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

FEBRUARY/MARCH 2017

Volume 16

Number 1

COMMUNICATIONS

- How to get the best out of the latest satellites
- Connecting the transportation sector
- Comparing MFS on both sides of the Indian Ocean



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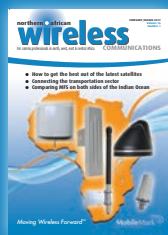
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Mobile Mark antennas are manufactured in the USA and UK. Their responsive manufacturing capabilities and production controls ensure that antennas are delivered on time and to spec. Their experienced engineering design group can take a project from initial concept through to final production. They also offer in-house engineering design and RF testing facilities for custom designs.

To find out more about Mobile Mark,
turn to page 12.

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MobileMark
antenna solutions



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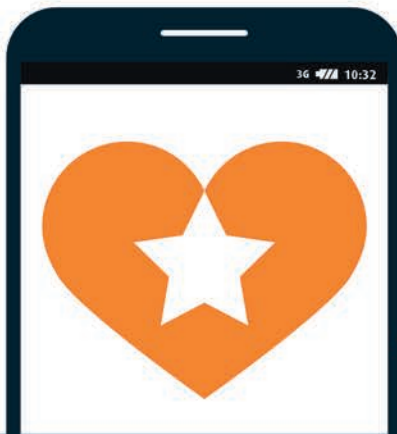
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USSD-based Campaign uses Game Play to Reach and Engage

Digitata Insights, in collaboration with Mastercard, recently launched a gamification campaign to educate South Africans on the benefits of making safe, secure and fast payments with Masterpass, the global digital payment service from Mastercard. Gabriel Swanepoel, Product Development and Innovation, Mastercard said. **"To create widespread adoption of our Masterpass solution, we looked for a unique, fun and engaging platform to bring its benefits to life for consumers. Gamification was a perfect opportunity to educate consumers about how digital payments can improve their lives."**

To participate, subscribers had to dial a USSD short code. Players earned points by answering questions relating to information supplied in the game about mobile and cashless payments as well as about Masterpass, and by completing actions such as downloading and using the Masterpass app. Players reached the next level of the game by accumulating points, which could be converted into airtime.

Richard Walton, CEO at Digitata Insights, says: **"Gamification – the incorporation of game play into online marketing – is an extremely effective way to keep mobile users engaged, offering the ideal opportunity to educate them in an interactive manner."** Digitata Insights developed the USSD-based gamification service using the company's MeMe measurable mobile media platform. Text-based USSD is device and network agnostic, so bespoke content can be delivered to a huge market without subscribers incurring any charges, as no data is required.

To ensure the broadest reach, Digitata Insights partnered with South Africa's two largest network operators, gaining access to millions of potential customers.

Results from the campaign were impressive with more than 398,595 people starting the race and some 153,000 reaching the finishing line, completing all 17 levels in the game.



About Digitata

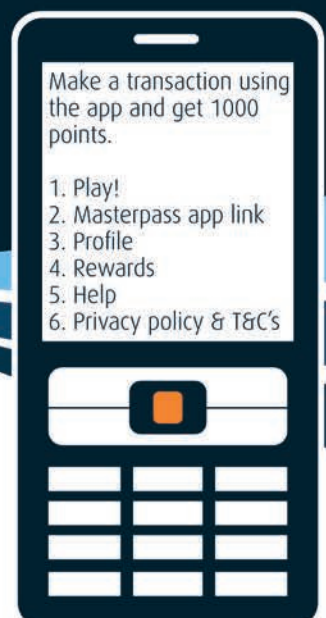
Multinational technology company, Digitata Limited focuses on delivering intelligence in the mobile telecommunications and digital media arenas, enabling mobile operators, brands and agencies to offer their customers greater value and an enhanced user experience.

This is achieved through the application of Machine Learning (ML) and Artificial Intelligence (AI). Our unique technical capabilities with regards to the network, the primary delivery platform in a mobile first world, allows us to manage the delivery of solutions with unprecedented efficiency.

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Vodafone Egypt launches region's first VNF platform

Having selected Ericsson as its NFV partner, Vodafone Egypt has now gone live with the first commercial virtual network function in the Middle East and North Africa.

Since last October, Ericsson's virtual *Serving GPRS Support Node – Mobility Management Entity (SGSN-MME)* has been handling and managing commercial mobile broadband traffic on the cellco's network. The platform is said to support multi-access technologies such as GSM, WCDMA and LTE, and interworks with Wi-Fi. Ericsson

adds that it also provides full feature parity, and is agnostic to the underlying cloud system with support for both Open Stack and VMware.

Vodafone Egypt's network runs using a combination of virtual and native *SGSN/MME* in the same pool which, according to Ericsson, supports efficient capacity expansion. The vendor claims its system extends network capabilities to meet even the "most aggressive" traffic growth predictions, and provides "superior scalability and capacity" so that operators can optimise their operations

and manage the increasing volume of traffic from mobile broadband.

"Virtualisation will enhance the speed and efficiency of services we provide to our customers which will in turn support our main goal to reach customer satisfaction," says Osama Said, technology director, Vodafone Egypt.

Ericsson's blade system for *SGSN-MME*. The company's virtualisation technology has been managing Vodafone Egypt's mobile broadband traffic since last October.



LTE not secure enough for public safety, warns TCCA

The security mechanisms being designed into future LTE standards are not currently at a level to match purpose-designed professional mobile radio standards, warns the TCCA (TETRA and Critical Communications Association).

In a recently published white paper, the TCCA identifies four key focus points for governments to consider if they are looking to implement LTE-based public safety networks.

Among them, it says a review of the security arrangements available in LTE systems and any commercial network that is used should be undertaken by suitably qualified staff.

MNOs already have the ability to



The TCCA says that while there is no simple answer to how mobile broadband should be provided to public safety users, it is essential that any network employed is suited to mission-critical communication.

deliver mobile broadband to public safety services. While many public

safety organisations are already taking advantage of this, the TCCA says it is only for non mission-critical applications, with the traffic carried by a 'best efforts' commercial service.

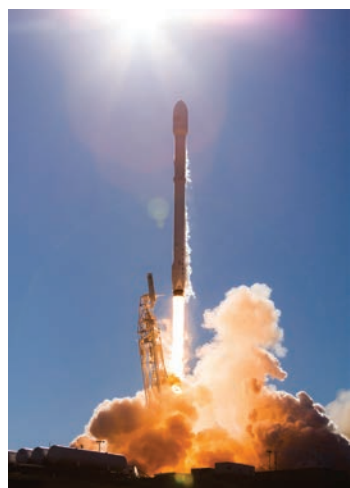
It adds that for safety critical applications – such as dispatching ambulances, passing on details of terrorist suspects, dealing with major incidents, etc. – it is essential to use networks that are suited to mission-critical communication.

The TCCA also points out that as with any commercial organisation, mobile networks are subject to being bought and sold. As a result, critical national infrastructure could end up being owned by foreign firms. It

advises those responsible for public safety communications to therefore consider national government policy with regard to foreign ownership and operation of telecoms infrastructure.

Spectrum and funding are also highlighted as focus areas in the white paper. The association says the availability of spectrum is essential to enabling choice in the provision of broadband data services. But even if spectrum is secured for public safety agencies, building nationwide infrastructure will be relatively costly in many countries. The TCCA therefore believes that an optimal balance between dedicated and commercial networks will be needed.

Launch success for largest commercial satellite constellation



In what it describes as the of "one of the biggest tech refreshes" in history, Iridium has finally launched the first satellites that will eventually replace and enhance its existing network of low-Earth orbit (LEO) satellites spanning the entire globe.

The first 10 satellites that comprise Iridium's *NEXT* constellation were originally due to be launched by SpaceX last September (*see News, Aug-Sep, 2016*). But the loss of Spacecom's *AMOS-6* on the launchpad (*ibid.*) has

A SpaceX *Falcon 9* rocket lifts-off with the first 10 LEO satellites for Iridium's *NEXT* constellation.

resulted in a backlog in Spacecom's schedule Iridium's satellites were eventually launched on 14 January 2017. They were delivered to a 625km temporary parking orbit where they are currently undergoing tests. Once they have passed, the satellites are expected to be moved into their 780km operational orbit some time in April.

These first 10 satellites are the start of what the company claims will be the largest commercial fleet in space, providing 100 per cent truly global communications coverage.

Over the next 18 months, SpaceX will carry out seven more launches for Iridium, deploying ten *NEXT*

satellites at a time. One-by-one, these new orbiters will be positioned near a current generation Iridium satellite, each moving at around 17,000 miles per hour as testing begins. Iridium says "unique" inter-satcom links from nearby satellites will be repositioned to point to the new *NEXT* spacecraft as it prepares to take over service. Existing satellites will eventually be de-boosted and de-orbited.

The second launch was expected in mid-April but this has now been moved to mid-June following continuing delays at SpaceX. The entire Iridium *NEXT* network is scheduled to be completed by mid-2018.

ISK fibre network upgraded to 10G

Telco Systems will upgrade Internet Solutions Kenya's (ISK) entire fibre network infrastructure to 10G.

Formerly AccessKenya Group, ISK provides cloud, communication, connectivity and carrier services to public and private sector organisations in Kenya and across East Africa. It is a licensed DCNO, ISP, PDNO and local loop operator in addition to being a shareholder in TEAMS.

Telco says it will provide a fully automated software-defined network with the capacity to support 10GbE. The vendor will supply its *T-Metro 7124*, *T-Marc 3348* and *T-Marc 3308* demarcation devices,

as well as its *EdgeGenie Orchestrator* service management system. It says this means the network will be fully orchestrated, allowing rapid service provisioning along with simplified network deployment and maintenance activities for ISK.

"In the last two years, we have been experiencing a growing demand for higher capacity and other layered services from our customers," says Richard Hechle, MD, Internet Solutions Kenya. "We are confident that [Telco Systems'] innovation networking technologies will enable us to deliver more capacity and will allow us to better utilise our

infrastructure in order to better serve customers with new and improved services."

It's claimed the newly upgraded network will enable ISK to serve thousands of enterprises in Kenya and across the region with advanced business services.

It will also provide the company with full MPLS services across all parts of the fibre network and all the way to the customer. In addition, Telco says the network upgrade will now include the latest MEF 2.0 standards, which means ISK will be able to deliver "more robust" services to its customers.



Telco Systems CEO Ariel Efrati (right) says the new network will be one of the best in Africa. Also pictured is Richard Hechle, MD of Internet Solutions Kenya.

"This network upgrade is a major step forward in creating one of the highest quality and most reliable networks, not only in Kenya but across Africa," says Telco's CEO Ariel Efrati.

Orange enhances optical network in Côte d'Ivoire

Orange Côte d'Ivoire is boosting its data carrying capacity with a 100Gbps optical network solution. With 12 million customers and growing, it's claimed the company can now upgrade easily to obtain 10 times its existing capacity.

The West African operator is working with France-based Ekinops on the rollout. Orange is extending the transmission capacity of its network along Côte d'Ivoire's main strategic routes, and has been conducting intensive field tests using Ekinops' next-generation optical network equipment.

According to the vendor, its 100G solutions allow for transmission capacity to be increased from 10G to 100G "very easily" and without changing the existing infrastructure.

The firm says that platforms such as the *Ekinops 360* (pictured) feature its "highly programmable" *T-Chip* (*Transport-on-a-Chip*) architecture which results in fast, flexible and cost-effective delivery of new services for high-speed, high-capacity transport.

By using its carrier-grade system, Ekinops reckons operators can increase network capacity more simply. The company also claims its 100G solution guarantees Orange "perfect interoperability" with existing equipment in its network.



Microsoft and Liquid partner for cloud in Africa

Microsoft and Liquid Telecom have joined forces to accelerate the use of cloud services across Africa.

The companies say businesses across the continent have traditionally been slower adopters of cloud services, particularly in areas with limited ICT infrastructure.

As well as the delivery of cloud services, their joint effort will also focus on SMB development, and the enablement of a TVWS technology and partner ecosystem to provide further connectivity across Africa.

By combining Liquid's fibre network reach – which now spans more than 40,000km across 12 countries – with Microsoft's business solutions, the partners say they will bring the cloud closer to the end user. They reckon this will enhance

business potential and enable startups and home-grown operations to be more productive and efficient.

"Cloud computing is still gaining momentum on the continent, but we believe it has the potential to transform the way businesses of all sizes operate," says Ben Roberts, group CTO, Liquid Telecom.

"Through better connectivity, faster internet and secure cloud offerings, businesses will have the platforms and tools they need to grow and succeed. We have the infrastructure to enable locally and regionally hosted cloud solutions keeping African data in Africa."

Part of the project, 'Business in a Box', will offer SMBs a cloud-based toolkit of relevant applications, cloud services and connectivity.

Arabsat expands capacity for CETel and Tunisia's ONT



CETel has upgraded its extended C-band service from Arabsat to meet increasing demand in the mining sector. And in a separate deal, Tunisia's Office National de la Telediffusion will launch a new broadcast platform using Arabsat's help.

As part of its upgrade, CETel will use more than 50MHz of extended C-band capacity from *Arabsat-5C*

In 2015, Arabsat and CETel built an Earth station which uses a 9.3m antenna at CETel's teleport.

which orbits at 20°E. It will use this to deliver up to 200Mbps to critical and sensitive operations in the natural resources industry, as well as connectivity to rural areas in many countries, especially Mali, Niger, Nigeria, DRC and South Africa.

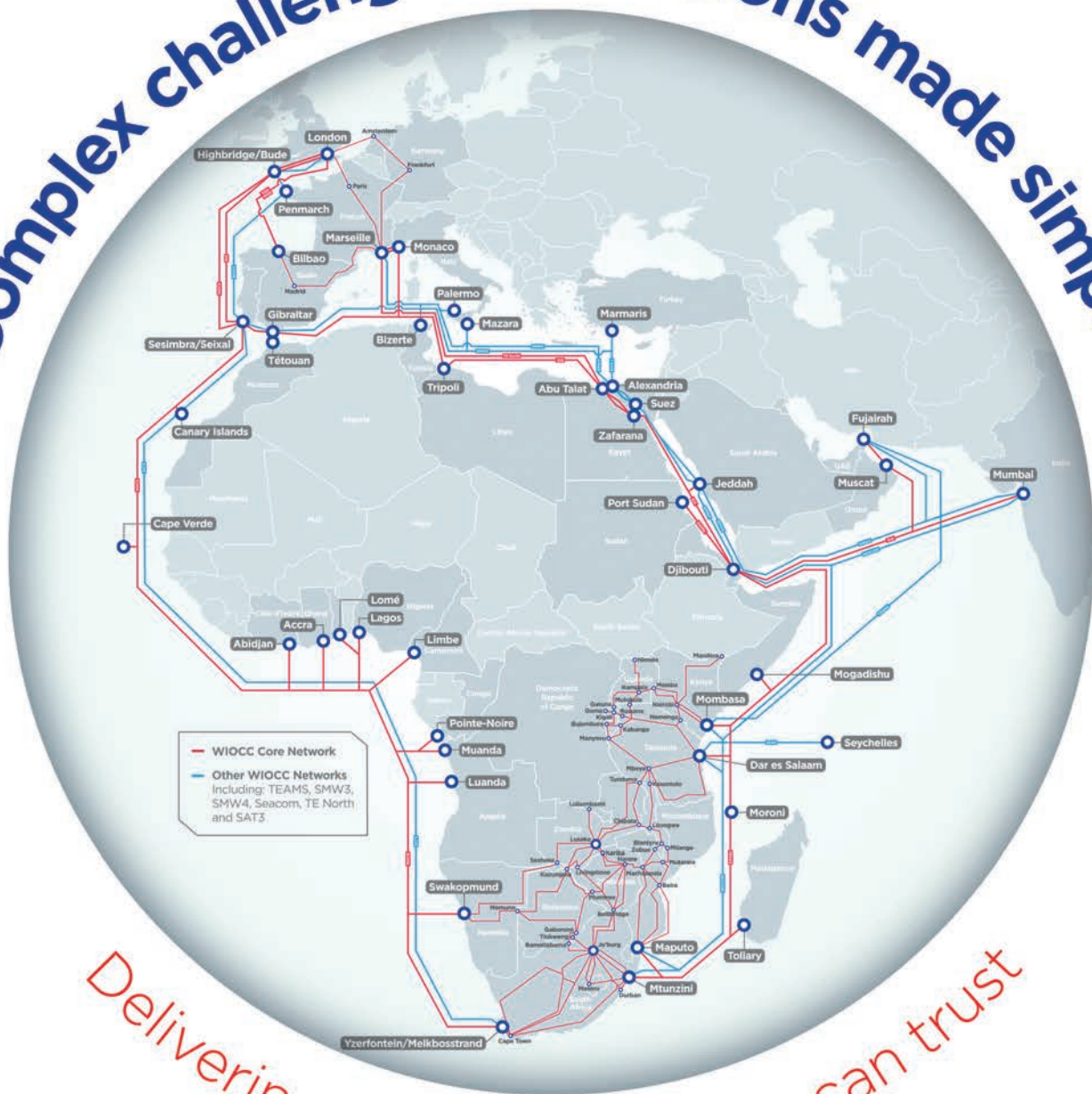
CETel and Arabsat have been long-term strategic partners. For instance in 2015, they built an Earth station which uses a 9.3m antenna at CETel's teleport in Ruppichteroth, Germany.

In separate news in February, Arabsat and Office National de la

Telediffusion (ONT) have signed an agreement to launch a Tunisian broadcast platform on Arabsat *BADR-4*. It is due to start operating by the end of Q217 and will allow Tunisian and regional broadcasters to have direct access from Tunis to the growing 26°E neighbourhood with coverage encompassing MENA and Western Europe.

Rohde and Schwartz was chosen for the installation and commissioning of the platform which is said to use the latest technical specifications.

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10 years of M-PESA in Kenya

Safaricom has marked 10 years since it launched *M-PESA* in Kenya. In early March 2017, it published the findings of a study carried out by KPMG which revealed that the 'social value' generated by its mobile money system grew from KES83m in 2007 to KES184bn by the end of March 2016.

In its *True Earnings* study, KPMG performed an evaluation of the social value created by Safaricom's mobile money system using 'Social Return on Investment' principles (SROI). According to the research,

M-PESA customers were the biggest beneficiaries of this social value, receiving a return in value of KES160bn (USD1.55bn) as a stakeholder group in the financial year ending 2016.

Neil Morris, climate change and sustainability director at KPMG South Africa, said: "Although Safaricom earns growing revenues from the *M-PESA* product, the social value it has generated for customers continues to exceed the financial benefits to Safaricom in each of the years since its inception."

The study found when the platform was first introduced in March 2007, it attracted 20,000 customers. By March 2016 the service had more than 16 million users, while the value of transactions rose from KES10.3m to KES5.2tr over the same period.

Safaricom said KPMG's report complements recent findings by economists from MIT and Georgetown University who found that *M-PESA* has lifted 194,000 Kenyan households out of extreme poverty. *CA denies plans to split M-PESA from Safaricom – Wireless Business, p13.*



Since its launch in March 2007, it's claimed *M-PESA* has lifted 194,000 Kenyan households out of extreme poverty.

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ICT: the "new oil" in Nigeria

Investments in Nigeria's growing telecoms sector reached USD68bn as at July 2016, according to figures published at the Nigerian Telecoms Investment Forum.

Held alongside ITU Telecom World 2016 in Bangkok last November, forum delegates heard that this figure included USD35bn in direct foreign investments.

Speaking at the event, former ITU secretary general Dr. Hamadoun Touré said Nigeria is now a "preferred destination" for telecoms investors in Africa. He pointed out that since the country first opened its sector to the global community, the market has grown from just 400,000 connected lines in 2001 to more than 150 million today with a teledensity of 107 per cent.

"The next growth for voice communication is in Quality of Service," said Touré. "The new oil in Nigeria is ICT and data transmission is the way to go."

Professor Umar Danbatta, executive vice chairman of the Nigerian Communications Commission (NCC), told the audience that the regulator has begun digital transformation through the National Broadband Plan 2013-2018. He said that while Nigeria has so far hit 21 per cent, investments will be needed for 3G and 4G, and to take services to underserved and unserved regions in order to reach the planned target of 30 per cent next year.

"We need to deploy infrastructure to those areas that have no services," said Danbatta. "We have come to let the global community know that investments are welcome in this area."

The forum also heard from Nigeria's communications minister, Adebayo Shittu. He spoke to assure existing and potential investors of government support and protection, and claimed that since the country was now moving from a resource-based to a knowledge-based economy, investors should "renew" their confidence in the state.

Smartphone re-use drives digital inclusion programme

Facebook has appointed HYL A Mobile to collect high-end smartphones for re-distribution in emerging markets as part of its *Smart Restart* initiative. The programme seeks to underline the company's commitment to sustainability while driving digital inclusion in underserved parts of the world.

It's claimed the re-distribution of devices will have a major impact in many parts of Africa where device affordability is a major barrier to mobile broadband adoption.

For example in Kenya, Facebook has been working with Medic Mobile and getting smartphones to frontline health workers in Isiolo County.

Devices collected through *Smart Restart* and refurbished by HYL A are being donated to 120 community health workers (CHWs). Supported by Christian Aid Kenya and the

Kenyan Ministry of Health, the CHWs will use the phones to register pregnant women, receive automated antenatal care visit reminders, report danger signs, and track deliveries.

They will also register new-born babies and receive immunisation reminders to ensure that children are receiving necessary and life-saving vaccinations. All the data collected will integrate directly into the Ministry of Health's reporting tools.

US-based HYL A Mobile specialises in mobile device recycling and re-commerce. It says the global secondhand device market is worth around USD17bn. The company claims to use "sophisticated" technology across its global operation centres to extend the lifecycle of mobile devices in the "most secure" manner possible.

Gazprom scores big with African satellite connectivity



Cameroon clinched their fifth title after defeating seven-time champions Egypt in the 2017 Africa Cup of Nations final.

Gazprom Space System's (GSS) *Yamal-402* satellite has been kept busier in Africa over the past few months.

In mid-February, the Russian operator announced that the satellite's capacity was used for the 2017 Africa Cup of Nations football tournament that was held in Gabon at the start of the year. This event was broadcast by Equinox Television Cameroun using *Yamal-402*'s Southern Beam which covers sub-Saharan Africa. Gazprom says it will work with Equinox on further

plans to develop business for full-time and occasional use TV broadcasting.

As the winner of the Africa Cup of Nations, Cameroon will now participate in the Confederation Cup held in Russia in June 2017. Gazprom's *Yamal-202* will be used to arrange backup links for TV broadcasting of Confederation Cup games as well as next year's FIFA World Cup Finals.

In separate news late last year, Gilat Satellite Networks (GSN) has also struck a deal with Gazprom to use

Yamal-402's Southern Beam to deliver services based on its *SkyEdge II-c* technology in sub-Saharan Africa.

Initially, the capacity will be used to implement broadband connectivity in schools and deliver services to mobile operators in rural Ghana.

GSS director general Dmitry Sevastyanov said: "The partnership with Gilat will further enforce our presence in the African market and will also involve enhancement of telecommunication infrastructure in Africa."

Creating Africa's cashless society

Mastercard promises to “empower” more than 150,000 micro, small and medium enterprises (MSMEs) in Kenya this year by giving them access to its *Masterpass QR* system.

The company says MSMEs have traditionally struggled with the cost of installing payment infrastructure such as POS devices, as well as with issues of security surrounding payment.

It claims *Masterpass QR* (*Quick Response*) combats these challenges in a “simple and user-friendly” manner, helping to stimulate the economy by digitising a sector previously solely dependent on cash-based transactions.

In Kenya, the company began introducing its mobile solution via various mobile banking applications in February. Consumers can pay for

in-store purchases by scanning a QR code displayed at the checkout on their smartphones, or by entering a merchant identifier into their feature phones.

Masterpass QR can be used at any supported location across Africa. As well as Kenya, the system is already available in Rwanda, Tanzania, Uganda and Ghana, as well as in Nigeria which was the first market

on the continent to see the launch of *Masterpass QR* last September following a partnership with the Ecobank Trans International Group.

Mastercard's global goal is to connect 40 million micro and small merchants to its electronic payments network by the end of 2020. By then, it says *Masterpass QR* will have been rolled out to 33 countries across Africa.

Intersat boosts pan-continental internet

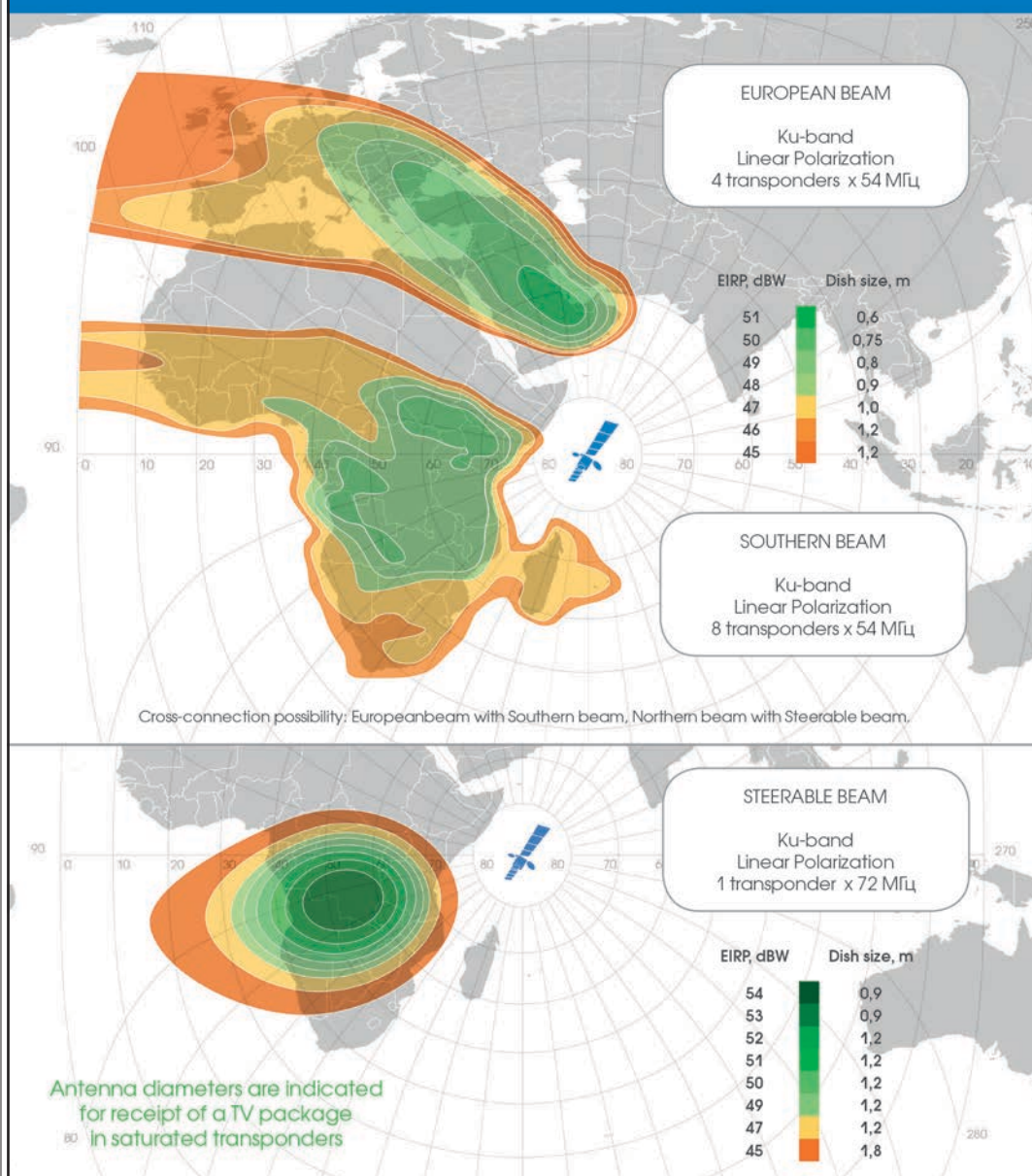
Intersat is delivering internet services across Africa following the signing of a multi-year capacity agreement with SES.

Based in Dubai, Intersat also has offices in Kenya and South Sudan and is said to be one of the largest providers of internet solutions on the continent. It will use the *NSS-12* satellite located at 57°E to deliver broadband connectivity to businesses and consumers. The agreement includes a new C-band capacity lease, infrastructure services out of SES' Betzdorf teleport, and a renewal of upgraded Ku-band capacity out of the Djibouti Teleport. The latter is managed by BringCom and has been used by SES since 2014 after it installed a nine-metre Ku-band antenna and hub equipment at the site.

Intersat will also use the *Enterprise+* service to deliver high-speed broadband connectivity across the continent. SES says this managed, ready-to-deploy, customised satellite connectivity solution provides carrier grade services and enables a range of applications including connectivity for ERP, VPN, VoIP services, remote data traffic, etc.

Hanif Kassam, executive director of Intersat, says: “With the new and upgraded capacity and customised connectivity platform on *NSS-12*, combined with an extensive teleport infrastructure, we will be able to offer truly differentiated services to our customers.”

Yamal-402 Satellite Capacity for African and Middle East Markets




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NCC re-plans microwave

 The Nigerian Communications Commission has told local operators it will re-plan the 23GHz microwave frequency band. In mid-February, the regulator said that following industry consultation, it has decided to re-channelise the 23GHz band from its original 7MHz plan to 28MHz in accordance with recommendation ITU-R.F. 637-4. The new plan will take effect from 30 May 2017. All affected operators will be given two years to migrate from 7MHz to 28MHz channel spacing in the 23GHz band. New assignments on the band will now be based on the 28MHz plan, and channel aggregation will no longer be permitted.

Full coverage in Morocco

 Maroc Telecom is claiming a first in Morocco with the launch of its new broadband satellite internet service for residential and business customers. As a result, the company says it has become the first operator to offer full coverage of Moroccan territory. It adds that customers can take advantage of a "wide range" of broadband packages of up to 20Mbps priced from MAD249 (USD25) per month. Enterprise users can also choose a VPN satellite service with speeds up to 6Mbps.

No snooping in Kenya

 The Communications Authority (CA) of Kenya has denied local media claims that it is deploying a regulatory device management system (DMS) with the express intention of accessing private mobile data. Speaking earlier this year, CA director general Francis Wangusi said the implementation of the DMS was driven by the need to curb the illegal termination of traffic, counterfeit handsets and phone models that have not been type approved to work in Kenya.

Intelsat extends *EpicNG* to millions with *IS-33e*

Intelsat has now gone live with what it claims to be the first multi spot beam, Ku-band, high throughput satellite (HTS) service for the EMEA, APAC, Mediterranean and Indian Ocean regions.

Intelsat 33e was successfully launched last August and is the second satellite to use Intelsat's *EpicNG* high throughput system. It was due to enter service at the end of last year (see *News*, Jun-Jul 2016), but this was delayed due to a malfunction in the primary thruster which meant orbit raising took longer than originally planned. The satellite eventually entered service on 29 January 2017.

Manufactured by Boeing, *Intelsat 33e* is said to be equipped with the "most advanced" HTS payload design that is also "exceptionally flexible".



Intelsat 33e was launched on an Ariane 5 rocket last August, but its in orbit testing was delayed.

From its orbital location of 60°E, Intelsat says the new spacecraft will enable the delivery of enterprise-grade, broadband services to fixed and mobile

network operators, aeronautical and maritime mobility service providers and government customers.

Some of the African customers committed to *Intelsat 33e*'s vast geographic coverage include Orange Cameroon, Djibouti Telecom, Africell, MultiChoice, Vodacom, Telkom South Africa, amongst others.

Intelsat's first satellite to use its *EpicNG* HTS system was *29e* which went live with services for the Americas in March 2016. The company says its *EpicNG* global footprint will be completed with additional launches over 2017-18. This includes *35e* in the next few weeks which features C-band spot beams as well as Ku-band coverage for Africa.

SureBuddy and Africell to insure screens

A new app has been launched in Uganda in an effort to drive what's described as a "crucial need" for insurance on the continent.

SureBuddy works on *Android* devices and is designed to be simple and easy to use. The app renders advertisements and the developer then uses the advertising revenue to reward the user directly with cover. It claims the ad images are non-intrusive, use very little data, and disappear with a click.

SureBuddy has initially started with a non-insurance product in order to build up consumer trust, as spokesperson Johan Basson explains: "Starting with screen cover means that clients will feel immediate gratification – when their phone screens break, they can have them repaired immediately.

"The only thing the user will ever pay for is an administration fee to the repairer of a maximum 10 per cent of the repair value."

He reckons this will make users feel more comfortable with the idea of insurance, and the initial purchase decision is easy because it's free. "Over time, they can change to insurance products such as life cover, as their trust increases from this experience."

SureBuddy will implement the first phase of the service by providing screen cover in conjunction with Phone Doctor. It's also partnered with MNO Africell in Gambia, Sierra Leone, DRC and Uganda.

Red Cross digitises services with new app

The Red Cross Society of Côte d'Ivoire (RCSCI) has launched a new mobile app to spread awareness about its mission and activities. It also provides resource mobilisation opportunities to increase the organisation's membership and volunteer base, as well as tools to improve community engagement.

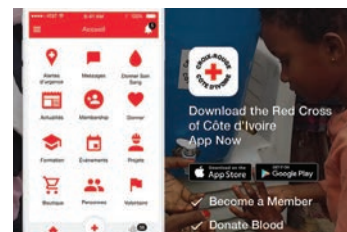
Founded in 1960, the RCSCI now has 12,000 volunteers throughout the country. It operates 50 local branches with an additional 26 first aid teams capable of rapid deployment in emergency situations.

The *RCSCI App* supports mobile devices that use *Android* and *Apple iOS*. It offers users a variety of features, including membership access to the

organisation's services and benefits, as well as volunteer opportunities in local projects. It can deliver up-to-the-minute emergency alerts, both nationally and locally, as well as information on blood donation such as locations of donation centres.

In addition, users can make donations, register for training courses and events, get access to the organisation's news, and also purchase Red Cross equipment through a dedicated marketplace.

The app was built in partnership with Connectik, a UK-based company that develops digital services for enterprise and large member organisations. Connectik also helps governments in the



The *RCSCI App* offers users a variety of features to support the Red Cross' teams in the country.

development of their digital policies. The RCSCI says it was encouraged to digitise its operations and improve its services following the success of the apps Connectik developed for the Red Cross in Kenya and South Africa.

Eutelsat plan “back on track”

Following *AMOS-6*'s failure to launch last year, Eutelsat say its African broadband initiative is back on track thanks to an agreement with Yahsat.

Under a multi-year deal signed last October, Eutelsat will use capacity on up to 16 Ka-band spot beams on Yahsat's *IB* satellite in order to roll out broadband services during the first half of 2017. Further expansion will

be supported later in the year using capacity on 18 spot beams on Yahsat's third satellite, *Al Yah 3*, which is scheduled for launch later this year.

The capacity will replace the payload Eutelsat previously contracted on Spacecom's *AMOS-6* which was lost in September following a launchpad explosion (*see News, Sep-Oct 2016*).

Eutelsat originally set up its *Broadband for Africa* initiative in 2015 and re-branded it as *Konnect Africa* last November. By working in close partnership with local partners to promote high-quality broadband at affordable prices for homes and businesses, the company's aim is to accelerate satellite broadband connectivity across the continent.

Under the initiative, Benin, Cameroon, Côte d'Ivoire, Congo, DRC, Ghana, Kenya, Nigeria, Senegal, Togo and Uganda are among the 17 nations that will be connected this year.

They will be joined by seven more countries from 2019, including Ethiopia and South Sudan, amongst others.

Nigerian MDXi goes live to peer local traffic

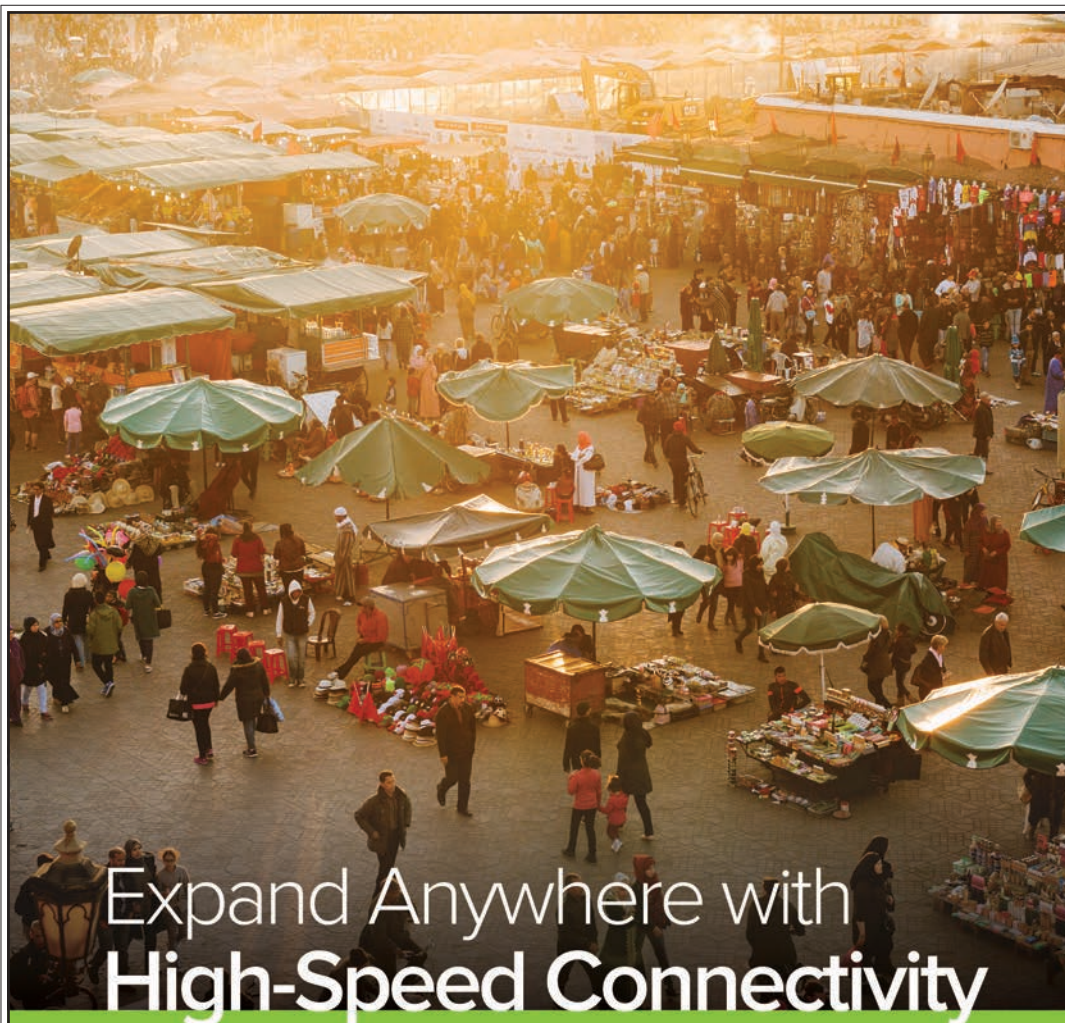
MainData Nigeria (MDXi) and the Internet Exchange Point of Nigeria (IXPN) have teamed up to expand the peering of internet transit traffic within Nigeria.

MDXi is the region's only Tier III certified data centre (*see News, Oct-Nov 2016*) and is operated by MainOne which also owns and runs an open access 4.96Tbps submarine cable system.

With its IP transit network already connected to the Lagos, Accra, London and Amsterdam Internet Exchanges, it's claimed MDXi will give IXPN the capacity to connect directly with the “greatest number” of IP transit and content delivery networks in West Africa. IXPN CEO Muhammed Rudman believes this will enhance local internet performance, lower costs, and minimise traffic bottlenecks for internet traffic in Nigeria.

MainOne says its vision is to improve connectivity across West Africa. The company's CEO Funke Opeke (*pictured*) says: “MainOne is committed to the penetration of high quality and affordable broadband internet services in West Africa, and bringing the IXPN closer to our

network plays an important role in helping us realise that vision not only for Nigeria, but for all of West Africa.



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INTELSAT

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Moving Wireless Forward

Mobile Mark is a leading supplier of innovative, high performance antennas to wireless companies across the globe. We've been in the wireless industry for over 30 years and have our roots in the early Cellular trials. We have grown and evolved over the years, along with the industry.

Today, we benefit from enhanced design capabilities and expanded production capacity – along with a greater understanding of new and emerging markets – all of which have allowed us to become one of the best antenna developers in our field.

Our customers have been our partners throughout the years. We believe in taking the time to understand our customers' individual needs. Through close consultation with clients, we are able to deliver innovative, tailored solutions that meet specific antenna requirements.

Rapid prototyping capabilities allow us to take our designs from concept to reality in an extremely short time span, and to verify the performance of the antenna. A variety of network analyzers and an anechoic chamber enable us to conduct measurements up to 13 GHz, and ensure that the antennas designed meet or exceed customer requirements.

We have onsite injection molding equipment and a fully equipped modeling shop staffed with skilled model makers to assist in the design phase and help us come up with a superior product – an antenna that not only meets the customer's electrical specifications, but is also very attractively packaged.

Mobile Mark antennas are used in many sectors of the wireless industry. Here are just a few examples:

Asset Tracking & RFID

Managing and tracking important assets can be a challenge in the field, and both RFID and WiFi offer effective wireless solutions. RFID / WiFi technology allows us to identify, monitor and track items ranging from medicine to fruit to parcels to people. Since each application has its own challenges, Mobile Mark offers a range of antennas so network developers can choose the right mix.



We are now looking for distributors throughout Africa

Commercial Fleet Management

Mobile Mark has consistently lead the industry with the most extensive and innovative range of antenna solutions that combine multiple wireless technologies: from simple GPS & Cellular antennas to complex 6-cable antennas combining LTE MIMO, WiFi MIMO, DSRC and GNSS in the same antenna housing. This combination of wireless technologies allows fleet owners to track and/or redirect their fleets of cars and trucks for optimum efficiencies. Mobile Mark antennas are rugged enough to handle tough environments and efficient enough to maintain reliable connections.

Public Transit & Bus Management

From monitoring the location of the bus to monitoring the condition of its tires, wireless has become an essential part of professional bus management. Mobile Mark's multiband antennas allow the system to capture that information and transmit it back to a central monitoring station with real-time connectivity. For an added touch, real-time WiFi service can also be added for the passengers. That's why companies like INIT have selected Mobile Mark antenna to complete their product offerings. And they have made the following endorsement:

"INIT GmbH – as a worldwide leading supplier of integrated planning, dispatching, telematics and ticketing systems for buses and trains – uses Mobile Mark bus antennas in public transportation projects all over the globe.

For example: INIT has installed Mobile Mark antennas in projects located in Abu Dhabi, Hertfordshire UK, Turku Finland, Oslo Norway, Montreal Canada, Luxembourg, as well as several German projects.

In 2017, a fleet of more than 1,500 buses will have Mobile Mark Antennas installed in one of INIT's

current major projects for National Express, West Midlands, UK."

Remote Monitoring & Surveillance

Surveillance plays an important role in maintaining secure settings. Network deployments need to be low maintenance and weather resistant. Broadband surface mounts offer flexibility for multi-frequency coverage and are rugged and dependable. YAGI antennas provide practical point-to-point coverage. Our antenna solutions are designed to handle tough conditions while providing the reliable wireless connection you would expect from a Mobile Mark antenna.

Mining & Exploration

Modern mining operations rely on a battalion of vehicles, ranging from massive extraction vehicles to modest-sized material transport trucks. These vehicles operate in tough environments where high vibration is a frequent wear and tear challenge. Mining companies throughout Africa have relied on our rugged, foam-filled mobile antennas for consistent connections. Mobile Mark's infrastructure antennas have been used for rapid deployment and redundancy coverage for effective wireless coverage in isolated settings.

Smart Cities & Smart Highway

For cities and highways, the lynchpin of a successful "Smart" system will be dependable wireless connections. Companies like Kapsch understand this, and have worked with Mobile Mark to find ideal antenna solutions. Wireless networks must reach seamlessly into hard-to-cover corners of city intersections and along vast expanses of highways. They must be carefully embedded in city lighting and electrical meters. Mobile Mark offers both small network infrastructure as well as embedded antenna elements to help network designers tie all the pieces together.

Let us know how we can help

We understand the RF wireless world and are ready to help you evaluate your options. Contact us by email, phone or fax and let us know how we can help.

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www.mobilemark.com

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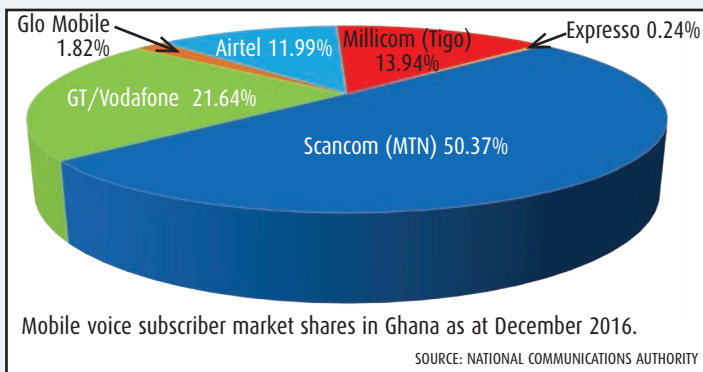


Tigo and Airtel merger in Ghana

As reported in our last issue, Millicom and Airtel have now entered into an agreement to combine their operations in Ghana. The financial terms of the agreement have not been disclosed, but each company will have equal ownership and governance rights in the merged entity.

It's claimed the combination of Millicom's Tigo operation in Ghana with Airtel's local subsidiary will cover more than 80 per cent of the population with high-speed data, providing the widest 3G coverage across the country. It will have revenues of just under USD300m and a 25.93 per cent market share, making it Ghana's second-biggest mobile voice operator (see chart).

According to December 2016 figures from the National Communications Authority, the



total number of mobile voice subscriptions increased YoY by 9.42 per cent to reach 38,305,078. That represents a penetration rate of 136.34 per cent. Scancom (MTN) remains the market leader with 19,296,157 voice subscribers and was the only cello in the country to have recorded an increase from

the previous month. It was followed by: Vodafone (8,289,913); Tigo (5,339,052); Airtel (4,591,051); Glo (695,306); and Expresso (93,599).

Millicom and Airtel expect the integration of their networks to provide a "major boost" for customers in both rural and urban network coverage. They add that

their combined fibre footprint and increased data centres will also give enterprise customers access to a diverse portfolio of "world class" solutions. Mobile financial services will also be enhanced with combined agent networks and platforms.

"The combination of Tigo and Airtel will create an operator that will be able to offer Ghanaian consumers and businesses a state-of-the-art network with high-speed mobile data coverage," says Millicom Africa EVP Mohamed Dabbour. "This transaction underlines confidence in the Ghanaian economy, and provides the opportunity to develop nationwide digital infrastructure and services."

The merger is subject to obtaining approvals from the relevant authorities in Ghana and the satisfaction of customary closing conditions.

Kenyan authority denies plans to split M-PESA from Safaricom

Kenya's information and communications minister has rejected recommendations from a report commissioned by the local regulator that says Safaricom and M-PESA should be separated.

In a study carried out on behalf of the Communications Authority of Kenya (CA), consultancy firm Analysys Mason looks at the degree of competition and its effectiveness in various telecoms markets in the country. While the CA says it plans to release the findings of Analysys Mason's *Dominant Market*

Power and Regulated Services study in May, some news outlets claim they have already seen it.

In late February, Kenya's *Daily Nation* reported that among the recommendations is a "functional separation" of Safaricom's mobile money service from its core telecoms business. According to the report, this would require the two to have separate offices and staff working below board level, as well as distinct branding, accounting and systems for business operations, support and management information. It added that the report

fell short of splitting M-PESA and Safaricom into different legal entities.

Joe Mucheru, cabinet secretary in Kenya's Ministry of Information and Communications, believes the proposals are detrimental to investors and innovators. "You cannot begin to punish companies for their innovativeness," he told journalists. "There is dominance in voice, which is a big area, according to the report. Parliament also wants to separate mobile money from the telecommunications and data business. We are having discussions

with telecommunication operators in the country to determine how to manage dominance."

In mid-March, the CA issued a press statement which said that it "has no intention of splitting the business of market players in the telecommunications sub-sector, or take such drastic actions that create disruptions that may destabilise dominant market players".

Board chairman Ngene Gituku confirmed that the CA's aim is to undertake "modest" regularity measures that are focused on the progress of

NEW APPOINTMENTS

Date	Name	New employer	New position	Previous employer	Previous position
15/2/17	Andrew Gill	Tait Communications	MD EMEA	Motorola Solutions	VP of growth & alliances for Europe & North Africa
24/2/17	Steve Collar	SES	Executive committee member	-	Has been appointed in his capacity as O3b CEO
28/2/17	Samer Abu Ltaif	Microsoft	President MEA	Microsoft Gulf	Regional GM
28/2/17	Ali Faramawy	Microsoft	Head of Emerging Markets Digital Transformation Organisation	Microsoft	Corporate VP
2/3/17	Vivek Badrinath	Safaricom	Director representing Vodafone Kenya	Vodafone	CEO, AMAP region (current)
2/3/17	Dr. Bitange Ndemo	Safaricom	Non-executive & independent director	University of Nairobi Business School	Lecturer on entrepreneurship & research methods (current)
13/3/17	Béatrice Beau	Eutelsat	EVP, global broadband services	Nc+	Member of supervisory board
20/3/17	Ilán Tevet	RAD	VP of marketing & business development	RAD	Head of service provider line of business

the sector. He added that Analysis Mason's report will be released once the "required processes as stipulated in the constitution, ICT sector law and the Fair Competition and Equality Treatment as well as the Tariffs Regulations have been concluded".

The CA also pointed out that while it does not regard dominance in any market segment as an offence, it is the "abuse and the potential of abuse of dominance" that must be regulated. Its statement said: "Uncompetitiveness in the sector has the potential to compromise consumer welfare in terms of limited access to services, poor quality of service, high tariffs and limited choice, if it is not regulated. Abuse of dominance could also lead to barriers to entry into the market and ultimately result in market failure."

Intelsat and OneWeb combine

Intelsat and OneWeb have agreed to merge in a share-for-share transaction. Japan's SoftBank Group – which acquired a 40 per cent stake in OneWeb at the end of last year (see *Wireless Business*, Dec 16-Jan 17 issue) – has also agreed to invest USD1.7bn in newly issued common and preferred shares of the combined company.

Both the merger and the SoftBank investment are subject to, among other conditions, successful completion of debt exchange offers to certain existing Intelsat bondholders as well as receipt of certain regulatory approvals.

The debt exchange offers together with the proceeds of the SoftBank investment are intended to reduce Intelsat's debt by around USD3.6bn, assuming the minimum level of

participation in the debt exchange offers is achieved. Either party can terminate the agreement and SoftBank can end its investment if the debt exchange offers have not been successfully completed within 90 days of the date of the agreement which was announced on 28 February 2017.

"As an early equity investor in OneWeb, we recognised a network that was a complement to our next-generation *EpicNG* fleet and a fit with our long-term strategy," said Intelsat CEO Stephen Spengler.

"By merging OneWeb's LEO satellite constellation and innovative technology with our global scale, terrestrial infrastructure and GEO satellite network, we will create advanced solutions that address the need for ubiquitous broadband."

Elhage quits following changes at Nokia

Nokia has announced changes to its organisation and group leadership team.

As part of the restructure, the company has split its Mobile Networks business group into two organisations: one will focus on products and solutions, while the other on global services. This has led to the resignation of Samih Elhage who was appointed president of Mobile Networks in 2016 (see *Wireless Business*, Dec 15-Jan 16 issue). It has been reportedly suggested that Elhage did not support the

Samih Elhage walked away from Nokia after the firm restructured its Mobile Networks division.



INVESTMENTS, MERGERS & ACQUISITIONS

Date	Buyer	Seller	Item	Price	Notes
9/2/17	Hytera	Sepura	Company	NA	Sepura's shareholders have reached a majority decision (97%) in favour of Hytera's acquisition offer. At the time of writing, the companies were liaising with the competition authorities in Spain & Germany to gain their approvals.
17/2/17	VimpelCom Holdings	Various international banks	Multi-currency term & revolving facilities agreement (TL/RCF)	Up to USD2.25bn	New agreement replaces existing USD1.8bn revolving credit facility signed in 2014. Several international banks have committed to the TL/RCF in an aggregate amount of USD2.108bn. The TL/RCF includes option to increase amount up to the full USD2.25bn, which would consist of a term facility of USD562,500,000 & a revolving credit facility of USD 1,687,500,000.

LATEST COMPANY RESULTS

Date	Company	Country	Period	Currency	Sales (m)	EBITDA (m)	EPS (units)	Notes
2/2/17	Motorola Solutions	US	FY16	USD	6,038	NA	3.17	YoY sales increased 6%. Growth of 33% in Europe, Middle East & Africa region driven by Airwave sales in the UK.
9/2/17	Eutelsat	France	1H16	EUR	755.1	588	NA	Revenues down 0.9% YoY but in line with expectations. Upcoming joint-venture with ViaSat paving the way for future growth in connectivity from 2020s. Secured Ka-band capacity from Yahsat to enable launch of African broadband initiative (<i>Konnect Africa</i>) later in 2017.
9/2/17	Infinera	US	FY16	USD	870.1	NA	(0.17)	Fall in GAAP revenue compared to USD886.7m in 2015. CEO Tom Fallon said "product transition is currently holding back revenue growth" but believes results will improve in 2017 following launch of next gen <i>ICE4</i> products.
14/2/17	Gilat Satellite Networks	Israel	FY16	USD	279.6	19.2	NA	Revenues up 42% from \$197.5m in 2015; growth driven by broadband & in-flight connectivity. Aiming for 2017 revenues of between USD280m to USD300m & adjusted EBITDA of around USD20-24m.
15/2/17	Cisco	US	2Q17	USD	11.6 (bn)	NA	0.47	Total revenue was down 2%, with product revenue down 4% & service revenue up 5%. Revenue by geographic segment was: Americas down 3%, EMEA flat, & APJC down 3%.
24/2/17	SES	Luxembourg	FY16	EUR	2,068.8	1,451.5	1.34	2.7% YoY growth. Video is 68% of group revenue & grew 4.7% to EUR1,398.8m. Fully protected contract backlog increased from EUR7.4bn to EUR 8.1bn for year ended 31 December 2016. This included EUR 0.3bn from O3b & EUR 0.1bn from RR Media, which were consolidated in 2016.
27/2/17	VimpelCom (VEON)	Netherlands	FY16	USD	8,885	3,232	0.23	Delivered on all 2016 financial targets & returned to growth at 7.5%. Reported YoY revenues up 27.7%, but earnings in Algeria organically decreased 14%. Company has now re-branded as 'VEON'.
28/2/17	Intelsat	US	FY16	USD	2,188	1,613.4	NA	15% YoY decrease in Network Services; 2% YoY decrease in Media revenues; & Government earnings flat. Forecasts FY17 revenue to be in a range of USD2.180bn to USD2.225bn.

separation of the division, although Nokia's official line is that "with the integration of Alcatel-Lucent largely complete", Elhage has decided to leave to "pursue new opportunities".

Nokia president and CEO Rajeev Suri described Elhage as a close friend and advisor through times both good and bad. "From helping lead the transformation at Nokia Siemens Networks and creating a disciplined operating model that remains a competitive advantage, to being one of the driving forces behind the acquisition of Alcatel-Lucent and its fast and successful integration, Samih's contributions to Nokia have been remarkable."

Marc Rouanne, currently chief innovation and operating officer (CIOO), will become president of the Mobile Networks business group. Igor Leprince, currently EVP of Global Services, has been appointed president of the new Global Services division.

In addition, Nokia will also split its CIOO organisation. Its current operating activities will be moved to a newly-appointed COO organisation, innovation activities to the CTO, and incubation to a chief strategy officer.

Other personnel changes announced by the company include: Monika Maurer, current COO of Fixed Networks, assumes the position of group COO; Kathrin Buvac, chief strategy officer, gains additional responsibilities for incubation of select new business opportunities; and CMO Barry French has been given additional responsibilities for health, safety, security and environment.

All of the changes became effective from 1 April 2017.

Orange launches brand in Burkina Faso

In mid-March, Orange announced the launch of its brand in Burkina Faso, less than a year after the closing

of the group's acquisition of Airtel's operations in the country together with Orange Côte d'Ivoire.

The operator's plans for Burkina Faso include the development of 3.75G mobile internet and mobile financial services. The company says its *Orange Money* solution for international transfers will be further extended in the West African Economic and Monetary Union (UEMOA). It also plans to expand its optical fibre network.

"We are at a decisive turning point in the development of the telecoms market," says Ben Cheick Haidara, CEO of Orange in Burkina Faso. "Our ambition is to continue the work accomplished in recent years in the mobile money and mobile internet fields to make Orange the leading partner for Burkina Faso's digital transformation."

Cataleya in management buyout

A joint management team has acquired Cataleya from Singapore-headquartered Epsilon Global Communications group. Financial details have not been disclosed.

The team includes technology startup accelerator Incipio and a group of R&D and engineering specialists. It was led by Andreas Hipp who co-founded Epsilon in 2003 and was the former CEO of both Epsilon and Cataleya until October 2015.

Cataleya specialises in IP networking and in developing and deploying next-generation carrier grade switching systems. Under its new ownership, it's claimed the firm will be able to push intelligent networking applications and services into new areas and develop new commercial models for next-generation session border controller (SBC) technologies (see *Wireless Solutions*, p16).



WIOCC CEO Chris Wood (right) presenting some of the veterinary drugs to KWS deputy director Edwin Wanyonyi.

"Epsilon Global Communications made the strategic decision to focus on its core service provider offering," says Epsilon CEO Jerzy Szlosarek. "The timing was right to dedicate ourselves fully to innovating within our Cloud-centric networking platform."

Hipp becomes Cataleya's chairman and CEO and will oversee its global operations. The company will maintain its Silicon Valley-based R&D facilities and headquarters in Singapore while expanding its operations in Pune, India.

In the coming months, Cataleya plans to make announcements around features and functionalities related to NFV, cloud and UCaaS (Unified Communications as a Service) in addition to its machine learning-based fraud identification and mitigation capabilities.

WIOCC supports lion conservation


WIOCC has donated much-needed drugs and consumables worth KES500,000 (USD4,860) to the Kenya Wildlife Service (KWS). WIOCC, which describes itself as "Africa's

carriers' carrier", has its main office in Nairobi, and its CEO Chris Wood says the continent's wildlife has always been dear to his heart.

In late March 2016, Mohawk, a 13-year-old lion with a distinctive black mane, was shot dead after straying away from the Nairobi National Park and before a suitably-equipped veterinary team could reach him. As a result, Wood began raising funds for the KWS through multiple activities and initiatives, starting at a global telecoms industry event in Chicago last May.

Following this initial support, he wanted to see how WIOCC could partner with KWS moving forward. "Out of this came [the] donation of additional anaesthetic drugs and medical consumables for use by veterinarians during wildlife rescues. The hope is that this will help prevent similar tragedies from occurring in the future," says Wood.

KWS says WIOCC's donation will help support the work it is doing to protect and conserve lions.




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Cataleya launches virtualised session border controller



Cataleya has launched a virtualised software version of its session border controller. The Singapore-based vendor says *vOrchid One* provides all of the

functionality of the hardware version of its *Orchid One* appliance (pictured), combining Big Data, real-time network analytics and machine learning to guarantee IP network performance.

vOrchid One is designed to deliver end-to-end visibility into network performance from transport to application layers. It's claimed service providers benefit from "comprehensive" visibility via near real-time and trending analytics reporting.

Cataleya says the platform enables users to deliver up to 2,250 concurrent sessions per core with a QoS analysis engine that allows the system to detect and predict voice performance. It offers full WebRTC to SIP interoperability as well as support for VoWiFi.

The firm adds that the software's integrated intelligent firewall and built-in fraud management services enables service providers to protect against voice fraud.

vOrchid One works with *vCenter* for VMware, Openstack for KVM, and is said to support multiple API standards and protocols.

According to Cataleya, the platform enables operators of all sizes to deploy intelligent networks. It reckons the platform delivers an immediate competitive advantage with faster monetisation of intelligent networks and the ability to deliver higher QoS and QoE for customers.

MANUFACTURER: Cataleya

PRODUCT: *vOrchid One*

MORE INFORMATION:
www.cataleya.com

Small cell radio platform aims to be alternative to SDR

ip.access has come up with a new band- and RAT-flexible small cell designed specifically for the needs of specialist integrators.

Despite the proliferation of software defined radio hardware, ip.access believes integrators struggle with inherent performance and reliability, as well as the need for extensive integration of the software necessary to run the device, the components for which often have to be sourced from multiple vendors.

In contrast, the firm claims its new *S60z* provides integrators with a complete 'cellular engine' that offers a carrier-proven alternative to SDR

approaches. By combining the new hardware platform with its "operator-proven" UMTS and LTE software stacks, ip.access says the *S60z* removes the software integration burden (while still offering low-level access), and enables integrators to achieve the RAT and band flexibility they need.

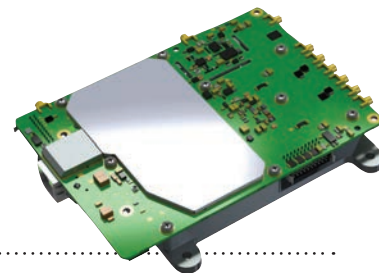
The *S60z* platform has been designed to support all UMTS and LTE bands (both FDD and TDD) in frequencies ranging from 500MHz to 3.6GHz.

It also supports ip.access' *SUMO* multi-operator technology which is said to further reduce the capex challenges in cost-sensitive deployments such as rural networks.

MANUFACTURER:
 ip.access

PRODUCT: *S60z*

MORE INFORMATION:
www.ipaccess.com



High capacity 24GHz point-to-point link from Proxim

Proxim Wireless has introduced a high capacity, 24GHz, point-to-point (PTP) radio. It is license-exempt and said to be ideal for providing a trunking backbone for the firm's 5GHz portfolio.



as licensing approval is required. Because its new *Tsunami GX-824* operates in a license-exempt band similar to 5GHz, the vendor says customers and carriers can proceed with their deployments without any regulatory delay.

It's claimed the *GX-824* delivers almost 1Gbps in a full duplex system, totalling just under 2Gbps of actual throughput. Proxim says moving almost 2Gbps of backbone capacity to the license-exempt 24GHz band frees-up 5GHz spectrum for last-mile access links using some of its other *Tsunami* products.

The *GX-824* is said to be rugged and offers support for either GbE or fibre as the interface. It is managed by the vendor's *ProximVision Advanced* hybrid controller.

While 6, 11, 15, 18 or 23GHz have long been used as backbones for lower capacity point-to-multipoint base stations, Proxim believes this approach often results in delays and extra cost

MANUFACTURER:
 Proxim Wireless

PRODUCT: *Tsunami GX-824*

MORE INFORMATION:
www.proxim.com

Scalable LTE test solution to help operators prepare for 5G

IxLoad LTE XAir2 has been designed to emulate mobile subscribers at scale in order to validate the performance and functionality of 4.5G- (LTE-A Pro) and 5G-related products and services.

Developed by network testing, visibility and security specialist Ixia, the new RAN test product combines scale and performance testing with realistic subscriber emulation and QoE validation. It can also be used for testing LTE on unlicensed spectrum.

The vendor says *IxLoad LTE XAir2* facilitates the realistic emulation of massive amounts of subscribers with multi-Gigabit OTT traffic via the internet, to help customers' future-proof their networks and devices.

The platform features Ixia's *XAir2* load module. It claims this provides LTE user equipment emulation that enables a "powerful" eNodeB Layer 1 to 7 test solution. By using its *IxLoad*

test system's real-world subscriber modelling, Ixia says users do not need to be protocol experts to develop test realism. From a single tool, it says they can perform capacity tests, detail a cell throughput, measure voice and video quality, and model a wide variety of mobility scenarios.

The firm adds that 5G presents unique technical challenges in terms of Wi-Fi and LTE-unlicensed spectrum. It says *IxLoad LTE XAir2* has been developed to address complex scenarios involving features like Carrier Aggregation, 4x4 MIMO and 256 QAM.

MANUFACTURER: Ixia

PRODUCT: *IxLoad LTE XAir2*

MORE INFORMATION:
www.ixia.com

New service targets SIM-swap fraud

Myriad Connect has launched a service to counter the growing threat of 'SIM-swap' fraud.

When a customer lets their operator know that their SIM card is damaged, lost or stolen, the current module is deactivated and a new one is issued.

MANUFACTURER:
Myriad Connect

PRODUCT: Anti SIM-Swap fraud service

MORE INFORMATION:
connect.myriadgroup.com

But according to Myriad, criminal groups and insiders at financial organisations and network operators work together to gather personal data and then pose as contract owners to secure a new SIM. Once activated by the fraudster, he or she is able to access bank accounts and other sensitive data authenticated through the SIM.

The threat from SIM-swap is said to be the greatest in regions where mobile banking penetration is highest. The firm believes its new service can help reduce this by providing a real-time check on the card. It adds that this cannot be



tampered with via compromised third parties within an operator or bank.

The service uses SSD authentication and no persistent data is held with any third party. Myriad reckons this provides a more secure service than current two factor authentication services which, for example, use SMS to store data and are therefore vulnerable to being intercepted.

It adds that a clear audit trail is also established, where the user's identity is verified by a party external to the transaction. The company reckons this results in a technology that will "greatly enhance" the security of transactions vulnerable to SIM-swap fraud.

ALSO LOOK OUT FOR

Optical DSP boosts fibre capacity

Nokia and Facebook have tested new optical digital signal processing technologies over a live 5,500km transatlantic submarine link. It's claimed the test showed an increase of almost 2.5x more capacity than the stated optical transmission capacity of the system.

The partners trialled new 'probabilistic constellation shaping' (PCS) technology from Bell Labs. This uses 'shaped' QAM formats to flexibly adjust transmission capacity to near the physical limits of a given fibre link. In the first experiment for an installed submarine link, Nokia and Facebook used PCS based on 64 QAM, combined with digital non-linearity compensation and low-linewidth lasers. They say they achieved a record spectral efficiency of 7.46bps per Hz, indicating the potential to upgrade the cable to 32Tbps per fibre in the future.

Nokia adds that tests based on its commercially available *Photonic Service Engine 2* validated the successful transmission of 8 QAM wavelengths running at 200Gbps and 16 QAM wavelengths running at 250 Gbps. In addition, the firm says 200G 8 QAM wavelengths supported a spectral efficiency of 4bps per Hz while exhibiting sufficient performance margin to support reliable, commercial operation.

Satellite QoE 'revolutionised' with dynamic network access platform

Comtech EF Data has unveiled its *Heights Dynamic Network Access (H-DNA)* technology with the claim that it offers a "step change" in satellite network performance as well as a vehicle to provide "exceptional" end user QoE.

H-DNA is designed for the return

MANUFACTURER:
Comtech EF Data

PRODUCT: Heights Dynamic Network Access

MORE INFORMATION:
www.comtechefdata.com

links in Comtech's *Heights Networking Platform*. The firm says it instantly assigns capacity based on network-wide demand and intelligently utilises total network bandwidth at all times.

It also allocates all available bandwidth per user demand and configured SLAs, ensuring that all capacity is used at all times. Comtech says *H-DNA* can provide sub-second reaction time to changing user demand and link conditions without introducing the excessive jitter and latency normally associated with any comparable technology.

The technology leverages the *VersaFEC-2* high-performance LDPC waveform, as recently announced as an option for Comtech's *CDM-570A/L-IP* satellite modems (pictured). It also uses ACM, dynamic power control, IP optimisation, low framing overhead, multi-tier QoS and WAN optimisation. As a result, Comtech claims *H-DNA* offers the "most robust reliability" and delivers the most user IP bits per Hertz compared to any other solution in its class.



System could help reduce rising capex

TEOCO's *SMART Capacity Management Solution* aims to help CSPs optimise current network capacity and plan ideal capex investments for traffic growth. The analytics, assurance and optimisation specialist claims

MANUFACTURER: TEOCO

PRODUCT: SMART Capacity Management Solution

MORE INFORMATION:
www.teoco.com

initial deployments of its solution with customers have demonstrated the potential of reducing upgrade spend by 10 per cent or more.

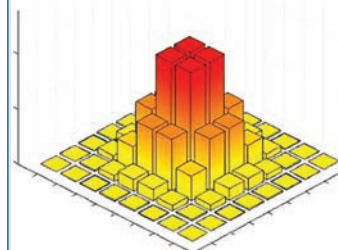
TEOCO says the platform does this by identifying the four most common areas of capex waste as it relates to capacity. These include: delays in re-purposing older infrastructure; failure to promptly re-farm spectrum; leaving 'default' settings across sites; and ineffective management of software licenses.

SMART is said to offer a way to plug capex leakage in these four areas, using

network event data in combination with subscriber behaviour.

As data demand grows exponentially and LTE and VoLTE networks are increasingly rolled out, TEOCO says capacity management will be more continuous in nature with the demand on 'what-ifs' and 'next best actions'.

The firm reckons its data and algorithm driven *SMART* solution can evaluate network traffic and its provisioning while identify potential cost savings through 'what-if' models centred around customer behaviour.



This graphic shows a genuine 'probabilistically shaped' 64 QAM constellation, with the height of the bars representing the 'probability' of transmitting a given constellation point. Nokia draws attention to how it is 'shaped' – in existing hardware it would look like a flat square with all points equally probable.



Next-generation high-throughput satellites continue to connect Africa, but what on Earth can be used to get the very best out of them? SARA FREWEN finds out.

As has been well documented, Africa continues to be the world's fastest-growing mobile phone market. Yet more than 300 million of its 1.13 billion inhabitants still lack access to mobile phones and the internet.

The rapid expansion of the mobile market is changing how media companies deliver content to consumers, and the number of people with smartphones on the continent is reported to have nearly doubled in the past two years to 226 million. Satellite technology, and especially the new generation of high-throughput satellites (HTS), will play a major role in both delivering content to mobile subscribers and connecting consumers who don't yet have service. The latest breed of spacecraft which leverage HTS technology promise higher performance, better economics, and new hardware and services that enable simple access to connectivity.

According to analysis by Euroconsult, the overall use of satellite capacity in sub-Saharan Africa has been increasing along with mobile connectivity. It is growing at an average of 11 per cent annually for the past five years, and is expected to continue at that same rate for the next five.

The biggest innovation in the region's market in 2017 will be the availability of high-throughput beams in both C- and Ku-bands, such as those offered by Intelsat's *IS-33e* and *IS-36*, the first satellites for Africa to use its *EpicNG* HTS platform. The company has always claimed this will enable mobile operators to give customers a fibre-like experience, driving both market expansion and increased data use per customer.

Jean Philippe Gillet, Intelsat's EMEA VP of sales, says increased demand has put extra pressure on operators to extend their networks as well as make them more robust to accommodate added demand from existing customers. He identifies four factors that operators will need to face these challenges: flexibility to quickly adapt to new requirements; a network with performance that will improve over time and stay ahead of user needs without requiring technology replacement; economics that provide a winning business case for the user and the VSAT operator; and simplified access which reduces the technical skill and mechanics of deploying satellite solutions.

"Intelsat works closely with Africa's telecoms operators and has a good understanding of their

requirements of users across continent," says Gillet. "We believe that not only do we need to provide cost-effective options to extend networks, but the operators should also focus on making their networks future-proof so they can react quickly to changing end-user demand."

He goes on to state that this was the driving force behind the design of Intelsat's *EpicNG* platform. "The open architecture and backward compatible design allows operators to seamlessly migrate their existing network onto the platform and realise service improvements with their existing terminals. By delivering more data at lower cost per megabit, *EpicNG* improves the economics of providing bandwidth and cellular backhaul to African telecom providers."

With high-throughput satellites offering three to five times the efficiency of earlier platforms, Intelsat reckons that not only do users gain the assurance of meeting booming demand, but they also see the cost of ownership go down. Thus, it says service providers are able to stay ahead of user demand and even expand their networks into new areas where demand for bandwidth has not been met.

Linking space and Earth

There is no point in developing better satellite hardware if you don't have the equipment on the ground that can take advantage of all the technology that they offer. And perhaps one of the unsung heroes here is the antenna – the key link between space and Earth.

For example, the ASC Signal division of Communications and Power Industries (CPI) has developed a high-wind version of its 2.5 metre *Nomadic* antenna. The trailer mountable, carbon-fibre antenna is said to be ideal for use in remote field deployment applications, and is capable of operation at L-, X-, C-, Ku-, Ka-, Q- and V-bands.

ASC Signal says the 2.5m system combines an “innovative” antenna design with its “state-of-the-art” *Next Generation Controller (NGC)* to provide the industry's highest level of acquisition, tracking accuracy and performance from antenna systems of this size.

Company president Keith Buckley claims that as mobility continues to be a prominent and dominant requirement for remote applications, his firm continues to deliver Earth station antennas that “seamlessly” integrate fixed and mobile systems into the same network architecture. “What is unique about our approach is that we are able to utilise the same antenna controller systems, regardless of the antenna platform, thereby reducing costs to customers and providing uniform operation across the entire network.”

Meanwhile late last year, Canada-based C-COM Satellite Systems revealed it had come up with new Ka-band in-motion antenna technology. Developed in partnership with the University of Waterloo, the company said that the patent-pending calibration method is expected to be used in low-profile two-way phased-array antenna (PAA) systems for land-mobile satcoms.

Speaking at the time, Dr. Safieddin Safavi-Naeini, a professor at the university's department of electrical and computer engineering, said: “The main advantage of this method is that it significantly reduces the calibration time and enhances its accuracy. The entire calibration can be performed during system initialisation in the field.”

PAAs are a growing area of development with companies such as Phasor, Gilat, Boeing and others developing new systems. But so far, they have been more widely used in the military market or within scientific research such as radio astronomy, rather than the commercial sector. Safavi-Naeini says this is largely because of their complexity which has made them cost prohibitive and difficult for private companies to use.

C-COM is working with the University of Waterloo on what it describes as a design that uses a “very advanced” software algorithm to control low-cost modules and calibrate them to work together. Each module will be small and simple, and while thousands will be needed for a single antenna, C-COM reckons scaled production should streamline the cost of development.

The antenna will use a beam-forming calibration algorithm invented by the university, and a beam-forming computer that identifies the whole system, characteristics of each module and records data. “We are not using any exotic technologies,” said Safavi-Naeini. “We use very low-cost microwave technology, low-cost packaging technology and low-cost materials. Because of this, the modules may deviate from their normal ideal parameters, but then we have the beam-forming computer that tracks these modules and also identifies any errors. If a module fails, the central beam-forming computer detects that immediately and redistributes the radiation task to other modules.”

In land mobility, C-COM plans to target HTS services in Ka-band, including those of ViaSat, Hughes, O3b Networks, Inmarsat and others. It says the PAAs could also see use in 5G systems as well as with multibeam radar.

More bang for your BUCs

The block upconverter (BUC) is used in the transmission of signals and represents another vital part of the satcoms ground infrastructure chain. Here, VSAT equipment specialists such as AnaCom come into their own, and one of the latest products it has added to its range is an XKu-band BUC which operates at 12.75-13.25GHz frequencies.



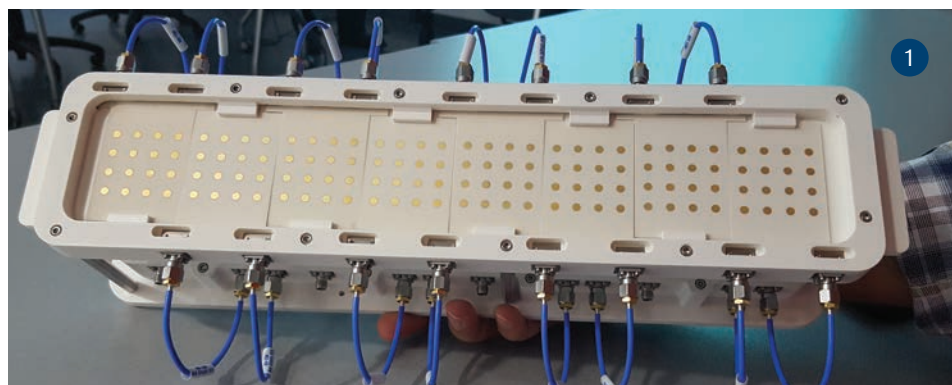
AnaCom's *ELSAT* BUC features an upconverter, power amp, monitor, control and power supply in a single enclosure.

The US-based vendor's *ELSAT* is available in transmitter output levels up to 100W and in single or redundant configurations. The upconverter, power amp, monitor, control and power supply are included in a single enclosure. AnaCom says the only cabling required to indoor equipment are IF connectors.

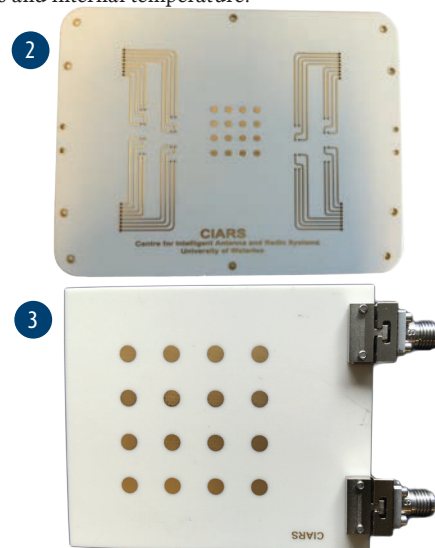
It adds that the units have a rugged construction for continuous outdoor duty in all types of environments, and claims they are particularly suitable for SCPC, MCPC and DAMA applications. An ‘ovenised’ high stability crystal oscillator is used to lock the TX synthesiser, and additional temperature and ageing compensation are provided by an onboard microprocessor.

The BUC features a monitor and control (M&C) system that can be used in combination with the unit's internal metering function to monitor operational parameters. The system also enables users to monitor and control the converter on the same M&C bus as most indoor equipment, such as modems and multiplexers.

Furthermore, AnaCom says the *ELSAT* includes built-in test facilities for improved maintenance and reduced dependence of external test equipment. To improve and simplify maintenance routines, it says the units can be connected to an external computer to monitor critical parameters such as transmitter power output and IF levels, power supply and TX synthesiser voltages, alarm details and internal temperature.



C-COM is working with the University of Waterloo on a phased array antenna design that uses a “very advanced” software algorithm to control low-cost modules and calibrate them to work together. Picture 1 above shows an RX array panel prototype (eight modules of 4 x 4); picture 2 (top, right) a single RX 4 x 4 module; picture 3 (below, right) a single TX 4 x 4 array module.



Other features include remote configuration and access via Ethernet and serial protocols, together with a flash memory so that the BUC always starts up with the same operating conditions it had before it was powered off.

Advantech Wireless is another satellite equipment specialist that includes BUCs in its portfolio. It recently released 125W to 200W Ka-band *UltraLinear* solid state power amplifier (SSPA)/BUC products based on second generation Gallium Nitride (GaN) technology. GaN is a semiconductor compound that makes miniaturised, high-power, wireless transmitters possible. Cristi Damian, Advantech's VP business development, says: "GaN technology allows us to reach power levels that were not possible before, and to serve customers that are looking for solutions in this fast growing market segment."

With weatherproof IP67 rated enclosures, the new *SSPB-4010Ka* series of products have been designed for Ka-band LEO and GEO satellite uplink applications. Advantech claims these latest systems are the "most advanced" GaN based Ka-band units in the market, providing higher power and higher reliability. They convert L- and Ka-Band signals from 27.5GHz to 31GHz (in bands), while the integrated amplifier delivers an output power of 100W to 200W. The integrated units come complete with detachable power supply, phase-locked oscillator, mixer, filter and proprietary cooling mechanism.

Other attributes are said to include high linearity, support for remote monitoring and control, and protection against overdrive, thermal runaway and out-of-lock conditions.

Advantech has also used second generation GaN technology in its *SapphireBlu* SSPA/power block which is designed to service new satellites operating in the 12.75 to 13.25GHz band. The small form factor SSPA is designed to be hub mounted very close to the antenna's flange input, eliminating losses through a waveguide. As a result, the company claims it is now possible to use just a relatively small SSPA on its own to transmit the signal. It adds that because of this efficiency, air conditioned shelters for a Klystron or indoor mounted HPA can be eliminated. Furthermore, instead of needing multiple antennas at a teleport, operators can reduce their number, simplifying operations.

The *SapphireBlu* units have a built-in L-band interface backup converter without separate upconverters. Advantech says they operate as 1:1 redundant or 1+1 phase combined to provide additional power when traffic demands. It claims they are very power efficient, reducing opex for power consumption, and capex from reducing the need for uninterruptible power sizing.

Breaking new ground

Newtec is a well-established vendor of ground infrastructure in the satellite market, and in 2016 it launched what was claimed to be the first DVB-S2X VSAT modem.

Describing the *MDM5000* as its most advanced VSAT modem to date, the company says it is capable of receiving forward carriers of up to 140MHz and processing more than 200Mbps of throughput. With forward symbol rates from 1 to 133 Mbaud and coding up to 256APSK, it's claimed the *MDM5000* will boost efficiency and performance on legacy satellites while "fully unleashing" the potential of next-generation HTS. On the return channel, Newtec says the device supports SCPC, TDMA, and offers its proprietary *Mx-DMA* technology for up to 75Mbps.

The modem is designed to handle a wide range of services, including internet access, VoIP and backhauling, along with video contribution and multicasting. As with Newtec's previous *Dialog* modems, the *MDM5000* incorporates Layer 3 routing, advanced QoS, TCP acceleration, pre-fetching, compression and encryption. It also supports a new Layer 2 mode, facilitating integration with various networking topologies and routing protocols such as MPLS and BGP. Dual demodulators for "seamless" beam switching on future HTS networks are also included.

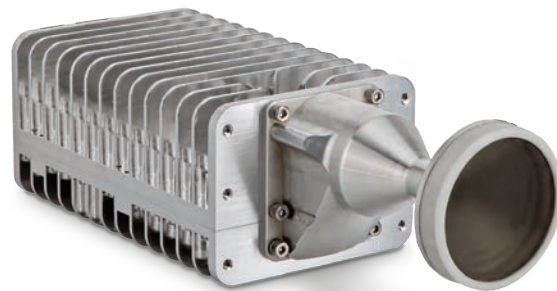
Meanwhile, Gilat Satellite Networks (GSN) has added the *Scorpio* "VSAT-in-a-box" to its range. The company reckons the outdoor terminal incorporates "breakthrough technology", lowering the cost barrier for ubiquitous broadband deployment.

According to GSN, *Scorpio's* innovative design increases system reliability due to the complete integration of the indoor and outdoor units into a single weatherproof box. It says the solution addresses the cost efficiencies required for residential customers and small businesses worldwide.

The compact and lightweight system has been designed to allow rapid self-installation and easy roof mounting. *Scorpio* connects to the home network with a single Ethernet cable, thus providing, according to GSN, a "simple demarcation point for improved network diagnostics and increased customer satisfaction".

Hagay Katz, head of the VSAT line of business at the company, says: "With our VSAT-in-a-box, ISPs will be able to save in installation and maintenance expenses while internet users will enjoy rapid self-installation and activation, in addition to low power consumption."

Scorpio is part of GSN's complete *SkyEdge II-c* VSAT ground system. This includes the company's *TotalNMS* network management



Gilat Satellite Networks claims its *Scorpio* "VSAT-in-a-box" lowers the cost barrier for ubiquitous broadband deployment.

system and is designed to facilitate service management via an electronic B2B interface. GSN says it enables ISPs to manage their services totally independent of the satellite network operator, providing a complete management suite. It includes real-time viewing of the service status, events, alarms and statistics, as well as historic/trend analysis of the service over longer periods. *TotalNMS* is also said to provide ISPs with an automated and easy-to-use interface for simple creation, activation and management of end-to-end services with a high level of flexibility.

Shifting away from hardware, BICS and Eutelsat have partnered to deliver satellite-based business continuity solutions for operators in Africa.

Headquartered in Belgium, BICS is a global wholesale carrier for voice, mobile data and capacity services, and has offices on the continent in Accra, Cape Town and Nairobi. It says robust backup capacity is vital in countries where geographic and environmental conditions can jeopardise quality data and voice services. Furthermore, it believes that an operator's ability to ensure the provision of high-quality services distinguishes it from the competition.

The new solution is based on BICS' *RouteFlex* system which automatically detects anomalies and re-routes critical traffic through the best available path. It achieves this by combining C-band capacity on the *EUTELSAT 8 West B* satellite which orbits at 8°W with BICS' teleport in France, IP transit global network, and an automated on-demand solution for IP traffic. The resulting service comes in three product variations: open community, closed community and occasional use.

BICS and Eutelsat claim their new solution will enable operators to offer their end users access to "consistent, cost-effective and high-quality" services at all times, even in the event of a terrestrial network outage.

"BICS is dedicated to supporting customers across the African continent, particularly the 30 per cent of countries that are landlocked and often depend on poor terrestrial connectivity", says Johan Wouters, VP capacity business unit, operations and customer services, BICS. "In countries with limited access to submarine cables, which are often prone to damage or incidents, *RouteFlex* can also change the way operators use satellite to back up their services." ■



Newtec describes the *MDM5000* as the world's first DVB-S2X VSAT modem.

AnaCom, Inc. GaN BUCs

A H I G H E R T I E R O F G a N

AnaCom, Inc. are partnering with Mitsubishi Electric to provide GaN-powered ODUs with remarkably dependable performance and reliability. This next-generation GaN technology will prove that not all GaN powered ODUs are the same.

Discover the benefits of AnaCom's new ODUs, powered by GaN from Mitsubishi Electric:

Minimal Memory Effect

Full Range of Published Power Specification

Remarkably Dependable Performance and Reliability.

See the difference when using a higher standard of GaN technology with the new generation of products from Anacom, Inc. It's GaN power custom tailored for the VSAT Environment.

Visit us at CABSAT and Satellite 2017 to learn more about how we plan to unleash the full potential of GaN.

Make a connection
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The road to success



The 120km long Ain Sokhna Free Road in Egypt has a total of 28 exits that require monitoring 24 hours a day.

How wireless solutions are helping the continent's transportation sector overcome congestion on its communications networks.

In recent years, the Egyptian Armed Forces have established what is today known as the National Service's Projects Organisation. In peacetime, the organisation – which has more than ten sub-companies and factories – specialises in public service and civil production to ease the burden on the state and assist in economic development projects across the country. It aims to increase national revenue with a focus on strategic industries, and to develop relationships and cooperation between private and public sector organisations. It also aims to establish key development projects in the provinces of North and South Sinai, South Valley, and the border regions in order to assist their development and to attract new investments into these areas.

One of the organisations run by the Armed Forces is the National Company for Building, Developing and Operating Roads. It required a high-capacity broadband infrastructure to provide real-time surveillance across the strategic Ain Sokhna Free Road, including monitoring of all of its exit junctions and toll gates. The 120km long road has a total of 28 exits that require monitoring 24 hours a day to meet the strict control, safety and security requirements. In addition to this, the road operator also wanted an

easily scalable network that it could add new sites and services to in the future without the need to 'rip and replace' the existing infrastructure.

It approached NextGen Communications to design, implement and commission the entire fixed broadband wireless access (FBWA) network. The Cairo-based system integrator recommended solutions from InfiNet Wireless for their flexibility and easy scalability, with the promise that they could seamlessly carry both video and voice



InfiNet Wireless' InfiLINK 2x2 wireless infrastructure carries traffic from the IP cameras to the main operating centre in Cairo.

traffic with no detriment to network speed.

The vendor's *InfiLINK 2x2 Mmx* and *Smm* point-to-point FBWA wireless infrastructure was selected to provide a series of secure communications links, ranging from 50Mbps to 300Mbps, offering high-speed connectivity to carry the traffic from the IP cameras to the main operating centre in Cairo. All the data transmission channels are combined into a single and manageable platform.

Almost immediately after the initial deployment of the network, the ease of scalability was demonstrated to the road operating company when it needed to implement a new IP telephony system on all exits. InfiNet says its network "simply and smoothly" accommodated the new requirement without the need to add any further hardware or software.

The system now provides the National Company for Building, Developing and Operating Roads with the high capacity needed for real-time video and voice traffic. NextGen general manager Ahmed Abd E-Fattah adds: "Infinet Wireless offers the network stability and performance required to provide safety and security to both staff and users of the Ain Sokhna Free Road."

The “OUTsurance Guys”

Traffic Freeflow is an independent company that owns and manages the *Pointsmen Project* currently operating in the South African cities of Johannesburg, Cape Town and Tshwane. Its aim is to alleviate road congestion by providing highly trained, dedicated and passionate men and women to help guide traffic.

Traffic Freeflow is said to be committed to being the most professional service provider for relief of traffic congestion in South Africa. As well as contributing towards road safety, the company also creates job opportunities in underprivileged communities.

The project was introduced in 2005, and right from the outset it was co-sponsored by municipal authorities as well as insurance firm OUTsurance. As a result, the pointsmen and pointswomen who bring relief to rush hour drivers have become locally known as the “OUTsurance guys”.

Thousands of motorists around South Africa have come to rely on the pointsmen of which there are two types: static and mobile. Static pointsmen are assigned to specific high-traffic intersections, while mobile pointsmen are dispatched on motorcycles to traffic hotspots at a moment's notice. The latter are thus able to respond quickly to major intersections that are experiencing faulty or malfunctioning traffic signals.

Gauteng province (Johannesburg and Thswane) has one of the country's highest traffic densities and consequently one of the highest road fatality rates. Construction, power outages and accidents have led to massive traffic congestion across the major cities. Working hand-in-glove with their Metro Police stakeholders, more than 200 pointsmen are dispatched to troublesome intersections and hotspots.

“When traffic lights go out, traffic slows down and backs up,” said Traffic Freeflow COO John Kelley. “The pointsmen not only play a crucial role in getting traffic flowing, but as they are often at the same intersections during rush hours, motorists tend to become very fond of them and appreciate the good job they are doing.”

However, he went on to explain that the company's six project managers would each have to drive to each assigned intersection in order to ensure attendance and that every pointsman was presenting themselves as brand ambassadors for the sponsors.

“We were unsure as to the time the pointsman started at the intersection, and if he/she stayed the full shift or, indeed, if they were at the correct place. Other issues included the costs of using six scooters per day, fuel costs and e-tags, and not the least, having our project managers in peak traffic hours twice a day, every day.”

Furthermore, Kelley wanted to be sure the staff were being paid correctly according to the hours worked. As a result, the company needed to know that the pointsmen were in the right place at the right time, how long they were there, and also check times and attendance back at its offices. It called upon ECONZ Wireless, the South Africa-based



An “Outsurance guy” helps Egyptian geese and their goslings cross a busy Cape Town road.

specialist in hosted enterprise mobility applications, and deployed its innovative *Econz Timecard* system.

The solution provides data about the pointsmen, such as the time they arrived for work and departed, their GPS location, and a breadcrumb trail, all captured in a web-based system. ECONZ says Timecard enables real-time tracking so that project managers can be sure that the correct intersections are manned. The data collected also integrates into Traffic Freeflow's payroll system to ensure wages for time spent are accurate.

“Timecard sits right on [the pointsmen's] cellphones and allows them to quickly clock in, and thus they can be tracked at all times,” said Kelley. “We have reduced the need for physical checks by our project managers, thus saving time, costs of the running of the scooters, and keeping our project managers safely out of the rush hour traffic. Now we have visibility at the enterprise level to know who is where and when they arrive and leave.”

eLTE firsts for Africa

Huawei has claimed a couple of firsts for Africa using its eLTE system. It says this is the first LTE broadband trunking solution to provide voice and video dispatching, and claims it “greatly increases” the efficiency of an emergency or control centre. The company says its eLTE systems are based on advanced wireless broadband technology, and provide 100Mbps downlink and 50Mbps uplink throughput. As a result, it says a single network can support multimedia trunking, voice and video scheduling, high-definition video surveillance, ultra-remote data acquisition, and mobile office services. Other features include a compact core network, distributed base stations, and terminal devices that can be used in harsh outdoor environments.

Earlier in 2016, Huawei announced that it had won the bid for a broadband trunking project in Algeria that is said to be the first commercial deployment of an eLTE system at an airport in Africa.

Houari Boumediene Airport in Algiers was using TETRA for routine scheduling and dispatch. But the technology's narrowband system proved insufficient for broadband data transmission, mobile video

surveillance, or multimedia dispatch. What made matters worse was that ground handling services were being carried out in a complicated and noisy environment, making voice dispatch error-prone and thereby increasing security risks.

Huawei provided a system capable of interworking with the existing TETRA platform to improve the accuracy and efficiency of ground dispatch. It supplied an eLTE core network, base stations, trunking terminals, multimedia dispatching, and other devices and systems.

The vendor said its real-time, large-bandwidth eLTE platform will enable the airport to carry out multimedia trunking dispatch, video surveillance, and other applications on a single network that covers both indoor and outdoor working areas for the ground staff. To cope with noise in the airport, Huawei's system supports throat vibration mic earpieces, noise-cancelling headphones, and additional accessories to guarantee voice trunking performance.

The company added that eLTE can offer complete video dispatch and real-time monitoring services through backhaul of onsite images to the command centre. It also provides an open eSDK for interconnection with third-party airport applications.

Huawei claimed another first for eLTE in 2015. After providing the communications systems for the Addis Ababa City Light Rail Transit (AACLRT) project, it claimed that it had become the first company to use LTE in an African metro railway system.

Addis Ababa is Ethiopia's economic centre and transportation hub. It also is the headquarters of the United Nations Economic Commission for Africa and the African Union. However, its outdated transportation infrastructure had become a bottleneck, preventing economic growth in the fast-growing city. Until recently, the main methods of public transportation were overcrowded buses and minibuses. A new metro rail system was therefore envisaged to reduce traffic congestion in Addis Ababa, boost economic growth in Ethiopia, and usher in a new era of urban light rail construction not only in the country but in Eastern Africa.

In 2015, a trial of the Addis Ababa Light Rail, Africa's first modern urban light rail system,

began operations. Built by China Railway Eryuan Engineering Group Company, the first phase of the project involved the construction of two railway lines that span 31km and included one control centre and 39 stations, two of which are underground.

Huawei was contracted to provide several key technologies including end-to-end eLTE and related communication systems for AACLRT's railway line which connects urban centres and industrial areas throughout the capital.

The Ethiopian government wanted the system to be based on advanced technologies that would not become obsolete within the next decade. In addition, the system would need to meet diverse service requirements, facilitate O&M, and reduce costs. A train-to-ground wireless communications system also was required to provide train dispatching and ticket data transmission services.

In order to avoid duplicating network capacity and to minimise the investment required for each device, Huawei says it based the AACLRT's system on a single backbone network that supports multiple services, including communication, signalling, SCADA and fare collection.

Huawei said its eLTE network operates on the dedicated LTE TDD 400MHz frequency band to avoid interference from external wireless signals. The company also claimed it provides more stable trunking services than analogue train dispatch communications systems. It provided eLTE broadband-trunking, handheld terminals and also customised the EV750 vehicle-mounted devices and dispatching systems for train drivers, provided by another project partner, Shenzhen Communication Technology.

Huawei said that just one of its eLTE cells provides a wireless network that covers 1.2km, and requires just four baseband units and nine radio remote units. The vendor added that eLTE's ultra-wideband technology enables wireless dispatching and various other services, including voice trunking and real-time wireless transmission of ticket data over a single-network,



Above: a bus in Algoa Bay equipped with free on-board Wi-Fi, is ready for the road. Right: W-Link's WL-R220 router is at the heart of its wireless system.

thereby reducing the need for trackside devices and lowering maintenance costs.

As urban rail transit systems are increasingly using video applications, Huawei said it created a bespoke version of its integrated *Digital Urban Rail Transportation* solution for the AACLRT. This train-to-ground communication platform uses LTE HD video and optical transmission technologies, and includes all necessary service systems such as: wireless, transport and IP-based fixed networks; communication power supply; telephony; and CCTV.

Free Wi-Fi on South African buses

Whether sourced via LAN, Wi-Fi or mobile, no one can reach the internet without data. But, as South Africa-based RF specialist Otto Wireless Solutions points out, the paradox is that companies who supply data need to make profits from their sales, while consumers using that data to reach the internet want them for free. That results in two forces moving in opposite directions.

According to Otto, the solution is advertising-sponsored free Wi-Fi. This is where suppliers and users of data meet and everyone's needs are

satisfied. And this is where proprietary technology from Moben comes in. The Polish technology specialist has developed *View2Surf (V2S)*, a platform for mobile operators which facilitates advertising while users surf the internet.

Operating out of Bloemfontein in South Africa, Ntosamo is an accredited distributor of V2S. It specialises in selling advertising space on the internet, using Wi-Fi as the medium. It integrates Moben's platform to any Wi-Fi hotspot. Anyone using the hotspot to browse the internet with a mobile device is shown full screen adverts after consuming a certain amount of data. Every time the user clicks on the advert or even skips it, a sale is completed and the data are duly paid for.

Spurred on by its experiences, Ntosamo has now ventured into free public transport Wi-Fi working closely with a number of partners including Udy Net, Otto Wireless Solutions, Algoa Bus Company, Afrihost and W-Link.

When asked about their profitability, business sustainability and how they could attract back younger passengers, bus operating companies revealed that Wi-Fi was seen as a value-added service. Ntosamo, in collaboration with WISP Udy Net, approached W-Link for the supply of a robust bus router that would cater for the encryption of V2S into its software. After a six-month integration and testing phase, W-Link's WL-R220 router was approved for use in a proof of concept. This POC was run with a local bus operator in Bloemfontein for a three-week period, covering major intercity routes in South Africa.

The results were beyond initial expectations, culminating in a commercially viable solution that could be tailored and offered to any public transport company in the country.

The POC findings were taken to Algoa Bus Company in Port Elizabeth and the project to install Wi-Fi into its 410 buses was approved in October 2016. As the local W-Link distributor, Otto Wireless Solutions supplied the routers, while Afrihost supplied the data. Ntosamo is now in advanced discussions with many other public transport operators in South Africa, where corporate sponsorship for the routers from would-be advertisers is currently being discussed. ■



Huawei created an end-to-end eLTE system for the Addis Ababa city light rail transit project.

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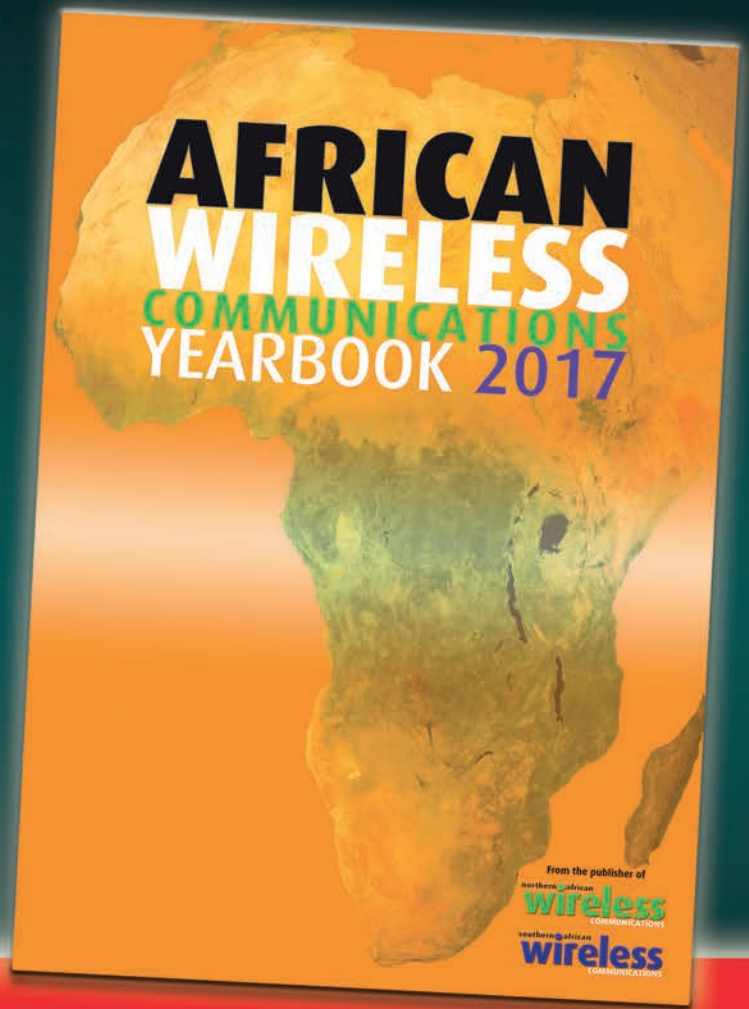
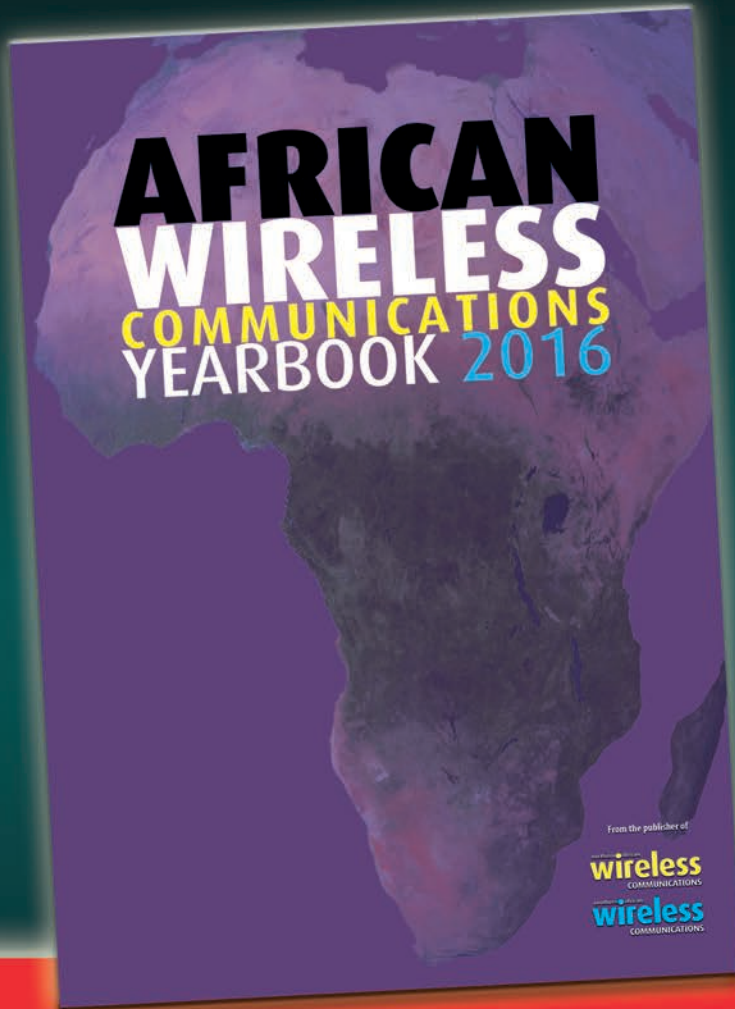
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An ocean apart

NITIN MADHAVAN looks at the trends in mobile financial services and telecoms on both sides of the Indian Ocean and discovers similarities as well as marked differences.

The wireless communications markets in India and Africa have really advanced over the past couple of years, and we have seen operators launching new services as well as strengthening existing ones.

Whilst some areas in both regions still have low mobile penetration rates, their markets have evolved beyond the initial 'land grab' phase of service providers competing for licenses and rolling out the early networks. The more established operators are now looking at revenue improvements through increasing their services and making their offerings more competitive.

One of the most important services in this region is mobile money and money transfer, with the likes of *M-PESA* which was introduced in Africa in 2007, and Immediate Payment Services launched by the National Payments Corporation of India in 2010 (the NCPI is an umbrella organisation for all retail payment systems in India).

The mobile money markets on both sides of the Indian Ocean have now grown beyond initial micropayments and simple money transfers and, certainly in India, we are transitioning towards a largely cashless society.

The value of m-banking in Africa

The African focus now is on expanding the mobile money system and adding digitisation to improve efficiency – making previously manual processes more automated and relying more on systems, networks, processes and technology.

In many respects, mobile money is 'old news' to the African market – Safaricom has been championing mobile money and payments with *M-PESA* in Kenya for 10 years now. Whilst other countries like Uganda, Zambia and Zimbabwe are beginning to expand, Kenya and Safaricom remain leaders of the pack.

However, although 350 million of the world's unbanked adults live in sub-Saharan Africa, mobile financial services have not had the same level of success as Kenya elsewhere on the continent. Vodacom and MTN shut down their mobile money services in South Africa last year, and other countries have struggled. In South Africa's case, this is most likely because the country's banking system is already very sophisticated and around 80 per cent of the population have some type of formal bank account.

These figures are lower in Kenya. While formal inclusion for men in Kenya has risen steadily since 2006, formal inclusion for women leapt between 2009 and 2013 driven by the spread of MFS. This has lessened women's exclusive reliance on the use of informal services. Compared to men, however, women still have lower access to formal prudentially regulated services such as banks (35 per cent for women compared to 50 per cent for men).

Formal inclusion and exclusion also differ across regions within Kenya. Formal inclusion is more than 70 per cent in most parts of the country, but slightly lower in the western and coastal areas. The northern parts of the country continue to face higher levels of exclusion, up to about 52 per cent.

Going back to South Africa, getting a new license for MFS in the country is now difficult thanks to its formal regulatory framework. Mobile money proponents I have spoken to say the regime is now harder to navigate for new entrants. Compare that to India where a special dispensation for non-banks financial companies or e-money providers is available.

For example, Bharti Airtel has started its own bank, known as a 'payment bank'. These payment

banks generally get a quicker license owing to the capital investments and various other factors when compared to the process of gaining a full-fledged license to start a bank.

However, while this may make it more attractive for telecoms companies to become banks, with great power comes great responsibility. Furthermore, regulators in both India and Africa are getting tougher on the telcos. The public sector has become more involved, and operators on both sides of the ocean are beginning to find themselves facing huge fines for any money laundering or illicit activity conducted on their networks. Should they fall foul of fraudsters repeatedly, they run the risk of having their licenses revoked.

But for me, the positives of this transition towards less cash and a more 'mobile' payment society outweigh the risks. By taking money from paper to wireless, many of the previously unbanked populations in the rural communities of India and Africa will now be able to move and store funds more easily and safely than ever before.

The majority of the population whose transactions are monitored and protected are good, honest folk and this increased visibility in transactions, both domestic and across borders, will help the countries in which they operate to trade more freely with the West. In order to trade with the USA and EU, countries must be able to show that they are on top of any potential crime (money laundering) and terrorism threats within their borders. The data available to telcos makes them one of the best positioned to spot terrorism and crime and help law enforcement to stop these threats, enabling greater trust and better trading potential.

India's MFS drivers

India has recently completed a massive demonetisation drive following the abolition of its largest currency notes in a fight against unaccounted wealth and corruption. This initiative has been a boon for local e-payment providers. For example, mobile payments and commerce platform provider Paytm reported a three-times surge in new users, adding more than 14 million new

accounts in November alone. Meanwhile, Oxigen Wallet claims its daily average users increased by 167 per cent since demonetisation began.

The initiative has also presented an opportunity for telcos to open banks, offering competitive interest rates and allowing people to deposit cash and use their mobiles to make payments for everything from cabs to airline flights. This new opportunity gateway has encouraged new players into the market, but has also raised concerns in the fintech community about cybersecurity and account hacking.

Another key driver in mobile financial services (MFS) is serving the unbanked and underbanked. According to the World Bank, around two billion adults worldwide don't use formal financial services and more than 50 per cent of adults in the poorest households are unbanked.

The Indian market has around 75 per cent mobile penetration and 53.1 per cent financial inclusion, presenting a clear opportunity for MFS. As part of its *Global Telecoms Risk Management Survey 2016*, Neural polled 113 individuals at different levels in operators from every part of the world. The results, published in February 2016, revealed that compared to other regions, Central Asia (which includes India, Pakistan and Bangladesh) saw greater opportunities in the fields of allowing the unbanked to establish a credit history (25 per cent), and helping the World Bank's 'unbanked' initiative (17 per cent) (see graph below).

EY (Ernst & Young) Global Telecommunications leader Prashant Singhal also points out that there are three benefits for financial institutions promoting MFS: expansion of reach; decrease in capital expenditure due to lesser need for physical infrastructure; and lowering of transaction cost.

"The cost of mobile banking channels is significantly lesser compared to traditional channels," says Singhal. "For instance, a mobile banking transaction can be done at 10 to 15 per cent of the branch banking cost. The cost involved in financial infrastructure is also much less – USD400 for agent-enabled mobile banking as compared to USD250,000 for a traditional branch. Furthermore, for banks the cost to serve



Nitin Madhavan,
Regional business
development
manager,
Neural Technologies

customers declines by a staggering 96 per cent when moving from a branch infrastructure to a mobile platform."

In emerging economies, all this adds up to a very attractive prospect.

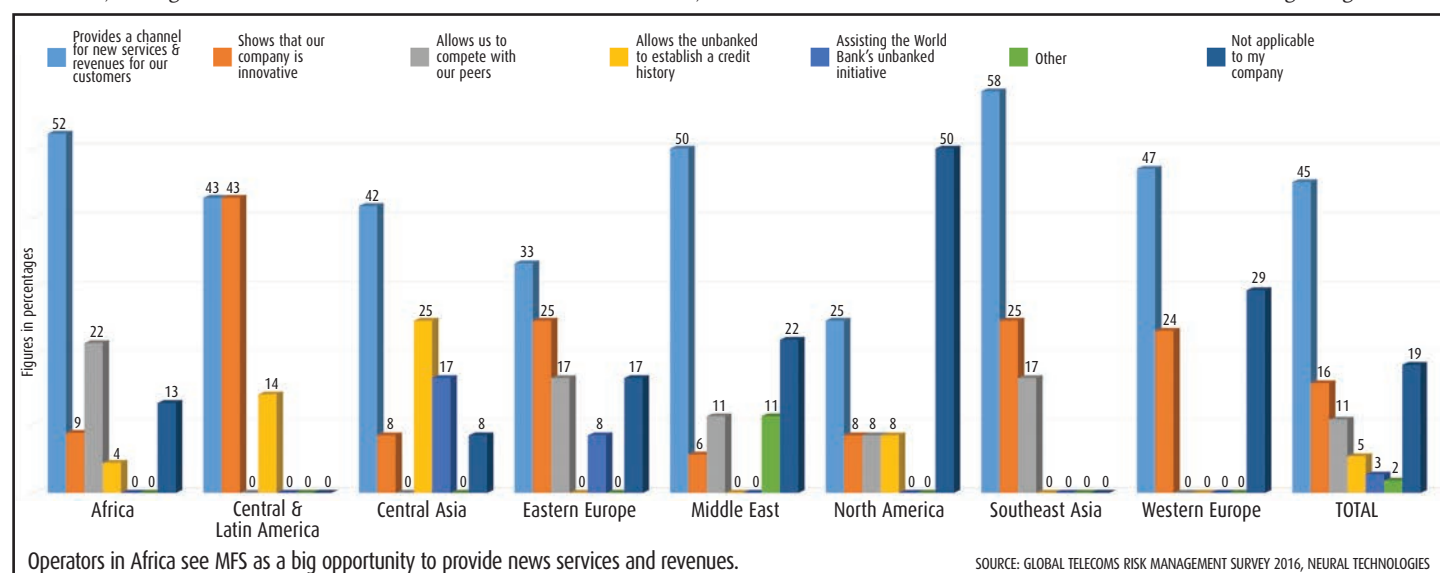
How IoT will affect the market

The growth of the Internet of Things (IoT) has the ability to take mobile money a stage further and integrate more areas of daily life for people within these two markets. Mobile money in emerging regions will be the catalyst for creating smart cities, transferring vast amounts of data over networks without requiring human-to-human or human-to-computer interaction.

Once these smart cities emerge, their inhabitants will start to see the full potential of the IoT, as interoperability will not be limited to banks and telecoms, but spread to utilities, municipal authorities and transportation systems.

Any company will be able to integrate into this payment and mobile money ecosystem and force the competition to innovate. Once an ecosystem is built, machines or devices will be able to determine the best rate and company for every aspect of daily life automatically, from electricity to groceries to healthcare.

As the IoT spreads its wings worldwide, the technological leaps made by India and Africa will set them in good stead to take advantage of the digital future. It will be interesting to see how these two regions measure up against the UK and USA in five years' time. My money would be on these currently 'emerging' markets overtaking the currently 'developed' world and setting the bar for them as we transition into the digital age. ■



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EU Parliament approves 'digital dividend' for mobile broadband

 The European Parliament has approved the use of 700MHz spectrum for mobile broadband. It will be allocated in 2020, while any European Union member states that need to delay (for certain technical or financial reasons) will be able to do so until 2022.

In a press announcement published in mid-March, the parliament said coordinating the release of the spectrum in EU member states is crucial to allow innovative mobile services, such as remote healthcare, smart cities and connected cars, to work across the union.

It added that member states



TCCA CEO Phil Kidner said his members will continue to lobby for reserved spectrum in the 700MHz band.

will ensure the availability for broadcasting services in the sub-700MHz band until 2030, and may also compensate end-users for any direct costs caused by migration or the reallocation of spectrum.

The TCCA, which represents the global critical communications industry, welcomed the news. It said binding technical provisions

were published in 2016 to establish harmonised technical conditions in the 700MHz band for public protection and disaster relief (PPDR) mobile broadband services.

With the European Parliament now having approved the use of the spectrum, the TCCA said EU members can now start preparing for the implementation of mobile broadband services for mission-critical communication applications.

However, the association's CEO Phil Kidner said his members will continue to lobby governments to reserve dedicated spectrum within the 700MHz band to prevent mission-

critical services having to compete with consumer services for bandwidth.

"France is currently the only member state that has allocated dedicated spectrum for PPDR in the 700MHz band," said Kidner. "We are following closely the progress of the Swedish PPDR stakeholders' recommendation to hold one of the three 700MHz allocations as a national asset for a future nationwide mission-critical mobile broadband network."

"There are also positive developments in Norway, where a report to the national regulator clearly recommends taking the needs of PPDR onboard in the licensing conditions."

Chile sees Latin America's first NarrowBand IoT project



A water utility company in Chile has successfully tested a telemetry solution for residential water meters using NarrowBand IoT technology (NB-IoT).

The system used real data from meters installed with residential customers. It will enable them to know their exact daily water usage, and means that the unnamed

water company will be able to bill for actual, rather than estimated, consumption. Telemetry will also allow the supplier to detect leaks and unaccounted water flows.

The experimental deployment was led by Spanish telco Telefónica. It worked with Danish vendor Kamstrup, which provided the smart meters, and Huawei, which carried

out the update to the NB-IoT network.

The pilot in Chile is claimed to be the first time NB-IoT technology has been used in Latin America. The partners plan to expand the project in the near future and include more than 300 residential water meters by reusing the 700MHz LTE network.

NB-IoT offers low-power

wide-area network (LPWAN) connectivity focused on adapting devices to the needs of the Internet of Things market. It is therefore said to enable increased battery life, appropriate use-specific cost, wide coverage and indoor penetration. At the same time, the technology aims to allow for great scalability and comprehensive security.

Wi-Fi optimised at botanic research institute



The Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) has optimised its Wi-Fi network using what's claimed to be a "unique" system.

IPK is a non-profit and internationally renowned botanic genome institution in Germany, and needed to provide comprehensive coverage and reliable connectivity for its researchers. To meet this objective, IPK upgraded its legacy Wi-Fi network to a solution based on the latest 802.11ac standard, and

used the WHG series WLAN gateway-controllers from wireless specialist 4ipnet. According to the Taiwan-based vendor, its controllers are "unique" because they integrate user authentication, role-based access policy enforcement, and centralised AP management into the same box.

Furthermore, 4ipnet says WHG's Service Zone feature allows a single gateway to simulate multiple independent virtual networks, each with their own user roles, access policies, and customised login pages.

With two WHG405s deployed, IPK is able to offer Wi-Fi service tailored for individual user groups. Guests are assigned to the first service zone and authenticated via the built-in local user-database with accounts generated using 4ipnet's WTG keypad-based ticket printer solution.

The second service zone is configured for visiting researchers. Here, users are authenticated by 802.1x directly with their home institution's 'eduroam' account. The third service zone, 'ipk', is exclusively reserved for the institute's employees.

4ipnet's EAP757, EAP76, and OWL630 APs were deployed to accommodate the various research labs, lecture halls, libraries, guesthouses and outdoor facilities.

The Leibniz Institute's new Wi-Fi network features several AP from 4ipnet including the OWL630 (inset).

Wi-Fi out in Windhoek



Windhoek's Police Dept. has replaced the Wi-Fi used for transmission in its CCTV systems with wireless video surveillance.

Namibia aims to be the safest African country by 2020. As part of that ambition, RADWIN's point-to-point and point-to-multipoint (PtMP) systems were installed in dozens of crime hotspots throughout the capital.

The systems are said to transmit high-quality video from the cameras directly to police headquarters, enabling on-the-spot detection and response to events.

"Now that we are using RADWIN's systems, we're getting the highest video transmission quality with zero video pixellation and low jitter, which is vital for our mission critical operations," said police spokesperson Cillie Auala.



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Tablet Comunitário brings the internet to remote communities



The solar powered *Community Tablet* is quite literally a mobile device. It is built on a trailer so that it can be towed (top), and features touchscreen displays (bottom) and virtual keyboards to provide internet access to people in underserved areas.

Mozambican tech startup Kamaleon has developed what it believes is an “innovative and engaging” way of promoting digital literacy through a shared platform.

The *Tablet Comunitário* (*Community Tablet*) is a solar powered mobile computer. Built on a trailer to provide internet access to remote areas, it features touchscreen displays and virtual keyboards. Kamaleon is also offering training on how to use the internet to members of the community and the local workforce.

The company’s ultimate aim is for the *Community Tablet* to promote digital inclusion and a knowledge-based society in Africa.

It began last November by launching in Mozambique where 24 million people reportedly lack an internet connection. Kamaleon said the system will be used to support

campaigns on various education and health initiatives in partnership with governmental and private organisations. The *Community Tablet* will be used to spread up-to-date messages and interactive lessons that showcase symptoms, prevention and treatment options, thereby replacing the need for leaflet distributions to convey life saving information.

Kamaleon founder and CEO Dayn Amade said: “A few years ago, anyone who could not read and write was considered illiterate. But today, this concept goes further, encompassing people who do not know how to use ICT.

“Health organisations and schools in Africa often face a unique set of obstacles, including a lack of access to much-needed health education and counselling platforms. The *Community Tablet* was created to help solve these problems.”

BodyCap creates ‘Internet of the gastrointestinal tract’

Ingestible connected pills that enable wireless medical monitoring have been approved for use in Europe’s hospitals.

The *e-Celsius Performance* was developed by France-based BodyCap which specialises in miniaturised wireless monitoring devices for e-health applications. The disposable electronic capsule is coated in a

biocompatible medical grade plastic, and follows the intestinal transit after being swallowed by the patient. The pill then uses 433MHz frequencies to wirelessly transmit measurements of the patient’s core body temperature every 30 seconds.

The readings are sent to a monitor called an *e-Viewer* which can be up to one metre away. The data show alerts

when the measurement is outside the range set by the healthcare professional.

Each *e-Celsius* pill is provided in standby mode. When the device is ready to be used, an activation box wakes it up and links it to the *e-Viewer* for data collection in real-time mode, or by recovery from the pill’s internal memory with no loss

of data, says BodyCap.

It adds that each device can store up to 2,000 data events and can remain operational for up to 20 days, but leaves the patient’s body naturally after one to three days.

The *e-Celsius* will be sold directly or through specialised distributors for a unit price of EUR40 to EUR60 (USD42-63), depending on volume.

DAMM stays on track with win for Mumbai monorail

DAMM Cellular has been awarded yet another contract to provide a TETRA-based radio system for the second phase of Mumbai Monorail. The Denmark critical communications specialist’s system was first used by the Mumbai Metropolitan Region Development Authority (MMRDA) in 2012.

This latest deal is for phase II of the comms network which extends coverage between Wadala Depot and Gadge Maharaj Chowk. As before, New Delhi-based TETRA system integrator Consort Digital will be responsible for the supply, installation, integration and commissioning of the entire project.

DAMM will provide its *TetraFlex* system to meet the customer’s requirements for a feature rich, reliable and safe communication system.

The vendor reckons the key to its system’s success as a rail solution is its decentralised architecture. It says the platform is a completely IP-based solution with distributed architecture that provides the “much needed” fault tolerance to communication networks, such as the one being installed for the Mumbai Monorail.

Furthermore, DAMM says *TetraFlex* is integrated to systems for signalling, public announcements, onboard train communications, telephony and centralised recording.



The TETRA network will cover the monorail between Wadala Depot (pictured) and Gadge Maharaj Chowk.

Consort Digital marketing director Devdarsh Jain adds: “The project will be completed in record time due to modularity and ease of deployment of the DAMM *Outdoor* base stations.”

The Mumbai Monorail is the first such project in India. It will have two

lines and cover 19km with 17 stations when phase II is completed.

Each monorail will have four coaches with a combined capacity of 600 passengers, thereby carrying nearly 300,000 commuters on a daily basis across the proposed route.

Zong boosts 4G network in Pakistan



Zong, China Mobile's subsidiary in Pakistan, is expanding its 4G network and services in the country.

The cellco rolled out an additional 1,000 4G sites across Pakistan in 2016, expanding its 4G coverage to more than 100 cities. It currently has around 6,000 4G sites nationwide, and claimed this makes it the country's biggest operator in terms of LTE coverage. China Mobile has so far invested more than USD300m in Zong's 4G network.

The operator said it will continue to invest and grow its services to "enable a fully connected environment" for citizens. As part of this, the company recently launched what it described as Pakistan's first cloud based electronic medical record (EMR) and practice management software.

Zong's *Cloud Clinic* platform aims to provide EMR solutions for small and big medical facilities. With this cloud-based solution, it said doctors will be able to manage their hospitals and clinics in a paper-free manner with no upfront investment.

Among some of the features on offer, *Cloud Clinic* enables medical staff to register patients, manage appointments, send automated SMS and email alerts to patients, issue e-prescriptions and e-referrals, and more.

Asian operators gain 5G headstart with Ericsson



Ericsson is helping Singapore pave the way towards 5G, and has also carried out the first live end-to-end transmission of the technology in Thailand.

In late February, the vendor announced that it was piloting key technologies in the evolution to 5G that will enable Singtel to offer faster speeds in Singapore by the end of the year. Ericsson's *AIR 6468* radio, which is said to provide 64T64R Massive MIMO capabilities, will be tested and progressively deployed on the operator's LTE network. The company said Massive MIMO is key to achieving Gigabit LTE speeds as it improves spectral efficiency to triple or quadruple the number of data paths of base stations.

The two partners will also pilot a Cloud RAN. Ericsson said this will



NBTC secretary general Takorn Tantasith outlined plans to support the transformation to a "Digital Thailand".

provide Singtel with the flexibility to centralise, distribute, scale and virtualise RAN functions to "efficiently meet performance requirements today and on the road to 5G".

Earlier this year at an event to mark 111 years in Thailand, Ericsson carried out the country's first live 5G end-to-end demonstration using its 5G test bed and core technologies.

It claimed to have achieved a peak throughput of 5.7Gbps and latency as low as 3ms. The company said these speeds not only support growing

demand for broadband and video on mobile devices, but also provide a "viable and cost effective" alternative to residential fibre connections.

Thailand's National Broadcasting and Telecommunications Commission (NBTC) expects to have broadband connectivity throughout the country by 2018, covering big cities as well as more than 75,000 villages nationwide.

Speaking at the event, NBTC secretary general Takorn Tantasith said: "Along with the fixed internet deployment, we plan to release more spectrum of 380MHz by 2020 which will add to the 420MHz already allocated to the telecommunications industry. This will handle the rising demand for online services, IoT and innovative applications as the country transforms into a Digital Thailand."

Jio build largest All-IP services platform



Cisco is supporting Indian operator Reliance Jio Infocomm to expand its All-IP converged network. Said to be the world's first network of its kind, the multi-terabit capacity platform is built on Cisco's *Open Network Architecture* and *Cloud Scale Networking* technologies featuring IP/MPLS. The vendor says this enables Jio to offer a combination of high-speed data, mobile video, VoLTE, digital commerce, media, cloud and payment services.

Since its launch, it's claimed Jio has accelerated India's monthly user data consumption 40 times, the highest in the world. It's also claimed that the operator's premium broadband service, priced at USD0.15 per GB, is the most affordable in the world.

Jio has more than 185,000 miles of fibre and has built what's said to be India's largest cloud data centre in order to develop platforms for applications and vertical solutions. Its All-IP network has been created

to handle ever-increasing volumes of data, and also promises to help shape the future of India with end-to-end digital solutions and broadband for all.

In addition, Cisco says Jio's infrastructure and CDN extends beyond India into Singapore, France, London, New York, Los Angeles, Amsterdam, and Frankfurt. As a result, it says the operator has direct interconnect with global carriers and content providers enabling "low-latency and high-quality experience" for users in India.

'Not-spots' eliminated at Sky



As part of consolidating its operations, UK-based satellite broadcaster and communication services provider Sky has extensively redeveloped its offices. But with multiple floors and the use of dense materials at its site in west London, wireless signals were heavily affected.

The biggest area of concern involved the second phase of the development, Sky Central. Set over three floors, this has a total combined area of around 46,000m² encompassing office space, a studio, production facilities, and R&D zones. It was vital for Sky to be able

to provide a consistent, strong signal source so that employees could use their mobile devices, connect to the internet and communicate wirelessly wherever they were on campus.

While the company had installed a single operator DAS in existing buildings at its site, it wanted multi-operator coverage to cope with user volumes throughout the much larger Sky Central area.

Martin Eddleston, planning and delivery manager for network implementation at Sky, said: "With the number of colleagues occupying our new building and the importance of mobile communications, it was



Set over three floors, Sky Central has a total combined area of around 46,000m².

imperative that a scalable, high performing and future-proof solution was selected."

Systems integrator Herbert In-Building Wireless recommended Zinwave's *UNiTivity* system because of its ability to support multiple operators, services, as well as public

safety access services. It delivered an end-to-end all fibre solution on a single converged system within the building.

Zinwave adds that the platform supports any frequency from 150MHz to 2700MHz, and claims it is only solution that can provide consistent mobile coverage inside metal lifts.

First LTE-R network



SK Telecom and the Busan Transportation Corporation (BTC) claim to have deployed the world's first LTE-R network. LTE-R is a standard for next-generation railway comms systems. The two partners first signed a contract for the deployment of LTE-R in August 2015. Since then, SK Telecom has built the network for the 40.48km long Busan Subway Line 1 using 10MHz bandwidth in the 700MHz frequency band. In February 2017, SK Telecom and BTC piloted the LTE-R network and plan to commercialise it in April 2017.

Big fibre in Hong Kong



Prysmian Group, the Italy-based energy and telecom cable systems specialist, is claiming a world record after delivering the densest and highest fibre count underwater optical cable ever made. The firm said its *FlexTube* cable containing 1,728 optical fibres was successfully deployed by Australian telco Superloop for its TKO Express project. This provides broadband connection between Siu Sai Wan on Hong Kong Island and the data centre hub of Tseung Kwan O (TKO) on the mainland. Prysmian says the previous record was set in 2014 with a *FlexTube* cable with 720 fibres.

IoT for Honda



Honda is using IoT to deliver the *MyHonda Connected Car* system. Using Bright Box's telematics solutions – which are powered by the Cisco Jasper Control Center automated IoT connectivity management platform – Honda will deliver a variety of connected services across Europe. They include vehicle data and diagnostics, alerts and scheduling of maintenance, and GPS tracking. Cisco Jasper says that its partnerships with 50 service providers in more than 100 countries will enable the car-maker to expand its services globally as needed.

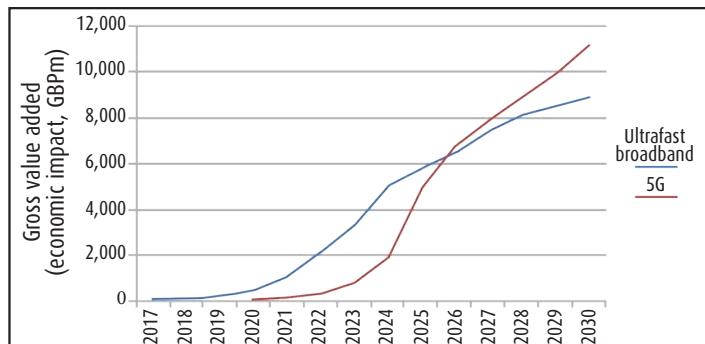
5G to deliver benefits 'twice as fast as fibre'



5G infrastructure will outstrip the economic benefits of fixed fibre broadband in the UK by 2026, according to a report by Telefónica-owned mobile operator O2.

It states that 5G will introduce entirely new industries, platforms and services. In addition to GBP7bn of direct economic value through businesses using the technology, the report says the 'ripple effect' through the supply chain will also see 5G indirectly boost UK productivity by an extra GBP3bn a year.

O2 also believes that the added value of 5G to the economy will become apparent almost twice as quickly as fibre broadband (see graph, right). Despite fibre broadband rollouts already taking place in the country and 5G not scheduled for launch until 2020, the latter is forecast to achieve the same



economic benefits as fibre by 2026.

Citing data from UK regulator Ofcom, O2 says more than four in every five adults in the UK now owns a smartphone and nearly three quarters use a mobile device to access the internet on the go. It says the combined value of 4G and 5G connectivity will add GBP18.5bn to the economy in less than a decade, compared to

GBP17.5bn for broadband overall.

"Mobile is the invisible infrastructure that can drive the economy of post-Brexit Britain," says O2 CEO Mark Evans. "The future of 5G promises a much quicker return on investment than fibre broadband, and a range of unprecedented benefits: from telehealth applications to smarter cities and more seamless public services."

UROS connects smart water grid with IoT



Roaming specialist UROS (Uni-fi Roaming Solutions) is working with Finland's Jyväskylä Energy to create smart management solutions for national water operation systems around the globe.

UROS offers worldwide roaming and IoT solutions for mobile operators, enterprises and consumers. The company says its "bill shock-free" services – which include smartphones, apps and Goodspeed 4G mobile Wi-Fi – are provisioned

by a unique M2M platform providing global connectivity via the eSIM ecosystem.

Jyväskylä Energy will use this M2M platform to connect its has water management platform initiative called 'Pisara'. This is said to offer preventive maintenance solutions aimed at avoiding water supply crises and at guaranteeing high-quality water for consumers.

Sakari Laitinen, development manager at Pisara Water Business,

says: "The world's smartest digital water solutions combined with global connectivity and security enable water management to enter a new era in which water will be distributed via intelligent water networks and in which water quality will be controlled using AI and smart sensors."

Laitinen adds that people in communities around the world will soon be able to monitor, in real-time, the quality of their most valuable asset – clean water.

Viasat improves driver safety with Orange



Orange Business Services (OBS) has signed a multi-million dollar three-year contract with Viasat Group for a global IoT roaming service for up to 350,000 SIM cards. It will allow Viasat to provide global coverage across a number of markets for services that include insurance, fleet security and safety, and telematics.

Italy-headquartered Viasat specialises in satellite-based security systems, which it says incorporate the very latest telematics information technologies to guarantee absolute security for the vehicle and its occupants.



The Viasat Group's remote telematics boxes will be able to remotely send and receive data via the IoT.

OBS will provide the IoT connectivity to enable the company's telematics boxes to remotely send and receive data, texts and voice. It says the SIMs are reinforced to withstand vibration and high

temperatures, and roaming-enabled which provides global coverage.

OBS also provides an IoT management platform that will allow Viasat customers to manage and update their own SIMs. It says the platform can be integrated with the customer's back-end system to provide detailed reports and retrieve billing information.

In addition, it's claimed IoT connectivity will also allow customers to improve the quality of their driving which translates into increased safety for passengers as well as vehicles. This will ultimately help to lower the average costs of insurance premiums.

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