added that the deal was "structured carefully" with safeguards to ensure that Spacecom's US business, including prospective procurement of US satellites, is and will not be affected. Under the terms of the deal, Spacecom's satellite fleet will remain owned and exclusively under the control of Spacecom in Israel, with satellites and their traffic operated exclusively from the country. All export control safeguards required by the US Government are in place.

Spacecom was also keen to point out that the Chinese Government will have no role in the company. It said Beijing Xinwei is a publicly traded company in the private sector, and that the merger represents a corporate investment, not an acquisition of technology or operations.

The completion of the merger is subject to shareholder and regulatory approvals, and the avoidance of specific unfavourable material changes in Spacecom's business.

The deal was also dependent on the launch of *AMOS 6* and the completion of its in-orbit tests, and although this has not gone ahead *(see News, p5)* a Spacecom spokesperson says there has been no indication of LST abandoning the deal.

Avanti open to takeover bid

Avanti Communications Group is looking for a buyer. In early July, the UK-based operator of the *HYLAS* satellite fleet announced its intention to engage in discussions with a number of potential investors to address its funding requirements.

In parallel to considering an equity raise, the company's directors are conducting a wider strategic review to explore additional opportunities. This includes a corporate transaction such as a merger with, or offer for, the group by a third party, or a sale of its businesses.

"The Board therefore intends to pursue all of these possible alternatives to ensure the best outcome for its shareholders," said an Avanti press statement.

Any discussions in relation to a merger with a third party or a sale will take place within the framework of a "formal sale process" in accordance with the UK's City Code on Takeovers and Mergers. This means Avanti's board will be able to have discussions with interested parties on a confidential basis, and they will not be required to be publicly identified.

The company has already been in talks with some unnamed entities. This has led to some speculation that one of the interested parties is Inmarsat. But the latter has said that it has "no intention" to make an offer to acquire Avanti. In an online statement dated 1 August, it said: "Inmarsat confirms that it was contacted by Avanti's advisers following the announcement by that company of a strategic review and formal sale process on 11 July 2016, and responded to that contact. Inmarsat confirms it has withdrawn from Avanti's announced process and it is not considering an offer for the shares of Avanti."

Wireless use in industrial IoT growing

The installed base of wireless Internet of Things devices in industrial automation reached 14.3m in 2015, according to research by Berg Insight.

The M2M/IoT analyst firm forecasts that the number of wireless IoT devices in automation networks will grow at a CAGR of 27.7 per cent to reach 62m by 2021.

Berg says there is a wide range of wireless technologies used in industrial automation with different characteristics and use cases. Wi-Fi and Bluetooth are the most widespread technologies in factory automation, while cellular connectivity is typically used for remote monitoring and backhaul communication between plants. The emerging area of Low Power Wide Area Networking (LPWAN) is also seen as a promising alternative in remote monitoring applications.

The firm goes on to say that the increasing popularity of Ethernet-based networks in factory automation is one of the key drivers for the use of Wi-Fi in such applications. It adds that 802.15.4-based standards such as WirelessHART and ISA100.11a are major contenders at the field level in process automation networks.

According to the research, Emerson, Honeywell, GE and Yokogawa are leading vendors of 802.15.4 devices in industrial automation. Siemens, Cisco, Belden, Moxa, Schneider Electric and Eaton are major vendors of Wi-Fi devices, while Eaton, GE and Sierra Wireless are important vendors of cellular devices for industrial automation applications.

"Wireless communication and industrial IoT solutions can provide integration of different automation systems as well as enterprise systems which enables supply chains to be lean, even with a complex mix of products and output levels," says Berg Insight senior analyst Johan Svanberg: "Connected automation solutions also open up the possibility for entirely new business and service models which can give companies a much needed competitive edge in today's manufacturing landscape."

Standard Bank expects more M&A activity in TMT

Standard Bank says Africa is seeing accelerating investment and innovation in telecoms, media and technology (TMT), and predicts increased M&A activity across the continent.

The bank, which claims to be one of Africa's leading TMT banks as well as the largest by assets, was

Nina Trantis, head of TMT for Standard Bank, said companies across Africa are considering their stategic options.

a partner for the inaugural *TMT Finance Africa* conference that was held in September. The event was held in Lagos which, say the organisers, is widely viewed as the central hub for technology innovation and investment on the continent.

Speaking during the run-up to the conference, Standard Bank's global head of TMT Nina Trantis said: "Investment and M&A in TMT continues to be especially active in Africa, with many companies across the continent considering strategic options, growth along diverse verticals, private debt and equity financing rounds, M&A, and public listings."

She added that the debt markets continue to be supportive for the right companies in Africa. "[This is] despite macro challenges in many countries as well as global uncertainty, though the funding currency and medium will inevitably reflect these challenges."

Saffelberg Investments acquires strategic stake in Effortel

Saffelberg Investments has become a strategic investor in global mobile virtual network enabler (MVNE) Effortel.

Brussels-based Effortel provides turnkey telecom solutions for non-telcos and brands that want to launch their own mobile services. It is said to be the only MVNE worldwide that has deployed and is running a centralised real-time IN system.

The firm is currently integrated with mobile operators in seven countries. In Africa, they include Equity Bank in Kenya which became the continent's first bank to become an MVNO after launching services on Airtel's network in July 2015.

Saffelberg Investments is said to be one of Belgium's largest and most active private equity funds. Its CEO Jos Sluys says: "Effortel's success in launching, developing and running efficient mobile virtual operators around the globe, as well proven technology and ability to operate in high-growth developing markets, attracted our attention."

The value of the deal has not been disclosed, but Sluys says Saffelberg will provide Effortel with an opportunity to grow and expand even faster: "The pipeline of opportunities looks good, and Effortel's technology proves both highly competitive and differentiating in its specialised markets."

New partnership for Arabsat and Newtec

Arabsat has expanded its partnership with satcoms technology specialist

INVESTMENTS, MERGERS & ACQUISITIONS

Date	Buyer	Seller	Item	Price	Notes
13/7/16	Helios Towers DRC	Standard Bank of South Africa & DEG	Loan	USD105m	Funding facility will partly finance both the acquisition of Bharti Airtel's tower portfolio & HTD's organic growth & operational programme across the DRC.
22/8/16	InfoVista	Ascom	TEMS	USD45m	*TEMS* is claimed to be the most widely used mobile network testing, monitoring & optimisation platform. InfoVista, which is now owned by the private equity investment firm Apax Partners, hopes the acquisition will give it the lead in the network performance orchestration software market.
8/8/16	SpeedCast International	Eutelsat	WINS Limited	EUR60m	SpeedCast says acquisition of Eutelsat's 70 per cent stake in WINS gives it a "strong local presence in Germany, a major maritime market, as well as expertise in the cruise industry in Europe".
14/9/16	Amdocs	Vindicia; Brite:Bill; Pontis	Companies	USD260m	Amdocs says the three similarly priced companies were acquired for a combined amount of around $260m in cash. US-based Vindicia provides SaaS, Brite-Bill is a billing specialist from Ireland, while Israeli firm Pontis offers "contextual digital engagement solutions".

NEW APPOINTMENTS

Date	Name	New employer	New position	Previous employer	Previous position
23/6/16	Nick Avill	Simoco Group	Business development director, EMEA utilities	Bender UK	UK industrial sales manager
1/8/16	Antony Sipho Sibanda	COO	Unnamed critical comms specialist in Africa	Emcom Wireless	Executive director business development
29/7/16	Vivek Badrinath	Vodafone Group	Chief executive for Africa, Middle East, Asia-Pacific	AccorHotels	Deputy chief executive
8/8/16	David Orloff	Small Cell Forum	Chair	–	The director of RAN product introduction at AT&T replaces outgoing chair Alan Law
6/9/16	Mark Daniels	Intelsat General	VP, new technologies & services	Intelsat General	VP, engineering & operations
6/9/16	Rory Welch	Intelsat General	VP, engineering & service delivery	Intelsat General	Director of space services & business development
6/9/16	David Agatston	Intelsat General	VP, business operations	Intelsat General	VP, finance & accounting

Arabsat CEO Khalid Balkheyour (left) said that as well as offering efficient technology, Newtec's training and certification programme meant that it was the "perfect" partner for upcoming projects. Also pictured is Newtec CEO Serge Van Herck.

Newtec in an effort to enable optimised solutions for its broadcast and telecom customers.

Under the new contract, Newtec will provide its *Dialog* multiservice platform to enhance Arabsat's DTH services, as well as its offerings in government and telecom markets.

The vendor says the platform features three return technologies, MF-TDMA, SCPC and its unique *Mx-DMA* system, to ensure maximum bandwidth efficiency and return on investment. The solution for Arabsat also incorporates *Equalink*, Newtec's pre-distortion technology. It's claimed this can provide an additional 15 per cent of data traffic in the same satellite capacity.

The company will also provide training and certification. Newtec says this is run by experienced engineers who are familiar with the challenges Arabsat and its customers face.

GSMA launches innovation fund

The GSM Association has launched its Ecosystem Accelerator Innovation Fund to help identify innovations with the greatest potential for growth, and provide best practices for stakeholders on the ways in which they can use mobile to drive socio-economic impact.

The fund is open to new companies from and operating in Africa, as well as selected countries in Asia. It will provide financing, mobile-focused mentoring, and technical assistance to selected start-ups, and establish partnerships between them and operators to increase the reach of innovative mobile services.

The fund will run several rounds between 2016 and 2020, with each having specific areas of focus. The first round will disburse around GBP2m. As well as being supported by the GSMA and its members, the initiative is backed by the UK Department for International Development (DFID).

IN BRIEF

Vodafone and LTE operator Afrimax Group have signed a new non-equity Partner Market agreement for Cameroon. The two companies will launch LTE data services under the Vodafone Cameroon brand initially in the country's two biggest cities, Douala and Yaoundé. The roll out will include the opening of Vodafone branded retail stores and kiosks in key locations, supported by a network of distributors and resellers. Afrimax has appointed Antoine Pamboro as CEO of Vodafone Cameroon, which will be headquartered in Douala.

Nokia has reopened its office in Nigeria. On 8 September, the company announced that it had closed its office in Lekki, Lagos but said in a press statement that this was temporary as it was continuing to closely collaborate with the local regulator in "accelerating" efforts to "regularise" its license. Eight days later, Nokia re-opened the office and said: "We have effected constructive and collaborative engagement with the Nigerian Communications Commission". It added that its business operations and local customer support had not been affected by the closure.

MTN Group and MMI Holdings have setup a micro insurance joint venture firm. By utilising their respective resources and capabilities, the two partners claim *aYo* will be able to improve insurance penetration across Africa, and offer relevant, accessible and easy to use solutions. They expect to rollout services in a number of countries from the end of 2016. The move comes as MTN follows in the footsteps of rival South African operator Vodacom by shelving its mobile money platform in the country due to what it said were "prohibitive" operating costs.

LATEST COMPANY RESULTS

Date	Company	Country	Period	Currency	Sales (m)	EBITDA (m)	EPS (units)	Notes
21/7/16	Millicom	Luxembourg	2Q16	USD	1,572	560	0.04	In Africa, Q2 reported organic revenue growth of 9.2% to $222m with service revenue growing 9.8%. Gained 171,000 subscribers in Africa, mainly from Tanzania and Senegal.
27/7/16	Infinera	US	2Q16	USD	258.8	12,787	0.08	GAAP revenue for quarter up compared to $244.8m in previous quarter & $207.3m 2Q15. But CEO Tom Fallon warned: "Demand is softening in certain areas of our business & we face a difficult near-term revenue outlook."
27/7/16	Intelsat	US	2Q16	USD	542.0	403.6	0.98	Compared to 2Q15, Network Services revenue decreased 16%, Media revenue is down 5%, & Government revenues declined 2%. CEO Spengler said results are "consistent" with expectation for 2016.
29/7/16	Eutelsat	France	FY16	EUR	1,529.0	1,164.6	1.10	Revenues up 0.2% on like-for-like basis – 64% of this is from video applications which increased 2.3% to €943.6m. This reflected sustained growth in MENA & sub-Saharan Africa with the entry into service of new capacity on *EUTELSAT 8 West B* in October 2015 & *EUTELSAT 36C* in February 2016, as well as growth at 16°E (SSA & Central Europe) & 7°E (MENA).
4/8/16	Motorola Solutions	US	2Q16	USD	1,430 (bn)	NA	0.61	Sales increased 5%, including $146m in sales associated with the acquisition of Airwave in the UK. Continues to expect revenue to increase 5 to 7% & non-GAAP EPS from continuing operations in the range of $4.45 to $4.65 per share.
4/8/16	Sierra Wireless	Canada	2Q16	USD	156.2	12.1	0.20	Earnings declined 1.1% compared to $158m for 2Q15. Completed acquisition of fleet management & asset tracking specialist GenX on 3 Aug for total cash consideration of $7.8m.
10/8/16	Gilat Satellite Networks	Israel	2Q16	USD	67.9	987 ('000s)	(0.16)	Revenues increased 53% from $44.3m in 2Q15, & 29% compared to 1Q16. Loss on a GAAP basis decreased to $3.7m compared to a loss of $9.1m in 2Q15.

AST claims to save costs by extending GSM offshore

Applied Satellite Technology Ltd claims its new *AST Long Range GSM* system extends the usable data range of GSM services whilst offshore, and helps users save money.

MANUFACTURER:
Applied Satellite Technology

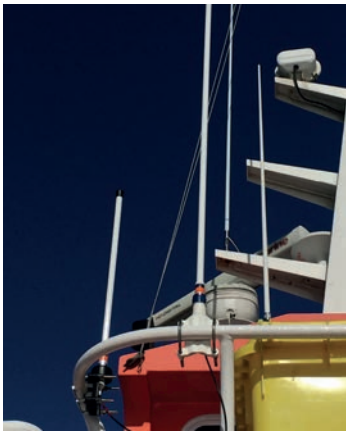
PRODUCT:
AST Long Range GSM

MORE INFORMATION:
www.theastgroup.com

With the evolution of GSM services and the future of 5G, the company says the ability to receive and use these fast data services on a day-to-day basis from anywhere has presented a problem for the maritime industry, with limitations on offshore reach.

While satellite communications can be used when GSM signals become unstable or lost completely, AST's aim was to develop a system that could extend the usable data range of a mobile device further offshore.

The company says it carried out extensive on-board testing in order to increase the offshore range of GSM services using two specialist blue-tipped antennas and an on-board device. During one trial, test data confirmed that the usable data services of GSM failed at 3-4km offshore.



However, by using the *AST Long Range* antenna system, it's claimed usable GSM data facilities were seen to increase to a distance of 25.94km.

Cutting edge features on Hytera's latest DMR radio

Hytera is promising "exceptional audio performance" and "advanced" features with the addition of the *PD98X* to its range of DMR handheld radios.

It says the device's sound quality is enhanced through noise cancellation technology as well as an integrated speaker that offers a maximum audio output of 2.5W.

MANUFACTURER: Hytera

PRODUCT: PD98X

MORE INFORMATION:
www.hytera.com

The radio supports full duplex calls to enable frontline personnel to make calls between other *PD98X*s or fixed line and mobile phones.

It also features single frequency repeater mode. Based on interference cancellation technology, Hytera says the *PD98X* is able to use one slot to receive a signal and another to transmit it in the same frequency using DMO mode to extend the communication distance.

Other features include: built-in Bluetooth 4.0 to support both audio transmit and programming; support for up to a 32GB Micro SD card to record up to 576 hours digital/analogue audio; and IP68 protection against dust and water. Hytera adds that the *PD98X* continues to function after submersion down to two metres for up to four hours.

There's also a *Smart Battery* feature which monitors the battery status and is said to "dramatically" reduce charging time.

Huawei claims world first with BTS testing system

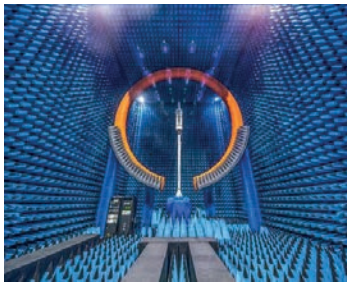
Huawei has launched what's described as the world's first multi-probe spherical near-field testing system. It says the *SG178* supports radiating characteristics testing for BTS antennas during product development.

According to the firm, there are three major testing systems for BTS antenna testing: indoor far field test range, spherical near-field test range, and compact test range. Among these, it believes multi-probe spherical near-field test range can best meet the demands of BST antennas in test efficiency and accuracy.

MANUFACTURER: Huawei

PRODUCT: SG178 test system

MORE INFORMATION:
www.huawei.com



Huawei says its system has 178 probes to achieve the industry's highest sampling density, and doubles test accuracy compared to indoor far field and near field test range.

It claims the *SG178* boasts a 20-fold increase in test efficiency compared to far field test range, supports more antenna types and wider frequency bands, and is the industry's only testing system to support active antenna and massive MIMO OTA tests.

Making new connections with Amphenol

Amphenol RF has expanded its range of *MCX* interconnects.

They include four new 50 ohm connectors (the *919-386P-51S*, *919-387P-51A*, *919-388P-51S* and *919-389P-51A*) that are designed to perform at frequencies up to 6GHz, with VSWR being 1.10 (max) at 2.5GHz, measured for right-angle configurations.

Amphenol says its *MCX* connectors feature a slide-on coupling mechanism interface, and adds that they can be found in many applications including GPS equipment, instrumentation and measurement, handheld radios and wireless network hardware.

The new line-up also includes an extended line of PCB jacks that are available in straight, right-angle, or edge-mount configurations, with options for surface or through-hole mounting. The company says all parts are efficiently manufactured from machined brass, and plated gold or tin for solderability. Centre contacts are made from beryllium copper and are gold plated.

Three new cable plugs have also been added to the *MCX* range. Models that have been designed for RG-178 and RG-174 type cables are included and they are available in both straight and right-angle configurations.

According to Amphenol, each cable's connector housings are made from machined brass, with beryllium copper outer contacts for secure mating.

MANUFACTURER:
Amphenol RF

PRODUCT: MCX

MORE INFORMATION:
www.amphenolrf.com

New dish from Advantech aims to make the most of HTS

Advantech Wireless' *Ka-8200* is a VSAT transceiver-router for the A-SAT-II multi-waveform and multi-access satcom systems.

The ultra-compact, all-outdoor unit features advancements such as software defined radio and direct modulation. It is specifically designed for M2M, IoT, SCADA/telemetry low data rate random access applications over Ka-band high throughput satellites (HTS).

Advantech Wireless says the *Ka-8200* can be combined with all its other VSAT terminals within the same A-SAT-II system according to application requirements.

A Ku-band version is also available. The *Ku-8200* has been designed mainly for applications such as VoD, interactive TV and other broadcasting related applications sharing the same satellite as content broadcasting, or in areas where Ka-band HTS is not available.

Separately, Advantech Wireless has launched new HTS widebeam technology. It claims *WideSAT* increases density, versatility and efficiency when utilising wide transponders from 250MHz to 2GHz for high throughput data links.

The firm adds that the technology will also improve integration with SDN, NFV and advanced terrestrial and wireless telecoms infrastructures. It will also support standardised cloud architectures and the deployment of MEC (mobile edge computing) satellite aggregation points.

MANUFACTURER:
Advantech Wireless

PRODUCT:
Ka-8200, Ku-8200, WideSAT

MORE INFORMATION: www.advantechwireless.com

SiteHawk has eye for antenna problems

Bird Technologies' *SiteHawk SK-200-TC* is a handheld antenna and cable analyser that operates between 300kHz and 200MHz. It is designed to simplify detection of problems in coaxial transmission lines and antenna systems, and pinpoints their source using distance-to-fault measurements.

The device is said to provide all of the measurement capabilities required to evaluate the performance of a communication system's transmission path.

Bird says the distance-to-fault measurement indicates VSWR or return loss at various points from the beginning of the transmission line all the way to the antenna, and identifies the location of a problem with high resolution. The cable loss function measures insertion loss of the transmission line over a given frequency range.

It's claimed the *SiteHawk* makes fast swept measurements at up to 0.25ms per data point of return loss and cable loss as well as VSWR and distance to fault, and allows users to set trace capture using 51, 101, 201, 401, 801, 1,601 or 3,201 data points per sweep.

MANUFACTURER:
Bird Technologies

PRODUCT:
SiteHawk SK-200-TC

MORE INFORMATION:
www.birdrf.com

Weightless launches LPWAN 'in a box'

The Weightless Specialist Interest Group (SIG) has released Weightless-P hardware and announced the pre-launch of a Weightless-P software development kit.

Weightless-P is an open standard for a high capacity, low power WAN (LPWAN) that is designed for performance. The SIG says it is the result of two years work and aims to become the *de facto* standard for public and private IoT networks.

The hardware, dubbed the *Weightless Ignition Pack*, provides Weightless-P network connectivity. The packs include a Weightless-P base station and a full protocol stack to support it, antennas developed by Antenova, end device plus all associated modules, host, as well as all necessary cabling.

According to the SIG, the pack will enable a Weightless-P IoT network to be deployed 'out of the box', and claims that it will deliver "substantive improvements and competitive advantages over existing IoT connectivity options".

The *Weightless Ignition Pack* (list price USD1,500) will be made available as part of a pre-launch offer on the Weightless website with a limited number offered free to developers – see *www.try.weightless.org/ctia* for details.

MANUFACTURER: Weightless

PRODUCT:
Weightless Ignition Pack

MORE INFORMATION:
weightless.org

ALSO LOOK OUT FOR

'Fog computing breakthrough' for enterprise cell networks

LILEE Systems reckons the combination of its *TransAir STS Series Gateways* and *T-Cloud Management Platform* will bring high-performance IoT innovations to new markets.

Built using an open, standards-based design, the *STS* gateways consolidate broadband connectivity and routing, switching, application server, M2M connectivity, and IoT sensors in what US-based LILEE says is a compact and rugged form.

The firm says the gateways offer multiple wired and wireless connectivity options, and are installed in distributed assets, such as a bus or retail store. They include an onboard application engine that enables enterprise applications to run in so-called "fog" computing architecture, i.e. integrating on-site and in-cloud computing.

Network management, auto-provisioning and the ability for third-party software providers to integrate with the gateways is provided via *T-Cloud*. LILEE says operators can connect to this cloud-based platform using LTE-A, Wi-Fi or Ethernet. This then gives them continuous remote access to IoT data, analytics, and the ability to perform critical asset management functions including zero-touch on-board application upgrades and configuration.

LILEE reckons the combination offers several first-to-market innovations. For example, it claims the *STS* is the world's only router intelligent enough to inform downstream LAN applications when the upstream link is down and that the LAN applications should therefore pause.

The gateways are also said to include the only application server to support both Linux and Windows applications. Furthermore, LILEE says they're the first to incorporate dual Wi-Fi 802.11ac wireless functionality, both upstream and downstream, and the first to provide two dual LTE-A radios.

Digging for glory

There are many challenges to implementing fibre in Africa, ranging from obtaining authorisations to lay fibre in underground ducts to dealing with cuts caused by civil works.

When it comes to dealing with booming demand for high capacity and fast connectivity, fibre is the way to go. But, as RAHIEL NASIR finds out, that does not mean other technology solutions are dead and buried.

By June 2016, the amount of operational terrestrial fibre in Africa had more than doubled to 761,602km compared to 376,564km in 2011, according to Hamilton Research. In addition, it said that a further 123,626km of fibre network was currently under construction, 91,736km is planned, and 47,743km is proposed.

"The landing of new submarine cables and expansion of terrestrial transmission networks is bringing additional countries, regions, cities and towns within reach of fibre networks for the first time," said Paul Hamilton of Hamilton Research. "In the last six years, network expansion has brought more than 210 million more people within access to high capacity national and international backbone networks."

According to the researcher, 48.1 per cent of sub-Saharan Africa's population (469 million people) was within a 25km range of an operational fibre optic network node by June 2016. This compares to 30.8 per cent (259 million) in 2010.

So how much of that fibre is reaching deep inland? Orange says the requirement for fibre begins where it has the highest need for capacity, and that is coming from the international connectivity.

Boosting bandwidth

As a stakeholder in more than 40 cables and major consortia, the operator claims it has contributed to the development of around 450,000km of undersea fibre worldwide.

In Africa, its submarine fibre interests include: LION (Lower Indian Ocean Network); LION2 which is said to have strengthened Kenya's internet services and brought broadband to Mayotte for the first time when it went live in 2012; the 17,000km ACE (Africa Coast to Europe) system; and Sea-Me-We 5 (South East Asia–Middle East–Western Europe). The latter primarily connects France, Arabian Gulf and South Asia, but touches Africa at Egypt and Djibouti.

"We invested a lot in deploying submarine cables and adding connectivity to bigger international routes" says Yves Bellego, Orange's director of network and technical strategy. "We are now deploying national backbones.

"Fundamentally, we bring fibre closer to the radio sites. We already have roughly two thirds of our networks in Africa with national backbones using fibre. We still have some networks and countries where the national backbone is almost all micro-wave, but most of our countries today use fibre."

Bellego says that for Orange, the need to deploy fibre is driven by mobile broadband usage and arose as it started to see real take-up of 3G and now 4G. But he adds that it was a step-by-step process that began first with bringing in international connectivity via cable, followed by deploying fibre for national backbones, and then moving the fibre closer to the radio sites depending on traffic demands.

According to Hamilton Research, Africa's total inbound international internet bandwidth increased by 51 per cent during 2015. By the end of last year, bandwidth on the continent reached 4.555Tbps, compared to 3.015Tbps in 2014, 2.037Tbps in 2013, 1.489Tbps in 2012 and 805Gbps in 2011.

The total of 4.555Tbps was split between sub-Saharan Africa, which increased by 64 per cent to reach 2.759Tbps, and North Africa which increased by 35 per cent to reach 1.796Tbps. Excluding Kenya, which reached 855Gbps in 2015 (source: CA), Hamilton says the total bandwidth for other countries in sub-Saharan Africa increased by 61 per cent to reach 1.904Tbps in December 2015.

Going inland?

One of the companies that is not only playing a major role in supporting that bandwidth but is also responsible for a lot of fibre in Africa is Liquid Telecom. David Eurin, the company's chief strategy officer, says: "Liquid Telecom typically deploys about 100km of fibre every week, with a mix of long distance fibre, metropolitan network fibre and fibre to the building/premise/home. We are deploying more FTTH now than long-distance routes as we have linked most large cities and towns."

Hamilton Research believes the deployment of FTTP is a significant driver in the growth of international internet bandwidth in Africa. In research published in November 2015, it found that around 20 per cent of the total fibre inventory that had reached 622,930km by June 2015 was within cities, and at least 112,967km was used for metro rings and FTTH/P networks. In addition, it said there was at least a further 40,938km of metro fibre and FTTP networks under construction.

Eurin reckons Liquid has been "at the heart" of internet deployment in Africa as its network has been built inland first and then connected to the landing station to interconnect with submarine cables.

"This is a major differentiator against other fibre companies that built subsea cables first and now struggle to find customers inland. Most of our 25,000km of fibre routes are inland, extending into landlocked countries such as Botswana, Zambia, the east provinces of DRC (e.g. Kivu, Katanga), Rwanda, Uganda, [etc.]."

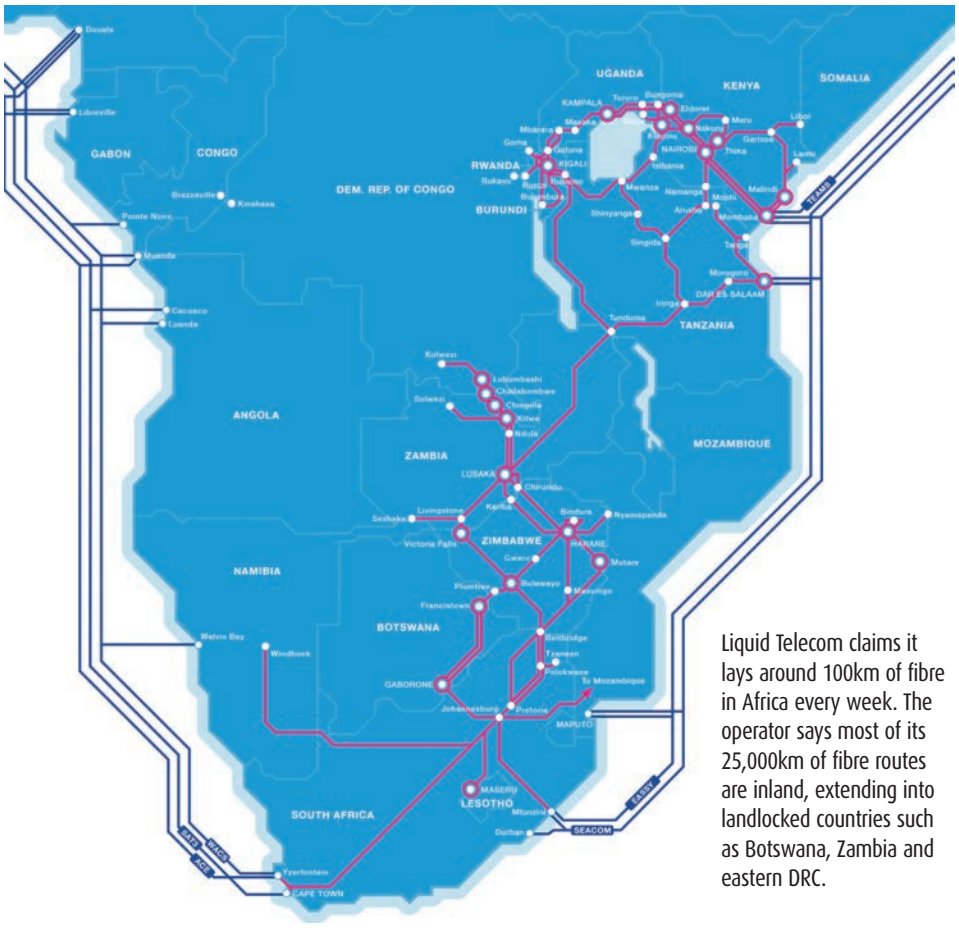
WIOCC (West Indian Ocean Cable Company) agrees that the international cable connectivity on Africa's coasts is being taken inland with additional fibre being laid across the continent's interior. The Mauritius-based company famously describes itself as "Africa's carrier's carrier", and is jointly owned by 14 telcos including Libya's LPTIC, Uganda Telecom, the Lesotho Communications Authority, BoFiNet in Botswana, amongst others.

Mike Last, WIOCC's CMO and VP international business development, says: "The arrival of super high-capacity submarine cables at the coast has made it feasible and cost-efficient to now purchase large amounts of international connectivity – with most of it destined for the internet in Europe.

"This has in turn catalysed the deployment of high-capacity terrestrial fibre infrastructure to extend connectivity from the submarine cable landing stations to key cities – initially in coastal countries and increasingly to landlocked countries in the interior."

Last says this infrastructure is being deployed to address requirements for both mobile backhaul and broadband applications. He goes on to point out that in many African countries, the main bottleneck is now in the local loop, but adds that 3G/4G/LTE deployment and FTTx initiatives are starting to address this on a city-by-city basis.

"One example is WIOCC's ongoing deployment of the largest metro area network in Africa. The Johannesburg MAN, which comprises three core POPs and more than 39 aggregation and customer-provided POPs, will offer carriers and ISPs seamless and cost-efficient access direct to their customers' doorsteps."



Liquid Telecom claims it lays around 100km of fibre in Africa every week. The operator says most of its 25,000km of fibre routes are inland, extending into landlocked countries such as Botswana, Zambia and eastern DRC.

At the time of writing, the Johannesburg MAN was due to go live by the end of September 2016.

Clearly then, work to lay fibre across Africa continues at a rapid pace. But how have the operators been able to overcome those notorious problems that surround the installation of fibre on the continent, such as municipal planning issues, damage to buried cables, vandalism, etc.?

"Obtaining authorisations to lay fibre in underground ducts or on utility poles (such as electricity distribution network poles, for example) is a core skill at Liquid Telecom," claims Eurin. "We have dedicated staff liaising with all authorities to obtain these wayleaves as quickly as possible, so that our service delivery lead time is as short as possible.

"Fibre cuts are a real threat to networks. We have hundreds of fibre cuts every month, but very few service-affecting cuts (even if there is a cut on a link, the service is still delivered). We achieve this by building our networks in a ring configuration and by installing smart network technologies."

While Bellego says Orange is working with its suppliers to find a way of making fibre cables more resistant to cuts, Last believes damage to cables is inevitable: "Despite terrestrial cable owners' efforts to protect telecoms cables, such events are still a regular occurrence. WIOCC's approach to dealing with this is to build diversity into our network wherever it is feasible and cost-effective to do so."

Last says this is achieved either by procuring protected circuits from specific network suppliers, or by purchasing from more than one supplier and ensuring that the routes are physically diverse. "For example, for one customer in Zambia, we've delivered four completely separate routes out of the country to their international hubs in order to meet their very high level availability demands.

"However, achieving diversity of this nature isn't always possible or cost-efficient in all locations. We have continually invested to improve our ability to monitor our network and specific customer circuits end-to-end. This means that we can quickly identify and localise problems, and be proactive in finding solutions as quickly as possible."

'Fibre in the sky'

The next generation of high throughput satellites that are beginning to cover Africa promise the kind of network performance that is akin to 'fibre in the sky'. So will these threaten fibre rollouts across the continent?

Not at all, says Eurin: "Satellite will complement fibre and other wireless technologies. It has a very specific place in the market. We sell more VSAT satellite service in Africa as demand grows everywhere, including in areas where bringing a fibre link would be uneconomical for our clients."

Bellego supports this view and sums it up quite neatly when he says: "Satellite will never be able

to compete with fibre into the big cities, but fibre will never be able to compete with satellite into remote areas. So there is a business case for each technology in each area."

He continues by saying new generations of satellite represent a new opportunity for Orange and not a threat.

"We need to have different technical solutions – satellite, microwave, fibre – and then we use the best one depending on the geography and the level of traffic. Today we use a lot of microwave, more and more fibre, some satellite, and that will remain. The ratio may vary but we will keep the three of them.

"For example, the DRC is one of the countries where we have almost full microwave and a bit of satellite. We plan to upgrade our microwave as there are now microwave solutions with the capability of carrying much more traffic.

"So we may not need fibre in such areas for quite some time; in the short or medium term, fibre will not reach those areas. Firstly because it is very costly, and secondly because we have better, more cost-effective solutions for remote areas with microwave."

Although Last believes satellite will remain a niche solution ideal for remote locations and for temporary connectivity requirements (such as one-off sports/music/political events), he says there is certainly a place for hybrid fibre/satellite solutions for specific requirements/locations.

In fact, one of WIOCC's shareholders is satellite specialist Gilat Satcom. The Israeli company says that since 2002 when SAT-3 was activated in West Africa, it now has more than 20 submarine cables covering the continent.

Gilat Satcom CEO Dan Zajicek says that high throughput satellite enables service providers and mobile operators to use smaller and less power consumption terminals, hence reducing the capex required for new roll outs.

He says: "It is more than likely that in many developing countries we shall see new cellular sites based on satellite, thanks to this new technology. The major cellular sites have already been moved to fibre/terrestrial connectivity, and we don't expect them moving back to satellite, so hybrid solutions will remain."

Zajicek adds that his company will continue to establish fibre-based POPs in Africa to be able to deliver reliable telecom services to its customers.

Clearly then, fibre will remain untroubled by the new breed of satellites that are beginning to take over Africa. As Last points out, the deployments are "proceeding at full-steam" throughout the continent as he cites several recent announcements.

"As first reported by TMT Finance, the World Bank has mandated Belgium based-boutique Cadmos to supervise the tender for a private operator to acquire the use of a fibre network in the DRC. The tender is for the use of around one third of utility company Société Nationale d'Electricité sa's (SNEL) fibre network which connects Kinshasa to Kasumbalesa (Tanzania), stretching around 2,200km.

Orange says it has contributed to the development of around 450,000km of undersea fibre worldwide, including the LION and ACE systems in Africa. This image shows the landing of Se-Me-We 5 in France which comes from South Asia via the Gulf, Egypt and Djibouti.

"Six companies have been shortlisted to build a new fibre network spanning the DRC, TMT Finance understands. Names such as Orange, SEACOM, Vodacom and Liquid Telecom have been rumoured to be involved in the process. A purchase price is likely to be above USD100m."

Another example is the Vivendi Group which is currently deploying a fibre network across five countries in Africa via its regional subsidiary Vivendi Group Africa (GVA). Last says the 5,000km network is expected to connect the cities of Abidjan (Côte d'Ivoire), Ouagadougou (Burkina Faso), Lome (Togo), Niamey and Dosso (Niger), and Parakou and Cotonou (Benin). He adds: "The fibre-optic infrastructure is being laid along the Blueline railway route, which is being constructed by the Bollore Group. Once the backbone is completed, the company plans to provide last-mile connectivity over utility poles, which is less costly than laying fibre underground."

Construction work on a 504km fibre network to interconnect the Republic of the Congo (Congo-Brazzaville) with neighbouring Gabon is also under way, with the first 10km of fibre already laid at Makebana-Mbinda, on the Bilinga-Dolisie portion of the network.

According to project coordinator Yvon-Didier Miehakanda, the first phase of the deployment (the installation of fibre cabling) will take two weeks to complete, while the second phase (provision of technical equipment) is expected to commence in October or November. The fibre installation from the city of Pointe-Noire to the Gabonese border began in June 2015. The project is part of the Central Africa Backbone (CAB) initiative, which aims to connect a total of eleven Central African countries when completed.

Meanwhile, Zimbabwean enterprise-specialist ISP Aquiva Wireless says it will invest around USD11m this year in the rollout of fibre infrastructure between Harare and the town of Plumtree in the west of the country.

"According to a report from *The Herald*, the firm says it has already deployed fibre from Harare to Gweru, with work on the Gweru to Plumtree link to begin next month," says Last.

Aquiva currently operates fibre networks in Harare, Bulawayo, Beitbridge and Mutare, and also uses VSAT to offer connectivity to business users in other areas.

The fibre future

If there is one thing that can be said for sure about mobile traffic in the future is that it will expand. And the growth will be huge, as has been well documented in regular research carried out by the likes of Cisco and Ericsson. And that can only mean one thing: more connectivity is required which points the way to more fibre, as illustrated by the examples above.

Liquid comes across as confident and resolute when it says that it will continue to lay more fibre in Africa for a long time. Eurin says: "The need is enormous and still expanding. If you deliver high-speed internet in a capital city, rapidly there is need for the same level of service in secondary towns, as enterprises have branches in these towns, and so forth.

Bellego says: "What we do is anticipate growth in traffic, so we lay down fibre in the various backbones. We also work on having terrestrial infrastructure to get countries like Mali, that has no shores, to get access to international connectivity. We forecast the evolutions of traffic, and a few years in advance we deploy the capacity for that. The deployment of mobile broadband – initially with 3G and now we are starting to have 4G – is really the driver for our fibre backbone." ■

www.fgwilson.com

FG Wilson launches new generator set range for telecoms

Diesel generator set brand FG Wilson marks 50 years in business this year and has just launched a new 6.8 – 25 kVA range designed with telecoms users in mind. Michael Milligan, FG Wilson Account Manager talked with us about FG Wilson and the new range.

Founded in 1966, FG Wilson was among the first to bring mass-scale production to generator sets, launching self-contained generator sets which were simple to buy and operate and were easy to install. The brand is now a major player in the global market for generator sets installing over 600,000 since 1990 alone, with a total installed capacity of almost 90GW - more than the total installed mains electricity capacity of a country like the UK.

The new 6.8 – 25 kVA range is among several new products being launched this year, and says Michael, its design and development have been in close partnership with customers: "First and foremost, this is a very customer-defined product. We spent a great deal of time simply talking with our customers and dealers and working through issues together to understand what was important."

"There was a real focus on product operating costs and this has led to a packaged generator product which is ideal for telecoms users, or indeed for any customer who operates at sites which are remote or difficult to access."

The new range is aimed at either hybrid or generator-only applications. To reduce operating costs, site visits for maintenance and fuel replenishment, the range offers 1,000 hours between service intervals, and comes with set-mounted fuel tanks of up to 2,000 litres. The ability to monitor generator sets from the Telecom NOC maximises uptime and allows preparation for site visits minimising servicing costs and ensuring that site visits are effective.

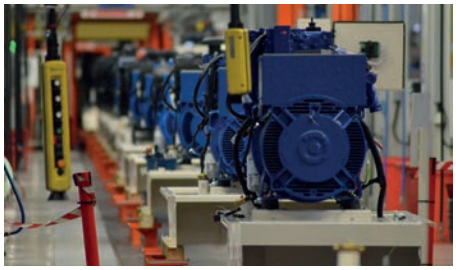
The product options list includes a flexible range of enclosures offering three levels of sound attenuation to help ensure that it meets local noise regulations and also mean that customers can choose the enclosure which is right for their needs.

Control systems played a big part in product design. Michael says, "We have incorporated a great deal of flexibility into control systems and remote communications to ensure that our generator set integrates seamlessly with any hybrid system. And we are partnering with several established hybrid manufacturers to confirm compatibility and ensure efficient and fast deployment of our products on site."

As with all FG Wilson products, the new range has been tested and validated at FG Wilson's Larne facility in the UK, a $26 million Centre of Excellence which also houses Europe's largest Hemi-Anechoic Chamber for noise testing. Here, all FG Wilson products are given intense pre-launch testing which include vibration, engine/alternator cooling, electromagnetic compatibility, noise, water ingress and rating/transient performance.

Michael says this is especially important. "We are a volume manufacturer and we take reliability extremely seriously. We know from past experience that rigorous upfront design, testing and validation lead to superior reliability throughout a product's lifetime and that this can save customers a substantial amount of money over time. That reliability is also underscored by FG Wilson's global network of over 400 dealers who offer automotive industry levels of service starting with product selection through to installation and a lifetime of support. They're trained by us and supported by our parts system which stocks over 11,500 parts and delivers three million parts a year, not only for our current products but also for legacy products."

The new range is now available to order from FG Wilson. You can find out more from www.fgwilson.com or from your local FG Wilson dealer.



Cashing in on wireless

How banking institutions and mobile operators are helping each other deliver better financial services across Africa.

Jumping on the bandwagon: while many MNOs in Africa now offer mobile financial services, wireless technologies are also helping banks to rollout their services to remote and rural communities.

Over the last few years, the industry's battle cry of 'banking the unbanked' has almost come across as loudly as 'connecting the connected'. For many of the continent's big name cellcos, offering mobile financial services now seems *de rigueur* and for some, such as Econet Wireless, it is imperative.

Speaking at a conference on mobile money in 2014, Econet Wireless Group founder Strive Masiyiwa said: "Our competitor is cash because we basically want to get rid of banknotes. We want people to do all their business using platforms like *EcoCash*. It is quicker, cheaper, safer, and cleaner."

Econet Zimbabwe launched its *EcoCash* service in 2011. By August 2012 it had 1.7 million subscribers which increased to three million just 12 months later. That made *EcoCash* Africa's second-fastest growing mobile money solution after Safaricom's *M-PESA*. Today, Econet Zimbabwe says more than five million customers now use its mobile financial services.

More than just cash transfers

When it was first introduced, *EcoCash*'s initial focus was on person-to-person money transfers. Since then, additional services have been added including savings, international remittances, salary disbursements, payment for public transport, and more.

VAS specialist Mahindra Comviva supplies the core platform for *EcoCash*. The vendor claims the "power" of its *mobiquity* solution lies in bringing together telcos, banks, merchants, billers, enterprises and government entities into a cohesive ecosystem centred around the consumer. It says this convergence makes it possible for financial service providers to deliver a range of granular, scalable and secure financial services and system flows. End customers benefit from a multifunctional and secure account to receive salaries, initiate international and domestic remittances, buy airtime, and pay utility bills and merchants.

Mahindra Comviva says *mobiquity* ensures that service and payment implementations are safeguarded with multi-level, bank-grade security in order to reduce fraud and increase consumer confidence. The security framework includes multi-factor authentication for access and transaction control, while all data are encrypted with the industry-standard 3DES algorithm. The platform also complies with international anti-money laundering requirements, and implements the best practices in PIN, password management and configurable 'Know Your Customer' processes.

Econet has also taken the step of acquiring its own bank grade switch from ACI Worldwide. This switch acts as a layer between the core mobile money platform and third-party banking platforms. The switch is based on banking standards (ISO 8583) and is said to enable fast, efficient integration with banking partners that include Stanbic (the first international bank in Zimbabwe to integrate with *EcoCash*), CBZ, and TN Bank (which is 100 per cent owned by Econet Wireless).

In 2014, Econet Wireless Zimbabwe claimed a first in Africa with the launch of *EcoCash* MasterCard debit cards. CEO Douglas Mboweni (centre) said it signalled "the end of paper money" in the country.

Econet has built a network of *EcoCash* agents throughout the country as this is said to be the key to the success of mobile money in emerging markets. The company pays out most of its *EcoCash* revenues in the form of commissions to more than 25,000 agents that include sole traders, post offices and other small businesses, as well as nationwide retailers such as the OK Zimbabwe supermarket chain.

In July 2014, Econet Zimbabwe announced a landmark deal that was expected to result in more than three million MasterCard debit cards being issued to *EcoCash* customers by 2019. The operator said this was the first time MasterCard debit cards would be available to people using mobile money services in Africa, and was the largest rollout of secure chip and PIN payment cards in Zimbabwe to date. At the time, Econet Wireless Zimbabwe CEO Douglas Mboweni said *EcoCash* MasterCard debit cards would replace paper money in everyday buying and selling. He said: "Econet is determined to make Zimbabwe totally cashless. We see this as the end of paper money in this country."

EcoCash is built on Mahindra Comviva's *mobiquity* platform. It has enabled Econet Wireless to launch additional mobile financial services such as savings, international remittances, salary disbursements, payment for public transport, and much more.

Mobile banking world firsts

In February 2014, Millicom launched what was claimed to be the world's first international mobile money transfer service with currency conversion automatically included. Two of the company's operations in Africa began pioneering the new system during that year – subscribers in Tanzania and Rwanda were able to send each other money from their *Tigo Pesa* and *Tigo Cash* accounts, respectively. It enabled them to make transactions in either Tanzanian shillings or Rwandan francs, and they were delivered already converted into the currency of the recipient's country.

Millicom said the new service would be of particular benefit to businesses with cross-border trade, diaspora families, truck drivers, and importers and exporters from both countries. Tanzania is Rwanda's second most important trading partner. In 2013, its exports to Rwanda amounted to more than USD80m while its imports from the country were valued at more than USD2.31m.

Speaking at the time, Tigo Rwanda GM Tongai Maramba described the service as a "welcome convenience" for subscribers in his country where the traditional money transfer companies mostly deliver only dollars. The situation is the same in Tanzania where Rwandan francs need to be exchanged for US dollars in order to make international remittances.

Millicom claimed another world first towards the end of 2014 with the launch of a mobile money service that offers users the opportunity to automatically earn a return on their balances direct to their mobile wallets without the need for a separate registration.

Called *Tigo Wekeza* ('*Tigo Invests*'), the service was launched in Tanzania where it is authorised by the Bank of Tanzania. It allows *Tigo Pesa* users to benefit from quarterly payments based on their account balances. They also have the option to nominate a non-profit beneficiary in line with their personal cultural beliefs. Earlier this year, Tigo announced it had paid its mobile money users a total of TZS5.2bn for the first quarter of 2016. This represented an 18 per cent increase from the TZS4.4bn paid out for the previous quarter.

Branching out with satellite

Of course, 'banking the unbanked' is not just all down to mobile operators. The financial institutions themselves need network connectivity not just for their own internal operations but also to expand their services to customers – not so easily done when you have remote and rural communities that lack any kind of network infrastructure. (Indeed, this prompted Bank Rakyat Indonesia to launch the world's first satellite dedicated to banking services – *see World News, p33*).

Founded in 1976, UNACOOPEC is said to be the largest microfinance and micro insurance institute in Côte d'Ivoire. Today, the organisation offers its customers complete banking services, even in the most remote areas, via a secured satellite private satcoms network provided by SkyVision.

The company claims it offered a "highly efficient and reliable" solution to support UNACOOPEC's 97 branch offices nationwide. SkyVision said its 'smart network design' gave the bank the crucial flexibility it needed in connecting its branches and head office via voice and data applications. It also helped to secure the organisation's vital data and information.

SkyVision managed the entire project for UNACOOPEC. This included network design, full head office hub and teleport installation, remote site installation and commissioning, pre- and post-sales customer training, support, and day-to-day network management. The company said the complete project was up and running throughout all 97 branches within a month.

With SkyVision managing network deployment and operation, UNACOOPEC was able to focus its efforts on the development of its microfinance and micro-insurance services.

The network planning process, tailored to suit the organisation's requirements, resulted in high reliability and availability of the network. It enabled UNACOOPEC to provide its employees and customers with faster online access, seamless connectivity and what's describer as a "more gratifying personal banking experience".

"As a leading, widely-dispersed institution, we knew we needed an experienced and skilled vendor who really understood our needs," said Savane Issaka, general manager, UNACOOPEC. "SkyVision [delivered] a strong and reliable private satellite network. It changed the way we do business and totally improved the service level we wish to [give] our customers."

SkyVision claims it is "highly experienced" in providing the African banking industry with reliable network solutions suited to their unique requirements across geographic boundaries, particularly in rural areas. Some of its other customers in the sector include Unity Bank in Nigeria which is using satellite-based VPN services to connect 236 branch offices nationwide, and Bank of Africa (BoA) in Burkina Faso which has a full communications solution connecting its central office in Ouagadougou to a nationwide network of 32 branches.

In a separate project, Bank of Africa has been working with Orange over the last three years to enable users of its *Orange Money* service to transfer funds directly between their accounts via their mobile phones. According to the mobile operator, it has a large network of licensed *Orange Money* distributors that are able to supplement BoA's network of branches across the continent in countries such as Côte d'Ivoire, DRC, Mali, Niger, Senegal, amongst others.

SkyVision says it has "vast experience" of connecting banks on the continent. For example, the Bank of Africa in Burkina Faso uses satellite to link its central office in Ouagadougou (pictured) to a nationwide network of 32 branches.

The *Tranwall Transaction Control* system enables two-way communication with Old Mutual's OMCARD holders in Namibia. Using USSD, SMS or a smartphone app, customers can securely switch their cards 'on' or 'off' via their mobiles.

Mobiles turn Visa cards 'on' or 'off' in Namibia

Technology from Tranwall has enabled customers of Old Mutual in Namibia to secure Visa card payments using their mobile phones.

Old Mutual's financial services include banking, insurance, savings and investments. Founded in 1845, it has expanded from its origins in South Africa and now claims to have more than 18 million customers in more than 30 countries, 15 of which are across Africa.

Tranwall is focused on creating technologies that address both existing and emerging threats in the global payment industry. It is headquartered in Hong Kong and says it also has a "highly skilled" development team based in South Africa.

Working with Mauritian payment processing company Payment Express, Old Mutual successfully deployed the *Tranwall Transaction Control (TTC)* system for its OMCARD Namibia project. This is a pre-paid Visa card specifically designed for the company's customers, providing them with a cash back rewards programme and the ability to link up to four additional cards for their family members.

At the time, the project was said to be unique to Namibia, with the card and self-service offering being almost completely cellphone-centric. *TTC* gives users the ability to secure their OMCARDs by using mobile phones to switch the cards 'on' or 'off' for specific transactions types, such as online shopping, in-store purchases, or cash withdrawals. Tranwall said its system enables two-way communication with cardholders using USSD, SMS or the *Tranwallet* smartphone application. It keeps users informed of transactions on their cards, and provides advanced real-time control of their security preferences. *TTC* also provides second-factor authentication to secure OMCARD internet banking.

Dealing with "out of order" subscribers

In an effort to maximise revenue and provide a strong base for future growth, Vodacom has partnered with Experian in South Africa to create and implement a credit management roadmap.

UK-based Experian provides data and analytical tools to help businesses globally manage credit risk, prevent fraud, target marketing offers, and automate decision making. It has offices in many countries around the world including South Africa.

Vodacom had been using various integrated Experian systems to manage subscriber acquisition and management. These also focused on collections management to reduce both bad debt write-offs and compulsory churn rate. According to Experian, the key to achieving these aims was the implementation of several segmentations, each with their own collection strategies for managing subscribers in arrears and improving customer service.

Previously, Vodacom managed collections using the appropriate module from its billing system. But it soon became clear to the company that investment in a best-practice specialist collections system would enable it to adopt the most effective techniques for managing all subscribers who were in arrears, in query, or had ID theft issues.

As part of the implementation of a credit roadmap, Vodacom selected Experian's *Tallyman* debt collection system to manage subscribers that were classed as "out of order". The system could be easily customised and integrated with the operator's existing internal platform, including Experian's *Probe SM* for customer management and *Strategy Management* for decisioning, to create an integrated credit risk and relationship management solution.

Experian said using *Tallyman* would enable Vodacom to become more proactive and effective in managing subscribers, regardless of the reason or the business area in which they require management. It said the system manages all subscribers who are in arrears through early and late collections, pre-legal and legal situations.

Tallyman uses various subscriber profiles derived from *Probe SM* and a variety of arrears categories to segment delinquent customers using rules developed specifically by Vodacom. These accurately assess the risk factor of each account and adopt a far more targeted and personalised approach to debt collection.

The system automates the collections process by consolidating all credit-related communications, including phone calls, emails, texts, letters and faxes, between the organisation and its subscribers into a single database. It automates many of the standard collections practices, such as the issue of texts and reminder letters, thereby freeing-up collections staff to focus on higher-value activities.

Tallyman has been integrated with Vodacom's main system for managing all post-paid accounts. It receives updates from the billing system on a near-real-time basis so the collections team always has an up-to-date view of the customer and their level of arrears. Using the system's *Management Information* capabilities, Vodacom has gained a complete overview of the current situation of the collections department, and can also drill down to investigate areas of concern if necessary.

In addition, the performance of the collections team can be easily monitored against a range of KPIs that can also be used to identify where early management intervention may be required.

Integration with the telephone dialler used by the collections department enables all the information held about an account to automatically load onto the *Tallyman* screen of the collector who receives the incoming call.

All information from the system is fed into Vodacom's data warehouse which holds data from the billing system and the integrated Experian systems for subscriber acquisition and customer management. This ensures that subscribers in arrears will not be offered other products or services.

The use of *Tallyman* and the automation of manual processes is said to have cut Vodacom's opex by 38 per cent. Experian said the operator has been able to reduce write-offs by 53 per cent by increasing the number of debts recovered, and increased productivity by 180 per cent with collectors focused on high-value activities whilst automating a significant number of collection actions.

As a result, it's claimed Vodacom's future revenue is protected by improved customer service and its ability to rehabilitate more subscribers. Roll rates have been improved as the company is now able to take effective action early in the collections cycle, while the number of subscribers who churn has also declined. ■

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VAST Networks believes one of the main challenges in the industry is debunking the myth that Wi-Fi is and should be free.

Shop (but don't let the signal drop)

GRANT MARAIS and KHETAN GAJJAR describe the challenges and drivers of building a reliable Wi-Fi network that is suitable for internet access, media streaming, and capable of delivering future-proof services.

VAST Networks, South Africa's first open-access Wi-Fi network, was launched in June 2015. Earlier this year, the company announced that it had successfully built the continent's largest shopping centre Wi-Fi installation with a deployment at the 130,000m² Mall of Africa in Johannesburg *(see World News, Apr-May 2016)*.

Overall, the company currently covers a total of 6.5 million square metres of indoor space with Wi-Fi, has more than 2,000 operational Wi-Fi locations across the country, and continues to grow the footprint daily.

VAST deliberately uses the term "locations" rather than "access points" or "hotspots". Other operators use the term hotspots to count the amount of equipment they deploy – but users should be interested in a location that is covered and not how much equipment is utilised to achieve that ubiquitous coverage.

Wi-Fi for all

One of the main challenges within the industry is debunking the myth that Wi-Fi is and should be free. Many end-users are unaware that the Wi-Fi they are using is being paid for – either by their employer, the location owner, or indeed themselves through their own broadband subscription or mobile service.

Despite it being one of the cheapest forms of communication, prices for public Wi-Fi access are sometimes artificially hiked, either by the landowners or the landlords who try to 'tax' telecoms services being provided in their buildings. This makes Wi-Fi artificially more expensive than it really ought to be and in some cases unaffordable.

When setting up a Wi-Fi network, location and building design play a vital role in determining the type of installation and the equipment needed. In dense, high traffic areas such as shopping malls, more hardware is needed to provide the end user with a high-quality, reliable and seamless experience.

South Africa remains one of the biggest mobile handset-using countries on the continent; VAST seeks to assist mobile-centric users by giving them a means to go online and experience world class internet service on their devices. Internet access can become the social fabric that binds and enables communities as they move along their digital path to social and economic development. It empowers people to learn, connect, and understand the world around them, making them global citizens. Wi-Fi is a cost-effective way of delivering internet access to users, often being a fraction of the cost of other means such as mobile data, for example.

As well as benefiting consumers, internet access is essential when it comes to participating in the modern economy. Businesses need to promote access to information, markets, people and opportunities through a great Wi-Fi experience that is affordable.

The largest commercial barriers that VAST faces is the cost of backhaul, access to facilities, and rights of way. These are all factors to consider when implementing the network and equipment. The company operates well within the framework of what is required from a legal and regulatory perspective.

Because VAST has multiple ISP-type tenants on its infrastructure, the commercial case for being in a specific location or geography is accelerated. While traditional single-operator networks build a commercial case based on just the usage of their own subscribers, our company has the advantage of multiple user bases and multiple user profiles to more quickly close a commercial case.

Carrier-grade switching and termination equipment used to power VAST's Wi-Fi network. The firm says it continually investigates a variety of technologies, such as DAS, LTE-U, LAA and LWA.

Grant Marais, CEO, VAST Networks

Khetan Gajjar, CTO, VAST Networks

Being connected also enables other services to be delivered, such as OTT and VOD, for the benefit of South Africa's social and economic development.

LTE-U and Wi-Fi

The equipment VAST Networks has deployed includes 802.11-based Wi-Fi access points while new sites are built using dual-band radios that comply with the 802.11ac specification. The bulk of our network has been implemented with 802.11n-compatible access points in 2.4GHz.

However, the company continually investigates a variety of technologies, including DAS, LTE-U, LAA and LWA, and as appropriate may deploy network technologies other than 802.11-based Wi-Fi.

Having said that, the company believes that the majority of usage for the next 5-7 years will still be dominated by 802.11-based Wi-Fi, as the standard has been ratified and included in most devices by default for more than a decade. This means that user terminals or devices are freely available, and it's almost impossible today to buy a device that doesn't have Wi-Fi built-in. Where it is not built-in, Wi-Fi dongles and adapters are now in the sub-USD10 range, and unaffordability for most consumers therefore doesn't apply.

Technologies such as DAS, LTE-U and LWA still pre-suppose that a carrier has access to licensed spectrum, and the overhead of licensing costs, technology and signalling infrastructure will always be higher than a pure-play Wi-Fi network operator.

We reckon VAST Networks is currently South Africa's most developed and seamless Wi-Fi ecosystem. With download and upload speeds of up to 500Mbps live in the network today, the company is able to deliver a consistent and repeatable experience to its end-users on devices that have been commonplace for at least five years.

The company's ecosystem operates on a fully redundant fibre optic backbone. This is capable of supporting secured connections to deliver a suite of services and applications that provide customers and end-users with a superior Wi-Fi experience across multiple and complex environments.

South African mobile operators who are testing LTE-U technology in their laboratories are reporting speeds of up to 1GB per second. While not available to consumers, its arrival is anticipated within the next three years. This is of particular concern to Wi-Fi providers, as LTE-U technology intrinsically muscles-in on the (unlicensed) spectrum that Wi-Fi operates in, leaving less capacity available for Wi-Fi.

Wi-Fi operators have consistently (and since inception) driven down internet connectivity pricing using this spectrum. It is a fair assumption that mobile network operators – who are not well-known for providing cost-effective services – will not encroach on this spectrum with the same mindset as Wi-Fi operators. So ultimately, consumers will end up paying more, and the cost of internet access will remain high.

Some Wi-Fi users have even expressed concern about whether LTE-U will interfere with the speed and performance of Wi-Fi hotspots. Ultimately, spectrum will be too congested once LTE-U has been introduced and fully functional. Many operators and chipset manufacturers are still searching for a way where LTE-U and Wi-Fi can co-operate fairly. The proposed LTE-U set of standards offer the user no better experience than Wi-Fi as provided by VAST.

The telecoms space is rapidly growing in South Africa and Wi-Fi in particular is becoming more accessible. In 2015, mobile phones accounted for 61 per cent of web traffic in the country, while desktop computers and laptops made up the rest.

Today's internet-driven economy means that more consumers require reliable internet on the go at an affordable rate. People want to stay connected wherever they are. An example of this could be in a retail environment where shoppers want to search for the latest deals and offers, and share interesting things they see with family and friends. Retailers are also looking at more innovative ways of promoting products and services to customers and a Wi-Fi network at a mall is the perfect platform to do so.

The future

Without doubt, users will want seamless connectivity. This means a continuous connectivity experience across a variety of network equipment manufactures and technologies.

Wi-Fi as a bearer has not fundamentally shifted in its approach; it is a technology built from the ground-up to compete with other emitting devices in its band, and its interference mitigation is still vastly superior to other licensed band technologies. VAST Networks is open to working with operators, either on a commercial basis as a provider to them, or as co-inhabitants of the same spectrum band(s).

The company is also currently exploring technologies like Hotspot 2.0 release 2, 802.11ac Wave 2 and carrier-band aggregation to deliver an easy to use and cost-effective service. In addition, it is closely following the regulatory regime change around CBRS (3GHz) in the US; as regulatory and policy changes occur, the company will adapt and adjust its course of business to match market requirements. ■

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IoT helps create air pollution map

UK cycle courier company Gophr is equipping 50 of its riders with *CleanSpace Tags*. The couriers will map pollution levels on their journeys across London, collecting data that will help to build a real-time map of the city's air pollution.

CleanSpace Tags are portable air pollution sensors powered by Freevolt, the innovative technology that uses wasted wireless signals to power low-energy devices so their batteries never need changing *(see Wireless Solutions, Oct-Nov 2015)*.

In what's said to be the first example of a public LoRa network in London, Gophr's couriers will be equipped with devices that use the long range IoT technology. These will track the couriers' locations via satellite connectivity provided by Inmarsat, negating the need to use mobile location based services which drain battery life. It also means fewer access points are needed to cover the whole city.

The carbon monoxide data collected from the tags will feed into the interactive *Air Map* that will show the actual pollution levels at each courier's location. With the cyclists predicted to travel more than 17,000 miles each month, it's claimed the amount of indoor and outdoor air pollution data collected will be on a scale that has never been achieved previously.

Gophr's cycle couriers will be equipped with LoRa powered tracking devices that monitor air pollution levels in real-time.

LatAm police force upgrades satellite-based mission critical network

Advantech Wireless has supplied an end-to-end advanced VSAT network solution to a state police force in Latin America. Neither the customer nor its location can be named due to confidentiality agreements.

The network, which covers the country's entire land area, includes internet for police use and beyond line-of-site communications for security.

In 2007, the customer selected and installed a VSAT network solution from Advantech in order to offer internet services to more than 200 remote police bases located in rural sites.

Eight years later, the vendor was selected to provide an FTDMA VSAT network solution, adding options for its *A-SAT-II* system and SCPC upgrades. Advantech adds that it also provides in-country operation and maintenance services using its own personnel.

The upgrade started in January 2016. It includes one new *Discovery 100 Hub* with Advantech's *A-SAT-II* optimisation system and *S4120* terminals in order to connect more than 250 remote sites. It's claimed the ruggedised remote terminals are able to cover the diverse topography of the nation and accommodate "flexible and expandable" satellite resources.

Advantech Wireless' CMO of VSAT business unit Oscar Glottman says: "Our customer had faced the challenge of protecting the country's civil order in a large land area, with diverse geography including rugged mountains separating coastal areas on the Caribbean Sea and on the Pacific Ocean."

The solution is also said to include versatile and highly portable VSAT systems including flyaway and driveaway antennas installed in police trucks and tracking systems.

"Using the enhanced Advantech Wireless system, a network node in an emergency site can be assembled and deployed in under 15 minutes, and is used for fast deployment of help assistance centres in case of fires, floods or earthquakes," says Glottman.

Alaskan fishing firm first to use *GX* powered broadband in Bering Sea

Alaskan Leader Fisheries (ALF) will use Inmarsat's new high-speed broadband maritime communications service in the remote and hostile waters of the Bering Sea.

ALF is a commercial fishing company specialising in the harvesting, processing and marketing of Alaskan seafood. It will use Inmarsat's *Global Xpress* powered *Fleet Xpress* system to support its daily business operations.

As well as providing crew members with a vital communication link and internet access during long sea voyages, the service will help ALF's shore-based sales teams to maximise their sales potential with up to date information on catch qualities and weights. It will also enable the sharing and recording of geographical catch areas for more targeted sustainable fishing methods.

After successfully converting the first VSAT system on board the *Alaskan Leader*, Fusion Marine Technology will now equip the three remaining vessels in ALF's fleet.

ALF's currently operates four vessels in its fleet including the *Alaskan Leader* which was the first to have its mini-VSAT system converted for *Fleet Xpress*. The installation was led by Network Innovations and its partner Fusion Marine Technology. It features a Cobham *100GX* one metre VSAT antenna which, together with a *FleetBroadband* antenna and below deck unit, form the hardware needed to operate the service.

David Pratt, VP Fusion Marine Technology, says: "*The Fleet Xpress* service has allowed the Alaskan Leader Fisheries to maintain connection and speed even in the harshest of conditions of the Bering Sea, with antenna elevation around eight to thirteen degrees."

Sri Lankan operators trial 4.5G networks

Two Sri Lankan mobile operators are claiming a regional first by trialling 4.5G LTE-A Pro technology which is capable of achieving speeds in excess of 1Gbps.

Earlier this year, Sri Lanka Telecom's mobile subsidiary Mobitel and Dialog Axiata each announced that they had demonstrated 4.5G LTE-A Pro.

Dialog says its trial was carried out on its LTE infrastructure that was provided by Huawei. Mobitel also partnered with Huawei well as ZTE for its lab test.

According to the latter, the prime factor behind the super-fast speeds demonstrated in 4.5G LTE-A Pro is the use of multiple carriers of spectrum to generate an aggregated spectrum block to deliver significant throughputs for end-users.

It says the use of OFDM with 256 QAM in LTE-A Pro allows easy upward scalability for higher bandwidth requirements. This higher modulation rate is coupled with up to five-component carrier and 4x4 MIMO technology to provide Gigabit speeds for end users.

Both Dialog and Mobitel plan to commercially deploy 4.5G services but have yet to announce any further details.

In the meantime, the two firms say these latest tests continue to prove that Sri Lanka is spearheading mobile technologies in South Asia.

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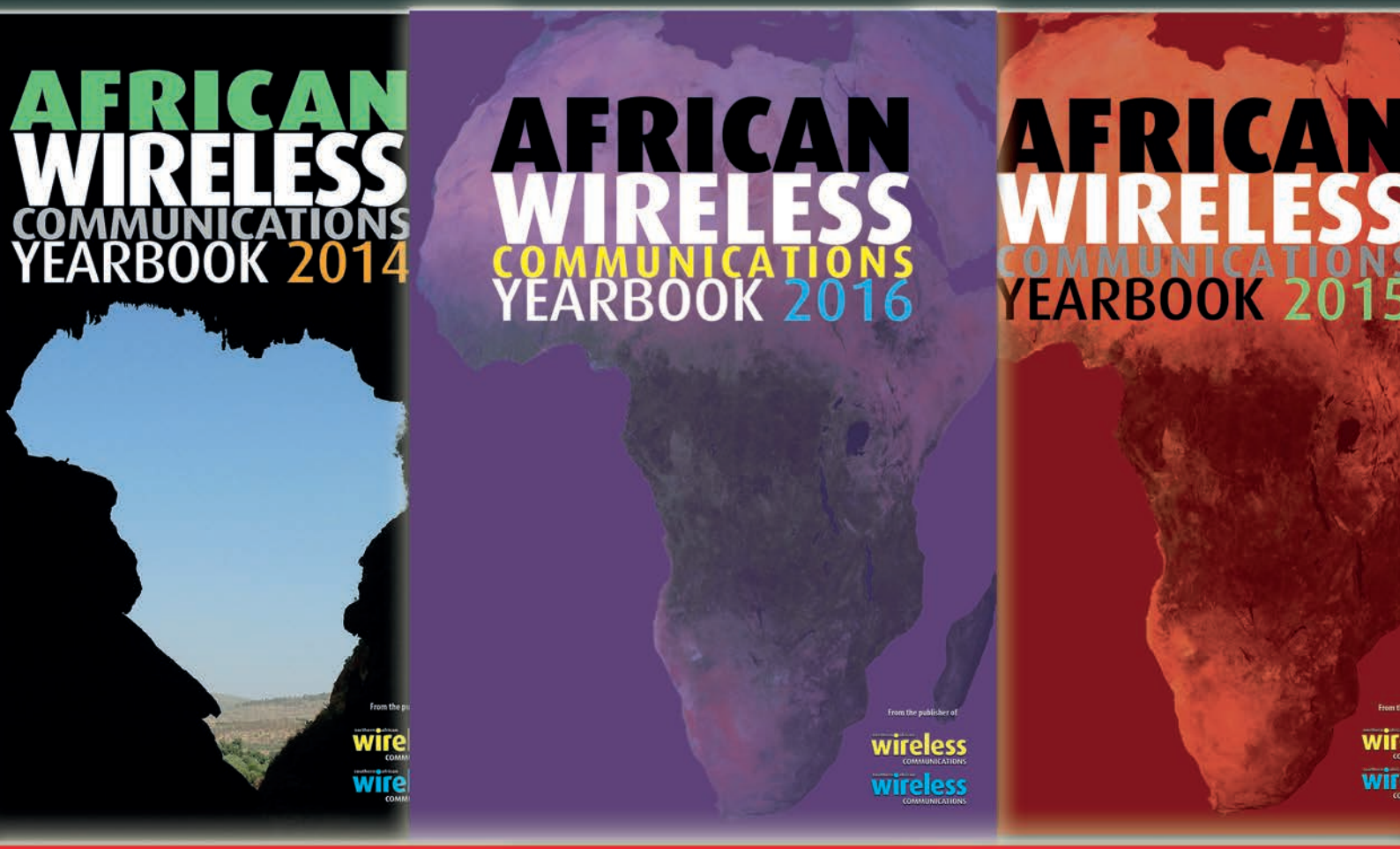

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Refugee camps given free emergency internet connectivity

Cloud network specialist Cradlepoint has partnered with Irish voluntary organisation Disaster Tech Lab (DTL) to deploy free emergency Wi-Fi in refugee camps across Greece.

DTL is using Cradlepoint's *COR IBR1100* series router to provide essential connectivity in 18 camps across the Greek mainland and islands.

According to Cradlepoint, its compact and ruggedised 3G/4G/LTE devices are designed to provide highly available, mission critical networking for extreme environments.

The company's *Enterprise Cloud Management Portal* enables DTL to monitor and troubleshoot the network locally on the ground. The system is also providing internet access in mobile vehicles used by NGOs across the country, including the UNHCR.

As new refugee camps are set up, Cradlepoint's technology provides first response emergency connectivity. There are two levels of access provided.

First, an open Wi-Fi network is used by refugees who rely on smartphones to keep in touch with relatives and communicate with the authorities.

Asylum seekers in Greece make their initial applications to the authorities via *Skype* using connectivity provided by Cradlepoint and Disaster Tech Lab.

For example, on arrival in Greece, asylum seekers are required to make their initial application to the country's authorities via a *Skype* call. This presents a real challenge as many camps do not have electricity infrastructure for months after being set up. The power needed to enable free connectivity often comes from solar panels, batteries or wind turbines rigged up by DTL.

Secondly, there's a password-encrypted network to help the authorities communicate and process asylum applications securely. This is essential given that biometric data is taken and processed for every refugee.

Orange Poland and Nokia set capacity-distance record

Orange and Nokia say they have achieved the world's first optical transmission of 250Gbps per wavelength over 870km.

The milestone was reached when a six-carrier 1.5Tbps superchannel occupying a bandwidth of 300GHz was transmitted through Orange Poland's existing network between Warsaw and Wroclaw over standard single mode fibre.

Nokia says optical systems typically achieve maximum transmission capacity over short distances, and lower capacity across long distances. The company claims the trial demonstrated how capacity and distance can be improved in tandem using its commercially available technology, resulting in a 250 per cent increase in bandwidth over commonly deployed 100Gbps networks using the same amount of spectrum.

The field trial used a 870km fibre link with flexible grid infrastructure and standard erbium-doped fibre amplification applied to 20dB spans of standard single mode fibre. The 1.5Tbps superchannel was based on six carriers of 250Gbps capacity each. Nokia says the size of the superchannel, and its 50GHz spacing between channels which is the same as existing 100Gbps channels, will ease network planning and operation.

Christian Gacon, VP in charge of Orange's transport networks, says the milestone will form the basis for faster networks and a better user experience. He adds: "Reaching these new heights in optical transmission proves we can meet bandwidth demand while maintaining the lowest cost per bit so our business can continue to flourish."

Telkom Indonesia looks to HAUD for network security

Telkom Indonesia, which is said to be the world's seventh largest cellco, will use mobile network security technology from HAUD to protect its 157 million subscribers from spam and fraudulent SMS traffic.

The deal follows a successful trial in which HAUD deployed a bespoke firewall solution with 24/7 monitoring, and carried out an in-depth traffic audit of millions of text messages.

According to the Malta headquartered vendor, its mobile network firewall provides modular, 360° protection against SS7 security vulnerabilities, and effectively ring-fences networks from malicious messages. At the same time, it's claimed to prevent grey route traffic that bypasses network termination fees.

HAUD will also provide Telkom with A2P SMS monetisation services to create new sources of revenue and improve its subscriber experiences.

Through what's claimed to be a "pioneering" Revenue-as-a-Service approach, HAUD says it will manage the entire A2P monetisation process, from traffic identification and blocking, to redirection of traffic to monetisable channels, without requiring any initial investment from the operator.

"Revenue-as-a-Service is a new approach to helping operators to make the most of all possible income streams available to them," says Mårten Björkman, SVP Asia Pacific at HAUD. "The global A2P SMS market is worth billions but many operators are not equipped to claim their fair share and routinely lose out on large amounts of revenue due to the ongoing use of grey routes."

Peru gets its "most reliable" first responder network

DAMM has rolled out a citywide TETRA network covering Lima in Peru. As well as the capital city, the deployment covers its surrounding regions including Tumbes, Piura, Lambayeque, La Libertad, Ica, Arequipa and Cuzco.

According to the Danish PMR specialist, it helped overcome Peru's challenging topography with a network that supports more than 40 sites and over 3,000 professional radio users. DAMM worked with its local system partner, Dolphin Telecom, which has successfully built the network over the last years and plans further expansions in both capacity and coverage to enhance the service offering.

DAMM says the challenges in Lima were "easily overcome" thanks to its decentralised IP-based architecture, *BS421* base station, and directional antennas.

Over a six month period that began earlier this year, the network was expanded with 20 sites. DAMM claims challenges such as need for enhanced coverage in tunnel areas and indoor locations were "easily overcome" by utilising its decentralised IP-based architecture and "easy" mountable outdoor *BS421* base station in connection with directional antennas.

Dolphin Telecom CEO Javier Sanchez adds: "With the open API in DAMM *TetraFlex*, it was easy for us to enhance the application services including AVL tracking, fleet management, and advanced alarm solutions."

Huawei and Vodafone test 20Gbps using E-band

Huawei and Vodafone claim they have conducted the world's first 5G outdoor field test at E-band, reaching 20Gbps peak rate for a single user device with high spectrum efficiency.

The demonstration took place at Vodafone's headquarters in Newbury, England earlier this year, and was part of a strategic partnership agreement on 5G technologies that it signed with Huawei in 2015.

According to the two companies, the 5G mmWave field test covered Single User-MIMO with a strong reflection path to reach 20Gbps UE peak rate, and Multi User-MIMO for long-range UE to reach 10Gbps peak rate. A peak user rate of 20Gbps is targeted by ITU-R as a 5G requirement.

Huawei believes the test will contribute to the study of spectrum above 6GHz for 5G enhanced mobile broadband, and to promote global spectrum harmonisation at World Radio Congress in 2019.

Vodafone Group CTO Johan Wibergh adds: "This field test in an outdoor environment is a significant step in validating the performance of 5G in high frequency bands, improving our understanding of the capabilities of the technology."

E-band millimetre wave spectrum can be used as complementary frequencies to the lower-band to deliver what's said to be an ultra-high mobile broadband user experience.

In particular, Huawei says it can enable new applications such as virtual/augmented reality, and act as self-backhaul for the 5G traffic.

Upgrade for Bravo

Saudi Telecom subsidiary Bravo is upgrading its mission-critical network that serves more than 3,000 customers across the country. Its current network is based on a proprietary technology, and the replacement programme underpins Saudi Arabia's *Vision 2030* which is about optimisation, digitisation of different verticals, and enhancing public/private partnerships. The new mission-critical TETRA network is planned for completion by 2019. Complementary mission-critical LTE, based on 3GPP Release 13, will be rolled out on a zone-by-zone basis according to customer needs, beginning in 2017.

First NFV telco cloud

Etisalat has activated its first live NFV (network function virtualisation) telco cloud in Abu Dhabi. It has been built using Quanta servers, Arista switches and Canonical Ubuntu OpenStack, a multi-vendor combination that has been integrated for production for the very first time. Etisalat says activations are currently in progress at more sites across the UAE. It also aims to virtualise its infrastructure and services across its portfolios of data, communications and video, beginning with mobile services.

WorldSIM connected

WorldSIM says it is now the most connected mobile network in the world. With the launch of *WorldSIM Infinity*, the global roaming specialist claims its network now encompasses 50 million Wi-Fi hotspots and 600 mobile networks in 200 countries. It says the new service gives subscribers "seamless" connectivity when they roam internationally, regardless of whether it's via Wi-Fi or mobile. The company claims that travellers will be able to always connect to the fastest network at the lowest cost.

Airbus and CSL upgrade comms network for Hong Kong electricity provider

CLP manages around 2.5 million customers in Hong Kong. It owns and operates more than 14,900km of transmission and high-voltage distribution overhead lines and cables, as well as more than 14,200 substations. PHOTO © CLP HOLDING LTD.

Airbus Defence and Space (ADS) is working with mobile operator CSL to upgrade the communications network of Hong Kong's largest power company.

CLP Power supplies electricity to around 80 per cent of Hong Kong's population. Since the early 2000s, it has been using a TETRA network from ADS, which it claims was the world's first 800MHz system. CLP set up the network for the remote control and monitoring of overhead lines in an effort to improve the reliability of its power supply.

CSL is said to be Hong Kong's largest mobile operator and provided CLP's existing network, including base stations, switches and services. Over the next four years, ADS will work with CSL on numerous sites across the state.

The upgraded system, based on the latest IP-based TETRA technology, will also offer the possibility to support LTE communications services in the future. There is also an option for CLP to add secure LTE services based on ADS' *Tactilon* product range *(see feature, 4G or not 4G?, Jun-Jul 2016).*

Liquid to acquire Neotel

In a move that will create what's claimed to be the "first pan-African fibre player", Liquid Telecom plans to acquire South African converged communications operator Neotel.

Liquid is partnering with investment group Royal Bafokeng Holdings (RBH) which will have a 30 per cent equity stake in the venture. Neotel's current owners – Tata Communications together with minority shareholders led by Nexus Connexion – have agreed a sale price of ZAR6.55bn (USD4.28bn).

Liquid said the acquisition will create the continent's largest broadband network comprising 40,000km of cross-border, metro and access fibre.

"For the first time, African companies will be able to connect with each other in a cost-effective and reliable way, all on a single fibre network," said Liquid Telecom CEO Nic Rudnick. "We will also be increasing investments into Neotel to cater for rapidly accelerating mobile and enterprise traffic, enabling us to launch exciting new products and services."

The transaction is subject to approval by South African regulatory authorities and is expected to be completed later this year.

In 2015, Vodacom announced plans to acquire Neotel but met with criticism from rival operators. In its end-of-year results statement published in June 2016, Vodacom Group CEO Shameel Joosub said: "The proposed acquisition of Neotel lapsed in March due to regulatory complexities and certain conditions not being fulfilled."

Liquid Telecom Group CEO Nick Rudnick (left) said companies in Africa will be able to connect with each other on a single fibre network. Also pictured: Strive Masiyiwa (right), Econet Wireless Global and Liquid Telecom chairman; and Troy Reynolds (centre), deputy group general counsel for Tata Communications.

Neotel runs a converged communications network which offers tailored services to enterprise users based on voice, internet and data.

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