For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

MARCH/APRIL 2021 Volume 25 Number 5

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- The growing importance of FWA and Wi-Fi on the move
- Making mobile devices more accessible to millions

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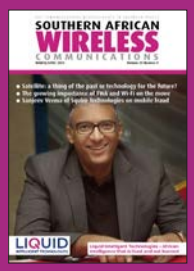

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EDITORIAL:
Editor: **Robert Shepherd**
Designer: **Sean McNamara**
Sub editor: **Gerry Moynihan**
Contributors: **Martin Jarrold, Ahmad Mokhles Aly El-Deen, Mladen Vratonjic, Dion Price, Robert Koldys, Sanjeev Verma, Simon Fletcher**

Editorial enquiries:
roberts@kadiumpublishing.com
Tel: +44 (0) 1932 481729

ADVERTISEMENT SALES:
Sales: **Kathy Moynihan**
kathym@kadiumpublishing.com
+44 (0) 1932 481731

Production & circulation: **Suzanne Thomas**
suzannet@kadiumpublishing.com
Tel: +44 (0) 1932 481728

Publishing director: **Kathy Moynihan**
kathym@kadiumpublishing.com
+44 (0) 1932 481730

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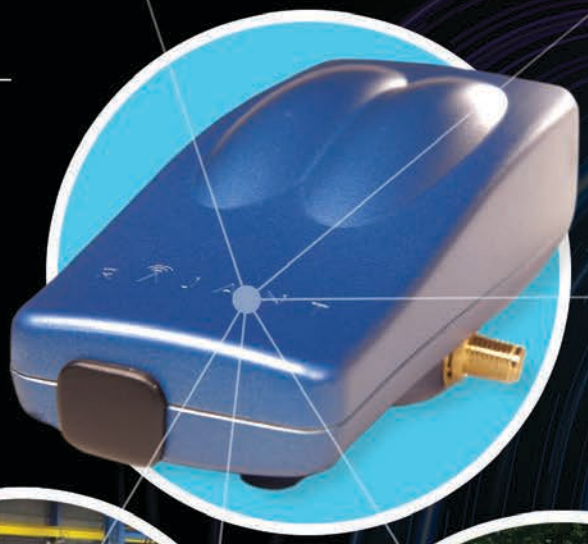

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Ericsson and Unitel sign network expansion frame agreement

Unitel and Ericsson have signed a three-year frame agreement for the supply of Ericsson Radio System solutions as well as core solutions and related services in Angola.

Under the terms of the deal, Ericsson will deliver a transformation to Unitel's existing 2G/3G/4G Radio Access Network (RAN) and core infrastructure, as well as prepare the service provider for future 5G services in Angola.

The radio and 5G ready core expansions will enable Unitel to meet increasing data demands of customers in Angolan market.

Unitel's Business Support Systems (BSS) will be upgraded and enhanced to enable catalog-driven charging across its services and prepare itself for the introduction of innovative business-to-consumer and business-to-business 5G products and services. Using these solutions, Unitel's network performance will improve to meet growing end-user expectations.

Meanwhile, expansions on virtual Mobile Switching Centre (MSC) and Ericsson Media Gateway for Mobile Networks (M-MGw) are included for improving voice services, while Ericsson Network Manager (ENM) is expected to ensure better performance and faster time-to-market for new services. The agreement also includes Ericsson 5G RAN products and solutions, from the Ericsson Radio System portfolio, introduced and deployed in Unitel as soon as service is licensed in Angola.

"We are committed to providing the residents and businesses in Angola with the best telecommunication services," said Amílcar Safeca, administrator and Chief Technical Officer at Unitel. "Our strategic goal is to stay at the forefront of customer experience and Ericsson is an excellent partner to address these requirements. This frame agreement will allow us to differentiate more our end-user offering and benefit from Ericsson's latest products and solutions."

Amílcar Safeca, administrator and chief technical officer at Unitel S.A. and Nora Wahby, VP and head of Ericsson west Africa and Morocco

Unitel will also benefit from more customer-centric business operations with Ericsson Digital BSS solutions, including core billing/charging and catalog driven charging, "helping the service provider to improve customer experience and monetise new services".

Nora Wahby, vice president and head of Ericsson eest Africa and Morocco added that Africa is witnessing a digital transformation fuelled by innovation of telecom services and solutions and the high demand for smart devices. "This transformation requires networks that can provide superior performance to cater for the data explosion," she said. "Our collaboration with Unitel will pave the way to support and meet the ambitions of delivering best performing networks that can provide superior customer experience for Unitel Angola's subscribers and this is part of our efforts to continue working with our partners to keep setting #AfricaInMotion."

Africell and Aviat ink major 5G deal

Wireless transport solutions expert Aviat Networks has agreed a multi-million agreement with mobile operator Africell to provide a 5G-ready end-to-end disaggregated transmission network across the continent.

The new network will be designed, installed, and maintained by Aviat and will include Aviat WTM 4000 and WTM 4800 Multi-band point-to-point radios and CTR microwave switches, and disaggregated cell site gateways (DCSGs).

The DCSGs are Edgecore Networks running IP Infusion's OcNOS network operating system. Both companies say the deployment, scheduled for the second quarter this year, is Africell's first Telecom Infra Project (TIP)-compliant DCSG endeavour.

"Leading mobile operators like Africell recognise the operational advantages of a disaggregated solution and how its flexibility will enable the rapid delivery of broadband services," said Peter Smith, CEO of Aviat Networks. "We are proud that Africell has placed its confidence in Aviat to meet the challenge of their first TIP-compliant DCSG project."

The new network will be designed, installed, and maintained by Aviat

Wissam Fayad, network transmission manager, Africell Holdings, added: "With escalating demand for high-speed mobile Internet services in our markets, and with 5G in our sights, we sought an approach that offers us fast deployment, maximum flexibility, and lowest TCO. Aviat's backhaul and DCSG solution was the clear choice to meet all these challenges and support the rapid network growth of our transmission network well into the future."

Botswana aborts MNP

Botswana's attempt to introduce mobile number portability (MNP), which allows customers to change their network provider while retaining their original number, has been aborted.

The idea was first mooted in 2012 and it in early 2019 when then transport and communications minister, Dorcas Makgato, said mobile number portability would happen that year.

However, present incumbent, Thulaganyo Segokgo, has announced that plans to implement MNP have been abandoned after more than six years of preparation. This comes after an operator network readiness assessment study has apparently shown that the plan is not feasible.

According to reports, the minister said operators were being encouraged to investigate other alternatives to MNP, such as promoting over-the-top (OTT) services and other 'disruptive technologies'.

Africa set to welcome new 10,000km subsea telecom system

The construction of Africa-1, a new 10,000 km subsea telecom system connecting Africa, the Middle East and Europe, has begun.

Current members of the consortium are Etisalat, G42, Mobily, Pakistan Telecommunication Company, Telecom Egypt and ASN, with other parties expected to join soon.

Africa-1 cable will provide eight fibre pairs to connect Africa and the Middle East eastward to Pakistan and westward to Europe, increasing the available transmission capacity between Asia and Europe.

It is expected to be ready for operation by the end of 2023 and will initially have landings in Kenya, Djibouti, Pakistan, the United Arab Emirates, Saudi Arabia, Egypt and France. The system will also land in Sudan, France and further connect other countries in the Mediterranean such as Algeria, Tunisia and Italy.

The next phase will include additional landings in Yemen and Somalia, as well as an extension from Kenya to South Africa with intermediate landings in Tanzania and Mozambique.

Alcatel Submarine Networks (ASN), which provides all elements of turnkey global undersea transmission systems, said the system will be equipped from the start with ASN 1620 Softnode transmission equipment, featuring high performance 200/300/400 Gb/s advanced coherent XWAV line cards. The partners said Africa-1 will support Africa, the Middle East and Asia.

Current members of the consortium are Etisalat, G42, Mobily, Pakistan Telecommunication Company, Telecom Egypt and ASN

MoMo transactions down in Zimbabwe

The total number of mobile money (MoMo) transactions processed in Zimbabwe last year dropped 23% to record US$1.5bn from US$1.96bn recorded in 2019 as active MoMo subscriptions also took a dip.

Postal and Telecommunications Regulatory Authority of Zimbabwe (Potraz) attributed the declines to the banning of mobile money agent lines.

During the period under review, the Reserve Bank of Zimbabwe (RBZ) banned agent lines which mainly affected Ecocash as it had the highest number of agent lines.

"As a result, Cash-In transactions and Cash-Out transactions are no longer being effected," reads part of the Potraz sector performance report for 2020. According to the report Ecocash maintained its dominance on both number of transactions as well as value of transactions at 97% and 95.7% respectively.

OneMoney accounted for 4% of value of transactions while the remaining 0.11% was for Telecash.

Euro specialists Evina and Telecoming partner up to fight mobile fraud in Africa

European technology companies Evina and Telecoming have signed a global alliance to promote DCB as the safest and most appropriate payment method in the new mobile economy and, in particular, for the fight against fraud.

The companies said the agreement "deals a body blow" to the mobile fraud that cost the African continent over US$4bn last year. DCB is the most suitable payment technology for millions of unbanked Africans who appreciate its unparalleled reach and convenience. This deal agreement between Evina and Telecoming, both with operations in 15 African, Middle Eastern and European countries, should make mobile-based transactionseven safer.

"Direct carrier billing has been growing in the new digital economy," said Roberto Monge, COO of Telecoming. "It is a technology with enormous potential that benefits all players in the mobile environment. With this alliance, we want to place DCB at the forefront of the payments industry and reinforce our commitment to the development of a transparent, secure and stable mobile economy".

The companies said the agreement ''deals a body blow'' to the mobile fraud that cost the African continent over US$4bn last year

David Lotfi, Evina's CEO added: "The potential of DCB is widely underestimated by mobile operators and other market players. This is mainly due to the fact that DCB is currently adversely affected by fraud. By protecting the mobile payment ecosystem, we aim to sustain DCB's growth and help all players flourish in this ecosystem."

The alliance aims to educate on the vast potential of direct carrier billing through the DCBMaster service that allows users to measure their exposure to fraud, as well as their market and regulations knowledge.

It will also enable the launch of the first global DCB indicator. This DCB Index will measure the maturity of the DCB market in different regions, based on the analysis of four indicators: Fraud protection, innovation, penetration in the digital industry and growth potential.

Huawei and Mondia Pay expand partnership

Huawei Mobile Services has teamed up with Mondia Pay, a digital payments company, to enable contactless payments via Huawei devices on networks across Africa.

Mondia Pay's direct carrier billing service integration was launched with Vodafone Egypt and during this quarter, Cell C South Africa, Orange Tunisia and Ooredoo Algeria will go live with the DCB service, following the testing phase.

As a DCB services for consumers, Mondia Pay is available on Huawei AppGallery, to facilitate online payments. Subscribers can also now use DCB to access apps on Huawei AppGallery, which expands their access to top local and global apps.

Mondia Pay, Mondia's digital payment entity, processes well over 2.1 billion monthly transactions globally, allowing consumers to pay for services using their mobile phone.

Mondia Pay's direct carrier billing service integration was launched with Vodafone Egypt and during this quarter, Cell C South Africa, Orange Tunisia and Ooredoo Algeria will go live with the service, following the testing phase

"We are extremely proud of our continued partnership with Huawei, and the efforts to enable customers across the continent to benefit from Mondia Pay's fully integrated digital payment technology to make frictionless payments in a fast, safe and secure manner," said Simon Rahmann, CEO of Mondia Pay. "We also support the continuous efforts taken towards the transition to cashless societies, which has gained significant traction in the past 12 months."

Adam Xiao, managing director, HMS and consumer cloud service, Huawei Consumer Business Group MEA, added: "We're excited to strengthen our partnership with Mondia Pay, and bring our users across the MEA region more payment options. With this, we continue to enhance our ongoing commitment to enabling local and global developers to seamlessly offer their services to millions of more people in the MEA region."

Africell preparing to upgrade to 5G-ready networks across Africa

Africell Holding is preparing to upgrade to 5G across the continent, in a bid to keep up with some of its African competitors. The group signed a multi-million US dollar agreement with wireless transport solution provider Aviat Networks, which will upgrade Africell Holding's telecom networks and prepare them to migrate to the 5G when needed.

"With escalating demand for high-speed mobile Internet services in our markets, and with 5G in our sights, we sought an approach that offers us fast deployment, maximum flexibility, and lowest TCO," said Younes Chaaban, CTO at Africell Holding. "Aviat's backhaul and DCSG solution was the clear choice to meet all these challenges and support the rapid network growth of our transmission network well into the future."

The deployment of the solutions will begin in Q2-2021.

A delegation from Africell Holding recently visited Gambia, expressing its commitment to making the necessary investment to improve the quality of its service in the country. Furthermore, the telecom operator, which already has a presence in the DRC, Gambia, Sierra Leonne, and Uganda, will soon enter the Angolan market.

The 5G-ready telecom networks will help Africell Holding to meet the growing connectivity demand across Africa. The telco is equipping itself to meet the new competition that is emerging in the ultra-broadband segment. Being 5G-ready will also aid Africell Holding is increasing its chances of growing its subscriber base, market share and revenues.

In March, Africell underwent a significant group reorganisation. At the time. Ziad Dalloul, founder and CEO of Africell, said: "The group reorganisation is a significant moment for Africell. The changes enacted certify us as a company with bold growth plans, a thoroughly international perspective, and the highest standards of governance and compliance."

Zonful Energy, GSMA target rural penetration

Zimbabwe-based solar power company, Zonful Energy, is on a drive to increase mobile internet adoption and usage for rural communities in the southern African nation, which have previously lagged behind.

The company, awarded a grant as part of the GSMA Innovation Fund for Mobile Internet Adoption and Digital Inclusion, funded by the Foreign, Commonwealth and Development Office (FCDO), said it is aiming to reduce the internet usage gap through providing affordable mobile services.

Zonful Energy will be introducing the Pay As You Go model to enable low income earning customers to access smartphones upon payment of a small deposit and settle the balance over a stipulated period of time.

Both customers and non-customers of Zonful Energy Solar Home System can be part of the programme.

"Internet adoption will curb the information gap and improve the livelihood of the deprived communities," the company said in a statement. "In this digital age, internet literacy is of paramount importance and over 43% of the Zimbabwean population does not currently use the internet. The GSMA Innovation Fund will enable Zonful Energy to curtail the internet usage gab in rural off-grid areas. Zonful Energy will market and distribute low-cost smartphones and data bundles with up to 24 months' data plans."

Both customers and non-customers of Zonful Energy Solar Home System can be part of the programme

South Africa inks telecom regulation agreement with the US

The Independent Communications Authority of South Africa (ICASA) and the Federal Communications Commission (FCC) of the US signed a virtual memorandum of understanding agreement that covers the exchange of ideas in the area of telecommunications regulation and policy.

According to ICASA president Keabetswe Modimoeng, the non-binding agreement "is a momentous collaboration that illustrates the confidence that our global counterparts have in ICASA. This collaboration places the Authority on solid ground to achieve international best practices, cutting-edge regulatory approaches and further validates South Africa's standing in the global ICT arena."

The deal is against a backdrop of American attempts to unite the telecom markets of Europe, Africa and even Asia against Chinese tech giant Huawei. South Africa has always been unwavering in its support for the company.

ICASA noted that the two regulators have agreed to implement a program of information exchange and technical cooperation in the field of telecommunications and related services and facilities, in accordance with their respective national and international laws, regulations and obligations, and within the framework of their annual budgets and terms.

Zambia: Beeline wins fourth mobile licence

Beeline Telecom has been granted a licence to commence mobile phone operations in Zambia.

The operator will be required to commence operation within the next six months and failure to which, unless determined otherwise by the Zambian Information and Communications Technology Authority (ZICTA), the licence will be revoked.

"This was in line with its regulatory mandate under the ICT ACT No. 15 of 2009, which includes the promotion of competition in the ICT sector," said Patrick Mutimushi, director general of ZICTA. "In September, 2020, the watchdog invited, through the request for proposals, applications for a network license under the international market segment and a service licence under the national market segment with associated resources."

Currently, Zambia's mobile service operators include South African telecoms MTN, Airtel and local telecom firm Zamtel. The local company has been offered the international network and national services licences with associated resources and becomes the fourth mobile network services provider in the country.

Meanwhile, the number of active mobile subscriptions in Zambia increased by 10.9% to 19.1 million on December 31 2020 from 17.2 million on the same date in 2019, according to statistics from ZICTA

'Convenience outweighs risk for Africa's mobile users' - KnowBe4 report

Africa's mobile users are increasingly concerned about the mobile risks and the potential for digital identity theft, this is not stopping them from using their favourite messaging platforms and applications, a report has found.

Research carried out by KnowBe4 among over 700 smartphone users in Botswana, Egypt, Ghana, Kenya, Mauritius, Morocco, Nigeria and Morocco.

The survey gauged the opinions of Africa's mobile users on the recent decision by WhatsApp to update their terms and conditions, sharing metadata with the rest of the Facebook group of companies.

The survey found that not only did the majority of the respondents across Africa intend to continue using WhatsApp, but also, that their favourite alternative to WhatsApp was Facebook Messenger.

Anna Collard, SVP content strategy and evangelist Africa at KnowBe4, said the recent WhatsApp privacy policy has spurred public discussions which resulted in more consumer awareness about their privacy rights as well as brought more visibility to alternative tools such as Signal, Telegram, and others.

"It is interesting to see that while most mobile users are concerned about their online privacy, Facebook Messenger, which was listed as the top alternative chat app, collects much more data than WhatsApp," Collard said. "This indicates that there may be a lack of understanding about the actual risks and implications of the new policy."

The imminent WhatsApp privacy policy change revealed some shifts, however, with 24% of respondents saying they were no longer allowed to use WhatsApp for work and 62% saying they were 'somewhat concerned' or 'very concerned' about the new privacy policy.

The survey gauged the opinions of Africa's mobile users on the recent decision by WhatsApp to update their terms and conditions, sharing metadata with the rest of the Facebook group of companies

Around 7.7% of respondents said they had – or planned to – cancel their WhatsApp accounts, with this number rising to 15% among South Africans respondents.

However, for most, the convenience of the platform outweighed concerns about privacy risks, with over half saying they had concerns but would continue using WhatsApp, even though they may have signed up to use other messaging tools. Just over a quarter of respondents had heard about the planned privacy terms changes but did not understand what the risks were.

For those also using alternative messaging tools, Facebook Messenger was the most popular, with over 80% electing to use this platform too. Over 56% also used Telegram, over 12% also used Signal, and 10% or less used Discord, Threema or other messaging platforms.

Collard added: "What's interesting is that, compared with the 2019 KnowBe4 African Report, respondents were even more concerned about cybercrime. In 2019, 37.86% were worried, and in 2020, the number had risen by 10% to 47.61%. Across all eight countries, we see a growing awareness of the risks that come with cybercrime."

However, she noted, there remains limited awareness of how to avoid risk, and the implications of data privacy terms and conditions. "This indicates a need for further education and awareness initiatives to enlighten the public about risks on social media and messaging platforms," Collard said.

MasterCard's US$100m investment in Airtel

Global payments and technology giant MasterCard penned a deal with Airtel Africa to invest US$100m in Airtel Mobile Commerce, the mobile money arm of the telecom operator. The initiative will position the US payment company on the growing African mobile money market. "We are significantly strengthening our existing strategic relationship with Mastercard to help us both realize the full potential from the substantial opportunity to improve financial inclusion across our countries of operation," said Raghunath Mandava, head of Airtel Africa. The cash injection from MasterCard will benefit more than 100 million customers. Meanwhile, Airtel Africa plans to be the number one service provider across all 14 countries it services on the continent, according to chief technology officer Razvan Ungureanu. The operator made headlines recently after concluding infrastructure acquisition agreements with Helios Towers, as well as Rise Fund investment of US$200m in Airtel Mobile Commerce BV (AMC BV). "Across my 14 operations, more than 50% we are best in class, so basically number one," Ungureanu told ITWeb Africa.

MTN Rwanda goes public

Rwandan businessmen have been afforded an opportunity to become new privileged actors of the mobile operator MTN Rwanda.

The mobile operator announced its entry on the Rwanda Stock Exchange (RSE) on Tuesday May 4, offering a total of 1,350,886,600 ordinary shares with a par value of FRw1 listed on the local stock exchange at an initial price of FRw269 per ordinary share.

Only 270,177,320 ordinary shares, representing 20% of the capital of the telecom company held by the special investment vehicle Crystal Telecom, will constitute the free float.

Talking satellite

Martin Jarrold, chief of international programme development, GVF

'Zoom'ing in on a Global Digital Ecosystem

In my last column published here I began with the words "The Digital Divide remains despite years of debate about solutions to bridge it." I was reflecting on the opening statement of the pre-event description for a dialogue in the GVF Webinar Series, organised in association with the Satellite Evolution Group (https://www.satellite-evolution.com/).

In this contribution I would like to draw attention to a discussion facilitated by another of GVF's webinars to consider the problem of a variation, or rather an extension, of that divide... A divide with consequences and implications far beyond those encompassed within the usual framework of discussion about inadequate access to the technologies and services of modern digital communications... This is what I describe as the digitisation divide.

What is the digitisation divide? The GVF webinar Global Transitions: Digital Economy, Digital Infrastructure, Connected Communities, Digital Planet set out to explore this with the help of representatives of two GVF members, Isotropic Networks and Telstra, joined by the Coordinator of the Digital Transformation Task Force of the United Nations Environment Programme (UNEP), with moderation by the Chief Technology Officer of the Satellite Applications Catapult in the UK.

Whilst the early train of thought leading to this theme originated out of the social distancing and travel restriction imperatives of pandemic lockdown, over time the initial thoughts, influenced by ideas from the UNEP, evolved into the concept of "Digital Planet".

The importance of the digital communications technologies behind our now having been forced to realise the full potential of virtual business meetings/events has been boldly underscored. Lockdown necessitated digital ways of working to allow people still to do their jobs. Extending digitisation will help recovery from the economic recession engendered by pandemic. Notions about, and gearing-up for, Digital Economy and Digital Infrastructure, are not new but a global socio-economic crisis has elevated debate about the necessity, and advantages, of far greater change than previously conceived. Though a necessary consequence of the (hopefully) limited phenomenon that is the SARS-Cov2 virus, we have undergone a profound change in the human experience, one which gives small illustration of the importance of a much more deeply rooted and strategic phenomenon: our ability to gather, analyse and disseminate that which can be digitised.

We have the potential to increasingly and more accurately understand the complexities of the world around us – natural disaster causes and consequences, manifestations and effects of climate change, monitoring environmental degradation throughout the biosphere, human action and inaction with consequences including conflict and refugee population migrations.

Communities and economies will be more deeply and widely enabled by the growing digital infrastructure. There is a much greater significance now attaching to the integration of 5G and satellite technologies into a single network of networks. Industries, businesses, people and governments worldwide, facing unprecedented challenge, will accelerate in their adoption of digitisation to both adjust to the new normal and to improve preparedness to minimise the impact of the next crisis – an impact that may again be equally as serious for, and equally intertwining of, people's economic well-being and their health.

Digitisation is not itself the end point. Whilst data gathered from a massively expanded – 5G + satellite enabled – communications infrastructure will be the vital raw material of a digitised economy and society, what matters is the mechanism and processes by which it is turned into what is today commonly called "Actionable Intelligence", often represented in the form of dashboards.

Data in the Zettabyte Age will flow in vast volumes from the tap of the Internet of Things (IoT), including devices from our own personal wireless communications (i.e., smartphones with social media, plus increasing biometrics-based data generation) to our Wi-Fi-enabled domestic appliances. All this data will only be of use when it is determined exactly what it is for. Data may be just measurement, quanta, of things, but when data is analysed it becomes information, and information is the building block of the knowledge that facilitates effective decisions and enables positive and productive action.

Data maintains financial liquidity in markets, improves creativity in maintaining and evolving supply chains, makes production of "things" more efficient using latest manufacturing technology advances, takes ideas and develops them, and builds more robust cyber security to sit alongside machine learning and artificial intelligence (AI).

5G Enhanced Mobile Broadband (eMBB), Ultra Reliable Low Latency Communications (URLLC), and Massive Machine Type Communications (mMTC), may be expanded into not just a global digital ecosystem, but a global digital ecosystem. Data will be gathered from all conceivable sources by all available technologies and processed by all available tools: satellites, drones & sensors; artificial & virtual reality; smartphone apps; open source software; blockchain & distributed databases; social media feeds; IoT; AI & machine learning; cloud & edge computing; and, other!

The "product" of this global digital ecosystem will enable more than just the formulation of Actionable Intelligence, but foster a culture of Sustainable Decision-Making that, in the context of trying to meet the Sustainable Development Goals (SDGs) and of trying to stem climate change, will be the indispensable currency of the future Digital Planet.

The webinar panellists were asked what they thought still needs to be done to guarantee a level of digitised connectivity – in developed and developing economies alike – to enable gathering of data for the World Economic Forum Stakeholder Capitalism Metrics which are designed to show how companies are doing on climate change action, biodiversity, etc., and track contributions towards the UN Sustainable Development Goals. If you want to hear their perspectives, this video recording is not to be missed.

If you want to grow your understanding of what the future of the digital Earth may be, how satellites contribute now and might be contributing 10 years from now, and understand the steps needed now to create a pathway to this future visit *https://gvf.org/webinars/.*

Liquid changes focus

The rebrand from Liquid Telecom to Liquid Intelligent Technologies highlights the organisation's expansion of its cloud business, cyber security services and other technologies added to its capabilities. Robert Shepherd catches up with its group chief operating officer, Ahmad Mokhles Aly El-Deen

What is the current state of the African market?

The Covid-19 pandemic has had a huge impact on industries worldwide, but especially in Africa. The first one concerns mobility. Previously, people thought mobility was the answer to everything. It may have been the case at one time, but it certainly isn't now since the pandemic. Times have changed because employees might have to work from a secondary location either due to the lockdown or because they want to keep safe. So, what we find now is that most people are adapting to what we call the modern workplace.

Meaning, organisation have opted for a hybrid model, where staff go into the office as little as once a week and work from home predominantly. With that in mind, I don't believe the old 9 AM-5 PM applies to the African workforce any longer. We're all going to be working remotely more and more. We can work from anywhere because, thankfully, we have the right digital tools.

What are the most obvious changes you've noticed?

We found that as a digital and technology provider in Africa, people are adapting more to and embracing fibre to the home (FTTH) and fixed wireless access (FWA) to be connected at their home or premises.

Once you open that layer of connectivity, we are adapting to a new way of using all digital tools, such as Microsoft 365, Microsoft teams and Dropbox. We see a tremendous increase in the adoption of these tools.

What impact has Covid had in terms of positives and negatives?

There are two parts to this conversation. The first one is that organisations downsized their ICT spend to their offices since employees are working remotely. To ensure that we cater to the changing need of our customers, Liquid developed its Work from Home offering that was tailor-made for the individual needs of the different industries. This ranged from enabling employees to transfer their office extension to their mobile devices or even their computers at home or seamlessly access secure documents without worry of a data breach. By partnering with our customers for their evolving needs, Liquid has helped them accelerate their digital adoption.

Having said that, as a business, we decided to take a step back to understand what the new normal meant for our customers and for us. Currently, businesses are just talking about the new normal. Still, no business has visualised how we need to adapt and change themselves as a digital infrastructure or as a technology player to work and compete in the new normal.

Why did Liquid embark on a repositioning?

We had developed a platform of business assessments for businesses in Africa called 'Digital Maturity Index '; through this platform, we reached out to businesses irrespective of their industry. The aim was to understand and measure the digital capability, readiness and adoption of these organisations, the outcome helped improve our understanding that businesses on the continent don't have challenges when it comes to digital readiness and capabilities. Their main hurdle was the adoption and use of the digital tools by the end-users.

Armed with these key market insights, we could visualise the new

direction for the company as Liquid Intelligent Technologies. As an organisation, Liquid is committed to ensuring that all Africans on the continent are digitally included. Stepping back to understand the industry we operate in and the changing needs of our customers enabled us to envisage what the brand would look like, the new promise we will offer to individuals, SMEs / Pan African MNC's and other businesses in Africa.

How will customers benefit from the repositioning?

This rebrand to Liquid Intelligent Technologies reflects the evolution of our organisation's product offerings and structure to deliver on our promise of realising Africa's digital future. We are not just one operating company, and we now have eight strategic business units under the larger brand name.

Over the last two decades, we have firmly established ourselves as the leading independent pan-African digital infrastructure provider with an extensive network. The legacy of our organisation was founded in telecommunications, and we are maintaining our digital infrastructure under the sub-brand of Liquid Networks.

Through our Liquid Sea unit, customers get access to our sub-sea cables that we either own or are part of the shareholder structure. For our customers in remote rural areas, like a school in a remote village in Rwanda or an NGO in South Sudan, through Liquid Satellite, we can still offer you connectivity, enabling these institutions to collaborate and develop students. This is the overarching architecture, i.e. the connectivity layer.

Today employees are not just restricted to working from the office. Our two new business units Liquid Home and Liquid Business, caters to these evolving needs. With our Home offering, we have brought high-quality connectivity, fixed wireless access and over the top content bundled solutions to create a seamless work experience irrespective of the employee's location. Through Liquid Business, we have introduced a variety of Managed Services that use our world-class intelligent technologies to assist with your evolving business needs like remote working and digital transformation.

With Liquid Cloud and Liquid Cyber Security, we can assist our customers by securely accelerating their digital transformation by bringing them world-class services. And finally, as a measure to ensure we are focusing on the continent's digital future, we are increasing the investment towards innovation, research and development section of our business under the name Liquid Labs.

What is Liquid's financial investment in Africa?

We have a strong presence in Africa, with numerous financial investments. It was our continuous investment into the continent that enabled the extremely successful refinancing of our bond refinancing package, totalling a combined US$840 million. This was a benchmark across the debt market in all emerging markets and not just in Africa. The order book, was more than 5.5 times oversubscribed, helping to drive a coupon rate down compared to the Group's previous debut bond coupon in July 2017.

What are Liquid's key differentiators?

We have three key focus areas on how we differentiate ourselves from our competitors. The first is that we always listen to feedback from our customers; listening to our customers is core to our operations. Secondly, we focus a lot on innovation. Liquid operates in an industry where we need to innovate our business model to empower our customers to stay ahead of their competition. And last but not least, our passion for the African continent. We are an African company, and we care deeply about digital inclusion and aim continuously to leave no one behind on the continent.

What opportunities does Liquid see in Africa?

We are a company looking for growth, so if there is an opportunity for organic growth in a country or region, we will always be interested. Nowadays, most interest is in the Democratic Republic of the Congo (DRC) and Nigeria. If you take these as two standalone countries, there are 100 million and 200 million, respectively – that's 300 million people that will be covered by Liquid Intelligent Technologies. The great news is we recently invested in DRC and have built 2,200km of our digital corridor connecting the country to the rest of Africa. This investment has allowed Liquid to bring digital connectivity to numerous cities, town, villages and other rural areas.

Nigeria as a country is a big focus not just for Liquid but also the Econet Group. As you can imagine, 200 million people with limited access to digital infrastructure is the perfect opportunity for us to extend our operations. Nigeria is not a country; it's a continent. If you want to do business in Africa, you need to start in Nigeria. If you ever visit, you will find the kinds of businesses, different languages and way of doing business is very encouraging for an investor like us.

Is it true that Africa is a difficult place for foreign firms to do business?

I wouldn't call it difficult, but I would say any foreign investor must embrace the local culture, the way of doing business and, of course, the regulations. Our African intelligence has been gained after working on the continent for over two decades and operations covering 15 countries. This helps us understand how we can adapt and comply with the local laws in different nations. ■

Tanzania joins the OAN project with fellow east African nations

Tanzania has joined the project to reduce the cost of international communications in the region, following pressure from its peers in east Africa.

The republic joins the One Area Network (OAN), adopted by member countries of the Community of East African States (CAE) for the harmonisation of call rates in the sub-region.

Kenya, Uganda, Rwanda and South Sudan already applied the new international mobile roaming tariffs indicated by this initiative officially launched in January 2015.

Tanzania, five years behind its neighbours, had until the first quarter of 2021 to catch up.

In correspondence to the EAC secretariat, Stephen Mbundi, the permanent secretary of the Tanzanian Ministry of Foreign Affairs, told the sub-regional executive body that "the United Republic of Tanzania has concluded the consultations and is now ready to begin the process, implementation of the CAE roaming framework ".

The missive comes as the country was in the sights of EAC's Transport, Communications and Meteorological (TCM) Sector Council. At a meeting held from June 24 to 28, 2019 in Kampala, Uganda, Tanzania was given until March 31 this year to make a decision on the implementation of the "One Area Network". Burundi is also expected to join at a later date.

Vodacom launches digital insurance service

Vodacom Tanzania launched 'VodaBima' – a digital service to give customers immediate access to insurance services, with the aim of driving up adoption of insurance solutions in the market.

In a statement, the operator references a Finscope report 2013 which found that insurance uptake in Tanzania was at 13.0% having doubled from 6.8% in 2009.

Despite the double-digit growth, Vodacom Tanzania believes insurance to be one of least utilised financial services in Tanzania. Reasons range from low awareness, mistrust of the service and bottlenecks to access the services.

This has formed the backdrop for the roll out of VodaBima. Speaking in Dar es Salaam, M-Pesa director, Epimack Mbeteni said that VodaBima is a new addition to M-Pesa portfolio of products and services all aimed at making digital inclusion in Tanzania a reality.

"For 13 years now, Vodacom M-Pesa has been a key catalyst in growth of financial inclusion in the country and we are always looking into new ways of pushing for an inclusive digital economy," Mbeteni added. "Vodacom aims to bridge the gap of access to insurance services by offering a digital solution that will cut down costs and increase access to Insurance products. VodaBima gives customers the option of saving up for Insurance at no cost in their VodaBima wallet throughout the year."

Investment company to inject US$200m in Airtel Mobile

Airtel Africa, the telecom and mobile money services provider, has signed an agreement under which The Rise Fund, the global impact investing platform of alternative investment firm TPG, will invest US$200m in Airtel Mobile Commerce BV (AMC BV).

The operator has a presence in 14 countries across Africa, while AMC BV is currently the holding company for several of Airtel Africa's mobile money operations and is now intended to own and operate the mobile money businesses across all of Airtel Africa's footprint.

Airtel Africa provides telecom and mobile money services, primarily in east, central and west Africa.

The transaction values Airtel Africa's mobile money business at US$2.65bn and The Rise Fund will hold a minority stake in AMC BV upon completion of the transaction, with Airtel Africa continuing to hold the remaining majority stake.

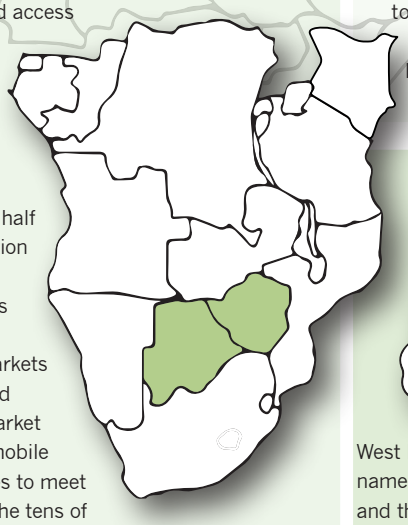
It is also the latest step in the group's pursuit of strategic asset monetisation and investment opportunities and it is the aim of Airtel Africa to explore the potential listing of the mobile money business within four years, the statement says.

The group is in discussions with other potential investors in relation to possible further minority investments into Airtel Money, up to a total of 25% of the issued share capital of AMC BV.

"There can be no certainty that a transaction will be concluded or as to the final terms of any transactions. The proceeds from the transaction will be used to reduce group debt and invest in network and sales infrastructure in the respective operating countries," the statement adds.

The Transaction is expected to reach first close over the next three to four months. From first close The Rise Fund will be entitled to appoint a director to the board of AMC BV and to certain customary information and minority protection rights.

"In line with our vision of enhancing financial inclusion, Airtel Africa offers a unique digital mobile financial services platform under the Airtel Money brand," said Raghunath Mandava, CEO of Airtel Africa. "In most of our markets there is limited access to traditional financial institutions, and little banking infrastructure, with less than half of the population having a bank account across sub-Saharan Africa. Our markets therefore afford substantial market potential for mobile money services to meet the needs of the tens of millions of customers in Africa who have little or no access to banking and financial services, and this demand is driving growth."



This transaction is subject to customary closing conditions including necessary regulatory filings and approvals, as necessary and the inclusion of specified mobile money business assets and contracts into AMC BV.

Airtel Africa is headquarted in London, United Kingdom, and is a subsidiary of Indian telecom services company Bharti Airtel. The former's subsidiaries, include Airtel Kenya, Airtel Uganda and Airtel Malawi.

WIOCC names new sales manager

International capacity wholesaler West Indian Ocean Cable Company (WIOCC) has named Mwesu Vunda as sales manager, Zambia and the Democratic Republic of the Congo (DRC).

In this newly-created position, Vunda will help service providers take advantage of improvements in international connectivity services – delivered through WIOCC's unique, hyperscale network infrastructure - enabling them to provide enhanced connectivity solutions to their enterprise and consumer customers in Zambia, DRC and other neighbouring countries.

Vunda will work closely with cloud operators, content providers, local and regional Internet Service Providers (ISPs) and fixed and mobile telcos, tailoring the solutions they require to meet their customers' increased bandwidth and uptime expectations.

Somalia hands first mobile money licence to Hormuud Telecom

Somalia's central bank awarded the country's first mobile money licence to Mogadishu-based Hormuud Telecom Somalia, a move aimed at formalising the country's digital payments system and integrating it with the global financial system.

The operator, which began operating in Somalia in 2002, has approximately 3.6 million subscribers in the country. The Horn of Africa nation has a population north of 15 million people, while some three million people use its mobile money platform EVC Plus.

The latter will now be subject to central bank regulation, which should boost confidence in the country's mobile money system, the governor of the monetary authority said in a statement.

"In formalising our existing digital payments infrastructure, we are accelerating the integration of Somalia's financial system into the global economy," Abdirahman Mohamed Abdullahi said.

More than two thirds of all payments made in Somalia are via mobile money platforms, according to Hormuud Telecom. The licence will help the country move towards becoming a cashless economy and tackle widespread counterfeiting.

"The news today cements what we've known for a long time, that Somalia is moving towards being the world's first truly cashless economy," added Ahmed Mohamud Yuusuf, Hormuud Telecom's chief executive.

Approximately 155 million mobile money transactions, worth US$2.7bn, are recorded in Somalia per month, according to a 2018 World Bank report.

Although conflict continues to disrupt the country, the telecom sector, dominated by the competitive mobile sector where seven networks compete for customers, has flourished.

More than two thirds of all payments made in Somalia are via mobile money platforms, not least due to counterfeiting. This licence award could encourage that trend and analysts have predicted that Somalia could soon become a cashless society – maybe even the world's first.

Somtel launches IPO

Somaliland's Somtel has begun its initial public offering (IPO) and interested parties can acquire a minimum of 20 shares for US$100 each.

The operator largely serves the enterprise sector across Somalia as well as the autonomous regions of Puntland and Somaliland, offering fixed and mobile services. Additionally, it holds a stake in the DARE1 (Djibouti Africa Regional Express 1) cable system.

It is understood that in addition to the minimum amount of 20 shares, investors will have their purchases capped at 1000 shares.

"With this injection of capital, Somtel is well-positioned to take advantage of new opportunities in the telecoms sector in the Horn of Africa, enhancing the lives of millions of customers whilst enabling businesses to achieve their full potential in a new digital future," said Abdirashid Duale, chief executive officer of Somtel's UAE-based parent company Dahabshiil Group. "Somtel will also, of course, be generating many more jobs."

However, without regulation requiring a company to reveal financial data as well as the number or percentage of shares being offered to the public, Dahabshiil could potentially offer an infinite number.

MTN Nigeria targets $489m on the local capital market

MTN Nigeria is seeking US$489m on the local capital market and has launched a new commercial paper program to achieve its goal.

Series three and four commercial paper issuance (the issuance or the offer) are being arranged by Chapel Hill Denham Advisory, the operator said.

The repayment period for the series three debt is 180 days while that of the series four debt is 270 days, the telco added.

This new commercial paper issue initiated by MTN Nigeria follows that in May 2020, also arranged by Chapel Hill Denham Advisory.

The proceeds of the offering will be used for MTN Nigeria's working capital and general corporate purposes, MTN Group said. In its 2020 financial report, the telecom group said its Nigerian subsidiary's operating expenses amounted to nearly US$2bn, up 29.02% compared to 2019.

Meanwhile, MTN Nigeria has acquired additional 10MHZ spectrum in the 800MHz band from Intercellular Nigeria. This was disclosed in a press release by the company, where it was also revealed that the transaction had been signed by the Nigerian Communications Commission (NCC), and the frequency had been assigned to the operator. The 800MHz spectrum is a technology developed to enhance service delivery and also overcome the challenges and costs of digging trenches and right of way issues.

MTN Nigeria has launched a new unified customer engagement platform, EnGauge, designed to enable small-to-medium enterprise business owners to seamlessly administer transactions with customers, potentially increasing their productivity significantly. It was developed in partnership with the fast-growing African start-up, Ajua.

Meanwhile, MTN Nigeria has approached domestic banks to secure an agreement on a sustainable pricing structure for selling products, following a recent row over commission halted airtime sales.

Ethiopia 'could scrap sale' if offers are too low

Ethiopia has a set amount it expects to receive from the part-privatisation of the country's telecom sector and could scrap the process if bidders fail to meet the target.

According to reports, three independent teams have calculated the value of two new licenses that would compete with state monopoly Ethio Telecom, Eyob Tekalign, the state minister responsible for the privatisation process, told reporters. He said that has given the government an amount it is looking to raise from the sale, without giving figures.

"If we get the value we expect from the bidding process, we will go ahead," Tekalign said. "If not, we will have another look."

It is also the first time an Ethiopian politician has publicly cast doubt over the much-anticipated liberalisation of the telecom industry, a move that would jeopardize a broader privatisation plan announced by the country's prime minister Abiy Ahmed in mid-2018.

The strategy had a range of goals: to shore up reserves of much-needed foreign exchange, pay down state debt, improve telecom service and create jobs.

AFR-IX inks deal with Asteroid Mombasa IXP to boost connectivity

Global broadband connectivity provider AFR-IX telecom has signed a peering deal with Asteroid Mombasa IXP to boost its network in Africa.

This is the company's fourth IXP in the continent, adding to Cape Town, Djibouti and Lagos.

Asteroid Mombasa IXP is a major gateway for submarine fibre optic cables and is on the verge of becoming one of the main hubs for Internet traffic in east Africa.

"Today, we have added Mombasa-based Asteroid IXP to our already growing peering community across the continent as part of our extensive resilient and robust African network coverage [...] we can provide a global ICT offering, focusing on the needs of our local and regional customers," said Louis Carver, AFR-IX telecom's chief commercial officer.

The deal comes against the backdrop of the growing demand for broadband connectivity across the continent. According to Swedish gear-maker Ericsson's Mobility Report June 2020, new uses, driven by the Internet of Things, streaming video, online gaming and others, will contribute to a 28% increase in mobile data traffic in sub-Saharan Africa from 2019 to 2025.

AFR-IX telecom views the addition of Asteroid IXP - through which more than 15 east African telecom operators and Internet service providers share traffic - as a strategic move that will enable it to increase its connectivity offering.

In late 2020, presented the Barcelona Cable Landing Station (CLS), the first landing station for international submarine cables that will be located on the coast of Barcelona (Spain).

It will be the point of entry for high-capacity fibre-optic subsea cables arriving from Asia, Africa and the Mediterranean, providing the fastest connection between Europe and America.

Grover joins Avanti as CTO

Vikas Grover joins Avanti Communications Group as its new chief technology officer. Grover was recently the founding chief information officer (CIO) at OneWeb, where he led global networks, IT platforms and security. Prior to that, he was the CIO and executive vice president technology planning at Vodafone India.

Grover will succeed Scott Richardson, who will be leaving the company.

Avanti chief executive officer Kyle Whitehill, said: "I am delighted to welcome Vikas to Avanti. Vikas is an accomplished Leader in the Telecoms field with a background including Mobile and Satellite organisations. He is also a highly regarded people leader and I have no doubt he will make an excellent addition to Avanti and our executive committee. I would also like to recognise Scott Richardson's contribution to Avanti over his 15 years tenure, we wish him the very best for the future."

Ghana's Telecom and IT Professionals Union in court over strike action

An Accra High Court has granted an interim injunction on the strike action embarked upon by members of the Telecom and IT Professionals Union (TIP), according to local media reports.

Judges gave the order following an application filed by MP Infrastructure (GH) Limited, Linfra Ghana and Remie Ghana, employers of the telecom workers.

TIP began the strike on Monday, March 15 in protest of poor conditions of service.

Although they have subsequently called off the strike, their employers believe the interim injunction will prevent them from declaring another industrial action.

TIP is made up of engineers and technicians contracted by four sub-contractors (SBCs) who have been engaged by Chinese tech giant, to manage and maintain the technical operations of MTN, AirtelTigo and Vodafone.

The plaintiffs in a separate writ of summons say the industrial action declared by their employees is unlawful. They say the strike is a breach of the NLC's directive to addressing the impasse between the two parties and one that will have dire consequences on telecommunication operations in the country.

Airtel Africa sells towers to Helios

Airtel Africa, a subsidiary of Bharti Airtel, has sold 1,424 telecom towers in Madagascar and Malawi to Helios Towers for around $119 million.

The former's subsidiaries will continue to develop, maintain and operate their equipment on the towers under separate lease arrangements, largely made in local currencies, with the purchaser.

"In addition, the Group has agreed to build to suit commitments with the purchaser for an additional 195 sites across Madagascar and Malawi over the three years following completion, for which a further US$11m of consideration is payable," Airtel said. "With these latest tower transactions we continue to demonstrate strong execution of our asset monetisation program."

The transactions will also help to improve the mix of its debt and increase its tenor through long term leases, which are largely payable in local currency by our operating entities, while reducing foreign currency debt of the group, according to Raghunath Mandava, chief executive officer, Airtel Africa.

Cell C reports wider annual loss

South Africa's fourth-biggest mobile operator Cell C reported a wider annual net loss, mainly due to an impairment and once-off expenses in the first half of the year.

The net loss before tax came in at R5.5bn (US$385.5m) in the year ended December 31, from a loss of R4.1bn in 2019.

Cell C booked an impairment of R5.1bn and the once-off costs include recapitalisation costs of 434 million rand and network site restorations costs of 248 million rand, the company said.

Excluding the impairment, the net loss after tax would have been 380 million rand, it added.

Elsewhere, total revenue was down by 8% as its prepaid subscriber base, its largest revenue contributor, declined by 15% to 9.2 million customers as the carrier shifts away from unprofitable customers to boost returns.

"The company's strategy of focusing on more profitable customers is bearing fruit as the average revenue per prepaid customer (ARPU) has increased by 28% on a year-on-year basis," Cell C said.

Meanwhile, Cell C has been appointed as one of the preferred service providers to the South African government for the delivery of mobile communication services for the period April 1, 2021 to March 31, 2026.

The mobile communication services contract is known as RT15-2021 and was previously held exclusively by Vodacom for a five-year period.

In awarding the tender the National Treasury issued a request for proposals in October 2020.

One of its main requirements was that civil servants get completely uncapped mobile Internet access. The aim of the new 'transversal' contract is continued reduction of expenditure on mobile communication services. It would achieve this by, among other things, ensuring there was a set limit of mobile spend per civil servant of a maximum of R500/month.

MTN looks at opening MoMo to investors

MTN group is considering opening its mobile money branch to investors, chief executive Ralph Mupita said in an interview with Bloomberg. He explained that with valuations similar to Airtel's, MTN's mobile money arm would be worth R75bn, or around US$5bn. However, Mupita "that no decision has yet been made, but going public will be an option considered if it turns out to be the best approach to unlock value".

The potential move comes just weeks after Airtel Africa, one of its major competitors in the African market, opened up its capital to TPG Holdings and MasterCard.

The African branch of the Indian group Bharti Airtel has managed to raise more than US$300m with these two financial operations.

TECNO overtakes Samsung

TECNO managed to replace Samsung as Africa's top smartphone brand for the first time in 2020, thanks to a successful launch of models in the affordable segment and continued market spending,.

According to Counterpoint Research's Market Monitor service, the Transsion-made brand achieved this feat against the backdrop of a 6.7% YoY fall in Africa's smartphone shipments in 2020.

Much of this happened in the first half of the year due to retail and supply chain disruptions caused by Covid-19 which were partially offset by a swift recovery in the second half due to pent-up demand.

"Looking at the entire year, the African smartphone market outperformed other regions but was not immune to disruptions caused by the pandemic," said senior analyst Yang Wang."

Talking critical

Mladen Vratonjic, chair,
The Critical Communications Association (TCCA)

Introducing the critical comms column

How would you define critical communications? There are many instances where needing to communicate is important. But truly mission critical communications can mean the difference between life or death.

This is the first in a series of articles where we will take a look at the critical communications landscape around the world, how it is evolving to meet the changing needs of the end-users, and the huge amount of work that goes on behind the scenes – largely carried out by volunteers – to ensure that critical communications networks are robust, reliable, resilient and secure. It is those networks that support, amongst others, our first responders - the police, medical and fire and rescue services that we rely on to help us in a crisis and keep us safe.

Until very recently, the networks that supported critical users were specific to that sector, designed from inception to meet the unique needs of mission critical users. The technologies – TETRA, P25, DMR, Tetrapol – have resilience and security built in from the very beginning, both in the infrastructure and the devices, in hardware and in software, in order to deliver trusted, reliable and resilient communications support. However, they are all narrowband technologies and as such are limited in the type of data applications they can support.

As any of us who use a smartphone will know, in the consumer mobile communications market, the focus is firmly on data applications. Although the past year has seen a resurgence in the use of voice calls due to the pandemic, overall the mobile networks are supporting mostly data-centric applications, and the same evolution is coming to the critical communications world.

While voice will always remain an essential – and the most immediate – form of communications between first responders in a crisis, there is a need for broadband networks to have the capability to be mission-critical bearers for mission-critical data – to have a similar level of reliability, resilience and security as the dedicated narrowband critical communications technologies.

This is the challenge that is being addressed around the world, as governments look to ensure their first responders have the best possible communications tools with which to carry out their critical work. The way forward however is very much dependent on the availability of spectrum and of course the level of investment that each country or region is able to commit.

Two examples: In the US, FirstNet is the new nationwide broadband communications platform for data, built for the country's first responders and extended public safety community. It is based on a public-private partnership with telecoms operator AT&T, and uses spectrum set aside by the US government specifically for FirstNet. The existing narrowband networks that carry critical voice services continued to be used for the meantime. In the UK, the Emergency Services Network (ESN) is being created using the network and spectrum owned by commercial mobile network operator EE. An ambitious roll-out schedule needed to be revised more than once to ensure that the ESN will be as trusted as the existing TETRA-based Airwave service before that network is switched off and ESN becomes the first responders' communication platform for both voice and data.

The US and the UK are two of the countries that are the most advanced in terms of delivering critical broadband. Other countries are at various stages from consultation through to procurement.

It is not just the networks that need to be 100% trusted. The services – voice, data, video – and the devices all need to work seamlessly. To achieve seamless services, the Third Generation Partnership Project (3GPP) has been developing a set of standards for mission-critical functions for broadband networks. Currently, these are Mission Critical Push-to-Talk (MCPTT), mission critical data (MC Data) and mission critical video (MC Video). This time these are not specialised, dedicated standards for mission critical systems but rather parts of the mainstream standards of cellular telephony, for 4G and 5G networks, developed and included on the basis of requirements and with the support of the critical communications community. When services are created to those 3GPP standards specifications are they considered to be mission critical.

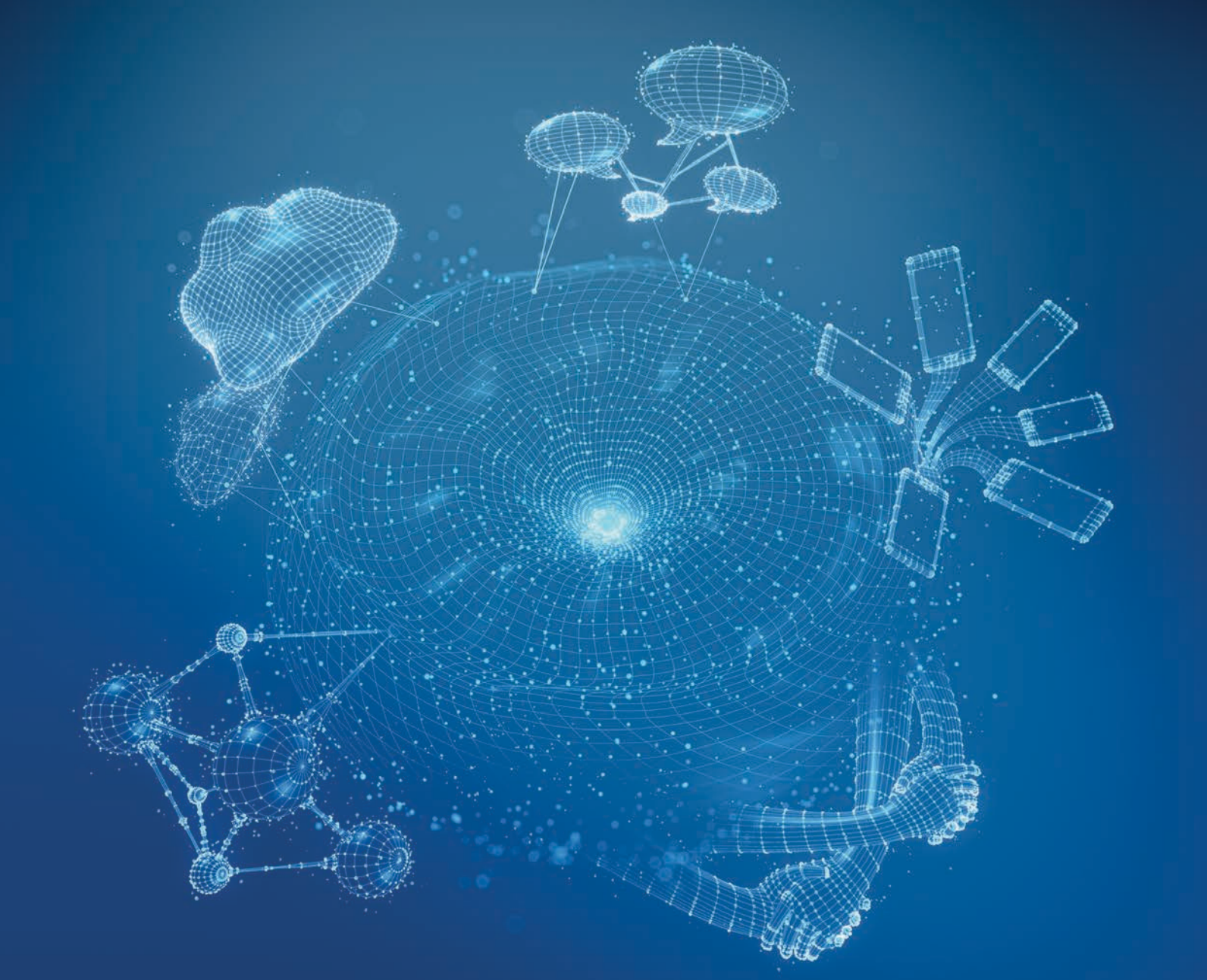
For devices, work is ongoing with the Global Certification Forum (GCF) to develop a testing and certification process to ensure user devices can also be termed mission critical whilst conforming to the 3GPP standards and being interoperable with networks and other devices built to the same 3GPP standards.

Against the backdrop of all the work going into developing mission critical broadband, the trusted narrowband networks remain in full use, new networks are being implemented and existing networks upgraded and refreshed. TCCA works closely with standards development organisation ETSI to ensure the TETRA standard is enhanced to support users to 2035 and beyond.

It is estimated that the transition from narrowband to broadband mission critical networks will take perhaps more than ten years. It is anticipated that in the meantime, many organisations will use hybrid mission critical networks and that it is necessary to enable interoperability and collaboration of narrowband and broadband networks and devices. Therefore, 3GPP on the one hand and ETSI on the other are working rapidly to develop a standardised interface for their interconnection.

TCCA, on behalf of its members – end users, government and commercial network operators, industry and more – represents all standard mobile critical communications technologies and complementary applications. Our members design, manufacture, build, implement, utilise, analyse, promote, develop and deploy critical communications worldwide. We believe in and promote the principle of open and competitive markets through the use of open standards and harmonised spectrum, working with stakeholders in the critical communications ecosystem to achieve this.

Behind the scenes, there are many, many organisations and individuals committed to ensuring that critical communications networks and services are the best they can be. We will endeavour through this column to showcase some of the initiatives, to discuss the challenges and the expectations, and to hopefully encourage more people to become involved in shaping the future of critical communications.



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Closing the gap - next step to a digital Africa

Millions still don't use mobile internet in Africa. Dion Price, CEO, Trustonic examines why this is and how we can make mobile devices more accessible

Over the last few years, the world has made huge progress in connecting the unconnected by delivering mobile internet access to millions around the world. In this regard, 2019 was a standout year for achievements. It marked the first year when there were globally more 3G and 4G mobile connections than 2G. It was also a year which saw the coverage gap reduce by half (from 50% to 25%) as 93% of the global population was covered by a mobile broadband signal.

However, despite these significant improvements in global connectivity, when we zoom into the statistics it becomes clear that there is still a lot of work to be done. This fact is especially stark in Sub-Sharan Africa which – according to the GSMA – is home to 67% of the world's population that is not covered by mobile broadband. Despite huge investments and various initiatives aimed at improving the situation, it is clear that more needs to be done to connect one of the poorest sections of our society.

The focus of many operators in Sub-Saharan Africa is on upgrading their existing 2G networks to 3G and 4G. From an operator's perspective, running a 2G network is costly and inefficient. This is especially true when they can re-farm the spectrum for use in their 4G networks, which a number of African countries have passed regulations to allow for. Additionally, by building out 4G networks they also have the opportunity to tap into a new market of millions that currently are not using mobile data, thereby the opportunity to grow their revenues. It is unsurprising that operators have been investing heavily in new and improved infrastructure.

These regional infrastructure investments have had a considerable effect. 3G coverage across Sub-Saharan Africa reaches now 75% compared to 63% in 2017, while 4G nearly doubled over the same period. However, the geography of much of Sub-Saharan Africa remains an impediment to closing the coverage gap. Development of new base stations for example can be a tremendous challenge in sparsely populated, rural and remote areas. Here, technological innovations such as RAN and backhaul have helped to make gains. Countries like Senegal have seen a dramatic transformation in connectivity over the last five years despite having a rural population of around 52%. In 2014, only 56% of Senegal was covered by a 3G network. This reached 95% in 2019 according the GSMA's Connectivity Index.

Other countries are following this example. In Ghana for instance, the government has announced its intention to connect 2,000 rural communities using open RAN solutions. Whilst encouraging, these developments are not consistent. Early this year, it was announced that Google's Loon project, a novel idea to connect the populations of remote areas, had collapsed. This came only a matter of months after Kenya had agreed to fast-track approval for the service. It is unknown how much investment those involved lost in this project, but the impact this may have on remote populations could be severe, delaying their access to mobile internet for perhaps, many more years.

Despite these challenges, it cannot be denied that the coverage gap has been decreasing. This however does not solve the problem of connecting the unconnected. Indeed 3.4 billion people who can access mobile coverage still do not use the internet. This is known as the 'usage gap' and is arguably a far more complex and difficult problem to solve. In fact, it is getting worse. Across Sub-Saharan Africa, the usage gap increased from 36% in 2014 to 49% in 2019.

The most obvious explanation for the growing usage gap is devices. The growth in infrastructure has not been accompanied by the necessary proliferation of devices needed to access data services. One answer to this is the development of affordable smartphones – which has been gathering speed in recent years. Internet-enabled devices are now being sold around the world at prices as low as $20. Nigeria for example, now has one of the most affordable handsets in the world, with MTN's 3G Smart Feature Phone. The cheapest internet-enabled device currently on the market, comes in at around 12% of average monthly wages in the country, down from 42% in 2017. In addition to this, data costs have also declined, leading to an increase in smartphone adoption among adults in the country to 28%.

While this is definitely progress, the full picture is not quite so rosy. Despite the average cost of mobile devices decreasing, it still sits at around 30% of average monthly wages in Sub-Saharan Africa. More shockingly, the median cost of an entry-level smart device still represents 120% of monthly income for the poorest – representing the 20% of the population. In addition, while data prices have been coming down slowly, more than half low- and middle-income countries still fall short of the UN Broadband Commission's target to make entry-level broadband services less than 2% of monthly income per capita.

Finally, we need to be realistic when it comes to the usability of these cheaper devices. While they are a step in the right direction, their specifications are not the same as what you would expect from even the cheapest mid-tier smartphone on the market. While these smart feature phones offer communities their first experience of mobile internet, all too often the poor user experience does not help to convince them of its importance to their lives. Lower spec devices have slower processing speeds, giving the user an inferior experience. In fact, many African users don't fully use their monthly data allowance for this reason. Indeed, the GSMA 2021 trends report points out that "while smartphone penetration has reached 50% on the continent, this overplays its significance as most are running legacy 2G and 3G speeds."

As we have discovered, whilst a lot has been done to address the needs of these underserved populations, it is clearly not enough. Many people still lack the devices to access technology services. This potentially jeopardises the investments made in the first place. The question is therefore: how do we get adequate technology into the hands of those who simply cannot afford it?

The answer to this, is a more nuanced and intelligent approach to device financing. We need to encourage operators and retailers to offer smartphones that are affordable, while also ensuring that they do not take on the burden of risk that this entails. Luckily there are ways to solve this. Using advanced security solutions, which give mobile operators and retailers remote access to devices and the ability to lock and control the device to encourage payment, mobile operators have more control in the face of unpaid bills. By giving operators this kind of control, it hugely reduces the risk-profile of a financed device.

The same technology is also able to lock a mobile device completely in the case of fraud, theft or trafficking. When mobile devices are such a lucrative target for these types of crime it is unsurprising that operators and retailers are reluctant to offer high-value commodities at affordable financing deals. However, with the ability to comprehensively shut down a device in the case of criminal activity, they can completely remove its inherent value. The effect of this is a reduction in crime and gives the operators and retailers the confidence to open financing to a whole market of people who were previously priced out.

The solution will not happen overnight, and it will require collaboration between governments, regulators, mobile operators, retailers, technology companies and even NGOs to succeed. However, the quickest route to address the inequalities exposed by the usage gap is to empower those who have the means of access to make these devices widely available to those who cannot afford it. Device financing is a way of making the unaffordable, affordable, with higher cost devices offering a far superior experience and usability whilst increasing access to the internet. ■

Shaping the future of satcoms

Satellite has played vital role for decades, whether it's for communication or entertainment - but is it in danger of being left behind? Robert Shepherd asks the experts

Satellite has attracted many favourable column inches of late. From Starlink, SpaceX's much-hyped satellite internet service to China's mission to dominate space internet, you'd be forgiven for thinking that the technology is going through a renaissance. Indeed, the opportunities afforded by this method of communication is moving at speed in military and defence applications and broadband IP services, to name a few. However, the challenge has been that these advancements have coincided with performance gains enjoyed by other telecommunications systems.

So, with satellite having long been viewed as a technology belonging to a different era, is it going to be playing catch up for a long time?

"Is it?," asks Robert Koldys, VP marketing, strategy and business development at Telecom26, a Swiss-based cross border mobile operator. "I don't agree at all. Just because it's been around for decades doesn't mean it's not as relevant as

ever. You just have to to look at the enormous investment in LEO satellite constellations to see that market watchers are confident.

I suppose some may view satellite as old as in the past it was circuit switched technology and the capacity was limited. Most of the deployments were for circuit switched voice which provide sub-optimal quality and performance. With advancement in the satellite ecosystem (especially low orbit) and the implementation of packet technology, we are seeing that many of those issues have been resolved."

Sharyn Nerenberg, senior director, corporate marketing communications at Hughes, the broadband satellite networks and services provider, is the first to admit that "unfortunately, satellite has a PR problem", primarily as a result of two misconceptions.

"The first misconception is that satellite is slow – which is a holdover from the early days of the technology and not a reflection of today's satellite capabilities," she says. "Today's satellite technology is much more sophisticated, fast and dependable, able to support speeds of 25 Mbps (the FCC's definition of "broadband") and higher for consumer plans and capable of handling thousands of simultaneous sessions (16,000 in the case of the Hughes Jupiter System)."

Another key player in Asia is Yahsat, a satellite communications company based in Abu Dhabi. Its chief commercial officer Farhan Khan, says satellites "might seem outdated, after all, it's close to 70 years since the first satellite launched into space.

"The Sputnik was a surprising accomplishment for many during the late 1950's and as a result of that success, we have plenty of satellites orbiting the earth's atmosphere enabling humanity to live safer and more connected lives," Khan says. "With rapid development over the past few years in the satellite technology industry, it would be unfair to say that satellites have the same limited functionalities as those launched during the mid-20th century. Like several small and large-scale devices used in the past, scientists and engineers have always found ways to significantly overhaul the functionalities of satellites to make them more efficient, easily deployable as well as maximising their capabilities."

Khan further argues that "with indispensable functions and a growing range of services", satellites will support disruption on ground, furthering movements like the advancement of autonomous vehicles and other interoperable devices as such which will use satellite connectivity to transfer data, communicate and make decisions. "Private enterprise is investing heavily in R&D and the likes of SpaceX are accelerating the volume of satellites to be deployed. We do not expect the trajectory to change anytime soon, as the future is dependent on better connectivity that is not necessarily dependent on terrestrial networks," he says.

Intelsat I was the first commercial communications satellite to be placed in geosynchronous orbit in April 1965. Brian Jakins,

Robert Koldys, VP marketing, strategy and business development, Telecom26

"Is it? I don't agree at all. Just because it's been around for decades doesn't mean it's not as relevant as ever"

the current RVP Africa sales for Intelsat, explains how it "wasn't long afterward", however, that satellite moved beyond sending transmissions covering the Apollo 11 moon landing in 1969 over local news stations, to transmitting news and entertainment from around the world directly into homes (mostly rural) via very large, clunky satellite dishes in the backyards along with complicated tuning hardware. "Eventually the large clunky home satellite systems were made smaller and easier to use, but as time went on and as more people moved from rural areas to urban and suburban areas where cable television was available, people began to view satellite as limited to government and science projects as well as global news feeds by media companies," he continues. "And since the launch of high-speed internet and the various access technologies, including mobile broadband, high quality transmission of news and entertainment is available anytime, anywhere, even on the move. Quickly, satellite became something viewed as outdated, limited largely to home internet and entertainment in places without access to cable networks. This perception of satellite is outdated."

Indeed, satellite technology has clearly come a long way over the decades and Nerenberg cites HughesNet, its flagship satellite internet service, as an example. "When it first launched, HughesNet enabled service at speeds of around 5 Mbps down," she continues. "HughesNet Gen4 offered download speeds of 15 Mbps. HughesNet Gen5, our current service, offers download speeds of 25 Mbps. Our next satellite, JUPITER 3, will enable service plans with speeds of up to 100 Mbps down."

She says that comparing today's satellite with the satellite service of the past "is like comparing dial-up internet access (remember 56 Kbps service?) with fibre-optic cable services", which are now capable of gigabit speeds. Both are wired services to the home or business, but the technology is drastically different.

"The second misconception about satellite is that it's a substitute for wired technologies like cable and fibre. That is simply not the case," adds Nerenberg. "Where terrestrial connectivity is available, it is always going to be the faster form of connectivity. However, where terrestrial services are not available, satellite offers the best solution for high-speed, reliable connectivity."

Now, we're in 2021 and newer technologies are always on the horizon. One of those is 5G, which has been lauded as the step towards a fully interconnected society. Nerenberg argues that satellite is perhaps more relevant than ever in 2021. That's because, she says, the demand for internet access has never been higher and will only continue to grow. "No single transport can meet all of the need for connectivity, and satellite is an essential service in the network mix, enabling access in places where other technologies do not reach," Nerenberg says. "Aeronautical and maritime applications, which wired technology cannot serve, are the most obvious instances. Remote and rural places are also ripe for satellite connectivity. In fact, the GSMA predicts that 5G will cover one-third of the world's population by 2025, leaving two-thirds of the world unserved by 5G."

Khan adds the need for satellite services is not eliminated with the introduction of 5G, "as both can work in a symbiotic relationship", serving the same and different purposes. The next generation of satellites will be equipped to cater to 5G platforms that enhance mobile broadband, better mission critical services, and enable the greater deployment of IoT systems across numerous sectors.

"Our satellites come with the flexibility of catering to 5G platforms and our most recent agreement with Airbus on the Thuraya 4-NGS satellite, will be best suited for a GEO mission, maximising capabilities, cost-effectiveness, security and reliability," he adds. "Reducing costs and increasing benefit to rural communities and non-urban communities which have limited access to 5G connectivity. Working to serve the unserved who might not be able to migrate easily to 5G. This flexibility still exists with satellites. While the industry has anticipated this transition, we have taken action to ensure that 5G was considered seriously with the evolution of our services." He adds that when the Thuraya 4-NGS satellite goes live in 2023, it will be able to cater to enterprise and government clients who have made the transition to 5G networks.

It may also come as a surprise that while 5G is a wireless service, unlike satellite, it doesn't function entirely without wires. That's because the fifth-generation technology depends on cell towers, which connect to the network core.

"In urban and suburban areas, that connection comes through fibre or cable," says Nerenberg. "In rural and hard-to-reach places (e.g., islands, mountains, forests, jungles), cell towers are connected by satellite for backhaul to the network core. According to NSR, more than 70,000 wireless towers are backhauled by geostationary satellite today, and that figure is expected to grow as wireless providers extend their networks to serve more people in hard-to-reach places." She says this is why companies like Hughes are working with standards bodies to ensure that satellite technology fits seamlessly into the multi-transport networks that make up what we call "5G" service.

Another satellite provider with a large Asian

Continuous innovation has kept the JUPITER System at the forefront of the industry, from DVB-S2 and DVB-S2X to more recent innovations like return channel adaptive coding and modulation (ACM) to yield up to 30% bandwidth savings, and support of Layer 2 transport – essential for cellular backhaul implementations

footprint is Singtel Satellite, a unit of Singapore Telecommunications (Singtel). Song Lee Meng, its director of FSS product and marketing, explains what technology the satellite sector introducing in order to improve its performance and make it more affordable to compete with small cells towers. "Satellite communications technologies have achieved remarkable breakthrough efficiencies and increases in performance in nearly a half century," he says. "High Throughput Satellite (HTS) can enable high performance and cost-effective links. In addition, the LEO satellites will offer low latency and higher throughput in future which will introduce new capabilities for satcom services. One key technology that will improve satcom capabilities is flat-panel antennas which will be 'a game changer' for expanding the role satellites play in connecting devices to the internet-of-things, assuming the price is right."

For Nerenberg, "our aim is not to compete with small cell towers", but rather to deliver value as part of the networking ecosystem. "To that end, our equipment is in use around the world back-hauling more than 12,000 cellular sites across Africa, Asia and Latin America, powering satellite internet services for millions of people and enabling more than 40,000 community Wi-Fi hotspots across the same regions," she continues. "In fact, our JUPITER System is the leading satellite ground system in the world, with more than 50% market share. As the de facto standard for satellite implementations, the JUPITER System powers broadband solutions on more than 40 conventional and high-throughput satellites globally."

Nerenberg argues how continuous innovation has kept the JUPITER System "at the forefront of the industry", from DVB-S2 and DVB-S2X to more recent innovations like return channel adaptive coding and modulation (ACM) to yield up to 30% bandwidth savings, and support of Layer 2 transport – essential for cellular backhaul implementations.

"On the horizon, we are innovating enhancements to the system such as software-defined networking, mobile edge computing, and virtualization with a private cloud to support scalability and efficiencies," she continues. "This kind of innovation is essential to support the new class of software-defined and flexible satellites."

It's often said that fibre is cheaper, faster, more reliable and carries far lower latency than satellite. It sounds like a no-brainer when it's put like that, but Lee Meng finds holes in the argument.

"Fibre is subject to terrestrial disruptions and cuts, where satellite has just three potential points of failure: the satellite, the hub and the satellite terminal, each of which has built-in redundancy in case of failure," he says. "It is also difficult to lay the last mile fibre due to challenges on the ground.

Most enterprise applications are not time sensitive. Therefore, satellite can be a good alternative as the main or backup connectivity but when companies are located in remote places, satellite communications can be the only option in providing ubiquitous and instant coverage in these zones."

In fact, there are those who are of the opinion that not only is satellite a viable alternative, to fibre, but it's actually more reliable. Nerenberg says that is most certainly the case when it comes to manmade and natural disasters, to which fibre is vulnerable. "This is why satellite makes the ideal transport for disaster response and recovery as well as critical back-up to enterprise and government fibre networks," she adds. "Then, I would say that we do not intend for our satellite services to compete with fibre. They are different - just the same way that a pick-up truck and a sedan serve different needs. Both forms of transportation have their own specific benefits and trade-offs. You probably wouldn't use the sedan to haul construction debris or landscaping equipment, or to traverse a mountainous dirt road or through a jungle. And the pick-up truck would be unwieldy and uncomfortable (not to mention inelegant!) in a city centre. Satellite-based

internet goes where fibre providers do not.

It's a view shared by Martin Jarrold, chief of international programme development at satellite body, GVF. "Copper or fibre lines are most applicable for urban areas and not economically viable for rural areas due to distance and terrain," he says. "For microwave transmission, line of sight and flat terrain needed to be cost-effective, with limited rural/remote application. Satellite is increasingly the backhaul of choice and only solution for rural/remote deployments."

Looking ahead, data consumption is only going to grow and it's no secret that satellite faces challenges in this space.

"Short range, low satellites provide low latency and high throughput called fibre in the sky which can meet the demand for growing data consumption," argues Amir Cohen, vice president of marketing and business development at Gilat Telecom.

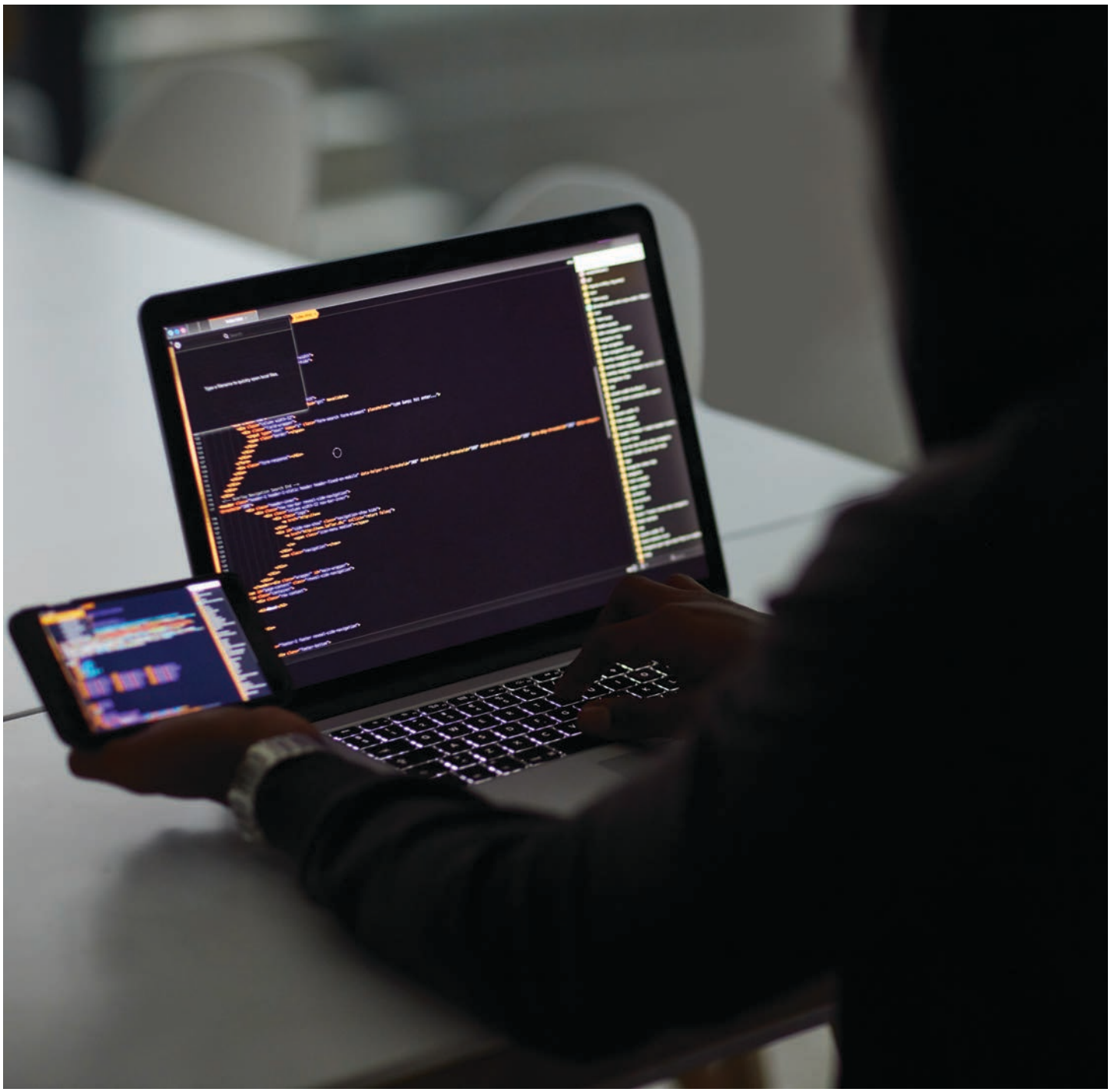
Khan says that while there are limitations, network infrastructure and capabilities continue to mature and develop at such an incredible rate. Yahsat, for example, is developing ways to overcome the obstacles that are posed by satellite data limits. "We remain committed to R&D in the field of satellite communication, and the development of new features and functionalities that meet the requirements of today's users," he adds. "With new emerging data requirements, at Yahsat, we have been developing next generation systems that will have a wide spectrum of data services catering to throughput requirements ranging from low (20 kbps) to high (more than 1 Mbps) for various verticals and applications. To this end, our next generation satellite system has nearly doubled throughput of data products as the MSS/L-Band design offers optimised data rates."

Nerenberg agrees that the challenge "and the opportunity" for satellite providers is to serve the growing demand for bandwidth with a finite resource. She warns that serving more customers is not as easy as running a connection to new customers' homes – it requires building and launching a new satellite. "That said, Hughes has been in the business of supplying satellite internet longer than any other provider, and we have learned a lot along the way," she says. "We are constantly improving and advancing our offerings to better serve our HughesNet customers, who have been largely overlooked by other providers. This is why we continue to innovate and implement network optimizations, such as automatically saving data when streaming video or using artificial intelligence to detect and triage potential network issues."

Yahsat's Thuraya 4 – NGS is an example of how the operator is overcoming data limit challenges, as the satellite is designed to be highly flexible and agile. "This is so that we can integrate new technologies on the ground, which provide considerable edge, given the challenges and dynamics in the industry which includes a wide spectrum of data service," says Khan.

Hughes is equally optimistic about what lies ahead. "Looking to the future, we see many opportunities to continue enhancing our service – from the launch of our JUPITER 3 satellite... to implementing multi-transport solutions combining a low-latency transport such as LEO or wireless as a complement to the high-capacity/low-cost GEO service," concludes Nerenberg.

Koldys adds that, "of course", there are some doubts about the viability of different projects, but there's no reason per se to question whether satellites in general can't play a significant role in delivering connectivity. "And, one only has to look at the work of ESOA and 3GPP, for example, to see how satellites are integral to future 5G rollout plans," he says. ■



Necessity is the mother of invention

Sanjeev Verma, CEO of Squire Technologies looks at how African telecoms operators are meeting the challenge of network fraud in a challenging threat landscape

In recent years sub-Saharan Africa has been home to several of the world's fastest-growing economies, and the telecoms industry continues to play a significant role in the region's economic growth, with it set to contribute $185bn by 2024.

While the environment is challenging, with lower margins, greater regulation and fragmented infrastructure, Africa's operators and the wider telecoms industry have proven themselves to be incredibly agile in the face of telecoms and cyber fraud. The telco landscape in the region challenging one, at a time where operators are faced with shrinking margins, increased competition from OTT providers and demands to invest in 5G and new technologies, the ever-present threat of fraud and its impact is a problem that looms large over operators. Understanding fraud for operators in the region is about understanding the challenges they face with providing services to an incredibly diverse part of world at a time of rapid growth and development on many fronts, both technologically and socially.

Africa is the world leader in non-contracted telecommunications with 95% of mobile subscribers on prepaid services, by far the largest ratio in the world. Prepaying for mobile and data sparingly, charges are relative, and much smaller, perhaps less than US10 cents for customers to use their phone. What this means for operators is that vast amounts of data is being generated, take MTN Nigeria for example who might face up to 8 trillion CDRs being generated which needs to be orchestrated by other systems. When you consider their 70 million strong subscribers this amounts to a huge environment where you process every individual transaction. In contrast an operator like AT&T in the US depend largely on their 75 million subscribers being on neatly defined monthly contracts. As far as billing and reconciliation is concerned, in Africa, it is a much more complex process. With margins being significantly slimmer it's crucial that operators get things right to make money.

These BSS/OSS challenges that operators face inevitably filter through to other areas, and this includes risk and fraud. As with the rest of the world Africa suffers from the ever-increasing threat of telecoms network fraud, which for some developed nations has reached epidemic levels.

Innovate to prosper

Mobile money is the biggest tech invention to come out of Africa and has become a catalyst for change on the continent. An attractive diversification for mobile operators, mobile money provides almost 20% of annual revenues. Succeeding where the UN and traditional financial institutions floundered in providing financial services to an unbanked population, mobile money inevitably caught the attention of opportunistic fraudsters. Providing connectivity and SIM cards to far flung markets required mechanisms that made it easier for people to do SIM swaps, which inadvertently led to SIM Swap frauds. Hence operators had to come up with remedies to tackle the emerging fraud.

Africa's approach to combatting fraud has always been a collaborative one, and this has seen them work closely with other industries and verticals to find solutions. The high costs from vendors delivering products and services into the region has encouraged an innovate to prosper mindset.

At a major bank in Mozambique, suffering from increasing cases of SIM Swap fraud, (where fraudsters trick or bribe a phone companies call centre staff into switching a legitimate customers SIM card to one they control), Vodacom Mozambique offered a straightforward cost-effective solution; They would setup a system that would allow the bank to query phone records for any recent SIM swaps associated with a bank account before they could carry out a money transfer. This would mean that if a SIM swap had occurred in the last two-three days, the transfer could be blocked. With victims of SIM swapping likely to be aware of it quickly due to the phone being disabled, the solution proved to be an enormous success and other banks and operators in Africa and abroad have put similar carrier-checking remedies in place.

As African operators have played a greater role to their subscribers, as financial service providers, the necessity to secure their networks and protect subscriber's money has driven innovation in telecoms and verticals. This has been especially so for brands selling connected and IoT enabled electronics into the continent. Faced with a consumer base almost entirely on prepaid mobile plans there was no way to load devices such as iPads with prepaid airtime or data bundles. Apple like many wrongly assumed everyone was on some sort of contract. Here a growing API industry offered a neat solution in airtime API's that could be used to add credit to devices.

As well as ensuring that international businesses can more easily access Africa, APIs developed to carry out security checks, account validation and KYC (Know Your Customer) APIs are adding an extra layer of security to mobile money and assurances to telecoms.

Fraud as a top priority

With telecoms being such a large part of Africa's economy, fraud is seen as serious threat at a government level. Authorities and regulators are proactive in doing everything that it takes to reduce tax losses, combat network fraud and reduce corruption.

Most recently Lesotho and Zimbabwe have implemented new telecom oversight technology to monitor national and international telecoms traffic. The technology promises to increase revenue assurance, combat fraud and enforce billing integrity across telco networks.

The system enables regulators to see, in real-time, what's happening in the telecom sector, so that they can improve upon governance. It

is seen as another example of the collaborative and proactive approach that the industry in region takes towards reducing network fraud.

Many of those working as regulators in Africa have come from the industry itself, and there's a common goal to protect the whole ecosystem as opposed to simply focussing on competition, like regulators are in Europe and the US.

Many of the leading telco's in Africa are listed on the South African stock exchange, corporate governance is tough and audits from external investors who do not have sight of what is happening on the ground are comprehensive and specific in terms of gauging what is happening with the operation. It is also commonplace for operators to have dedicated risk and fraud teams and the role of a Chief Risk Officer with overall responsibility of fraud prevention.

What can operators do?

Fraud attacks are becoming increasingly more sophisticated especially on the borders of networks where international connection with services such as IOT platforms and cloud communications is taking place. Being aware of what the threat landscape is and the ways that fraudsters and criminals are attacking networks is the first step for operators. Deploying a multi-layered strategy and going on the offensive is crucial for them as waiting for attacks to happen and then working to block them only proves costly. Automation technologies are increasingly adding value to the fight against fraud, leveraging active and passive detection that deploys both test calls and messages to seek out sources of fraudulent traffic, as well as testing live traffic for anomalies and threats. Combined with big data and machine learning automation solutions disrupt criminal activity, and they are proving to be a cost-effective solution to fraud on the wholesale industry, specifically international wholesale fraud, and effective for detecting SIM Boxes and combatting various forms of illegal bypass fraud.

The loss from network fraud in Africa and beyond still remains staggeringly high, costing the industry and customers billions of dollars a year. But Africa is proving to be resourceful and agile in the face of a challenging threat landscape. The innovative and collaborative approach the continent takes to fraud prevention, and the determination to make it a top priority should be seen as an example to be set to operators and regulators in more developed nations. ■

Fixed wireless access and Wi-Fi on the move

FWA, an invaluable tool for internet connectivity in remote and built-up areas? Robert Shepherd connects with the industry to find out if this is so and how

Wherever you live, the average broadband speed requirement continues to rise and fibre access is arguably still the go-to option. It makes complete sense, when one considers its high bandwidth performance, low latency and maintenance, as well as durability.

Of course, copper and fibre deployment for better broadband service is not always an upgrade option. Reasons include the fact that municipal regulations can make fibre trenching prohibitive, lower population densities in rural markets often harm the fibre business case return on investment (ROI), while buildings or things of natural beauty may prevent the installation of fibre regardless of how much money has been made available.

That said, fibre is not always available, either, which means other technologies and methods of communication have to fill the void. Enter fixed wireless access (FWA), which is known to offer high-capacity solutions for parts of Africa, indeed the world, in need of enhanced quality and speeds. Now, in early 2021, as the dust begins to settle following the worst pandemic any of us will (hopefully) ever have to endure, the demands for speedy internet access on the move is becoming more important than ever before. Does FWA really offer the best way to meet the last mile challenge that wired networks have been unable to solve? If so, how?

"FWA has several major benefits when compared to fixed line/fibre deployments," says

David Sumi, VP of marketing at wireless gigabit solution provider Siklu. "Especially in a large area such as Africa where many communities are spread out. Fixed line deployments are almost always more expensive than FWA and take months to install versus FWA which can be up and running in weeks. It used to be that FWA was at a speed disadvantage to wireline, but with mmWave systems delivering up to 10Gbps full duplex, this is no longer the case. For regions that lack existing wireline infrastructure FWA is cheaper and faster."

Large swathes of Africa certainly lack the infrastructure Sumi mentions, which is unsurprising when one considers the topography across the bottom half of the world's largest continent by land mass.

WiFiontheMove is a South African firm run by Justin Farnell, the company CEO and founder. He says that because Africa "is so huge", the cost of running fixed fibre into most towns and villages just isn't financially viable. "Poynting's FIBREPOYNT have developed a FWA solution that saves 50% of the OPEX costs of a traditional fibre deployment, whilst delivering equivalent speeds and QOS, through patented beamforming RF technology."

The good news is "FWA is generally lower cost to deploy than wired networks such as fibre optic cable", especially outside of rural areas where the distances between buildings increase, making the cost of laying fibre higher, says William Webb, chief technology officer (CTO) at Cambridge Broadband Networks Group (CBNG). "Where broadband is not available due to cost then FWA can provide an excellent solution," he continues. "However, even with FWA there will be some regions so remote that only with government funding will it be economically viable to connect them."

For Simon Fletcher, CTO at independent advisory Real Wireless, FWA "has to be a part of the solution" along with options such as satellite that must also be considered. "However if tower infrastructure along with power and backhaul (which could be shared) are well placed, then FWA would give a good, scalable and robust capability for delivering the high per-user data rates that will inevitably be required and demanded by consumers and enterprises alike," he adds.

Eugina Jordan, VP, marketing at OpenRAN software firm Parallel Wireless, also explains how the cost of legacy high-speed broadband service through cable or fibre-to-the-x (FTTx) deployment, is a significant part of initial network deployment. "The average cost of laying fibre is US$15,000 per mile," she says. "Also, in many areas the permits for related construction work will take months. This will be a huge burden for service providers because of initial costs that will not necessarily convert into revenue." However, Jordan says, a fixed wireless solution deployment "is simply based on a base station deployment" and no last mile delivery investment. "In this scenario, service providers will cover specific geographical areas and target customers without any specific investment for last mile delivery for that specific customer. "For rural area deployment; with lower population density, a cable or fibre solution will be even more costly and their ROI will not justify the initial investment or on-going investment due to low ARPU."

> "There is, unfortunately, no single blanket solution that will meet the exact requirements in all scenarios"


Kamal Mokrani, global vice president, Infinet Wireless

Of course, the availability, indeed quality of connectivity depends heavily on where one is located. When it comes to the last point of contact within a shopping centre, on a campus, on a train or bus, or even workers risking their lives in a mine, different technological options are needed, according to Kamal Mokrani, global vice president at broadband wireless development business Infinet Wireless. "There is, unfortunately, no single blanket solution that will meet the exact requirements in all scenarios," he says. Our experience has shown that the challenges we would need to overcome in a shopping centre, as an example, are totally different from those we encounter in a mining environment where signal propagation can be affected by many geological structures and man-made obstacles."

Mokrani says that when hundreds, if not thousands of retail customers, decide to go shopping at the same time, Infinet's solutions tend to focus more on relieving the well-known bottleneck related to backhauling capacity, thus offering sufficient capacity to ensure both "high quality" voice calls and Internet access.

"High-speed connectivity for passengers on a train, bus or metro present us with completely different challenges, but ones which we have already been resolved in many of our deployments around the world," he continues. All our wireless solutions are adaptable to the specific environment we are faced with, thanks to our approach in developing Software Defined Radio (SDR) platforms with all the flexibility they offer us and our customers. For example, when roaming between base stations deployed along the tracks for a train or a pre-defined route for other moving vehicles, seamless handover from one access point to another, whilst keeping latency of the data transmitted at its lowest level possible, is the biggest challenge for such high-speed mobility applications."

These contexts all have subtly different principle drivers of the demand, argues Fletcher. "A shopping centre will be primarily focussed on B2C, while a mine would be more B2B as the driving force," he says. "The nature of the data being transmitted wirelessly – B2B or B2C – will determine and push the economic principles that shape the network deployment principles. While FWA can provide a good group / shared connection on which to bolt a Wi-Fi access solution and would work for a shopping centre, mines are a well-understood scenario, often choosing to deploy a mobile micro BTS in lower spectrum bands to maximise coverage over wide expanses of land, and even into the tunnel system itself. Trains and buses are a different scenario altogether and don't really lend themselves to FWA solutions."

Webb says that the last point of connectivity must use a technology widely available in handsets, tablets, laptops and other devices. However, there are only two options - cellular and Wi-Fi. "Both are used in places like shopping centres where mobile operators are often keen to deploy cellular solutions alongside the shopping centre owner providing Wi-Fi," he adds. "In locations where mobile operators are less interested in deployment then only Wi-Fi is used. Many trains and buses now have Wi-Fi deployed within them."

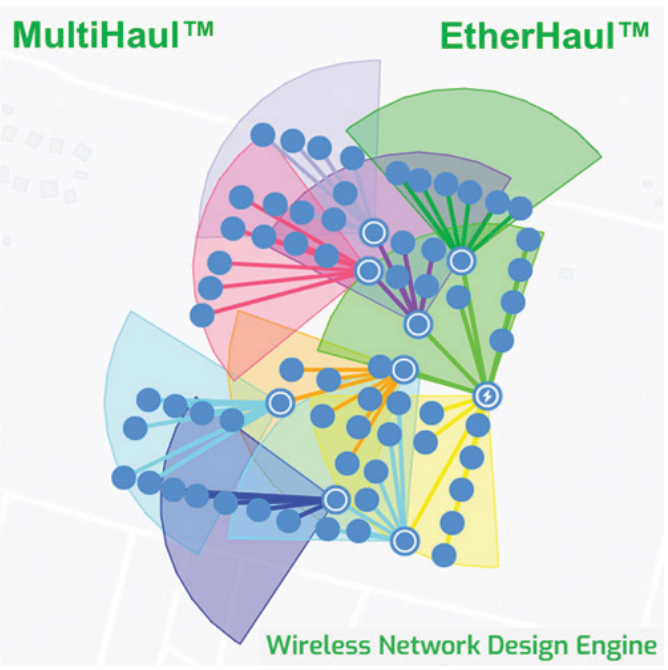
Historically, there was no ultra-high bandwidth alternative to fibre, but high performance FWA has emerged to fill the gigabit broadband desire when fibre is not an option. What's more, technically, there are no limitations to bands that can be used to deploy FWA. In the case of LTE network deployments, operators often favour 800MHz, 1.8GHz and 2.1GHz bands for rural and suburban areas while using 2.3 GHz and 2.6 GHz for urban areas. The same strategy could be applied for FWA, however, due to the possibility of mitigating the adverse effects of higher propagation loss, it is feasible to also consider high carrier frequencies such as those in the 3.5GHz range where large bandwidths are more readily available.

Clearly a good solution for connectivity in even the most unforgiving of environments, but will opportunities for FWA continue to open up as operators and service providers in the region realise the benefits of LTE-based FWA?

"Most definitely," argues Farnell. "The current auction in South Africa of much needed spectrum in the 700, 800, 2600 and 3500MHz bands will drive down LTE data and voice costs and improve service quality. So the growth prospects for the FWA sector look strong."

As far as Jordan is concerned, it's just another, more cost-effective way to deliver coverage. "The coverage it delivers will enable not only many more opportunities, but also creates services like eLearning, eHealth and eCommerce that will help to move the region forward," she adds. However, she says that legacy LTE-based fixed wireless solution deployment relies on a complicated deployment and configuration process during site installation. "This requires a complicated preparation phase and expert technician presence at the time of any new site installation," Jordan says.

Webb says opportunities for FWA already exist, citing every home and building without a



broadband connection. Nevertheless, he says LTE is not the solution, because it is designed for mobile use and is too expensive and too low capacity for FWA. "To put it into perspective, a mobile user tends to have a monthly data consumption of about 5GByte/month, a home about 350GByte/month - 70 times more," says Webb. "Using LTE or even 5G mobile to provide home broadband is like trying to use a car to transport 50 people - a coach is far better suited."

In fact, Webb is rather blunt about LTE and 5G being used for FWA, calling it a waste of more costly infrastructure and due to densification and the transitory nature of mobile users coming in and out of the coverage area, the user's bandwidth experience is not predictable or guaranteed. "FWA is static and so can be designed to provide predictable service which can be backed by service level agreements," he argues. "There is a great deal of fibre deployed in African countries, making FWA more of a niche solution for urban residential/enterprise connectivity. However, FWA will always have a strong foothold in rural and suburban communities where the costs to lay fibre over dispersed dwellings remains largely prohibitive."

The changes that have occurred in recent years with the introduction of LTE, 5G and more advanced FWA technologies have clearly been monumental across a plethora of industry sectors. Mokrani says "the heightened consumer adoption of mobile devices is due to the lack of adequate fixed infrastructures" in many countries.

"This has leveraged broadband wireless technology providers to play a much bigger role than traditional fixed operators by relieving the pressure for backhauling data and voice traffic from the mobile operators' base stations to the rest of their network," Mokrani continues. "Network operators of all types naturally want to spread the cost of installation and maintenance of any new technology across as many services and applications as possible."

He argues that the largest opportunity Infinet predicts for FWA, whether LTE-based or others, will be in emerging countries where fixed broadband via legacy fibre, cable or DSL is simply not available today. "In developed countries, we are seeing strong signs that FWA technologies are giving service providers a more competitive edge over more expensive and sometimes unreliable wired alternatives," Mokrani adds. "The biggest opportunity we see for LTE-based FWA specifically will be for the residential market, especially fuelled by the current Covid-19 pandemic where more and more people are having to work from home and demanding broadband speeds so as to stay fully operational and productive."

Let's look to the future. While microwave links have long been the cheap and effective solution, some believe there is now a real danger of usurpation by mobile tech such as 5G, whilst others see this in bigger towns and cities only.

Jordan says the approach adopted by fixed wireless service providers to network deployment is based on coverage limited or capacity limited scenarios. "In a coverage limited scenario, service providers main objective is providing acceptable coverage for a specific area considering targeted SLA for subscribers," she explains. "In a capacity limited scenario, service provider addresses limited capacity in a geographical area by adding extra base stations in the specific geographical area already has coverage."

Jordan says that although "the classical deployment will start with a 'search ring' identification", following site acquisition and deployment; in many rural deployments, ease of deployment is the main objective for providers.

Mokrani argues that "there is no doubt that all types of wireless technologies have a significant role to play in improving broadband access in all parts of Africa. "Some of these technologies may still have a long way to go before they become universally accepted, with political and regulatory policies being the biggest obstacles to ubiquitous connectivity, but their acceptance and deployment are certainly crucial for bridging the digital divide between urban and rural areas," he continues. "There is noticeably more demand for broadband connectivity in cities and bigger towns than rural areas simply because that's where most companies and businesses are physically located. Mobile technologies such as 4G or 5G are not necessarily the most trusted platforms for a bank, as just one example, to establish connectivity between its branches and its headquarters as their managers value data security much more than anything else. They would most certainly deploy their own private networks, such as one based on FWA, and not want to share best-efforts network capacity from mobile networks with other users, ultimately exposing themselves to potential cyber threats and attacks. The same principle is also applicable to mission critical applications such as the fire brigade, the ambulance service and law enforcement agencies, all favouring a dedicated and private network for their own use only."

As far as Webb is concerned, mobile technology is great....for mobiles. The problem, he says, is that "it is not designed" for providing broadband connection to buildings. "It is both very expensive as a solution to fixed broadband and lacks sufficient capacity, especially after providing service to mobile users," Webb adds. "There are few examples of widespread FWA solutions using mobile technology and those that exist tend to require massive investment in a denser network of base stations. Better to use FWA - a technology designed for the purpose, with much more capacity and reliability."

Lest we take it for granted, remember that incredible things happen when people connect to the internet or with each other. Whether the location is rural or urban, domestic, international, telco or cable, enterprise or residential, it sounds like optimised gigabit broadband solutions deliver the vision of global networking. FWA is addressing last mile deployment challenges timely, cost effectively and with increased speed and resilience. That can only be a good thing. ■

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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. Today, we benefit from enhanced design capabilities and expanded production capacity – along with a greater understanding of new and emerging markets such as mining and 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.

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Sepura SC21

Small and light, the SC21 is the next-generation, smart TETRA hand-portable radio. With a wide range of functionality inherited from the SC20 hand-portable - yet 25% smaller - it offers all the benefits of a compact radio.

Reliable performance: With a best-in-class TETRA engine, the SC21 allows you to keep communicating where other small handsets fail. Class 3 high-power RF transmission, coupled with exceptional receive sensitivity, gives the SC21 extended operational range.

Powerful Audio: The SC21's best-in-class audio capability allows for rich, clear voice communication, however noisy the environment. The powerful, directional speaker projects audio to the user's ear, providing extra clarity, and unique Water Porting technology ensures that clarity is maintained, even in continuous, heavy rain.

Advanced Safety Features: The SC21's advanced worker safety features offer peace of mind for lone and remote workers at all times of the day or night, including automated Man-Down and Lone Worker protection, biometric user health monitoring and location tracking.

User Friendly: The SC21 has a 2.4" high resolution QVGA screen – the largest on any TETRA hand-portable – allowing for quick and easy viewing in all light conditions, including direct sunlight. *sepura.com*

Doodle Labs' Mesh Rider OS for the Smart Radio Platform

Doodle Labs is "pleased" to release Mesh Rider OS firmware version 2021-03 for the Smart Radio. This firmware update delivers significant new features and performance improvements, including improved link reliability, improved management tools and the customisation of smart radios. Starting with the former, a new link monitor constantly checks the status of the wireless link and triggers a rapid recovery in the event of a link loss. There is also a pre-flight link check tool that runs through a series of checks to test the integrity of RF link quality for each antenna. In addition, the automatic channel selection (ACS) for interference mitigation means the Smart Radio will periodically monitor the medium and may switch over to a better operating channel. Elsewhere, the web GUI, Doodle Labs says, has been revamped to provide a simple and clean interface for an enhanced user experience. By default, it provides commonly used settings, and click the "Advanced Settings" button reveals all of the original settings. Meanwhile, the Mesh Rider SDK will allow customers to write and compile their own software to run on the Smart Radio. "We enhanced the Mesh Rider OS based on direct feedback from our customers to meet their operational requirements," says Aaron Do, manager of application engineering and customer support at Doodle Labs. *doodlelabs.com*

Ericsson launches 5G RAN slicing

Swedish gear-maker Ericsson's new 5G network slicing solution for radio access networks (RAN) enables communications service providers to deliver customised 5G services with guaranteed performance, the company says.

Now commercially available, Ericsson 5G RAN Slicing allocates radio resources at one millisecond scheduling and supports multi-dimensional service differentiation handling across slices. This, the company reckons, strengthens end-to-end slicing capabilities for dynamic resource management and orchestration that ensure the high-quality end-user experience required by diverse use cases.

Network slicing supports multiple logical networks for different service types over one common infrastructure. It is a key enabler for unlocking 5G revenue opportunities such as enhanced video, and in-car connectivity, and extended reality.

"Ericsson 5G RAN Slicing dynamically optimizes radio resources to deliver significantly more spectrum-efficient radio access network slicing," says Per Narvinger, head of product area networks, Ericsson. "What makes our solution distinct is that it boosts end-to-end management and orchestration support for fast and efficient service delivery. This gives service providers the differentiation and guaranteed performance needed to monetize 5G investments with diverse use cases. With 5G as innovation platform, we continue to drive value for our customers." *ericsson.com*

ThinKom antenna design 'offers flexible installation'

ThinKom Solutions has developed a new product variant of its VICTS aero satellite communication antennas, which, it claims, enables more flexible installation choices and allows for smaller distributed and embedded phased-array applications.

The new product variant, which targets government and military beyond-line-of-sight (BLOS) satellite communication markets, integrates the VICTS antenna, antenna control unit (ACU) and power-supply (PS) electronics into a single low-profile small-footprint package. This eliminates the need for a separate line-replaceable unit (LRU) for the ACU/PS. Further, the unique high-efficiency and low-power characteristics of the VICTS phased array fully eliminate the need for other bulky and power-consuming LRUs, such as power-conditioning units, heat-exchanger units and external RF/power/cooling manifolds.

"This new design is part of our strategy to become the preferred satellite antenna choice for smaller volume-limited and power-limited platforms," says Bill Milroy, chairman and CTO of ThinKom Solutions.

Another apparent plus is the incorporation of the ACU into the base of the antenna does not result in any increase in mounting footprint and maintains the antenna's highly favoured low-profile characteristics. The antenna measures less than 9cm in total height, while retaining the flight-proven, high-reliability design and product features for which the VICTS antennas have become known.

ThinKom says an added benefit of the new product variant is enabling the transmit and receive antennas to be co-located or alternatively mounted in remotely separated platform locations. This maximises application flexibility in terms of packaging, weight balance and other airframe and operational considerations. *thinkom.com*

ViaLite adds Blue OEM 1U Chassis to range

ViaLite Communications has added a Blue OEM 1U chassis to its RF over fibre product range.

The chassis has the capacity to hold up to eight ViaLite Blue OEM modules and is typically used for satellite and broadcast installations, as well as satellite news gathering (SNG) and outdoor broadcast truck operations at sporting events etc.

This product was designed to operate as a transmitter, receiver or both, as a means of supporting uplink and downlink operations. It is a 1U high chassis, supports high throughput operations and enables signal transmission across distances where it is not possible to use coaxial cables.

The chassis was designed with a removable rear tray, which allows the fibre modules to be hot-swapped.

Typical applications include fixed satcom earth stations and teleports, telemetry, tracking and command (TT&C), oil and gas platforms, timing and synchronization, marine antennas and broadcast facilities. *vialite.com*

Teltronic presents the new MCBS

Teltronic presents the new MCBS, an outdoor TETRA base station which, through the use of SDR (Software defined radio) techniques, provides up to four carriers in a single compact unit, offering, it reckons, the highest level of performance in a single, lightweight and compact device.

The multi-carrier technology, the MCBS, with its 40W of RF Power, is apparently able to offer the features of an indoor fixed base station in a single compact device that is prepared to operate outdoors without requiring civil works for its installation, which means a significant reduction in costs and deployment time in railway environments. In addition, it allows different configurations to adapt flexibly to any number of subscribers and system traffic load.

Furthermore, operation and maintenance tasks are apparently simplified as the MCBS is configured and monitored completely remotely from the NEBULA infrastructure Network Management System, which incorporates a set of tools that allow supervising its status in real time, monitoring the activity of the network users, having access to statistics and alarm troubleshooting. All this, added to its low consumption, means significant savings in OPEX.

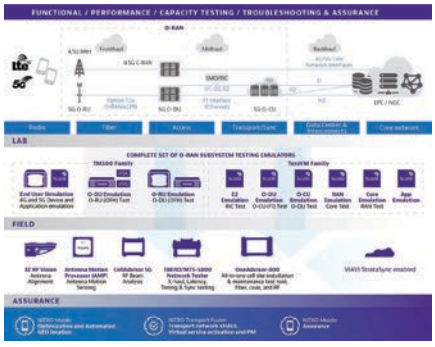
Similarly, the increase in the number of radio resources available in a TETRA zone is greatly simplified, as it does not require any hardware upgrade or a visit to the site, but only the incorporation of licenses to activate new carriers.

"With this development, Teltronic shows that we keep our commitment to TETRA technology and our NEBULA infrastructure, incorporating into our portfolio a new product that is the result of hours of intense work by our R&D engineers and offers unique performance and capabilities in the radio communications market," explains the company's CEO, Juan Ferro. *teltronic.es*

Viavi releases 2021 updates to the Test Suite for O-RAN Specifications

Viavi Solutions introduces updates to its industry-first Test Suite for O-RAN Specifications. The O-RAN ALLIANCE's specifications for open radio access networks are being adopted by operators and equipment manufacturers worldwide, to reduce infrastructure costs and lower the barrier to entry for new product innovation.

Viavi says the test suite has been augmented to include use cases of critical importance as O-RAN becomes adopted at scale, as well as learnings from customer engagements around the globe. Based on its position validating network products for operators and manufacturers worldwide – including all Tier-1 network equipment manufacturers – Viavi boasts to have the most comprehensive O-RAN test platform on the market, with CUSM-plane parameters used by more vendors than any other solution.



The company is also active in specifications development, as the editor of interoperability test specifications in the open fronthaul (WG4) and open interfaces (WG5) working groups, and the co-chair of multiple working groups at the O-RAN ALLIANCE. "Viavi's active contributions have enabled it to develop partnerships with complementary solutions from best-of-breed vendors," the company argues. *viavisolutions.com*

Look out for...

China launches 'world's first 6G' test satellite

China launched what it claimed to be the first ever 6G experimental satellite to test communications from space using high-frequency terahertz spectrum.

The Chinese embassy in the US capital Washington, DC tweeted that the country's "6G" satellite was one of 13 aboard the Long March-6 rocket, which launched November 6 at the Taiyuan Satellite Launch Centre in Shanxi province.

The 70kg 6G test satellite aims to verify the performance of data transmission using terahertz spectrum and will test a number of smart city, environmental protection and disaster prevention applications, such as crop and forest fire monitoring, according to local media reports.

This sixth-generation mobile access technology has already started to gain momentum as major industry players back a launch as early as 2030.

South Korean giant Samsung expects the ITU-R to begin work on 6G in 2021, with the standard to be completed as early as 2028. This would open the door to the earliest deployments in 10 years.

The challenges to 6G are many, including requiring 100-times the data throughput of 5G and sub-millisecond latency, AT&T executive Mazin Gilbert said at the 6G Symposium last month.

Last year, US operators Verizon, AT&T, T-Mobile US and US Cellular joined other operators under the guise of the Next G Alliance, aiming to steer development of 6G and establish North America as a global leader in the technology.

Japanese mobile phone operator NTT Docomo made early moves to develop 6G technology in January with a goal of a commercial launch by 2030 and in May, China Unicom and ZTE signed a strategic agreement to develop 6G technologies.

Studies have also contributed to a lot of progress in the 6G arena. The University of California that claimed significant progress by building a device that can speed up the process of development and save substantial amounts of time during the design phase.

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Caribbean Express: next stop Jamaica

The Caribbean Express, a new multi-billion-dollar submarine cable system being rolled out by American telecom development firm, Ocean Networks, is making its way to Jamaica.

An 18-fibre pair subsea cable system linking the state of Florida to Panama, which is just being built out, is also being extended to the Caribbean island's capital, Kingston.

In the initial phase the Caribbean Express network will not only run between Palm Beach, Florida and Balboa, Panama, but with additional landing points in Cancún, Mexico and Cartagena, Colombia.

Ocean Networks disclosed plans to build more than a dozen landing points along the route in the coming years in cities such Kingston (Jamaica), Havana (Cuba), George Town (Grand Cayman), Puerto Barrios (Guatemala), Puerto Lempira (Honduras), Bluefields (Nicaragua), and Limón (Costa Rica).

The firm also said that once launched, the submarine cable system will be the only system that can offer dedicated dark fibre pair indefeasible right of use (IRU) in the Caribbean market. An IRU permits customer to have exclusive use of fibres throughout the term of a contract.

Brazil regulator approves 5G spectrum auction rules

Brazilian telecom regulator Anatel approved rules for a spectrum auction for 5G networks this year and rejected calls to curb China's Huawei Technologies an equipment supplier.

The South American country's president Jair Bolsonaro last year criticised the Chinese company and considered banning the world's largest telecom equipment-maker from the country's fifth-generation technology market on security concerns.

Brazil's telecom companies insisted on a free market and complained that excluding Huawei would cost billions of dollars to replace the equipment of the tech giant, which currently supplies 50% of the existing 3G and 4G networks.

Rules for the auction expected in a few months have costly conditions such as requiring telecom companies to migrate by next year to more advanced technology with stand-alone networks not based on their current technology. They will also have to cover the big northern Amazon region with broadband connectivity, largely using optic fibre cables laid in rivers, as well as build a separate secure network for the federal government.

Industry representatives said Huawei could not be excluded from Brazil's 5G market because, cost aside, it would set the country back three to four years in technology.

Two of Brazil's main telecom companies, Telefônica Brasil and Claro are pressing for a five-year transition to the more advanced stand-alone networks.

"The stand-alone condition requires changing the core of today's networks and will set us back years," said Vivien Suruagy, head of Feninfra, a lobby representing 137,000 companies that build and maintain telecommunications networks.

The rules must be approved by Brazil's Federal Audit Court, the TCU, where the telecoms hope the government's onerous conditions can be changed, Suruagy added.

Russia's MTS launches pilot 5G network

Russian telecom MTS launched the country's first user pilot 5G network in the 4.9GHz band across 14 locations in Moscow, using Chinese Huawei's telecom equipment.

Subscribers using 5G-compatible smartphones will be able to connect to 5G Internet at speeds up to 1.5 Gbps, the firm said in a press release. However, users will not be able to independently connect to pilot zones, the company said and added that the selection of participants in the pilot project using smartphones with support for the n79 range will be carried out on basis analysis of data in their movement, proximity to pilot locations, internet traffic, among others.

MTS also said the number of 5G zones and consequently, the coverage will increase over time. However, no further information was provided.

At the first stage, MTS and Huawei will enable round-the-clock video surveillance over the 5G network while at the second stage, they will provide indoor 5G coverage.

In late Februrary, MTS together with Skoltech, expanded the 5G coverage in Skolkovo, deploying a pilot network for the International Medical Cluster (MMK).

Russia adopted a roadmap last year intending to roll out 5G networks across 10 cities by 2024.

SES supplies broadband to Indonesian villages

Luxembourg's SES Networks has signed a new broadband deal with Dwi Tunggal Putra (DTP), to enable residents of 158 villages in remote parts of Indonesia's West Java Province.

The move will offer access to crucial online resources such as educational content, as well as unlocking the potential of the region's digital economy.

DTP will be using high-throughput capacity on the SES-12 satellite to support the Ministry of Communication and Information Technology's Smart Village project and fulfil the government's universal service obligation (USO).

SES is already serving Indonesia's telecommunication and information accessibility agency Badan Aksesibilitas Telekomunikasi dan Informasi's (BAKTI) Leased Capacity Project using the SES-12 ground station in Indonesia. The Smart Village project, spearheaded by BAKTI, aims to bridge the digital divide and bring much-needed e-government and other essential services to underserved rural communities of Indonesia.

The move will offer access to crucial online resources such as educational content, as well as unlocking the potential of the region's digital economy

"Satellite connectivity plays a critical role in providing internet access to many of Indonesia's villages and small towns located in remote areas," said Edi Sugianto, chief commercial officer of DTP. "At DTP, we strive to bridge the digital divide by providing high-quality internet to these far-flung, remote communities and thereby allowing access to essential e-government, e-health and e-learning services, among others."

Inmarsat takes on Dutch government over 5G eviction

The Dutch government has told British satellite telecom firm Inmarsat to relocate from the village of Burum in the north of the country, after independent research showed that the latter's services and 5G could not coexist in the same spectrum band.Operators worldwide are looking to rollout 5G services as quickly as possible to steal a march on their rivals, but their ambitions are often limited by the availability of suitable spectrum.

In many countries, the frequencies best-suited for 5G are already in use, with satellite operators often reluctant to undertake the difficult process of migrating their services to other bands. This is also true for Inmarsat in the Netherlands, which has been in discussion with the Dutch government for around 18 months regarding its operations within the country's C-band spectrum. Currently, the Dutch government wants to auction frequencies in the 3.5 GHz band in early 2022, arguing that Inmarsat will have until then to vacate the respective spectrum.

Inmarsat said its services can co-exist alongside Dutch 5G and is set to sue the Dutch government after the latter said it would need the satellite operator to relocate a ground station it currently shares with the military

However, Inmarsat said its services can co-exist alongside Dutch 5G and is set to sue the Dutch government after the latter said it would need the satellite operator to relocate a ground station it currently shares with the military.

Burum is the site of a ground station of the Dutch Nationale SIGINT Organisatie, which intercepts satellite communications.

Phoenix Tower and Monaco Telecom partner up

Phoenix Tower International (PTI) and Monaco Telecom have joined forces to operate new towers sites across Mediterranean island nations Cyprus and Malta.

The two companies will purchase over 815 existing wireless towers as well as acquiring newly built wireless towers over six years via a build-to-suit programme.

"With this latest transaction, PTI continues to expand its presence across Europe and will demonstrate the neutral host independent tower model in two new markets to facilitate increased coverage expansion for all of the wireless operators and ultimately increased connectivity for the population of Malta and Cyprus," said Dagan Kasavana, chief executive officer of Phoenix Tower International. "As the economies of the world continue to recover from the impacts of Covid-19, Phoenix is proud to be working with the mobile network operators across the world to deploy more coverage solutions and is pleased to partner with Monaco Telecom on this transaction."

PTI and Monaco Telecom have also established a long-term tenancy agreement where the latter will occupy the sites for a minimum of 20 years. On completion, this transaction will position PTI as the largest tower infrastructure provider in both markets, as well as significantly expanding its footprint in Europe.

"This transaction allows us to create a strategic partnership in Cyprus and Malta with a leading international firm, which allows us to accelerate our investment plans on 5G and fibre where we are present," added Martin Péronnet, CEO of Monaco Telecom.

The deal, for an undisclosed sum, is subject to standard closing conditions.

Service provider Thaicom searches for LEO partner

Satellite service provider Thaicom is looking to serve as a partner for any operators offering low Earth orbit (LEO) satellite broadband services as the firm specialises in the regional market.

The move comes after the LEO satellite Starlink project under billionaire entrepreneur Elon Musk's SpaceX has allowed interested people to pre-order the service through its website with a refundable US$99 deposit, putting them on a priority list to purchase the Starlink kit when it becomes available.

The latter is targeting service coverage for Bangkok in 2022, according to its website. Interested customers in Thailand can pre-order the service, which will be allotted on a first-come first-serve basis.

"For a close satellite service society, we have been in the industry for long and we know all the operators, including Starlink," said Patompob Suwansiri, deputy chief executive and chief commercial officer of Thaicom. "We are looking to open for partnership with any LEO satellite providers. We have more knowledge about the regional market than global players do so we can support their businesses."

LEO satellites operate 500-2,000km from Earth's surface, versus traditional communication satellites, also known as geostationary satellites, that orbit at around 36,000km. The lower orbit means lower latency in signal transmission.

Furthermore, LEO satellites are projected by some to have strong business potential because they can beam the internet all over the globe.

Nokia to supply Cibicom with mission-critical LTE network

Nokia has partnered with Danish operator and internet service provider (ISP) Cibicom to implement a new 450MHz LTE (4G) network.

The project will ensure that key mission-critical services throughout the Nordic nation have access to highly reliable and secure connectivity as well as building preparedness for mass volume IoT adoption.

This deal means replacing the existing Cibicom radio networks and migrating them to a new framework that will enable full 4G data coverage across Denmark, as well as mass-volume IoT connectivity. Building on the company's 450mHz license acquisition in June, the project will allow Cibicom to improve its offering to utility companies and ensures that the service provider is in a strong position to adapt to changing customer requirements and offer new opportunities and application support around 5G 3.5Ghz.

"Radio networks supplying waste, water, energy, and transportation services must not only be foundationally sound and built to last but also prioritise security, quality, and reliability," said Lise Karstensen, head of Nordics at Nokia. "In addition, these sectors are also witnessing a growing need for IoT-powered remote monitoring and management solutions, increasing the focus on network and service quality, as well as uptime. This technology upgrade will make Cibicom's network ready for current and future demand."

Furthermore, this deployment will enhance Cibicom's credentials as the supplier of critical and business-critical infrastructure, such as waste, water, energy, and transportation. Smart grids and remote managed petrol stations are just some of the areas where these systems will be needed, as well as "blue light" emergency services,.

Currently, Cibicom covers 98% of Denmark and the deal will maintain that level of coverage, as well as provide improved connectivity for private households in neighbouring Greenland.

Greece's OTE Telecom targets growth

OTE Telecom, Greece's biggest telecoms operator said that revenue would start growing from the second half of the year as coronavirus vaccinations gather pace and transport restrictions are lifted.

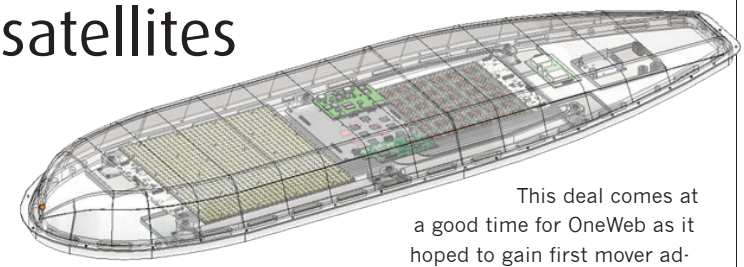
The firm, which is 46% owned and managed by Deutsche Telecom, said core earnings (EBITDA) were almost flat at €1.22bn (US$1.48bn) last year.

Revenues came in at €3.26bn, down 1.3% year-on-year, as global restrictions to slow down the spread of Covid-19 and a weak summer tourist season hit both roaming and its mobile business.

With vaccinations accelerating and tourism, a key growth driver for the Mediterranean country, seen reopening later this year, OTE said it expected a "progressive but measured" return to better operating conditions and revenue growth from the second half.

The operator, which has launched 5G services, said it would continue to focus on growing data usage.

IFC terminal to deliver Wi-Fi on aircraft via LEO/GEO satellites



OneWeb, the global communications network powered from Space and SatixFy UK, a multibeam antenna and terminal design specialist, are currently developing a new In-Flight Connectivity (IFC) terminal that will work over the OneWeb network as well as on Geostationary (GEO) satellite networks.

SatixFy UK has formed a Joint Venture with Singapore Technology Engineering Ltd (ST Engineering), called JetTalk, to exclusively commercialise the IFC terminal for the commercial aviation market.

OneWeb said it is confident of its suitability for all aviation applications - commercial, regional, business and government aviation use-cases. "OneWeb is creating IFC solutions which offer a significant increase in the whole passenger travelling experience," said Ben Griffin, VP mobility at OneWeb. "This agreement with SatixFy represents a major milestone for OneWeb Aviation, as we plot our path to facilitating onboard connectivity, globally, on commercial airliner and corporate jets, large and small."

Yoel Gat, CEO at SatixFy, added: "The ability to deploy multi-beam, multi-satellite, multi-orbit in-flight connectivity terminals is key in SatixFy's offerings. Aggregating capacity from multiple satellites will give customers the grade of service they expect to get on flights. This great leap forward is made possible thanks to the continuous support by ESA and the UK Space Agency."

This deal comes at a good time for OneWeb as it hoped to gain first mover advantage in the satellite broadband space, believing the combination of its harmonised spectrum and LEO constellation design would give it technological supremacy. It secured more than US$1bn in funding before filing bankruptcy protection last year. However, the business was rescued through a takeover by Indian telco Bharti Airtel and the Department for Business, Energy, and Industrial Strategy. The UK government now owns a third of the company after investing £400m in the satellite system. It allowed OneWeb to resume satellite launches and increase its constellation to 110.

MasMovil to buy out telecom rival Euskaltel

MasMovil has made a "friendly" takeover bid for rival Spanish telecom firm Euskaltel worth nearly €2bn, in a move destined to shake up the country's competitive sector.

The former said it had already secured the agreement of shareholders who hold 52.32% of Euskaltel's share capital. It is offering €11.17 per share in cash.

"MasMovil and Euskaltel together form a solid and complementary industrial project," MasMovil said in a statement, adding that the takeover would allow it to "reinforce and boost its growth and continue transforming the telecommunications sector in Spain."

In addition, MasMovil said its offer was conditional on achieving the acceptance of at least 75% of the share capital and obtaining all appropriate competition and regulatory authorisations. The buyer added that it would maintain the Euskaltel, R, Telecable and Virgin brands and maintain employment at those companies. MasMovil said acquiring Euskaltel would reinforce its position as Spain's fourth-largest telecoms company. Euskaltel declined to comment.

Nepal Gautam Buddha airport deploys Sepura SC20 TETRA radios

Gautam Buddha International Airport has become the second airport in Nepal to deploy a TETRA communication solution, following on from Tribhuvan International Airport.

The solution will be led by Sepura SC20 hand-held radios, providing the airport's security and operations team with the standard of secure, robust, reliable communications devices required to safely manage operations.

This mission critical communications solution, built on Teltronic's TETRA infrastructure, is part of the airport's wider infrastructure upgrade. When complete the airport should ease the burden on Tribhuvan.

The TETRA network will allow the airport to respond to the pressure of moving passengers, luggage and cargo at the airport site, improving both efficiency and safety. It will also enable co-ordination between the airport's security and operational teams for everyday operations and, where necessary, emergency response.

Sepura's regional partner in Nepal, Mahavir Shree International Pvt, delivered the solution to the airport's operational and security teams.

This mission critical communications solution, built on Teltronic's TETRA infrastructure, is part of the airport's wider infrastructure upgrade. When complete the airport should ease the burden on Tribhuvan

"By adopting Sepura's SC20 radios, airport staff will benefit from the robust design, crystal clear audio and class-leading coverage capability, making the radio suitable for those working across the airport in security roles and those working in noisy airside locations," said Shiv Prakash Khemka, director of Mahavir Shree International Pvt.

Sepura said that having seen the performance of Sepura's solutions around the world, the purchasing team at Gautam Buddha were convinced of the need to deploy a TETRA network to ensure that coverage was achieved throughout the entire airport site, including runways, covered walkways, passenger areas, cargo areas, hangars, underground areas and parking.

STC to list shares of internet services unit in IPO

Saudi Telecom Company (STC) will list the shares of its internet services unit in an initial public offering (IPO), it confirmed.

The move follows the completion of a feasibility study into the listing of the Arabian Internet and Communications Services Co.

STC said it was now in the process of submitting an application for the registration and offering of its shares to the Capital Market Authority and of an application for the listing of its shares to the Saudi Stock Exchange.

In February this year, STC topped the list of the most valuable telecoms brands in the Middle East and Africa, weeks after it reported its highest-ever annual revenue for eight years. STC's brand value increased 14% to US$9.2bn, jumping five places to 13th on the annual Brand Finance Telecoms 150 2021 report.

This improved ranking comes as it reported its highest annual revenue for eight years. Last year, total revenues reached SR58.94bn (US$15.72bn), an increase of 8.43%.

The Communications and Information Technology Commission also announced that STC has the highest mobile download speed in Saudi.

SpaceX's Starlink arriving in Lebanon in 2022

SpaceX satellite internet constellation, Starlink, is expected to have active coverage in Lebanon next year. According to its website, pre-orders are available with a fully-refundable deposit of US$99.

However, the deposit payment does not guarantee that the Starlink service and relevant kit will be available, but does establish priority for the payer in his or her region for purchasing the it when available in the future.

Starlink has already launched its beta service and made it available to a limited number of users in parts of Canada and the USA.

SpaceX has launched more than 1,000 satellites into space in over 24 missions. The company, owned by South African-born American business magnate Elon Musk, aims to deploy thousands more.

The full Starlink Kit, which includes a small mountable dish antenna, a Wi-Fi router, and power supply, currently retails at US$499. This service also requires a monthly $99 subscription.

Although Starlink is more expensive than most traditional internet services today, its ease of installation, high accessibility for remote areas, low latency, and impressive speeds (300 Mbps download speed), can make the high fees more bearable for some.

Q&A

Simon Fletcher
CTO
Real Wireless

What was your big career break?

I think in terms of establishing my career, my entry to the international technology arena came when I was thrust into the front line of creating the joint venture between NEC and Siemens to create the first global market platform for 3G. For a number of years, it was the market-leading platform for 3G products. It really shaped my philosophy for how projects of similar scale should be approached and how large corporations through strategic collaboration can effectively compete in an early adopters market.

The second break would be when I was invited to be the Chair of the Green Radio Programme, a UK-based research programme tasked with looking at energy efficiency of networks. Around the same time, I headed up the UK delegation to China on a number of occasions to talk to them about energy efficiencies for radio networks. This shaped my view on the importance of sustainability and energy efficiency and how ICT can contribute.

Who was your hero growing up?

I'd have to say Bill Gates. I remember my first experiences with the early personal computers and recognising something that was going to change the way we lived and worked every day. Through my formative years I was always dabbling with computers and playing with programming and MS DOS and windows were emerging and I think that's when the initial spark, pardon the pun, of interest for electronic engineering was lit and, in many ways, that was the defining moment for my career direction. Given that, there's really no doubt that Bill Gates, who for me was the instigator of the personal computer revolution has to be named as my childhood hero.

What's the best piece of advice you've been given?

That's a very hard question – I remember people through my career giving good advice, but I think truly good advice is so clear, so logical that it becomes part of your ethos, your whole ethic, rather than something a specific person shared. Many people like to give advice and I think that's a great thing. Giving advice is a way of sharing experience and shows our inherent human nature to want to help others. Advice is usually based on personal experience – good or bad – and giving advice is our way of trying to impart knowledge that we've gained though our lives either through success or failure and wanting others to benefit from it without the trial and error that we ourselves have experienced. My best piece of advice would be to listen to those who give it and consider what they've been through to get to that position of giving advice – that tells you the true value of the wisdom they are trying to share.

If I was to single out an individual, I would have to name Walter Tuttlebee who really brought home to me the concept and importance of open innovation – especially in terms of shaping outcomes of projects and initiatives.

What's the strangest question you've ever been asked?

Apart from this question... I recall one of my early attendances of MWC and taking part in a technical panel session. During the Q&A after the discussion, I was asked by a journalist what impact the development and adoption of smart cities would have on television and the media – the sectors she was involved in. The discussion panel was focused on the much wider picture; the infrastructure, transportation, connectivity, energy systems and IoT – the broader impact of smart cities on the socio-economic activities, but she was hyper focused on her sector, her role, her industry. It was a bizarre moment when I was in front of an engaged and switched on audience, being quizzed by someone who effectively wanted to explain how this big, far-reaching topic, would impact her role. I think the rest of the panel was quite pleased that her question had been fielded by me and not themselves and wonder to this day if she had attended the session from the very start or just come in for the Q&A at the end.

If you could live anywhere, where would it be?

I've been fortunate to travel a lot through my life and career, and two places have always resonated – Norway, where my wife has family, and Japan, where I have visited many times for work. While they are very different cultures on the surface, there are distinct similarities in terms of the friendliness and welcome that both give to visitors. They also both have strong records for their use of renewable energy, which is something that is close to my heart. In my career, I've always been aware that the communications and technology that are my work has the potential to help build a more sustainable energy future and this is something I'm keen to explore further in the years to come.

What would you do with $1m?

Obviously and predictably, the first thing would be to pay off the mortgage, but after that I think I'd want to look at investing. The UK has a fantastic history of entrepreneurial inventors and small companies in the start-up space can go a long way with some initial seed investment. That type of Angel investment has always appealed and being able to play a role, however small in start-ups that could be the next big thing is something that appeals.

Which law would you most like to change?

I think with reference to my work for Real Wireless, there is a need to simplify and update the planning restrictions on the height and location of masts and infrastructure. It's all moving in the right direction, but there's certainly more that can be done to assist deployment.

On the bigger picture side of things, I hold the sustainability and ESG agenda in the corporate space close to my heart. Establishing regulations around corporate entities to make ESG more than just an extended CSR policy would be something I would like to see. It would really help drive business and industry towards a more sustainable future. The sector is certainly ripe for more effective governance and incentivisation.

If had the oppourtunity to work in a different industry, which would you choose?

I would have to say financial services and investment banking. It may not be an obvious choice, but it's probably influenced by my father who worked as a banker loaning to new start and established businesses, so I was exposed to that sector from an early age. Looking back, I clearly decided to rebel against that direction and pursued my career interests in electronic engineering.

In an ideal world, maybe venture capital investment would be my alternative choice...and maybe when I have that million dollars from the earlier question that could still be an option! While others may wish they'd pursued a career in medicine or politics, I think my alternative career may well have seen me following in my father's footsteps more closely.

What's your career highlight?

As I mentioned earlier, I was part of the team working on the spec and integration management for the first jointly developed 3G base station. The pinnacle of that was being present in the lab for the switch on and testing of the first base station. It was jointly developed by NEC and Siemens, and the atmosphere in that lab as it was switched on was something I will never forget.

I'm also very much enjoying taking part in the UK5G Advisory Board working in a committee that is focussed on helping the UK benefit from 5G. Working as co-chair of the International working group gives a unique opportunity to consider the UK role on an international stage. ■

Do you want to be involved with the 2021 edition of the African Wireless Communications Yearbook?

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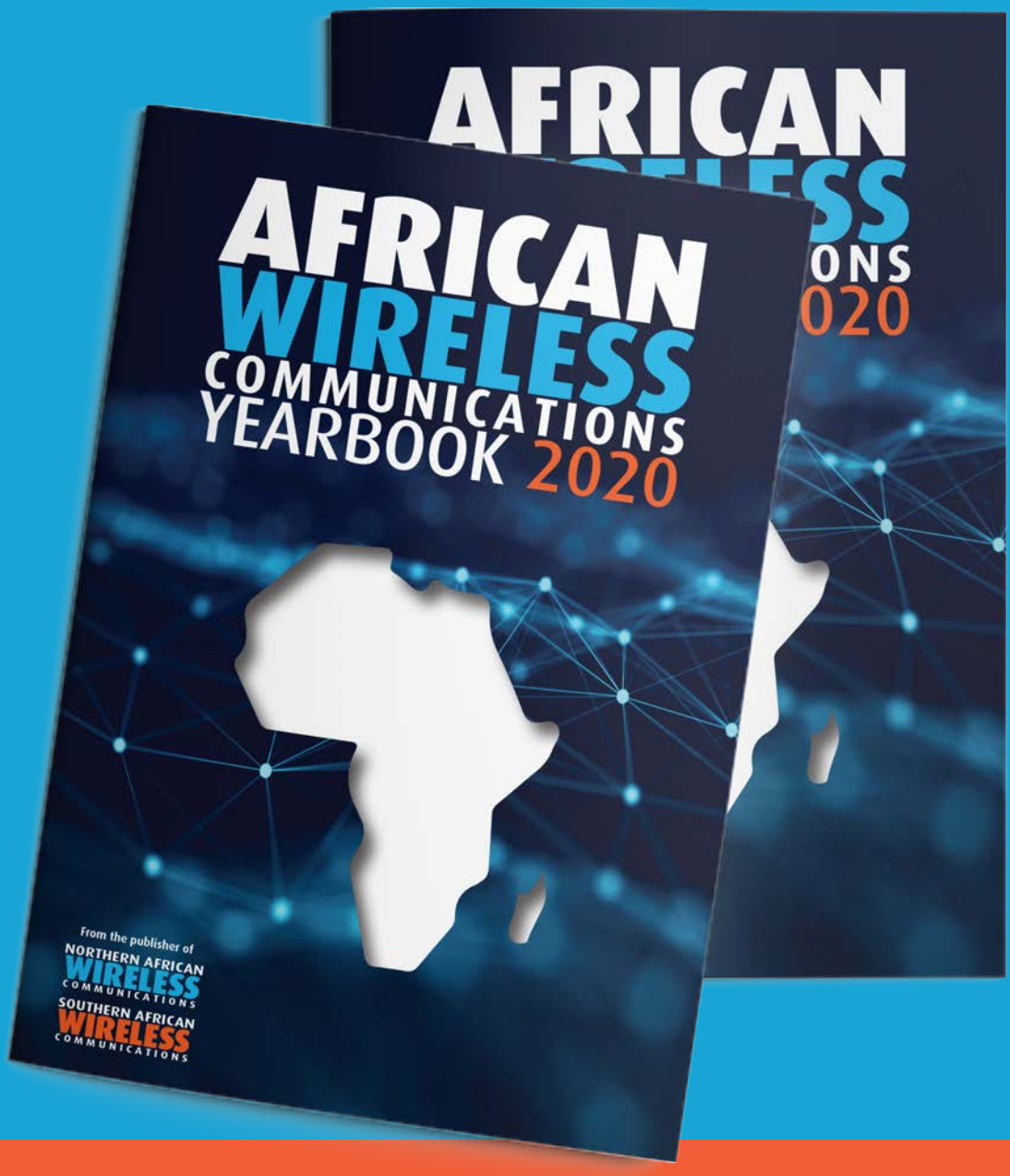

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