

For communications professionals in southern Africa

# SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

MAY/JUNE 2019

Volume 24 Number 1

- The challenges of in-building wireless networks
- Students in Mauritius inspire a Wi-Fi network upgrade
- Is now the right time for an agile wireless network?

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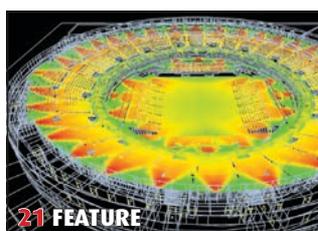
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# Bharti Airtel pays US\$26.2m to Tanzania to settle ownership row

Indian Telecom giant Bharti Airtel has agreed to pay the Tanzanian government TSh60bn (US\$26.2m) over a period of five years to resolve a dispute over ownership of its Airtel Tanzania unit.

Bharti will hand over one billion shillings every month for 60 months, chairman Sunil Mittal said at a briefing in Tanzania's commercial hub, Dar es Salaam. He also confirmed that the company will pay the government a special dividend at end of 2019, but did not mention the amount. Mittal also confirmed that three of the seven members of the company's board will be Tanzanian nationals.

In addition, Airtel will pay the east African nation US\$1m to support development projects, president John Magufuli's communications

director, Gerson Msigwa, said in an emailed statement.

The payments are part of a January 2019 deal in which Bharti agreed to reduce its stake in Airtel Tanzania to 51% from 60%, boosting the country's ownership of the company to 49%.

The government kickstarted the dispute in December 2017 when president Magufuli announced on television that Airtel Tanzania was the government's property via the Tanzania Telecommunications Company.

Referring to an investigation report on regulatory procedures around Bharti's acquisition of Airtel Tanzania, the president indicated that Tanzania had been cheated.

Finance minister Philip Mpango waded in to the dispute when he claimed it was a fraud. Airtel argued these claims were wrong because the



Airtel Tanzania headquarters in Dar es Salaam, Tanzania

acquisition was made in compliance with the regulations in force and had been approved by the government.

Finally, on March 12th, 2018,

Bharti initiated discussions with the government to settle the dispute that had hampered Airtel Tanzania's activities.

## Zambia's mobile subscriber figures on the up

The mobile phone subscription penetration rate in Zambia is now at 90.3%, according to latest figures from the country's regulator.

The Zambia Information and Communications Technology Authority (ZICTA) reported that in Q1 2019, the number rose slightly to 15.7 million, up from 15.5 million in Q4 2018.

The increase is attributed to, among other things, the

expansion of networks by mobile phone network operators who are competing for customers in a population that has become more digitally aware.

Last year, ZICTA warned that the aggressive advertising and marketing campaigns from the likes of MTN Zambia, Airtel Zambia and Zamtel have pushed the nation's market towards the saturation point.

The country's communications

and transport Brian Mushimba said he expected the local mobile market to grow more this year after the arrival of Uzi Zambia, the country's fourth licensed operator.

Mushimba said the new network being established by Uzi will cover the entire country and represents direct competition for the three other operators. Uzi is expected to launch by October 2019.

"Where competition is,

consumers always benefit because the companies are going to compete on quality of service, they are going to compete on the price of service and they are going to compete on the reach of the service," Mushimba said.

ZICTA's statistics also show that the number of mobile internet users increased to 10.2 million from 9.8 million, representing a 58.9% penetration rate.

## Paratus rolls out fibre services in Namibian city

Paratus Telecommunications in Namibia has introduced its fibre packages to businesses and residents in the city of Gobabis.

The company is offering capped and uncapped packages starting from N\$620 for 100Mbps and N\$785 for 10Mbps.

Paratus has completed a national fibre project, connecting from the WACS landing station in Swakopmund eastward to the border of Botswana, serving Gobabis and other towns en-route.

The city's council representative,

councillor Liberius Kalili said he was "proud" to have Paratus come forward and address the requirement for businesses and residents to move into the digital age with fibre-optic cable solutions.

"Gobabis can now look towards new opportunities provided by the Internet platform to grow the economy and we call upon entrepreneurs to support the investment made to elevate the town," he added. "This is a prime example of how mutual cooperation has benefits to both organisations."

Andrew Hall, managing director

at Paratus Namibia said it was a natural progression for the company to start connecting the towns en-route of the first privately-owned national back-haul fibre network through Namibia.

"We will continue on our relentless drive to make investments towards elevating our citizens to gain access to fast and reliable internet services," he said. "We would like to express our sincere appreciation to Cllr Kalili and the team in Gobabis who were very approachable to the idea of moving ahead with installing fibre



Andrew Hall,  
managing  
director at  
Paratus Namibia

infrastructure and their professional execution during the rollout of the first phase of fibre expansion in town".

The telecom firm also offers a range of satellite solutions for clients who do not live or work in a coverage area.

# South African customers less satisfied with mobile operators

The *South African Customer Satisfaction Index (SAcsi)* for mobile operators recorded a drop in satisfied customers among all operators.

Vodacom came top in the 2018 survey of customer perception, with a satisfaction score of 74.8. The figure is down 4.4% from 2017, where the company scored 79.2. MTN came second with a score of 71.8, which is down from the 74.2 it achieved in 2017.

Meanwhile, Cell C saw its score drop to 71.4 from the 76.7 it recorded the previous year. Both MTN and Cell C's 2018 scores place them below the industry average of 73.3.

The SAcsi is a measure of customer perception, as opposed to network quality or speeds.

"While mobile networks have focused on technical and infrastructural delivery and



**Other reasons provided for a decline in overall customer satisfaction scores include commoditisation, market maturity and a lack of visible differentiation**

handset upgrades in terms of capturing customer loyalty, customers have indicated via

the SAcsi that the seemingly softer perceptual drivers such as perceived value for money, quality of relationship and service levels and competent complaints handling are what matter most to them," said professor Adré Schreuder, SAcsi chairperson. "All networks are highly concerned with acquisition, infrastructure and competing, however none are making a clear value proposition around customer-centricity."

Other reasons provided by SAcsi for the three major companies showing a decline in overall customer satisfaction scores in the past 12 months, include commoditisation, market maturity and a lack of visible differentiation.

## Brazilian group in talks over stake in Angola's Unitel

Brazilian group Oi said it has "been in talks" with potentially interested parties in the purchase of its 25% stake in Angolan telecom operator Unitel.

The Rio de Janeiro-based firm said it had not received a proposal from the state-owned oil and fuel company Sonangol, which controls a 25% stake in that telecom operator.

There had been reports that the Oi group had received two proposals to buy Unitel, one of

which made by Africa's richest woman Isabel dos Santos, who also controls 25% of Unitel, which is worth US\$850 million.

The second proposal was reported to have been from Sonangol and worth US\$1 billion. It was supposedly submitted to the board of directors by the chief financial officer and investor Relations Officer Carlos Brandão at meeting in late May.

## Zimbabwe officials consider data rollover

Government officials in Zimbabwe are mulling over the introduction of data rollover to cut costs for customers who are struggling with declining disposable income.

Mobile data currently costs about one US cent per megabyte per second in the country, according to the country's ICT Ministry. However, consumers believe the cost is too high, especially after inflation hit 75% in April.

"I personally wouldn't see any

problem on data rollover," said Zimbabwe's ICT minister, Kazembe Kazembe. "We need to do our best to protect consumers."

The Ministry and the industry regulator, the Posts and Telecommunications Regulatory Authority of Zimbabwe (Potraz) have successfully pushed for infrastructure sharing as another way of keeping telecom costs down.

Econet and state-owned NetOne recently signed such an agreement.

## Airtel Africa makes £3.6bn London IPO claim

Airtel Africa said it is targeting a valuation of up to GB£3.6bn as it moves ahead with its London listing.

The telecommunications and mobile money firm has almost 100 million subscribers, making it the second largest mobile operator on the continent. Plans to float were first announced in early June.

Its IPO has been priced at 80p to 100p a share, with Airtel offering 595.2 million to 744.0 million new shares. Final pricing will be announced June 28th, with shares to start trading in London on the same day.

"We have built Airtel Africa into the second largest mobile operator in Africa and our clear strategy and efficient business model make us well positioned to capture the growth opportunities across our markets, in voice, data and mobile money," said chief executive Raghunath Mandava. "Our leadership position, positive track record and the exciting growth opportunities in the markets where we operate, have resulted in significant interest in our business. We are excited to be able to give

an opportunity to a broader audience of institutional investors to participate in some of the fastest growing telecom and payment markets in the world through the IPO of Airtel Africa shares on the London Stock Exchange."

The company added that it plans to pursue a Nigerian listing to run concurrently with the London IPO.

Airtel Africa, which is headquartered in Amsterdam, operates in 15 African nations, including Democratic Republic of Congo, Madagascar, Rwanda and Seychelles.

Its main shareholder is Airtel Africa Mauritius (68%), which is part of India's Bharti Airtel. The firm revealed in May that it would go ahead with the listing in a bid to cut debt levels across the business.



**Raghunath Mandava, chief executive at Airtel Africa**

# Tough first quarter hurts smartphone shipments in Africa

Africa's smartphone market saw a 7.1% decline in shipments in the first quarter of 2019, with the continent's two biggest markets, South Africa and Nigeria, underperforming.

According to the latest *Quarterly Mobile Phone Tracker* report released by research house International Data Corporation (IDC), economic turbulence caused a 7.1% quarter-on-quarter decline in Africa's smartphone market, to total 21.5 million units.

"Africa is susceptible to challenging local macro-economic environments as well as to global tensions surrounding international trade," IDC said. "Another factor is the rise of protectionist measures aimed at controlling smartphone shipments in multiple countries, which causes sudden short-term swings in the market's performance."

South Africa and Nigeria underperformed due to "seasonal effects", posting quarter-on-quarter declines of 23.4% and 14.7% respectively.

"While Africa's smartphone market experienced a quarter-on-quarter decline, shipments actually increased 5.6% when viewed year-on-year," said Arnold Ponela, research analyst at IDC. "The YOY increase indicates the market is showing some signs of improvement, while the QOQ decline can be attributed to the traditionally weaker performance of Q1 versus the seasonal buoyancy of Q4 in 2018, in addition to disappointing results in some large markets."

South Africa's overall mobile phone market contracted 4% year-on-year in Q1 2019 to 4.7 million units.

"The decline can be attributed to seasonal factors, with Q1



According to the report released by IDC, economic turbulence caused a 7.1% quarter-on-quarter decline in Africa's smartphone market

traditionally being the slowest quarter of the year," added Ponela. "There was also an issue with overstocking in the channel because of the buoyant volumes seen during Q4, traditionally the strongest, when demand is stirred by Black Friday and the Christmas season." Meanwhile, Nigeria saw

smartphone shipments of 2.3 million units in Q1 2019, down 11.9% year-on-year. The report said the west African nation's poor performance can be attributed to a three-week embargo on shipments of Chinese mobile phone brands into the country, which negatively affected major market players.

## Zambia to introduce biometric SIM registration by January 2020

Zambia will implement biometric SIM card registration in January 2020 to combat ongoing fraud.

A meeting was held between regulator the Zambia Information and Communications Technology Authority (ZICTA) and mobile network operators May 21st, in which the directives were explained and agreed upon.

Edward Mulenga, corporate communications manager at ZICTA, said all MNOs would be required to comply with the biometric standards, conduct regular interval verification exercises to ensure accuracy of SIM databases and

furnish the authority with a report of all deregistered SIM cards.

He added that MNOs are required to relay to ZICTA the total number of subscribers with more than 10 registered MSISDNs under the same identity card.

"The authority will place obligations on the seller of SIM cards including use of identity cards for ease of identification," Mulenga said. "Failure to adhere to the directive will attract punitive measures within the law. MNOs should also send an updated dealers' register to the authority and

a report on the agents responsible for any inaccurate registrations and any fraudulent activities."

There had been no response from MNOs regarding the latest directives or how much it would cost to comply when *Southern African Wireless Communications* went to press.

The minister of communications and transport Brian Mushimba had previously raised concerns over the loss of public confidence in the local mobile money market and the issue of unsolicited, unauthorised access to funds within subscriber mobile money accounts.

## Econet hikes international call tariffs

Zimbabwean telecom giant Econet Wireless Zimbabwe has significantly increased its international call tariffs in response to the country's RTGS\$ currency, which launched in February this year.

The company last adjusted the regional and international call tariffs in February when it fixed the cheapest regional call tariff at RTGS\$1.10 per minute. Its rationale behind the increase is that it had "certain services that require direct settlement in foreign currency", which includes roaming fees, international outbound calling and SMS charges.

Published on the company's website, the latest adjustment is effective June 13th, 2019. However, local call tariffs remain unaffected.

The most expensive destination to call from Zimbabwe, according to the new tariff schedule, is classified under Group 7 where call charges are as high as RTGS\$60 per minute.

## DumaCard launches in Tanzania

Direct Pay Online (DPO), the African service provider, has launched the DumaCard business-to-business payment card in Tanzania and neighbouring Kenya.

It is available in both plastic and virtual forms – the latter provides a

16-digit card number, expiry date and security code just like a physical one.

Furthermore, the DumaCard can be used as a single or multiple-use card and can be topped up regularly using mobile money so holders do not have to have a bank

account in order to use it.

It gives businesses in Africa access to new markets by allowing online payments both regionally and internationally and allows customisation so that that merchants can pay single or multiple recipients.

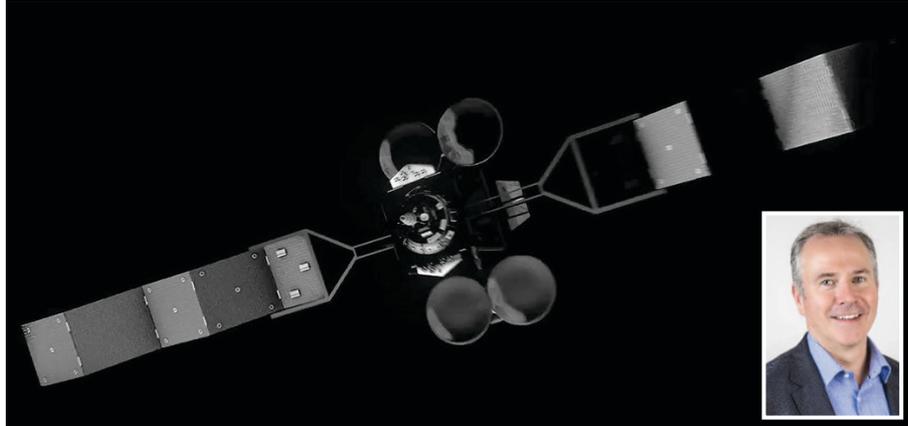
# Avanti brings high-speed satellite broadband to Angola

Avanti Communications, the UK-based operator, has penned a five-year agreement with MGI Global Services which enables the latter to provide high-speed satellite broadband services across Angola, South Sudan and Chad.

The new partnership will improve the penetration of reliable satellite broadband in these three countries, and significantly increase access to the internet.

Using Avanti's latest Ka-band satellite HYLAS 4, MGI will provide affordable high-speed satellite broadband to connect governments, enterprises, schools, clinics and communities in Angola, South Sudan and Chad, especially in rural and other locations where terrestrial networks are either limited or unreliable.

Avanti chief executive officer, Kyle



Whitehill (inset), said: "HYLAS 4, the latest addition to our satellite fleet, was launched to complete our coverage of Sub-Saharan Africa."

Whitehill, said: "HYLAS 4, the latest addition to our satellite fleet, was launched to complete our coverage of sub-Saharan Africa."

MGI managing partner, Ilija Reymond, added that the company was committed to providing

governments, NGOs, businesses and communities across sub-Saharan Africa with reliable and top tier telecommunications services.

"Avanti's HYLAS 4 enables us to provide customers with affordable high speed and

quality broadband flexible Ka-band satellite technology," said Reymond. "We're excited to partner with Avanti to further expand our service portfolio and to continue supporting the digital transformation in Africa."

## New Airtel tower aids rural village

Communities in the Mulaba Village, Sengerema District in Mwanza Region, Tanzania now have communication services thanks to a newly-built communication tower by Airtel Tanzania in partnership with the Universal Communication Services Access Fund (UCSAF).

Albert Richard, chief operating engineer at the UCSAF said that the government has been at the forefront of making sure that telecom companies extend their services to most parts of the country.

"The government through UCSAF commends Airtel for extending quality and affordable communication services especially to rural areas," he said during the visit of the UCSAF board members to the tower. "I'm so happy that Airtel Tanzania has been very supportive and this communication tower we have visited here today is an example of that. I have learned that the communication serves the entire district of Sengerema and stays connected to the Airtel network."

## Malawi operators witness connectivity problems during elections

Malawi Telecommunications and fibre-optic network operator SimbaNet last month joined the list of African service providers that have experienced disrupted internet connectivity during crucial election periods.

The internet providers saw service interruptions as results from the general election came in on Tuesday May 21st. It is understood the disruption lasted six hours in some cases.

According to reports, the

suspension came after a tight election in which president Peter Mutharika was seeking a second term in office.

Data from digital advocacy group NetBlocks showed the outage began at 6:30pm local time, half-an-hour after counting began around the country and results were being sent to the electoral commission. Fixed network carrier Malawi Telecommunications and SimbaNET were reported to be

among those affected.

Local media also noted television and radio communications were taken off air in different parts of Malawi.

Despite the high cost of internet combined with low internet and mobile penetration in Malawi, fake news made its way on to social media in the weeks prior to the elections, prompting a warning from the telecom regulator, The Malawi Communications Regulatory Authority.

## Zambia focusing on ICTs, report finds

Zambia has turned to developing ICTs to boost growth in the country's digital economy.

That is according to a new report from Research & Markets, which says consumers have benefited from access to international submarine fibre optic cables within the landlocked country.

Furthermore, their introduction has resulted in a considerable reduction in fixed-line and mobile access pricing.

In addition, tariffs have been reduced in recent quarters as network operators battle to gain customers in anticipation of the launch of services by UZI Telecom.

The government's Universal Access Fund has made considerable progress in delivering telecom services to historically underserved areas, mainly by financing the erection of over 1,000 base stations. By the middle of last year, the project had helped extend mobile coverage to about 95%

of the population. It is expected to be half-complete by the end of 2019.

Meanwhile, mobile network operators continue to invest in 3G and LTE-based services, while several ISPs have also rolled out WiMAX wireless broadband networks.

MTN Zambia has initiated an FttP program, initially in Lusaka and these developments are expected to increase overall broadband penetration significantly in coming years.

# Wari and Mara Phones partner up to increase presence in Africa

Digital financial services platform Wari has teamed up with African smartphone manufacturer Mara Phones as part of its strategy to increase its presence on the continent.

Wari's services will be preloaded onto Mara devices and the former will bundle its services with the Mara Phone to all its clients.

"We are extremely excited about this collaboration and we expect to see Wari increase its presence and penetration with the bundling of the Mara Phone," said Mara Phones' chief executive officer Ashish Thakkar.

Kabirou Mbodje, chief executive officer at Wari, added that the partnership was a good opportunity for

Wari to diversify its offer and facilitate the utilisation of the MyWari app.

"The Mara Phones are the first 100% African built phones and we should be proud of this achievement. As two African champions, we must support

each other and multiply African partnerships to create value and increase economic growth," said Mbodje. "Africa is 54 countries. We're talking about a billion people, a huge continent, thirty currencies. Why it is not prosperous is because

we're not integrated. We are small countries with no effect on a global scale. If we don't aggregate those markets together, we will not have leverage," he added.

The agreement was signed in Paris at the VivaTech 2019 event.

## Vodacom Congo looks to reverse 2G licence order

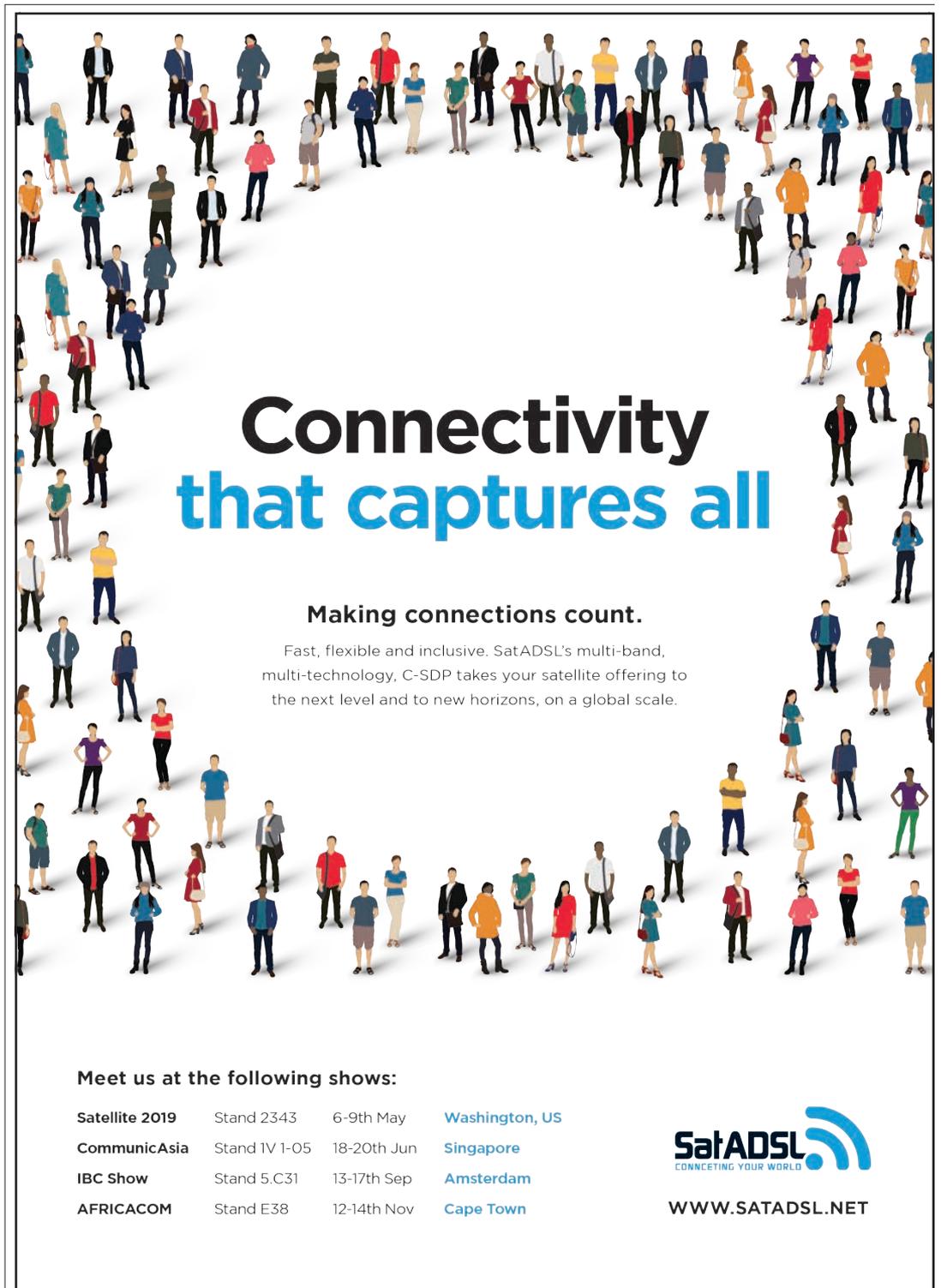
Vodacom Congo, the largest operator in the Democratic Republic of Congo, has petitioned the country's top administrative court to reverse a government order withdrawing its 2G licence.

A directive signed by telecommunications minister Emery Okundji in April threatens to disconnect some of Vodacom Congo's 11.8 million customers who've yet to switch to 3G and 4G. The same is true for people living in remote areas not yet covered by the faster data services.

A first hearing of Vodacom Congo's complaint against the telecommunications ministry has taken place in Congo's capital, Kinshasa. The court's judges are deliberating and are set to give instructions on how the case should proceed.

Okundji told Vodacom Congo to reapply for a 20-year 2G license originally given to the company in 1998, arguing a 2015 extension was obtained illegally.

Johannesburg-based Vodacom owns 51% of Vodacom Congo.



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## Tigo Tanzania launches new Saizi Yako service

Tigo Tanzania has launched a new service called 'Saizi Yako', which is designed to address the specific internet, voice and SMS needs of each customer at an affordable price.

The company said its new offering comes with a simplified menu for easy access and purchase, at a very affordable price.

Tigo chief commercial officer Tarik Boudiaf said that the company's objective was to give "the best all-in-one offer" at competitive prices and meet the needs of its customers.

Meanwhile, Tigo has launched a football promotion called Soka Afrika, giving customers the opportunity to win prizes, including a trip to Egypt to watch the Africa Cup of Nations. The tournament runs from June 21st – July 29th and sees the Tanzanian national team making its first appearance at the event in 36 years.

To participate, customers should text the keyword Soka to 15670 or visit the Tigo website to answer questions on the African football tournament taking place in Egypt.

# Mozambique disaster sees PCCW Global and TSF connect

PCCW Global and Télécoms Sans Frontières (TSF) have received official recognition from the Mozambique National Institute for Disaster Management (INGC) for their combined and ongoing mission to provide critical communications services following the two tropical cyclones which recently hit the country.

One VSAT communications system was installed in the Matarara coordination centre, from which relief operations to five surrounding communities were conducted. A second VSAT was also installed at the Médecins Sans Frontières (MSF) cholera treatment centre in Mafambisse. A further two VSATs provided by PCCW Global have been handed over to Mozambique's INGC, enabling the organisation to rapidly deploy critical communications for any similar emergency in the country.

The cyclone also devastated the region's electricity and communications infrastructure, frustrating disaster response teams that require effective communications in order to coordinate emergency services



**One VSAT communications system was installed in Matarara, from which relief operations to surrounding communities were conducted**

and relief efforts. Beira city itself suffered extensive damage, with almost 80 per cent of the economic infrastructure destroyed.

One month later, Mozambique was struck by yet another tropical cyclone, Kenneth, resulting in the deaths of more than 40 people, displacing a further 21,000, and again damaging infrastructure critical for rescue and relief efforts.

"PCCW Global's prompt reaction and instrumental aid, since the beginning of our operations in the

country, have been essential for the positive impact of our mission for the affected population," said Jean-François Cazenave, chairman, Télécoms Sans Frontières. "The situation on the ground has been very difficult since the beginning, with isolated areas hard to reach and a significant need for rapid telecommunication connections. The contribution of PCCW Global's team on the ground has thus been very important for the success of TSF's operations."

## Orange backing KaiOS

French giant Orange has thrown its weight behind KaiOS Technologies by contributing to the Series B funding round led by Cathay Innovation.

The money will be used to promote and expand the phone operating system in new markets along with the introduction of new features. It is thought there are currently more than 100 million devices running on KaiOS in 100 countries.

"It's partnerships such as this one with Orange that has made KaiOS the third leading mobile operating system with devices in more than 100 countries; further propelling us towards our goal of connecting the next billion users," said Sebastien Codeville, chief executive officer of KaiOS Technologies.

Alioune Ndiaye, chief executive officer Orange Middle East &

Africa, added: "Today the two main barriers to internet access are the lack of infrastructure, for which Orange is investing one billion euros per year, and the cost of the device. As part of our effort to overcome this second barrier, I am very pleased to have this opportunity to develop our partnership with Kai through a direct investment. Providing our customers with access to affordable devices is a crucial step in our ambition to democratise access to the Internet in Africa."

At Mobile World Congress in February 2019, Kai and Orange launched Sanza – a smart feature phone integrating voice-recognition, long battery life and popular apps. The device is available for as little as US\$20.

## Vodacom extends partnership

Vodacom Tanzania has extended its partnership with OSS/BSS software and services provider Optiva for the use of the Optiva Charging Engine and Policy Control (PCRF).

Under the terms of the multiyear deal, the mobile communications company will upgrade its current platform and support, as well as take another step toward leveraging Optiva's cloud-native BSS architecture. The firm will also be able to quickly launch new, flexible and personalised products and services designed to secure additional market share and improve its customers' experiences.

The telecom firm has used Optiva systems for more than a decade.

"Optiva and Vodacom Tanzania have been long-standing partners, and this agreement further strengthens our

ties," Hisham Hendi, chief executive officer at Vodacom Tanzania said in a statement. "Optiva's solutions, with the leading cloud-native architecture, and our close working collaboration allow us to capture the market opportunities faster and stay ahead of our competition."

Danielle Royston, chief executive officer at Optiva added: "We are thankful for our continued partnership with Vodacom Tanzania and their trust in us to extend our relationship long-term. By working closely with our customers to understand their business, our focus on Customer Success helps them to grow their subscriber base and win in their markets. Add the game-changing advantage of moving to the cloud with its promise of 80% lower total cost of ownership, and it's a winning combination."

## Vodacom sells interests

 Vodacom is to sell Vodacom Business Africa's Angolan operations and assets to the largest independent enterprise telecommunications provider in the country. Internet Technologies Angola (ITA) has agreed to purchase the operations and assets and both firms are in the process of concluding the required agreements. The deal supports Vodacom Group's enterprise strategy in Africa, which has been refocused to grow and strengthen its core business.

## Nkurunziza set for return

 The chief financial officer of Rwanda Development Board is set to join telecom operator MTN Rwanda. According to reports, Mark Nkurunziza, will join the subsidiary of South Africa-based MTN Group in a similar capacity. It follows a decision made in a cabinet meeting in late June which granted him leave of absence from public service. Nkurunziza, who has headed the finance docket of Rwanda Development Board since 2012, previously worked at MTN as a senior financial manager.

## Globalstar gets all clear

 Globalstar has received the mobile satellite services (MSS) and terrestrial green light in South Africa, Mozambique, Gabon and Rwanda. The four territories join Botswana to represent a population greater than 100 million people, annual GDP of over a half a trillion dollars and more than 1.7 billion MHz-POPs of licensed coverage across Africa. "Africa is a rich market for our terrestrial and satellite services and Globalstar is committed to bringing its unique mix of solutions to the continent to meet the communications needs of the next generation of African businesses and consumers," said Jay Monroe, Globalstar's executive chairman of the board. "



## Talking satellite

Martin Jarrold, chief of international programme development, GVF



### Satellite's front line

Previously I focused on Africa's satellite ascendancy. This time I want to look at a potential threat not just to this ascendancy, nor one affecting a single continent, but one casting a shadow over the future of satellite communications worldwide.

It is a recurring threat, a regular feature on the telecommunications agenda, but attaining particular prominence with each quadrennial ITU World Radiocommunication Conference (WRC), as the mobile wireless sector ramps-up its cycle of repeated effort to displace satellite from its spectrum in various frequency bands.

Now, as we approach WRC-19, these efforts are revealed again with even greater vigour than was evident in 2015. Yet this just at a time when the providers of the latest generation of mobile networks have clearly acknowledged the imperatives of these networks as having a greater degree of – critical – dependence on satellite compared to any of the earlier generations of cellular systems. To put it at its most succinct – satellite is integral to the 5G architecture Network of Networks.

For example, at WRC-19 the mobile industry plans to introduce a future agenda item to identify additional portions of C-band for "International Mobile Telecommunications" (IMT), namely 3600-3800 MHz. Given that the IMT identification made at WRC-15 in 3400-3600 MHz remains largely unused in Africa, there is no practical justification for additional spectrum for IMT in C-band. Such additional identification will not serve the needs of Africa and will only cause disruption to the critical satellite services being provided in C-band.

GVF has various sister associations around the world, each with their respective geographic or market segment focus. In combination, these organizations work together as the Global Satellite Coalition (GSC) (<https://gsccoalition.org/>). GVF is represented in the GSC via its own Regulatory Working Group. Among GSC's priorities is to advocate for the role of satellite in achieving complete connectivity, contributing to the UN Sustainable Development Goals (SDGs) and the Broadband Commission's

connectivity objectives, to realizing the Network of Networks required for 5G and ensuring satellite services are an essential element of national broadband strategies and universal service programmes.

In the GSC, the position of African nations regarding the preservation of spectrum for satellite use is recognized as extremely important. A dedicated GSC Africa Group meets regularly and the agenda of the next meeting will address updates from GSC representatives attending Southern African Development Community (SADC) and East African Communications Organization (EACO) meetings, as well as preparations for the African Telecommunication Union (ATU) meeting over 17-21 June.

GSC's strategic mission is paralleled, and facilitated, by evolving in-orbit infrastructure taking us beyond, only, geosynchronous (GSO) systems, and on through growth of HTS and Medium Earth Orbit (MEO) systems, and now to the current emergence of the mega-LEO (non-GSO, or NGSO) constellations. Investment by the industry in these constellations is improving the quality and reach of satellite services, as well as enabling development of satellite-based solutions to a wide range of new emerging markets. The industry's goals require that the necessary spectrum is satellite's to use (whether in GSO or NGSO); that it is not re-allocated (as in the case of current commercial satellite use of C-, Ku- and Ka- bands) or assigned (as in the case of future commercial use of Q- and V- bands), as an outcome of WRC-19 or WRCs beyond that.

There are still some older, underlying, problems to resolve in the region. For some, access to satellite services has been made unnecessarily difficult by restrictive regulation, particularly regarding earth station licensing. Despite the existence of many transparent regulatory and licensing regimes, satellite solutions providers still encounter jurisdictions where licensing practice is an impediment because of complexity, application processing times, and prohibitive costs (individual earth station fees, 'landing rights' fees, operator fees) added to which are often-imposed requirements for an in-country commercial presence which brings

additional overheads. The satellite industry, through its only globally focused representative association – GVF – has engaged in long-established advocacy for earth station network 'Blanket Licensing', replacing individual earth station or terminal licensing.

This advocacy, for all fixed satellite service (FSS) systems, is set out in the GVF's International VSAT Policy Declaration: Regulatory Recommendations & Guidelines. It establishes the case for transparent and ease of access to licensing procedures, for speedy execution of licensing applications, and for licensing fees to be set at a level to cover administration costs only. When licensing fees are set too high this only adds to a continuation of a deeply rooted misconception that satellite services are expensive. Reducing bandwidth prices and earth station terminal equipment costs have been a feature of the satellite solutions market for many years, and yet there is a still often-held belief that satellite services are expensive, a misconception fuelled by excessive fee levels.

In closing, I would like to reference a forthcoming event for which I will be part of the moderating team, Cellular Backhaul 2019, embedded in the largest 5G-focused event in the world – the 5G World Summit. It is premised on the recognition that satellite will be integral to the operation of 5G networks and to the entire ecosystem of the Internet of Things/Internet of Everything Everywhere. The IoT/IOEE will be everywhere; with NGSOs, satellite really will be ubiquitous. Today satellite networks complement the offering of terrestrial networks, providing connectivity to areas not reachable by terrestrial means, enhancing the universal service obligation of African countries. Whilst this would seem such a perfect pairing there will be problems to resolve, particularly in ensuring that satellite-IoT regulation will not stifle a huge growth market, one of particular importance for the remote geographies of many regions of the world, including Africa.



# MANAGING MOBILITY IN FIELD SERVICES

The Field Service industry was revolutionised by mobile technology, and this mobility had driven the field service industry. Cell phones and pagers enabled real-time communication between the engineer in the field and the manager in the back office. Smartphones and tablets have taken this one step further. Mobile devices and apps simplify all aspects of field services; work order assignment, dispatch & scheduling, routing/ navigation, technician visibility, and customer communications. Now, the Internet of Things (IoT) looks to become critical to the future of Field Services. New technology such as smart machines, augmented reality (A/R) and connected vehicles are revolutionising the industry. SOTI MobiControl secures and manages all your company's mobile devices, apps and content as well as IoT endpoints and solutions.

## INCREASE FIRST-TIME FIX RATE

Fixing customer issues quickly, on the first call is 'win-win' for the customer and the field services organisation. The customer benefits from a rapid resolution to their problem, while the organisation gets to close the call and reallocate the resource to another customer issue. Mobile technology and new IoT solutions like A/R googles improve first-time fix rate. They deliver real-time voice, video, schematics and animated walkthroughs. An A/R

channel to the senior engineer at HQ lets you dispatch a less experienced engineer who is closer to the job, or even utilise the customer to investigate and fix issues.

## IMPROVE WORKER VISIBILITY

Field service managers and dispatchers need to know where the technician is and the status of each call that is scheduled or completed. Knowing where the technician is enables quick re-scheduling or a high priority diversion. In addition, GPS

functionality provides technicians with an optimised travel route and call schedule. Real-time location information warns the technician about traffic hazards and bad road conditions. Based on this data, they can calculate optimal routing and job schedules to reduce fuel costs and improve technician utilisation. Lastly, location data delivers improved service to the customer – providing more accurate estimates of arrival time, a channel for communications and add the capacity to bill and/or pay immediately.

## WHAT CAN SOTI DO FOR FIELD SERVICES?

### KEEP WORKERS SAFE

Whether you manage a fleet of vehicles or oversee a mobile workforce, there are measures you can take to reduce risks of distracted driving. SOTI MobiControl's distracted driving policies can assist to protect your workers from dangerous driving. We let you lock down devices or applications based on vehicle speed. SOTI can help reduce risks to your organisation by enabling lockdown/kiosk mode, which limits the functionality of mobile devices on the road.

### ELIMINATE DOWNTIME

Field Service technicians need a working device to stay productive. However, they don't have the expertise to fix them when a problem occurs. SOTI MobiControl's remote support features make it easy for IT staff to communicate with remote users, see what is going on and then fix the problem. Remote support is available anywhere and anytime, so the problem device doesn't have to be shipped back for repair.

### MANAGE EVERYTHING

All the new endpoints, sensors and devices deployed require full lifecycle management more than ever. For some devices the risk is more than compliance and data privacy, it is patient safety. New devices and endpoints will range from simple little temperature and motion sensors to complex systems such as an autonomous farming equipment. SOTI MobiControl delivers management and security for these new mobile devices, sensors and endpoints, as well as their applications and content.

### TRACK YOUR ASSETS

Your workers are constantly on the move, and so are their mobile devices. Visibility into where these assets are, and what they are doing can improve your operations. SOTI MobiControl can track everything a mobile device does such as when it was used, and why. Flexible reporting features make it easy for IT Staff to extract this information and figure out ways to streamline mobile operations. SOTI helps you keep track of your valuable mobile assets and can lock them down or wipe them if they are lost or stolen.



# Orange launches Tunis Digital Centre to provide support for start-ups

French telecom firm Orange has launched the Orange Digital Centre in Tunis, to provide wide-ranging support for start-ups, including training in coding as well as guidance in start-up acceleration and investment in early-stage companies.

The company said the centre houses four strategic programmes: the coding school, the FabLab Solidaire, Orange Fab and Orange Digital Ventures Africa.

The coding school is a free-of-charge technological centre that offers training and events for the community. It is particularly aimed at students, young graduates and entrepreneurs.

The FabLab Solidaire is a digital production workshop for creating and prototyping with digital equipment, such as 3D printers, milling machines and laser cutters.

Orange Fab is a start-up accelerator with an aim to build national and international business partnerships with the Orange Group and the international Orange Fab network.

Meanwhile, Orange Digital Ventures Africa is a €50m investment fund for financing start-ups in Africa and the

Middle East, focused on several key markets including FinTech, e-health, energy, edutech and govtech.

Alioune Ndiaye, chief executive officer of Orange Middle East and Africa, said he was “very proud” to launch the first Orange Digital Centre in Tunis and by the close of 2019, the company will set-up similar centres in Senegal, Côte d’Ivoire, Jordan, Cameroon, Burkina Faso and Sierra Leone.

“From 2020 onwards, Morocco, Egypt and the rest of the countries in the Middle East and Africa region will have their own Orange Digital Centre,” he added. “Functioning as a network, these sites favour sharing experiences and expertise in a way that will benefit not just entrepreneurs but also students, young people with or without degrees, and young people undertaking a career change. We will therefore work in close collaboration with all our stakeholders, including governments and academics, to strengthen the employability of these young people and to encourage them to run businesses and to innovate.”

The system in Tunisia is made up



Orange said it will set-up similar centres in Senegal, Côte d’Ivoire, Jordan, Cameroon, Burkina Faso and Sierra Leone by the close of 2019 PHOTO: ORANGE

of 27 partner universities, alongside five centres in the region. The aim is to offer access to and support for the best uses of networks to the largest number of people possible.

“Through our programme, 16,000 young Tunisians have been trained and given support with digital technologies, 1,800 have benefited from career change work experience courses, 800 secondary school students have been taught coding and 95 per cent of them

have been employed in Tunisia or abroad,” said Thierry Millet, chief executive officer of Orange Tunisia.

Orange operates in 19 African and Middle Eastern countries and had 120 million customers at the end of 2018.

In February 2019 the firm announced the launch of Sanza smart feature phones to Africa and the Middle East markets [see *News Feb-Mar 2019 issue*], in collaboration with KaiOS Technologies and mobile baseband chipset supplier UNISOC.

## MTN unveil plans to create ‘Africa’s biggest bank’

MTN has unveiled plans to build a “market place” in a bid to turn its mobile money platform MoMo into Africa’s biggest bank.

In presentation slides for a capital markets day in Johannesburg, the South African telecom giant said it wanted to first enable payments to merchants and companies via MoMo and then convert the app into a “financial services market place” where it would offer both MTN and third-party products. The firm said customers would be able to purchase anything from household appliances to insurance.

With a 233 million-strong subscriber base spanning Africa and the Middle East, MTN is also trying to simplify its portfolio, reduce risk and achieve R15bn (\$1bn) worth of capital over the next three years to help with the transformation.

As part of the process, MTN said

it would sell its stake in investment fund Amadeus to private equity firm HarbourVest for circa R1.2bn.

## SA telecom firm makes swingeing cuts despite profits surge

Telkom SA cut 13.4% of permanent jobs after posting a 22.6% surge in full-year earnings as a strong performance in its mobile business offset declines in the traditional fixed-line unit.

The company, which runs South Africa’s biggest fixed-line telecom network, said its total permanent jobs, as of March 31st, dived to 15,296 from 17,472 in financial year 2018.

Headline earnings per share (HEPS), the main profit measure in South Africa, came in at 722.4 cents for the year through end-March, compared with 589.3 year-on-year.

HEPS excludes the impact of voluntary severance packages (VSP), voluntary early retirement packages (VERP) and section 189 cost of R728 million.

## Ethiopia approves legislation to open telecom sector to foreigners

Ethiopia’s parliament has approved a draft law that would allow foreign companies to invest in its telecom industry.

The law further establishes an independent communications regulator, which is accountable to the prime minister and is charged with promoting competition.

It also says that ownership of telecoms companies “shall be open without limitation to private investors including both domestic investors and foreign investors”.

Lawmakers “approved into law the Ethiopian Communication Regulatory Proclamation,” innovation and technology minister Getahun Mekuria posted in a tweet. “This is a huge step in reforming the telecom sector.”

The law repealed several pre-existing ones on which the country’s state-owned telecoms monopoly, Ethio Telecom, was founded.

## Liberian government investigates regulator after internet lockdown

The Liberian government said it will investigate the country’s regulator following complaints of an internet and social media blackout during recent civil protest action.

People took to the streets of Monrovia June 7th in protest at corruption and economic decline.

A complaint was lodged by Grand Bassa County District 5 representative Thomas Goshua and the House of Representatives instructed its committee on posts and telecommunications to investigate the Liberia Telecommunications Authority (LTA)

The 12-hour shutdown is understood to have incurred a loss among ISPs and the government of an estimated US\$109,913 in revenue.

The minister of information, cultural affairs and tourism said the government was informed of threats to the country on that day

and admitted that online and social media platforms were blocked “because of security concerns”.

## MTN Rwanda starts interest payments

MTN Rwanda said it has started paying out Frw93 million (US\$102,762) in interest to its 2.7 million mobile money customers for the first quarter of 2019

Payment of interest is in line with e-money regulations set by the Central Bank of Rwanda to give Mobile Money customers interest earned on MTN’s escrow accounts.

It is calculated on an average monthly basis on the subscriber’s wallet closing balances and paid out quarterly.

“MTN is committed to ensuring that its customers reap the benefits of using the Mobile Money service,” said MTN’s chief business and corporate affairs officer, Chantal Kagame. “With more and more digital transactions being done as we move towards a cashless society, we encourage our customers to maintain an end of day balance on their wallets that earn them interest.”

As part of the Rwandan government’s drive to move to a cashless society, the penetration of mobile money has grown unabated. Existing offerings such as MoMoPay for merchants, Tap&Go payments for bus services and Bill Payments are just a few examples of growing services.

## OBS names new Africa VP

Orange Business Services (OBS) has named Sahem Azzam as vice president Middle East and Africa.

Azzam will be based in the regional headquarters at Dubai Silicon Oasis in the United Arab Emirates (UAE)

and takes over regional leadership from Luc Serviant.

OBS added that Azzam will lead its regional team, with support from offices in Egypt, Morocco, Nigeria, Saudi Arabia and the Arabian Gulf, South Africa and Turkey.

He will be charged with accelerating the growth of the business, leveraging opportunities from the rapid digital business transformation across the region, which is creating a new operating landscape for enterprises and governments.

“We are pleased to welcome Sahem Azzam, who will play a critical role in leading the regional team in the Middle East and Africa, supported by our strong partner ecosystem and innovation culture,” said Richard Van Wageningen, senior vice president for Indirect, Middle East, Africa, Russia (IMEAR), at OBS.

Azzam brings over 15 years of experience in the region to his new role, including sales and marketing management across the ICT industry and networking space in several multinational organisations.

## South Africa fuses comms and telecoms departments

The merger of South Africa’s department of communications (DOC) and the department of telecommunications and postal services (DTPS) will now be known as the department of communications and digital technologies (DCDT).

It follows president Cyril Ramaphosa’s decision to announce the appointment of a reconfigured national executive following the recently held general elections.

After the elections in May,

Stella Ndabeni-Abrahams retained her post as minister leading the country’s ICT agenda.

“The minister of communications is responsible for the department of communications and digital technologies,” Ramaphosa said in a statement. “This is a new department arising from a merger between the department of communications and the department of telecommunications and postal services. “Some departments remain mainly unchanged, but require changes to nomenclature to conform to ministerial portfolio designations. The total number of departments has been reduced by five, stemming from mergers and the transfer of functions.”

## African online payment service launches in Tanzania

Direct Pay Online (DPO), the African service provider, has launched the DumaCard business-to-business payment card in Tanzania and neighbouring Kenya.

It is available in both plastic and virtual forms – the latter provides a 16-digit card number, expiry date and security code just like a physical one.

Furthermore, the DumaCard can be used as a single or multiple-use card and can be topped up regularly using mobile money so holders do not have to have a bank account in order to use it. It can be used internationally and locally and allows customisation so that that merchants can pay single or multiple recipients.

## Cell C names new HR boss

Cell C, the South African mobile operator, has named Juba Mashaba as its chief human resources

officer, effective June 1st.

His appointment is part of a strategy to implement “a new transformation initiative”, which the company said is aimed at creating an environment of employee empowerment and business conversion.

“Mashaba has gained experience across many HR areas, having worked for both South African and global leading brands,” the company said in a statement, “He joins Cell C from Aveng where he served as an executive director and director of HR since 2007.”

Before that, he was head of human resources at both Arcelor-Mittal (South Africa) and Simba, a division of PepsiCo International.

“Juba’s experience will undoubtedly strengthen our renewed focus on people management. I am confident that he will be an excellent addition to our leadership team,” said Cell C chief executive officer Douglas Craigie Stevenson.

Mashaba has taken on the role formerly held by Juliet Mhango, who has been appointed chief human capital development and transformation officer.



**Juba Mashaba, recently appointed chief human resources officer at Cell C**

## MTN sees revenue growth in Q1

MTN Group said it recorded revenue growth of 10 per cent during the first quarter of 2019 — led by

## PEOPLE MOVES & CHANGES

Date	Name	New employer	New position	Previous employer	Previous position
18/4/19	Eddy Kapuku	Airtel Madagascar	Managing director	Airtel Madagascar	marketing director
1/6/19	Juba Mashaba	Cell C	Chief human resources officer	Aveng	Director of human resources
17/6/19	Sahem Azzam	Orange Business Services (OBS)	Vice president Middle East and Africa	NA	NA

## INVESTMENTS, MERGERS, ACQUISITIONS

Date	Buyer	Seller	Item	Price	Notes
22/3/19	Maroc Telecom	Millicom	Tigo Chad	NA	The acquisition forms part of Maroc Telecom’s strategy to expand operations in north and central Africa, while Millicom focuses its efforts on Latin America.

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strong operational performance in South Africa, Nigeria and Ghana.

The growth in service revenue was supported by 5.9 percent growth in voice, 18.3 per cent rise in data and 30.6 per cent increase in fintech revenue.

MTN South Africa slashed pricing for pre-paid customers, making data services much more affordable.

“We are encouraged by the operational progress we continue to see across the business, supported by the network roll-out we achieved and enhancements to the propositions that we offer to our customers,” said MTN Group chief executive officer Rob Shuter.

MTN also launched Africa’s first instant messaging platform Ayoba in Ivory Coast and Cameroon. MTN will expand the instant messaging service into other markets in the second half of the year.

## South African cloud business buys major stake in iWayAfrica Kenya

South Africa-based cloud computing firm Echotel International Proprietary is set to acquire 80 per cent of internet service provider iWayAfrica Kenya after it was given the green light by the Kenyan competition watchdog.

The former resells Internet connectivity, virtual private network (VPN) and online security services.

iWayAfrica is a subsidiary of Gondwana International Networks (GIN), a pan-African communications service company and one of the largest VSAT operators on the continent through its operating brands, Africa Online and iWayAfrica.

“This is an exciting opportunity for iWayAfrica Kenya to strengthen and ex-

pand our service offering to customers, said iWayAfrica Kenya country manager Ken Munyi.” This is not only a positive development for customers, but also for staff and suppliers who can be assured of continuity as a strong, focused, industry-leading business.”

The Competition Authority of Kenya said that proposed transaction qualifies as a merger within the meaning of Section 2 and 41 of the Competition Act No.12 of 2010 as it would not affect competition negatively.

## Telecom reports major spike in earnings

Telecom Egypt, the north African nation’s largest internet provider, reported a surge 109.3 per cent increase in Q1 earnings for the year 2019. Net profit amounted to EGP1.62bn, compared to EGP774m in Q1 2018.

The company’s revenue rose 27.41 percent to EGP6.09bn in Q1 2019, compared to 4.78bn pounds the previous year.

“This quarter shows strong results and a robust preface to Telecom Egypt’s strategic objectives for 2019,” said Adel Hamed, the group chief executive, “Our retail revenue continues its notable growth driven by both fixed and mobile data, reflecting the growth of our customer base across our spectrum of services, which will soon expand to quad play.”

## Vanu and AMN expand deal to serve remote villages

Global network equipment provider, Vanu, has announced the expansion of its ongoing agreement with Africa Mobile Networks (AMN) to supply mobile network

infrastructure in support of the latter’s mission to connect rural communities in sub-Saharan Africa.

AMN, which has orders exceeding 2,500 systems so far in 2019, has placed orders for more than 3,000 Vanu systems over the last two years. Both organisations want to provide mobile network operators (MNOs) with a fully-connected Africa and have collaborated to enable coverage for 1.1 million previously unserved people.

Vanu’s equipment, tools and services enable MNOs and partners, such as AMN, to provide off-grid coverage profitably. Its high-resolution coverage mapping tool, VanuMaps, provides MNOs, partners and potential investors with high-resolution coverage and population data needed to more accurately and efficiently identify the return on investment afforded by serving previously uncovered villages.

## Airtel Madagascar appoints new MD

Airtel Africa has named Eddy Kapuku as the new managing director of Airtel Madagascar.

He will replace the outgoing Maixent Bekangba who has been in charge since 2015.

Kapuku said he intended to focus on increasing the company’s growth momentum and partnerships with government to develop the country’s economy, specifically in the area financial inclusion.

“Financial inclusion, bridging the digital divide and network rollout are at the heart of our priorities,” he added.

With a population of 26 million, a mere 12 per cent of citizens have access to fixed and mobile internet.

Kapuku began his career in telecommunications as a telecoms

engineer. He also has expertise in marketing, product development and sales. Prior to his latest appointment, he served as marketing director in Gabon and in the Democratic Republic of Congo in 2016.

## Mozambique telco inks deal with Huawei – reports

Mozambican telecom company Tmcel has reportedly spent US\$23m on telecom equipment under a contract signed with controversial Chinese tech giant Huawei.

The amount to be invested by Tmcel is thought to have come from the company’s own resources that the amount will be the result of the sale of assets “which are not the main focus of Tmcel’s business”.

Mozambique’s minister of transport and communications, Carlos Mesquita, said that an investment project, also in the telecommunications sector, with an estimated value of US\$130m, is due to launch before the end of 2019.

He added that this project, whose contribution from China he did not disclose, is focused on installing a fibre optic network in Mozambique, linking the north and south of the country, as well as the hubs that connect to neighbouring countries.

“The project is well underway, it has already been approved by the Chinese government, and the practical aspects of the disbursements are now going ahead,” said Mesquita.

## Uganda’s central bank to regulate mobile money

The Ugandan government is drafting a new law in which it will transfer regulation of mobile money services

## LATEST COMPANY RESULTS

Date	Company	Country	Period	Currency	Sales (m)	EBITDA (m)	EPS (units)	Notes
31/3/19	Telecom Egypt	Egypt	Q1	EGP	6.09bn	NA	NA	The company’s revenue rose 27.41 percent to EGP6.09bn in Q1 2019, compared to 4.78bn pounds in Q1 2018.
31/3/19	MTN Group	South Africa	Q1	ZAR	NA	NA	NA	Revenue increased year-on-year by 4.6%.
15/4/19	Sudatel	Sudan	Annual	USD	326m	NA	NA	Overall operating revenue of US\$326m was down by 36 per cent from US\$513m in 2017.
30/4/19	Orange	France	Q1	EUR	4.4bn	NA	NA	Orange saw a sales decline of 1.8% in its domestic market, to around EUR4.4bn (USD4.9bn), compared with the year-earlier period, citing a “challenging competitive context” in its domestic market.
04/5/19	Safaricom	Kenya	Q1	KSH	234bn	NA	NA	Safaricom’s total revenues increased seven per cent to KSH251bn (USD2.51bn) from KSH234bn (USD2.34bn), with M-Pesa revenues contributing close to 75 per cent of the revenue growth.
14/5/19	MTN Nigeria	Nigeria	Q1	N	48.4bn	NA	NA	company grew its revenue by 13.2 percent to N282bn driven by voice, which accounted 74.9 percent of the total revenue.

to the country's central bank.

Speaking at a two-day public consultative in Jinja last month, Bank of Uganda (BoU) deputy governor Louis Kasekende, said the new law will give the central bank the sole responsibility of regulating mobile money and payment services in the country.

"We currently share the responsibility of regulating mobile money with UCC (Uganda Communication Commission)," he said. "But there is a new law that is in offing, the National Payments Bill that will assign the regulatory role of mobile money services to central bank."

The National Payments Bill will seek to streamline Uganda's payment system in which government is seeking to reduce cash payments by at least 2022.

Kasekende said that for a long time there has not been any specific law to regulate mobile money services, which has allowed telecom companies to introduce different financial products although it is not their core mandate.

Currently, mobile money services are regulated through a shared responsibility that is governed by BoU and UCC.

Although the central bank has the sole responsibility of regulating financial services, the financial services offered by telecoms have remained largely unregulated given that they are offered by non-financial institutions.

### Sudatel net profit falls

Sudatel, the telecom and internet service provider in Sudan, recorded a net profit of US\$32m in 2018, down from the US\$45m posted in 2017.

Overall operating revenue of US\$326m was down by 36 per cent from US\$513m in 2017, but revenue from operations in Sudan was up 49% last year.

"We adopted a very clear strategy of partnering with successful international firms to expand our operations both in Sudan and in west Africa," said Sudatel group chair Fadul Abdalla. Fadul noted, "This strategy is serving us well and will be continued."

Sudatel's chief executive officer Eng. Tarig Hamza Zain Elabdein, added that Sudatel had moved from being a telecom operator providing voice and data to an ICT solution provider.

"The Sudatel data centre is one example of this, with customers that include large institutions in Sudan

such as banks, public corporations and insurance companies," said Elabdein. "We are also hosting Google's servers, and this vote of confidence in our data centre has boosted our reputation globally."

Sudatel is the only Sudanese company quoted on the Abu Dhabi Stock Exchange, and is also the largest company listed in Khartoum Stock Exchanges.

The company's financial performance for 2018, like all other businesses in Sudan, was impacted by a major currency devaluation.

### Ghana: fintech launches Visa on mobile

Ghana's fintech expressPay has launched Visa on mobile, which means the electronic payment service will enable people and businesses to make and accept digital payments more conveniently by using a merchant QR code to make a payment.

Furthermore, the service is interoperable with other bank apps and USSD short codes. ExpressPay launched the service at the latest Accra Goods Market festival where merchants received digital payments via the new innovative feature.

"This service will accelerate digital commerce and combat some of the challenges small and micro merchants in Ghana face using traditional point of sale systems, including the cost of installation and requirement for electricity and internet connectivity," said Curtis Vanderpuije, chief executive officer at expressPay, "This service will accelerate digital commerce and combat some of the challenges small and micro merchants in Ghana face using traditional point of sale systems, including the cost of installation and requirement for electricity and internet connectivity. It provides merchants with a low-cost and convenient way to receive payments from multiple sources, including debit cards and mobile money wallets. We have ensured that merchants can seamlessly sign-up for the service and receive all the required approvals immediately when we receive their requests."

Adoma Peprah, country manager at Visa Ghana added: "We continually seek strategic collaborations with local partners who share our vision of simplifying digital payments so that more Ghanaians can be included in the payments ecosystem. This partnership with expressPay delivers on that objective, as it will help to include more people and businesses in the formal financial system".

Visa on mobile was launched in Ghana in late 2018. The service is also available to customers who use the mobile banking apps of CAL Bank, Zenith Bank, Ecobank, and GTBank.

### Telco expands fibre footprint in Benin

Benin's Isocel Telecom has officially launched the first phase of deployment of its fibre optic network at the headquarters of the Sèmè City Development Agency in Cotonou.

This initial phase represents the deployment of a 70km long optical fibre access network in the port city's neighbourhoods. The infrastructure, already available in several areas of the city, will facilitate the migration of Isocel subscribers from wireless to optical fibre.

It is part of a major project of fibre optic network deployment in the greater Cotonou area dubbed iNGAN (Isocel Next Generation Access Network).

By 2020, the network will comprise of more than 450km of optical fibre to serve customers in the economic capital city of Benin.

### Cameroon and Vietnam seek solution to Nexttel crisis

Cameroonian and Vietnamese authorities have waded in to resolve a drawn-out managerial crisis rocking Nexttel, the brand name of Viettel Cameroon, which is the third privately-owned mobile telecommunications network service provider in the west African country.

It is a joint venture between Viettel Global Investment Joint Stock Company (a subsidiary of Vietnam military telecoms company – Viettel) and Bestcam, a local shareholder.

The crisis stems from disagreements in the management of the company by the Cameroonian and Vietnamese stakeholders.

Vietnamese shareholders have denied allegations by their Cameroonian counterparts of flouting Cameroonian business laws, including the Organisation pour l'harmonisation en Afrique du droit des affaires (OHADA) law, which translates as "Organisation for the Harmonization of Corporate Law in Africa". The OHADA Treaty is made up today of 17 African states.

El Hadji Baba Danpullo, board chair at Bestcam has accused the general manager of Viettel Cameroon "of running Nexttel like his private business".

He further claimed that the

Vietnamese were recruiting their counterparts at the expense of unemployed Cameroonians.

However, the dispute is also predicated on other issues, such as signatures for financial transactions, engagement of foreign partners, purchase of telecoms hardware and transfers of technology, amongst others.

### Somalia introduces five-day social media blackout following exam paper leaks

The Somali government announced plans to block social media for five days and cancelled national exams after reports exam papers were leaked and sold.

Hundreds of high school students protested in the Somali capital, Mogadishu, although reports were unclear as to whether the demonstrations were sparked by the cancellation of the papers or the planned shutdown of social media. However, the government blamed social media for the leaks.

Education minister Abdullahi Godah Barre said the cancellation of the exams, which started last Saturday May 11th and were supposed to end May 21st. The re-sit was scheduled for May 27th- 31st and social media would be blocked during those days, he added.

"It's a temporary measure which will run for hours when the students are sitting for the exam papers," said the Somaliland minister for telecommunication and technology, Abdiweli Sheikh Ibrahim. "Social media has proven to be a threat to the examinations."

### IN BRIEF...



Tunisia Telecom has signed a memorandum of understanding (MoU) with IT firm 3S for the

launch of a LoRaWAN internet of things (IoT) national network developed by LoRa Alliance. The two companies said the project is mainly aimed at addressing the various emergencies requiring the transmission of small quantities of long-range information with energy and cost constraints. It is also aimed at enterprises and start-ups in their IoT projects. Mohamed Fadhel Kraiem, chief executive officer of Tunisia Telecom and Adel Dahmani, deputy managing director of 3S signed the deal in the presence of Anouar Maârouf, Tunisia's minister of IT and digital economy.

## One Web and Intellian in user terminal partnership



Communications firm One Web has partnered with Intellian to build user terminals designed specifically for remote enterprise networks, cellular backhaul expansion and remote connectivity needs.

The companies said the user terminals will be the units provided to customers to enable the high-speed, low latency service.

They further claim that the user terminals are "perfect" for a range of use cases including connecting businesses in rural areas, schools, hospitals, farms and community centres

This partnership with Intellian represents a major step-forward in the development of One Web's system following the launch of its first satellites and its first customer announcements in February 2019. With six satellites now in orbit and a range of antennas now in place, One Web is aggressively looking to advance the development of its portfolio of user terminals, ranging from compact flat panels to highly-efficient dual parabolics.

"Our user terminals will always be designed with customer needs in mind, ensuring we deliver a service they can trust," says Adrian Steckel, chief executive officer of One Web. "We're delighted to be partnering with Intellian and this agreement marks a major step forward in our efforts to bridge the global digital divide." [www.oneweb.world](http://www.oneweb.world)

## Comtech EF Data expands satellite modem product line

Comtech EF Data has expanded its satellite modem product line, introducing the SLM-5650C and SLM-5650C ODU CyberLynx software defined modems and enhanced performance options.

The company reckons the products feature "extremely compact form factors and software options" and can be integrated with a variety of platforms, while providing an upgrade path to support future requirements.

The SLM-5650C CyberLynx model is an indoor product that operates from -10°C to +55°C using conductive cooling. The heat is transferred from the electronics to the housing and



then to an external mounting surface, such as a trailer wall. The SLM-5650C ODU CyberLynx model is an IP67 rated outdoor unit that is designed to meet MIL-STD-810G and operates from -32°C to +65°C.

"Building on our expertise with the installed and proven SLM-5650A and SLM-5650B Satellite Modems, we reduced the form factor (volume) of the SLM-5650C & SLM-5650C ODU CyberLynx approximately 90%, doubled the processing resources,

reduced the maximum power consumption by 80% and increased the functionality compared to the SLM-5650A," claims Jeff Harig, senior vice president government systems for Comtech EF Data. "The proven performance of our offerings translates into reliability, scalability, and adaptability while optimising space segment for mission-critical communications for government, military and commercial applications."

The SLM-5650C and SLM-5650C ODU CyberLynx Software Defined Modems and the SLM-5650B Satellite Modem are all commercially available. For more information, visit [www.comtechefdata.com](http://www.comtechefdata.com)

## GetSAT and SatixFy collaborate to deliver advanced MCPC system

SatixFy, a provider of baseband modem and antenna chips, products and solutions and GetSAT, the manufacturer of innovative satellite terminals for aerial, maritime and land-based applications, are together offering an advanced MCPC system for what they claim is more highly efficient network optimisation to improve ground-satellite link conditions and data throughput. The collaboration will enable SatixFy platforms to operate and manage GetSAT micronised antenna and modem products. The system is designed with a cloud-ready architecture in mind. It utilizes a friendly and modern, easy to use management for existing and future

GetSAT customers will be able to upgrade their SCPC terminals to operate inside an MCPC network with a shared DVB-S2X up-to 500MHz forward channel carrier at 1Gbps of data and on-demand allocation of DVB-S2X 50 MHz return channel at 200mbps. The solution will be monitored and configured "by an easy to use" network management system controlling the terminals and the space segment allocation. The MCPC system is based on SatixFy's Software Defined Radio ASIC technology, ensuring state-of-the-art DVB-S2X capabilities from VLSNR to 256APSK and data performance.

The new MCPC satellite



system was showcased during Satellite 2019 in Washington, DC, in early May. [www.getsat.com](http://www.getsat.com)

## Belden router now backed with Verizon 4G/LTE technology

Belden, provider of signal transmission solutions for mission-critical applications, says its Magnum DX940e Industrial Cellular Router is now backed with Verizon certified 4G/LTE technology.

This compact device from the company's GarrettCom brand uses the technology to offer "the most reliable connections" over wireless networks in energy facilities and adheres to

NERC CIP industry standards by delivering stricter security protocols and extended flexibility.

"Data is traveling further and faster than ever before in today's industrial markets, which makes it necessary to optimize network reliability and security—especially with the rise in data and compliance standards such as NERC CIP's requirements," says Divij Agarwal,

product manager at Belden. "The new 4G/LTE Magnum DX940e variant is now Verizon certified, giving users the highest possible network coverage and business-ready plan for secure remote connectivity."

Belden further claims that the DX940e is ideal for applications that require

high-speed and secure data transfer remotely over long distances. The router is suited for markets that require flexibility to securely connect to remote substations, either wired or wirelessly and depend on a durable and reliable product that can perform even under harsh operating conditions, such as in the utility, transportation and oil and gas industries. [www.beldensolutions.com](http://www.beldensolutions.com)



# Airbus introduces Dabat Hybrid Roaming feature

Airbus has unveiled a new feature called Dabat Hybrid Roaming, which combines its Tactilon Dabat hybrid TETRA/LTE terminal and its Tactilon Agnet 800 solution to allow users of the terminal to “seamlessly roam” between their TETRA network and LTE coverage.

Tactilon Agnet 800 is an app for smart devices such as the Tactilon Dabat; it enables the

use of features such as push-to-talk, status notifications, text messaging, and emergency calls,



along with the ability to switch to LTE coverage (the Tactilon Dabat's primary mode of operation is to use the TETRA network). Airbus claims the security of the solution is preserved because all Tactilon Agnet traffic is securely protected via the secure client's VPN.

The new service was introduced at Critical Communications World in Kuala Lumpur. [www.airbus.com](http://www.airbus.com)

# Huber+Suhner outdoor MIMO antennas to ease urban 5G deployments

Huber+Suhner has launched “compact” omnidirectional and directional outdoor antennas for use in 4G and 5G deployments. It says the products will help operators with the challenge of providing cost-effective 4G and 5G in urban areas.

The new Sencity Urban 100 and 200 outdoor MIMO antennas cover both 4G and 5G high frequency ranges and the company claims they are “as compact as possible” for discreet installation in different types of street furniture,

such as bus shelters, poles or walls, depending on the location, thanks to various bracket mounting options.

“Operators are under pressure to provide widespread, fast 4G and 5G coverage in urban areas where space is limited and existing infrastructure is condensed and our unique range of outdoor MIMO antennas can play a major role in overcoming these challenges in small cell deployment,” said Claudia Bartholdi, Product Manager at Huber+Suhner. “At the

moment there are no other antennas on the market that are as compact as the Sencity Urban 100 and 200 that cover 4G and 5G bands, so we are incredibly excited to be releasing the Sencity Urban series to the wider industry.” [www.hubersuhner.com](http://www.hubersuhner.com)



# Globalstar SPOT X two-way satellite tracker now available in Africa

Globalstar's SPOT X two-way satellite communications device is now available in Africa to safeguard personnel working in remote or dangerous locations where mobile communications are unreliable.

According to Globalstar, the latest generation of the SPOT family offers two-way SMS and email as well as GPS tracking and a one-touch SOS button. This instantly sends the user's GPS location to the GEOS International Emergency Response Coordination Centre (IERCC) over Globalstar's satellite network and the IERCC then transmits details including the user's precise location

to local first responders.

The company further claims that SPOT X is the only satellite messenger to give users a permanent phone number, easy check-in function and a full, backlit QWERTY keypad for intuitive typing. It also reckons the product has the industry's longest battery life in both tracking and SOS modes.

While SPOT is primarily known for providing SOS and tracking for adventurers including competitors in the Marathon Des Sables in the Sahara, Globalstar says SPOT has been increasingly adopted by enterprises and organisations to safeguard employees in high risk and hazardous environments.

SPOT users now include businesses, military organisations,

NGOs, first responders and rescue agencies. Many use SPOT with third party applications that enhance worker safety with customised mapping and data management.

Globalstar says international wind technology provider, General Electric Wind Energy (GEWE) uses SPOT to track and protect workers as they install, operate and maintain onshore wind power installations in Morocco, Egypt, Ghana and Kenya. SPOT provides operations and security teams with a complete picture of each crew's location in almost real-time as they traverse remote terrain – sometimes with security escorts – to and from sites. Visit [africa.findmespot.com](http://africa.findmespot.com) for more details on resellers in Africa. [www.globalstar.com](http://www.globalstar.com)

## Look out for...

### WBA claims 'world's first'

The Wireless Broadband Alliance (WBA) has announced what it claims to be the world's first Wi-Fi 6 industrial enterprise and IoT trial, as part of its ongoing Wi-Fi program.

Mettis Aerospace, a designer and manufacturer of precision-forged, machined and sub-assembled components, primarily for the aerospace and defence industry, will work with WBA members to test several use cases on a Wi-Fi 6 network at its 27-acre West Midlands (UK) facility. The first of a series of global trials will enable the use of augmented reality, real-time monitoring of equipment, and a host of other applications in an enterprise network environment designed to digitize Mettis' production line. Mettis Aerospace is a supplier to organisations like Airbus, Boeing and Rolls-Royce.

The Mettis Aerospace environment is challenging from a connectivity perspective, with a large geography to be covered and industrial radio interference that can disrupt signals. The WBA said some applications will require high bandwidth, others low latency and mission critical applications need clear prioritization for data. However, it claims Wi-Fi 6 is well-positioned to support the provision of cost-effective enterprise-level connectivity in this industrial environment, “to these standards using the latest security capabilities”.

“Wi-Fi 6 is a critical component for the future of connectivity for enterprises, operators and consumers, said Tiago Rodrigues, general manager at the WBA. “The work of Mettis Aerospace, the WBA and its members will clearly illustrate the role that Wi-Fi 6 has to play.” This first trial will serve as an example to industrial manufacturers around the world who are embracing the move to ‘industry 4.0’ about the capabilities to deliver transformation with Wi-Fi 6”.



Mettis Aerospace's 27-acre wWest Midlands facility



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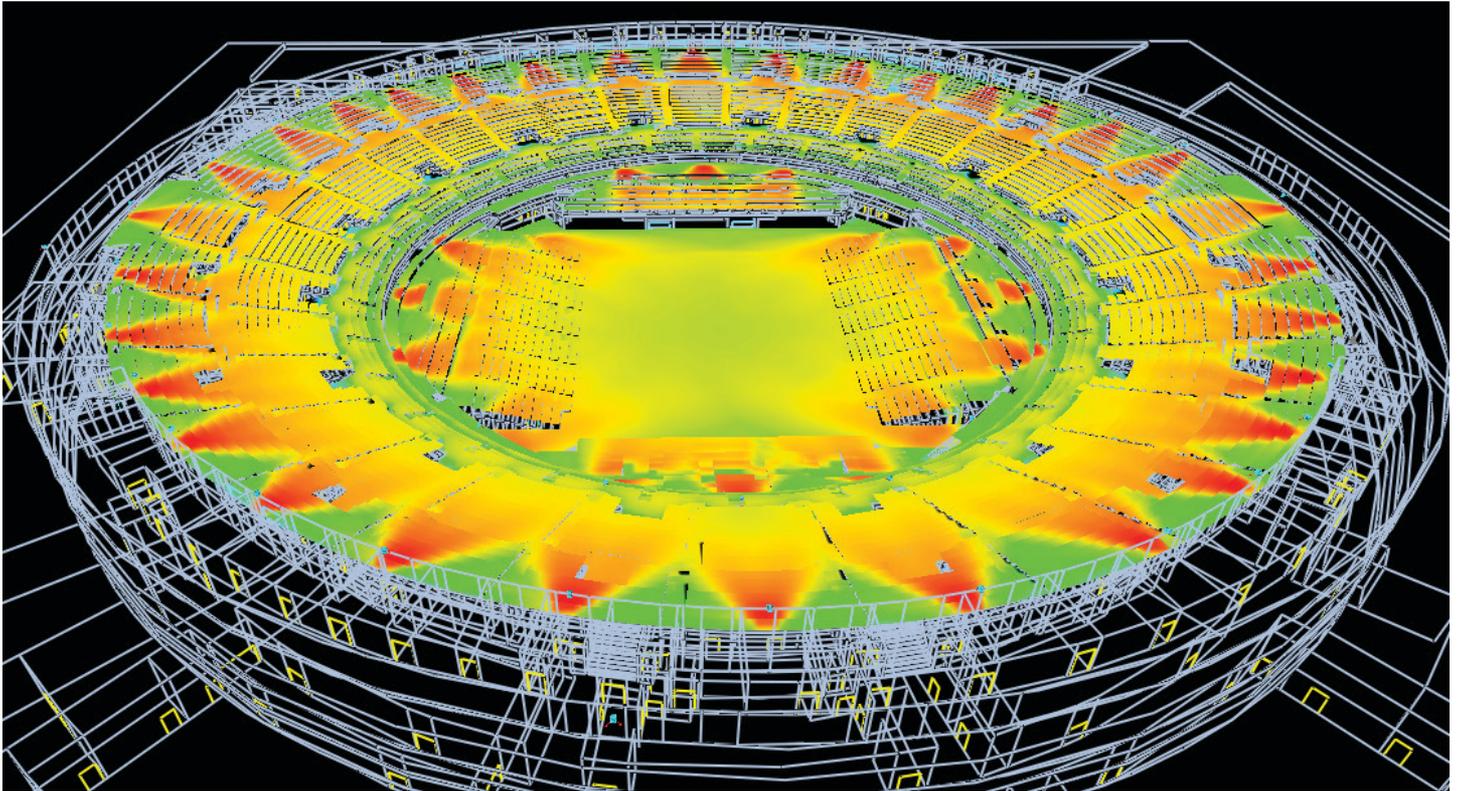
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# Filling the holes

Jon Howell investigates the challenges of in-building wireless

**E**ver since the introduction of smartphones the demands on mobile networks have increased and each device is now capable of consuming ever-increasing amounts of data.

The pressures are only going to increase. There is still plenty of expansion left in Africa for the adoption of smartphones. For example, in countries such as Tanzania although over three quarters of the population own a mobile phone less than a fifth of those are smartphones. Even some of the most mature markets in the continent, such as South Africa, still have a sizeable potential for growth of these data-hungry devices.

## Keeping up with demand

As you would expect, mobile operators are rising to the challenge by beginning to look at 5G. Both Vodacom and MTN have run trials in South Africa and Rain, a data-only network, launched at the end of February in the country. This makes South Africa one of the first countries in the world to launch commercial 5G services.

However, it's not just a new generation that is going to help out. "Operators can increase their number of mobile cells, as that will enable them to service a larger number of simultaneous

users," says Joe Chiou, vice president, Zyxel IBS Business Unit. "For increasing data demands there are two ways through which smartphone users can obtain faster data speeds.

"Firstly, there is MIMO: multiple-input multiple-output. With multiple antennas, each can act as one communications channel and each additional channel can add to the data transmission speed. Secondly, there is carrier aggregation. This technology allows the smartphone to communicate with multiple carriers (wireless signal distribution devices, such as cell towers) at the same time." Carrier aggregation would mean that a phone which can support multiple bands, such as 900MHz, 1800MHz, and 2600MHz, could be talking to three separate towers using each band to avoid signal interference.

So, operators will have methods to increase the bandwidth available to users, but the pressure will come from more sources and indeed in new ways. You only have to look at how wireless networking has changed in homes to see the problem.

"In-home networks have to keep up with more and more devices - from smartphones and TVs to household appliances - all wanting to access the internet, especially since most of them need high speed connections and high bandwidths," says

Sebastian Richter, director of product management for home networking at Devolo. You might think of Devolo as a consumer firm, providing power line Wi-Fi extenders, but they also have a commercial arm where similar products are put into use to solve in-building wireless connectivity issues for businesses.

Businesses won't see their in-building networks struggling under a plethora of Wi-Fi enabled fridge freezers, though. "The primary driver for network growth is connected devices for IoT applications in the home and in the community, including imbedded smart nodes for home controls, public safety and connected automobiles," says Keith Pennachio, EVP at Squan.

Technology such as connected automobiles might seem far off for now, but the rise of IoT has already exceeded 21 billion devices worldwide in 2018, expected to rise to 50 billion by 2022, according to Juniper Research.

As Mervyn Byleveldt, solutions sales manager Africa at Cradlepoint, says, "Smartphones aren't the only consideration for indoor wireless networks, organisations need to consider CCTV, failover for retail outlets, vending machines, ATMs etc." So, the proliferation of devices wanting to share the network is going to be an issue, but it doesn't stop there. "When it comes to the smartphone, too much is still never enough.

With the imminent rollout of 5G and increasing demand for unlimited data, we are starting to see new consumer behaviours,” warns Byleveldt

This shows that there will be demands that might not even be predicted yet. Apps or services which may suddenly strike a chord with users. Maybe it will be a new platform, something that can be data hungry like WhatsApp with its video calling, which will suddenly have users chewing through more bandwidth than ever before. So, what can operators do to prepare for this?

### 5G to the rescue?

Just like 3G and 4G, 5G is going to offer faster data rates and lower latency. Over the three generations, maximum data rates have increased from 42mbps to 1gbps to 10gbps and latencies have dropped from 100-500ms to 50-100ms to 1-10ms.

“Mobile carriers need to start preparing for their pathway to 5G and start their adoption of Gigabit-Class-LTE with a combination of cloud-based applications and services. We are seeing increasing numbers of devices that need to access networks, meaning that additional network on-ramps will be needed as well as remote, cloud-based network management,” says Byleveldt. He also predicts that the adoption of 5G will be even faster than was seen for 4G.

However, Pennachio is more reserved: “Some network operators have taken a ‘Build it and they will come’ approach, while others have been more reserved in their rush to claim success with 5G. Use cases for faster speeds and lower latency are still coalescing around the need for more clearly defined ROI.”

There are also lessons to be learnt from existing technology, such as LTE. “While traditional LTE is already widely recognised by mobile and distributed enterprises as a critical business enabler, one potential drawback is the potential for radio spectrum interference in densely crowded areas like urban centres and stadiums,” warns Byleveldt. “Today, cellular carriers are aggressively deploying small-cell radio access nodes in many urban centres in concert with their efforts to expand their LTE-A coverage.”

On the plus side, existing networks should be able to add 5G, at least for outdoor networks. “Towers can be upgraded, equipment rooms can be expanded, and fiber can be overbuilt. Most 3G and 4G networks are upgradable, through a mix of equipment adds and backhaul augmentation,” says Pennachio.

Unfortunately for 5G, and those who are hoping it will solve their in-building wireless connectivity issues, is that the new technology has some severe drawbacks. Alastair Williamson, CEO of Ranplan, explains, “5G signals will be deployed using the C-band (3GHz-5GHz) and mmWave frequency bands (26-28GHz); and as such have shorter ranges compared to sub 3GHz frequency bands currently employed by 4G (LTE). With these higher frequencies, 5G

signals will find it even harder to penetrate most building materials such as steel frames, glass, insulation, and wood, leading to increased penetration loss if outdoor 5G macrocells are used to cover indoor areas.”

To provide some technical data to show how much of a problem this will be, C-band frequencies will generate an additional 8-18dB wall penetration loss and it's even worse for the mmWave band which will generate over 80dB wall penetration loss. So, it's not going to be feasible to rely on a mobile operator's outdoor network to provide coverage for office blocks, shopping centres, campuses, or stadiums.

There's also bad news for those who are hoping that 5G might come to their current in-building DAS solution. “Most existing indoor networks are passive DAS and cannot be upgraded to 4G/5G,” says Zyxel's Chiou. “Likewise, existing Wi-Fi equipment cannot be upgraded to support 5G through firmware. To support these new technologies, modern equipment is required.” So, it could be that you'd be looking at a building refit, which could be expensive, or to have a repeater in the building, to bring the outdoor network inside, but there are problems with that approach too.

### Solving the problem

“There are numerous issues to consider when deploying an in-building solution,” says Chiou. “How large is the building? Is the building to-be-built or existing? Which parts of the building needs signal provision/strengthening? What is the building layout? Which operator(s) do we want to support? Which operator is or is not willing to pipe a signal source to the building? What cellular technologies (2G/3G/4G/5G) do we need to support? Is it better to use a Repeater, a DAS, a small cell, or a combination thereof? So what's the client's budget?”

Certainly, if you are in the position to be designing a network for a building that is still yet to be constructed then that gives you much more flexibility in the planning. This gives you the potential to feed back into the plans before work starts, possibly suggesting the use of different lighting or separating wall material to reduce interference and signal loss. Although there are limits. “Given that seven stories are considered as a reasonable maximum for outdoor signal penetration from street level,

people in tall buildings may get a good view but no connectivity,” says Williamson, reiterating at how even for new buildings that there are limits on what outdoor wireless networks can achieve.

You also need to consider what your goals are. “You need to address the tenant or owner's need,” says Pennachio. “Maybe it's public safety or mechanicals monitoring/proactive maintenance, then again it could be something more wide-ranging such as improving the existing wireless coverage. Once a use case is established, it is critical to understand the cost and logistics of designing and building a system. Questions around ROI, who will fund, who will operate and who will manage the network once deployed are all questions needing to be answered.”

Pre-existing installations or old buildings can make things more difficult. “The ‘problem’ with older venues is that they typically have older in-building solutions installed, most likely in the form of 2G/3G passive DAS. And the problem with those is that they cannot be upgraded to provide 5G and cannot fully support 4G (uplink signal loss and inability to support MIMO being major issues).,” says Chiou.

“Adding such support will mean a separate DAS (active DAS, due to above reasons), and most older buildings - with their pipes already full from decades of installing this and that - simply have no more room,” he continues, before suggesting that Zyxel's active DAS solutions can help because they use CAT5 cables in lieu of coaxial or fibre optics. “Unlike coaxial and fiber, CAT5 cables are easy to handle (thin, light, highly bendable), easy to install, and easy to afford. Installing ZoneDAS is basically the same thing IT cabling and Wi-Fi planning!”

There are other solutions to help with old buildings which don't have space for new networking cable deployments. “It's important to avoid ‘dead zones’ and this can best be achieved through a combination of powerline communications and Wi-Fi with mesh functionality and additional ‘smart’ features,” says Devolo's Richter. “This solution combines the best of two worlds: powerline communications as the backbone uses the existing wiring to transmit data across the entire property, without the signal being blocked by thick walls or ceilings, and the latest generation of G.hn-based products recently made a huge step forward in terms of speed.”

Pre-existing wireless networks will also cause problems, unless you are in the lucky position of being able to ‘rip and replace’ the whole network. “As the number of wireless network installations increases on a daily basis, the potential for signal interference is becoming a serious threat to the reliability of new and existing wireless broadband networks alike,” says Byleveldt. He warns that you absolutely must take into account all the possible sources of interference, if you want to provide a seamless service. “The key is to choose the right equipment that can dynamically adapt to congestion and interference; older buildings tend to have more interference factors like steel



**Some existing networks will have extra capacity available, others might need ‘rip and replace’**

and concrete rather than dry or temporary walling, and fluorescent lighting rather than the LED lighting newer venues might have.”

## DAS is all?

Distributed antenna systems (DAS) have often found favour for solving in-building networking problems. The central idea of replacing one big antenna with multiple low-powered antennas linked over a transport medium solves many of the problems which buildings raise. Each antenna can be placed to work around the penetration losses that internal walls can cause and reach what would otherwise be dead zones.

It certainly seems as though DAS will remain a relevant option to be considered for deployments. “Distributed antenna system (DAS) network solutions will continue to play a role in the effort to expand network connectivity for the foreseeable future,” says Byleveldt.

There are certainly benefits to DAS. Pennachio explains: “DAS utilizes a RAN architecture, which is highly secure and adaptable across a broader platform of wireless applications. Think about a user moving from their mode of transportation and crossing the transom of any facility while maintaining connectivity and without interruption of use.” Certainly, much like unified communications, the seamless hand-off from one wireless technology to another has not always been easy to accomplish.

Chiou also raises the point that DAS solutions have traditionally been expensive, difficult to install, and complex, although he points out that Zyxel’s ZoneDAS/SlimDAS uses Cat5 cabling which can help with the cost and ease of installation. He suggests that some sites might be better served using small cells, because they can live with small cell limitations: each small cell supports one operator only, and supports just two cellular technologies (pick 2 from 2G/3G/4G; no affordable 5G small cell exists yet). Ultimately though he still believes in the power of DAS. “However, because most building cannot accept small cell limitations, because many are too big or populous to settle for repeaters, and because passive DAS is unable to support newer technologies, active DAS is still the best solution (or part of the solution) for medium/large scale in-door needs,” he recommends.

Small cells are also suggested by Cradlepoint’s Byleveldt. “DAS’s role in smaller indoor and outdoor venues is likely to be reduced as small cell technology continues to mature and evolve. Although DAS technology is currently the preferred method for larger venues, some advancements in small cell network technology will allow them to support additional bands and carriers, making them more competitive with DAS systems,” he says.

However, Chiou still sees them as a less than ideal solution. “Small cells (including picocells and femtocells) are good in that they are designed to be a part of cellular networks. But they are meant to be sold to operators,



The proliferation of smart devices is putting ever greater strain on in-building wireless networks

and strengthen the networks of only single operators,” he says. “As a result, they are widely used outdoors, where they help operators complete their grids, and a lot less suitable for indoor applications, where we want single devices to provide signals from all of the area’s major operators. Imagine installing multiple sets of four small cells all over a building, just to make sure that users of all four cellular operators can stay connected! Also, because each small cell is an independent cell site, areas with overlapping small cell support will experience interference and poor signal.”

## It’s all about planning

Yet another solution is that of heterogeneous networks, or HetNet for short. These networks are comprised of a combination of cell types and different access technologies. The basis tends to be a cellular network, with its various generations of systems (2G-5G), with macrocells being complemented by microcells, picocells, and femtocells in order to fill in coverage or provide extra bandwidth in particular areas. Then HetNets also add Wi-Fi into the mix.

So, it might seem as though there is no simple solution for in-building wireless connectivity. Ultimately there are different choices which are applicable to different ages and sizes of buildings. Various implications depending on how many people use the build and how many IoT devices (and other automated connected devices) are on the network too. However, there is one thing that all in-building networks can benefit from - planning.

As Byleveldt says, “Determine where users will congregate, the type of Wi-Fi-enabled devices they’ll be using, as well as how they’ll be using

them. Another key step you should consider is to do an active site survey at the venue prior to equipment deployment. This step will help you determine optimal network reach.”

Active site surveys are valuable, but there is a lot you can do from the comfort of your own PC. Williamson explains how Ranplan’s products can take a lot of pain and legwork out of network planning. “An indoor solution has to be built around small cells or DAS networks, while also integrating seamlessly with Wi-Fi networks. For effective radio planning inside buildings, the structure has to be defined and modelled in as much detail as possible, including a detailed knowledge-base of propagation characteristics of different materials and the leakage out into the external environment, potentially causing handover issues.”

Ranplan has In-Building and In-Building Lite, the latter aimed at small or medium-sized enterprise projects. There is support for multiple technologies, such as 3G, 4G, 5G, NR, IoT, Public Safety, and Smart Cities. Passive DAS, small cells and Wi-Fi are included, so a network designer can try out different possible configurations.

The product information promises an advanced propagation engine with 3D ray tracing to calculate a coverage map. It’s possible to get a feel for how actual hardware will respond because there is a live database featuring multiple vendor-approved components that are validated and compatible for all wireless technologies.

Ranplan isn’t the only firm that has network planning tools, obviously most vendors of access points (AP) have their own coverage tools to help you choose the correct number of APs for your situation. However, the best way to find which solution is right for you - DAS, small cells, a HetNet, Wi-Fi - is to plan before you buy. ■

# Small island state with a big vision



Charles Telfair Campus (Curtin University), Telfair, Moka, Mauritius PHOTO: CHARLES TELFAIR TRIBUNE

In an era where there has been a change in the lecturer/student role, classrooms have become collaborative flexible learning spaces, with technology and reliable connectivity no longer 'nice-to-have', but a basic necessity

**M**auritius is a country that has experienced remarkable progress with regards to its education system across compulsory primary education, free secondary education and with more tertiary institutions providing enviable learning.

To put that into context, government expenditure on education and training for 2016/2017 and 2017/2018 was circa MUR16,791m and MUR18,214m, representing 12.7 per cent and 12.4 per cent of total expenditure, respectively.

Now, with a new ICT strategy for the Indian Ocean island nation's education sector to boot, it is clear that access and digital technologies are becoming critical to not only making education more accessible, but also providing better services and enhancing the learning

experience and teaching processes.

This is exactly what Charles Telfair Campus, part of Curtin University, is doing to the letter. The campus serves 2,000 students and has a faculty located in Moka,

Curtin is an internationally-focused research and teaching university based in Perth, western Australia with campuses in Singapore, Malaysia, Dubai and of course Mauritius, with strong connections to businesses, industries and over 90 universities globally.

The Mauritian campus was facing critical issues regarding its wireless connectivity, which is far from ideal, when students are heavy users of the internet, social media and streaming educational content due to the needs of their respective courses.

The ageing legacy network led to regular

network outages and downtime, causing frustration for both students and the seemingly helpless and overworked IT department.

"Access to internet is a must at Charles Telfair Campus as it forms part of our curriculum," says Surendra Sewlall, IT manager at Charles Telfair Campus. "However, in the past, we received numerous complaints, especially when lectures were interrupted or when students weren't able to work on or submit their assignments. The students were impatient and the IT department became frustrated. Some of the lectures are being simultaneously conducted with Curtin University in Australia – meaning campus-wide Wi-Fi and connectivity is a mandatory criterion. We needed a solution that would not only solve the unsteadiness of the current Wi-Fi connectivity, but also provide

visibility over the wireless network for better monitoring and troubleshooting.”

Something had to be done, so following a tender process, Ruckus distribution partner Westcon and integration partner Infosystems AA were appointed to design, install and manage the project.

“We needed a solution with the required capacity to meet the demand for high user concurrent connections without performance degradation, while still being reliable and providing flexibility for the management of the network,” said Sewlall.

Notably, the expectation from the customer regarding the new setup of the wireless infrastructure at the Charles Telfair Campus was very high. After all, the campus and its occupants had suffered enough.

“It was very challenging for us to position Ruckus on this project since they did not have any past experience with the brand,” said Souryanand Narroo, head of datacom at Infosystems AA.

“Since the very first meeting, we always tried to reassure them that adopting the Ruckus wireless solution would not only be the most viable investment, but also a worthwhile one as we have seen the products outperform competitors in the toughest of environments. The key determinant for us to win this project was our past reference sites regarding similar successful Ruckus implementations particularly in the educational and banking sectors, which gave Ruckus an edge over its competitor brands.”

Whoever took on the job was going to find it hard going. Busy indoor locations like classrooms and education campuses can be the most challenging Wi-Fi environments. The campus compared the performance of the proposed Ruckus access point (AP) with a competitor product to determine which one was best suited to their requirements as well as requested an RF plan to ensure better coverage across the campus before making a final decision.

Due to cost, reliability and performance, 68 Ruckus 802.11ac APs were deployed to cover four floors, 62 locations including the classrooms and lecture halls, auditorium, canteen, libraries and staff locations providing capacity for up to 900 concurrent users, managed by the Ruckus Virtual SmartZone controller software.

Dozens of users share the same crowded RF spectrum, all expecting fast, reliable connectivity. This solution delivered the right combination of performance, affordability and ease of management.

The results are almost tangible as the campus has experienced significantly improved Wi-Fi performance and user satisfaction since the successful implementation of the Wi-Fi network.

“There has been a big noticeable change since implementation as connectivity has never been so steady, even during peak time periods,” added Sewlall.

“In fact, sometimes I even forget we have a wireless system as everything works and I get no complaints from the students or the staff. It was



**The campus is situated in the village of Moka on the western side of the island** PHOTO: GOOGLE

difficult to explain why we did not opt to go for a traditional big brand – but I think everyone now sees we definitely made the right choice.”

## Bringing power to the people

Rural western Tanzania has long faced the same problems affecting much of the African continent. A lack of network infrastructure and electricity due to a shortage of resource and investment has put heavy strain on every day living. As a result, schools in the area have had to work with what they have and the government-run Zeze Secondary School in Kasulu, Kigoma was one of them.

Teachers and students at the school were unable to access the most up-to-date online educational content, hindering the pupils’ learning opportunities and future employability.

In addition, with less than 25 per cent of people in Tanzania currently having access to electrical power, the absence of electricity and sufficient lighting in the evening means students found it difficult to complete homework assignments and academic revisions, further affecting educational progression.

Yet rather than continue to soldier on in very trying circumstances, the school decided to address the problem and so set out to find a solution that would bring high speed, reliable broadband connectivity to the school, and to source and provide an inexpensive electricity solution.

Zeze chose Avanti Communications, the UK based satellite operator with a rich history of bringing internet connectivity to some of the most rural and remote places on earth.

The iKnowledge project, led by Avanti, deployed high speed broadband connectivity via satellite and provided wireless internet access to the school. Having had the most basic of resources, students and teachers were suddenly able to access the internet via Avanti’s HYLAS 2 Ka-band satellite, which provides 100 per cent coverage of the east African nation. The broadband is installed and supported locally through internet service provider Infinity Africa. It’s also important to mention that the ICT hardware, digital training and educational software are delivered in partnership with Avanti Communications and

## Requirements

- A scalable Wi-Fi network solution to provide reliable access across the university campus
- Capacity to provide high user concurrent connections without performance degradation
- Provide a future-proof solution
- Provide client with a user-friendly and flexible central management interface for the wireless network for easy administration

## Solution and benefits

- High performance network solution that meets current and future Wi-Fi needs with superior connectivity and coverage
- Deployed 68 access points to provide campus-wide coverage
- Ease of management with Ruckus Virtual SmartZone
- Improved density capabilities and overall throughput
- User satisfaction across students and staff. ■

Camara Education Tanzania. The programme is funded under the UK Space Agency’s International Partnership Programme.

Through the Tanzania Development Trust, a fundraising event was run to raise funds for the procurement and installation of solar power in the school. Solar lighting is an affordable long-term renewable energy alternative available in abundance throughout large parts of Africa.

## A connected school

Zeze Secondary School now has reliable internet connectivity, allowing students and teachers to access up-to-date educational content online, as well as being able to use the connectivity for communication via Skype with other schools worldwide.

The teachers and students have recently taken part in an international education conference that was hosted in London, remotely via Skype. Through a conference, they were able to share ideas for school improvement with other schools across the world, such as Brazil and Bangladesh. Students also benefit from the solar panels, as they provide lighting for them to study and revise for exams in the evening.

Zeze Secondary School headmaster Joseph Mabuye explains it perfectly: “Before our satellite was installed, Zeze school was cut off by poor connectivity, but now, thanks to iKnowledge we can share ideas with schools from all over the world,” he says. ■



**The iKnowledge project deployed high speed broadband connectivity via satellite and provided wireless internet access to the school**

# Moving Wireless Forward

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

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

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

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

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

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

## Asset Tracking & RFID

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



**We are now looking for distributors throughout Africa**

## Commercial Fleet Management

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

## Public Transit & Bus Management

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

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

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

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

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

## Remote Monitoring & Surveillance

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

## Mining & Exploration

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

## Smart Cities & Smart Highway

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

## Let us know how we can help

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

**Mobile Mark Europe Ltd**

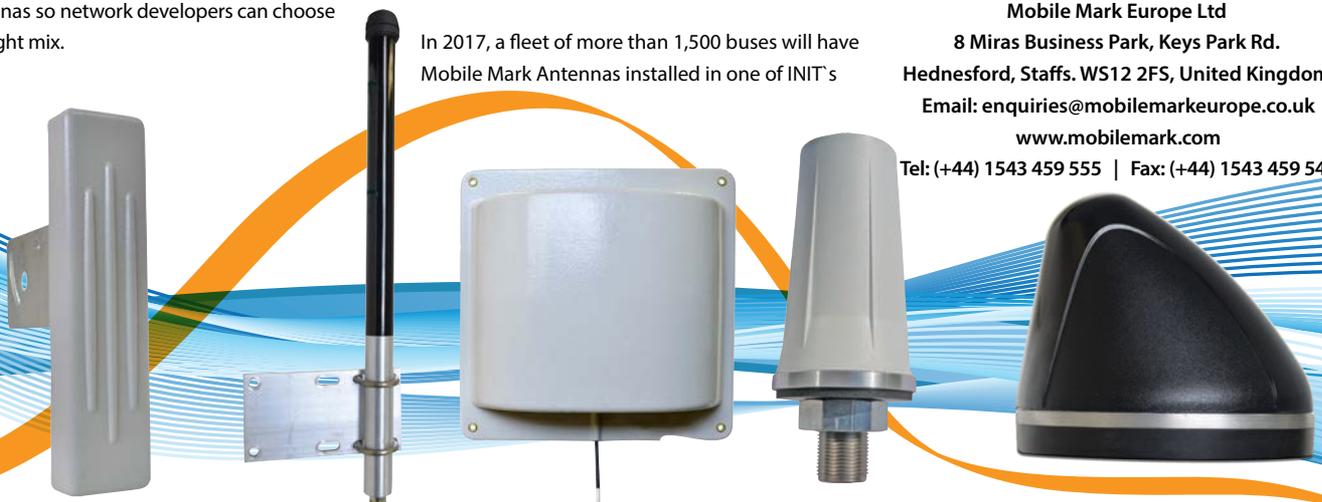
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# Preparing businesses for future wireless networking

Mervyn Byleveldt, solution sales manager, Africa at Cradlepoint explains why now is the time for an agile wireless network

**E**nterprise networks need to be conditioned to keep pace with the speed at which cloud, mobile devices and the Internet of Things (IoT) technologies are evolving – as well as the way businesses now operate. In Africa, today's organisations require networks – and connected devices – to be easily manageable, deployable, and maintainable. From the birth of the internet, to cloud management, modern enterprises need an agile network they can manage at exceptional scale with unparalleled visibility.

The 2018 Gartner Magic Quadrant for Data Centre Networking explains: "As enterprises scale digital business initiatives, they must balance refreshing equipment and expanding capacity, while improving agility and maintaining

uptime in their data centre networks."

For many organisations looking to increase network agility, this starts by leveraging wireless, cellular-based broadband for enterprise networking. The rise of wireless is all around us, but with IoT, cloud, and 5G constantly swirling, thousands of organisations looking to 4G LTE, Gigabit LTE and soon 5G, to increase agility and future-proof their network architecture.

There are still concerns about the immediate relevance of 5G in Africa, while a significant portion of the African market is still struggling with basic connectivity. With connectivity a staple of the business world, organisations need to be prepared and future-proof their networks to ensure that whatever leaps

**Mervyn Byleveldt,**  
solution sales  
manager,  
Cradlepoint



technology makes, they can adapt. In South Africa, Frost & Sullivan predicts its telecoms sector revenue will reach R149.5bn in 2019 – so there is definitely scope.

As the landscape continues to evolve, here are some areas where IT teams can utilise wireless to improve the agility of their networks.

## Operational ease

Agile IT departments are finding ways to save time and resources while adding new applications and deployments. For example, day one Internet is an on-demand style of connectivity with a painless deployment process and little to no cost to install the network. It also provides the option to relocate the network quickly and easily or open a new location with minimal advanced notice.

This makes wireless networking and software-defined networking (SDN) invaluable when networks need to be spun up and down quickly and easily, such as pop-up networks. Often wired connectivity has a lengthy installation time and is difficult to relocate. Pop-up networks allow a business to deploy an Internet connection before the network infrastructure has been developed within the business. Situations like this are a perfect opportunity for a wireless solution, offering day one deployment, a reliable connection, and bypassing installation delays.

Pop-up networks also allow businesses to utilise a wireless network while the wired network is being installed. One unique example is the opportunity for retail stores that are still in the process of opening to spin up instant networks for technologies like interactive kiosks outside the doors. People passing by can enter their email addresses into the kiosks to receive notification for when the store will open, and even shop from the store's online catalogue resulting in an overall profit and relationship with customers before they even open the doors.

## Improving network security

A secure network also increases wireless network agility by giving organisations the

confidence to deploy a pop-up network and continue business operations securely, for instance with credit card transactions when sensitive data is involved.

This also extends to enhanced IoT device security. When combined with SDN, Software-defined Perimeter (SDP) makes it easy to connect IoT devices to applications and resources quickly and securely. Multiple device types can be connected with SDPs, including Windows, Mac, Linux, iOS, Android and even Docker containers. For unsupported devices, such as IoT sensors or security cameras, admins can easily connect the device to the perimeter network behind a router acting as an SDP Gateway.

This technique adds a layer of security to an IoT deployment, reducing the attack surface by integrating IoT devices into an enterprise network. This can also be combined with LTE air-gapped connectivity, which prevents a compromised IoT device from infiltrating your core business information systems. Data is protected, and the rest of the network is secure from breaches that could occur through IoT devices.

## Moving to the cloud

Cloud networking provides centralised management, device and application visibility, real-time web-based diagnostics, reporting and control. These benefits provide more agility by making a company savvier within their networking architecture. Organisations can scale IT infrastructure resources both up and down to meet unpredictable usage requirements, while also saving time with instant updates from one location.

Cloud management offers zero-touch deployment to remotely deploy and manage all

the devices on a business's network without the need for on-site IT staff. Cloud management also provides instant insights to WAN/LAN analytics and visibility to manage data usage, performance, and costs.

## Adapting to the pace of technology advancements

The prevalence of IoT is increasing the need for business connectivity. Whilst 5G for business use is potentially longer way off for some parts of Africa than other parts of the world, it is a technology that will be implemented in the future. Earlier this year, data-only network operator Rain announced that it has become the first company in South Africa to launch a commercial 5G network. Partnering with Huawei, it has deployed several 5G sites in Johannesburg and is delivering services using the 3.6GHz band.

There will slowly start to be a reliance on connections to 4G LTE to ensure continuous coverage. 5G won't replace LTE; it will continue to evolve along with LTE – and the two will work together to handle different types of traffic most efficiently. 5G will allow for higher bandwidth, lower latency, and more favourable data plans. Organisations that want to take advantage of these benefits will need to evolve from legacy networks to an agile wireless network.

Organisations will want to develop a clear picture of how 5G fits within their existing technology and business roadmaps and how it will impact the network design. An agile wireless network will help to seamlessly transfer networks to LTE and 5G and better embrace IoT.

This pathway to 5G will be pioneered with a variety of use-cases across a variety of industries. In medicine, tele-health frameworks are already using 5G-ready routers to enable remote practitioner access to patients using high-resolution cameras, 4K video, and remote medical equipment. Providing a remote subject matter expert dramatically increases patient outcomes at a vastly reduced cost, essentially creating an 'Uber for doctors' – where patients no longer need to wait days or weeks for an appointment.

The same principle can be applied to other industries, for example the oil & gas industry, where specialist knowledge is needed in hazardous or hostile environments. In retail, smart stores are already leveraging 4G LTE connectivity and leading the way in testing and implementing customer engagement and operations strategies that someday will be adopted across virtually all industries.

With Gigabit LTE now available and 5G coming around the corner, wireless is poised to overtake wired WAN as the link of choice – both for failover and primary connectivity – for enterprises of all shapes and sizes. Organisations across all industries will need to be adaptable and ensure their wireless network is agile, to allow for new developments in technology and keep up with the increasing pace of change. ■



Cloud networking provides centralised management, device and application visibility, real-time web-based diagnostics, reporting and control

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## Telecom market rises in Romania

 Romania's telecom market grew 1.3 per cent in 2018 and was worth RON16.1bn, according to the latest data published by regulator ANCOM.

To put this into context, the figure was equivalent to 1.7 per cent of the country's GDP.

ANCOM said that on average each Romanian generated a monthly income of nearly RON60 for companies providing electronic communication services, or two per cent more than in the previous year. Meanwhile, ARPU per household stood at RON179, up 1.3 per cent on the 2017 figure.

The biggest growth was experienced by the fixed and mobile and internet sectors, where revenues rose by 12 per cent to reach RON4.8bn.

## ZTE launches first cyber security lab in China

 ZTE has launched its first cyber security lab in Nanjing, China and said it plans to do likewise in Italy and Belgium in the near future.

With the vision of 'Security in DNA, Trust through Transparency,' the firm is committed to providing customers with end-to-end security products and services and integrating security considerations and controls into every aspect of the product's life cycle.

ZTE said that the establishment of the cyber security lab this time represents a milestone for itself to increase transparency and enhance trust with all third parties.

The rationale behind the lab is to provide global customers, regulators and other stakeholders with security assessment and audit services, such as source code review on ZTE products including 4G and 5G, security design audit, procedural document review, black box testing and penetration testing.

# Brazil starts 5G testing

 Telecom Italia's Brazilian subsidiary TIM has started the first 5G tests in South America's largest nation ahead of commercial launch of the

technology forecast for 2021.

Trials on the 3.5 GHz frequency in Florianópolis, the capital of southern Brazil's Santa Catarina state, are being executed with Chinese tech giant

Huawei and CERTI foundation, a public research and development body.

The firm said it planned to develop a reference centre for 5G, with activity including trials related to smart cities, healthcare and agriculture.

"TIM wants to be a 5G pioneer and leader, both in Brazil and Italy," said Pietro Labriola, chief executive at TIM Brasil. "Our goal is to repeat the path of success of 4G and generate new solutions that improve the lives of our customers and boost the technological development in the country."

He also said that government investment, combined with the simplification of procedures for the installation of antennas and fibre, would be "enabling elements" that could position 5G as a vehicle to drive competitiveness and growth in the country.

The Brazilian government plans to auction the 5G spectrum in March 2020.



**Trials on the 3.5 GHz frequency are being executed with Chinese tech giant Huawei and, public research and development body, CERTI foundation**

## Tele2 agrees deal to exit Kazakhstan

 Sweden's Tele2 has completed the sale of its Kazakhstan joint venture stake to partner Kazakhtelecom for a net total of US\$169m and now plans to focus on Nordic and Baltic markets.

Tele2 and the Kazakh state-controlled telecommunications firm formed the joint venture in 2015 to combine their mobile

businesses in the country.

The former said in December that it had initiated a sale process of its 49% stake in the venture after Kazakhtelecom agreed a deal to buy a 75% holding in mobile operator Kcell from Telia and Turkcell.

"When Kazakhtelecom signed its deal with Telia and Kcell, it triggered the option and we chose

to use it," a Tele2 spokesman said, adding the deal was in line with the firm's strategy to focus on the Nordic and Baltic markets.

Tele2 said in a statement that it will receive net proceeds, after deducting the existing earn-out liability and full repayment of its shareholder loan of around US\$218 million.

## Ericsson chief makes 5G rallying call

 Ericsson chief executive officer and president Börje Ekholm has called on European regulators to act quickly to remove barriers to deploying 5G if the region wants to remain competitive against the US and China.

In his keynote address at the Viva Technology Conference in Paris in May, he said the US and China see 5G as "critical national infrastructure" and the backbone of digitalising society.

"We can't afford to have our European entrepreneurs and enterprises innovate on an old and ageing infrastructure. 5G must be seen as a critical national infrastructure—just as vital as trains

or ports or airports," he added.

Ekholm said Europe lacked a concerted regulatory effort for facilitating what he calls 5G digitalisation. "It's up to countries to decide if they want to be part of the revolution that 5G is going to bring," he said.

In addition, Ekholm called for 5G spectrum auctions to be coordinated across the region and offer spectrum at "reasonable prices" to help accelerate the rollout of 5G infrastructure. He said spectrum licences should also be overhauled, to remove investment uncertainty. Ekholm further added that addressing security in 5G networks, no network

can be 100 per cent secure.

"Given the complexity of future architecture, and future networks, the security in 5G will not only depend on the equipment in the networks," he said. "It will also depend on the security solutions deployed, and the operating parameters of the network—basically decisions the operator will make."



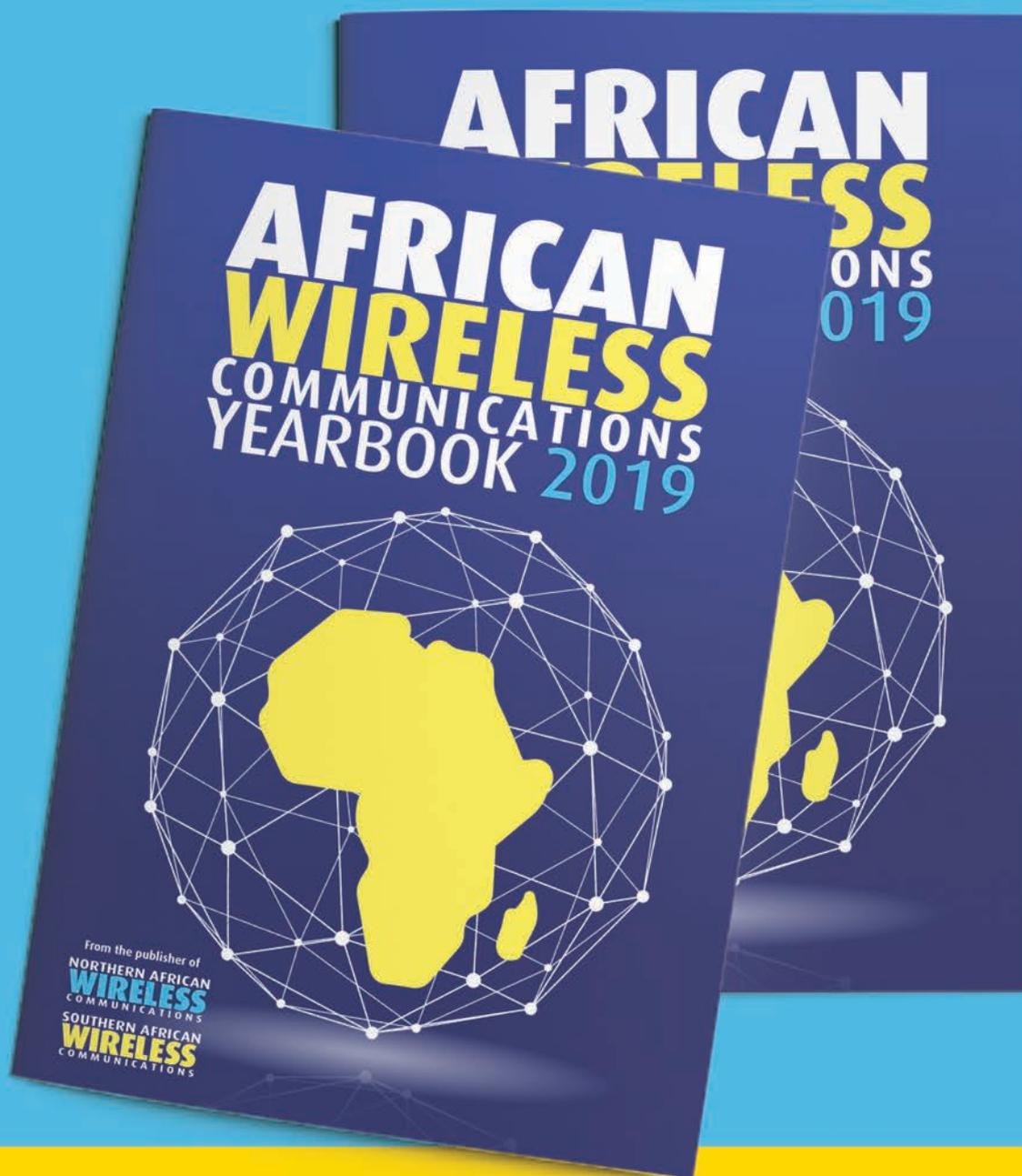
**Ericsson chief executive and president Börje Ekholm**

PHOTO: ERICSSON

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## Japan looks to restrict foreign ownership



The Japanese government said that high-tech industries will be added to a list of businesses for which foreign ownership of Japanese firms is restricted.

Effective August 1st, the new rule comes in amid heightening pressure from the US in dealing with cyber-security risks and technological transfers involving China.

Japan did not mention specific countries or companies that will be impacted by applying existing foreign ownership restrictions to the IT and telecom industries.

“Based on increasing importance of ensuring cyber security in recent years, we decided to take necessary steps, including addition of integrated circuit manufacturing, from the standpoint of preventing as appropriate a situation that will severely affect Japan’s national security,” Japanese ministries said in a statement.

The new rule will be applied to 20 sectors in information and communications industries.

Japan made the announcement on the same day visiting US president Donald Trump and Japanese prime minister Shinzo Abe held talks in Tokyo on trade and other issues.

# Venezuela targets 4G network development



Venezuelan president Nicolás Maduro has invited Russian telecom companies, along with Chinese tech giants Huawei and ZTE, to develop a nationwide 4G telecommunication network in the Bolivarian Republic.

Development of the 4G network system will become a part of the socialist corporation of the telecommunications and postal services sector of Venezuela, he said. However, Maduro did not specify the range of potential

investments into the project.

During the president’s most recent trip to Russia, Moscow and Caracas reached a preliminary agreement on launching Russia’s Global Navigation Satellite System in Venezuela.

“I have ordered to make an investment and, together with China’s technologies, Huawei and ZTE technologies and the technologies of Russian companies, bring telecommunications to a new level and make a nationwide 4G network a reality in Venezuela

to ensure Venezuela has fast communications, internet, and telephony,” President Maduro said in the speech during the country’s first Innovation, Development, Science and Technology Fair.

However, the political and economic situation in Venezuela has since deteriorated as the US introduced new sanctions against the Latin American state. Most recently, Washington imposed a strict ban on Venezuela’s oil exports, the country’s key source of income.

## Russian operator MTS signs 5G development deal with Huawei



Russia’s largest mobile operator MTS has signed an agreement with Huawei to develop 5G technology as the Chinese tech giant faces mounting pressure from the US.

The 5G deal was one of several cooperation agreements signed after talks between president Vladimir Putin and Chinese president Xi Jinping in Moscow. The Kremlin website lists the deal as a “memorandum of understanding.” According to reports, pilot launches of the advanced cellular network technology will be held this year and in 2020.

Headquartered in Russia’s capital city, Moscow, MTS also operates in Ukraine, Armenia and Belarus. As of 2017, it had over

106.5 million subscribers in the four countries. In Russia alone it had a market share of 31% with 78.3 million subscribers.



The Kremlin in Moscow, Russia

## Kerlink and Tata announce partnership for LoRaWAN network deployments



IoT specialist Kerlink and Tata Communications Transformation Services (TCTS) have joined forces to promote the LoRaWAN network deployments globally.

The two companies said they demonstrate to telecom carriers and start-up IoT connectivity providers how LoRa technology is one of the most responsive and reliable protocols for IoT connectivity.

“This is an exciting opportunity for Kerlink and TCTS to combine

our deep technological know-how and broad on-the-ground experience in designing and deploying reliable telecommunications networks that are tailored to meet our customers’ goals,” said Robert Clapham, Kerlink’s deputy chief executive officer. “Kerlink’s high-performance equipment and network design and management offerings, which have been validated in challenging environments around the world, will be key components of this joint offer with TCTS.”

## Spain deports 94 Taiwanese suspects to Beijing for telecom fraud offences



Spain has deported 94 Taiwanese to Beijing as part of a joint operation against telecom fraud launched three-years-ago.

The suspects were arrested in December 2016 in joint raids, dubbed “Operation Great Wall”, by Spanish and Chinese police.

Spain’s handling of the case and approval of the extradition in early 2017 drew heavy criticism from Taiwan. In Taipei, the foreign ministry “expressed deep concern

and strong regret” over the deportation of the suspects to China

It called on the Spanish government to “uphold the spirit of humaneness and the principles of human rights”, and to work with Taiwan in the fight against cross-border crime and to properly handle this type of case.

A Spanish court agreed to the extradition to China of all 237 suspects picked up in the raids. Spain has so far sent 225 suspects to China, including 218 from Taiwan.

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## Telekom Albania sold

 Bulgaria's Albania Telecom Invest has completed the acquisition of Telekom Albania from Greece's OTE Group, for a total gross equity consideration of €50m (\$57.2m). Albania Telecom Invest, which acquired OTE Group's entire 99.757% stake, is owned by Bulgarian businessman Spas Roussev and Albanian-Bulgarian investor Elvin Guri. "It is a strategic decision, in the context of OTE Group's redefined priorities and growth plans, in order to create value for all shareholders and support sustainable development," OTE chairman and chief executive officer Michael Tsamaz said when the group agreed to sell its stake in Telekom Albania back in January this year.

## Frequency up for sale

 Romania said it plans to start selling the frequency spectrum needed for 5G wireless networks in Q4 2019. The bidding will be open to all, including companies using equipment from Huawei, said communications minister Alexandru Petrescu. Finance minister Eugen Teodorovici added that the 5G auction could contribute to public finances this year or next, depending on how fast the process is completed.

## Huawei sales nosedive

 Huawei founder Ren Zhengfei said international sales of the Chinese telecom firm's handsets have dropped 40% in the past month as a US-led backlash against the embattled firm intensifies. Speaking at the firm's headquarters, he also said the company would slash production by \$30bn (£23.9bn). In May, the Trump administration put Huawei on a list of companies that American firms cannot trade with unless they have a licence. It argued that the world's largest maker of telecoms equipment and the second biggest smartphone maker poses a security risk.

# China threatens US with retaliation in Huawei row

 China has threatened to retaliate against US sanctions seen as an attempt to restrict international trade by controversial Chinese technology firm Huawei.

Foreign ministry spokesman Lu Kang said Beijing opposed countries imposing unilateral sanctions on Chinese companies and would take action.

The Trump administration effectively blocked Huawei products from being used in US networks. However, the order does not name any company, but is believed to target Huawei.

The latter has long denied its products pose a security threat and says it is ready to engage with the US to thaw frosty relations.

Beijing accused President Trump of engaging in industrial sabotage by using state security as "a pretext for suppressing foreign business".



**Huawei products have been effectively blocked from being used in US networks after claims that use of their equipment posed a security risk**

"We urge the US to stop this practice and instead create better conditions for business co-operation," Lu said, but he did not share details over how China planned to retaliate.

The confrontation over Huawei comes amid a broader trade war between the US and China, with both countries imposing aggressive tariffs on imports.

## Ex-France Télécom directors face charges

 Former executives at France Télécom, now known as Orange, have gone on trial over a spate of suicides among staff a decade ago.

The seven accused are facing charges linked to "moral harassment" and allegedly creating a climate that drove at least 19 employees to take their own lives.

The trial is expected to last two months and is said to be the largest case in which a major company and its former directors have been

brought to court to justify their treatment of staff.

In the dock are Didier Lombard, the former president of France Télécom and six other former senior executives. All deny their actions led to any loss of life.

Lombard, his second in command Louis-Pierre Wenes and the former director of human resources, Olivier Barberot, are accused of "moral harassment", and the others of complicity in it.

The court will examine how the executives carried out a restructuring of the company in 2006, two years after it was privatised, during which 22,000 jobs were cut and 14,000 workers changed jobs.

Accusations against the directors include deliberately creating a culture of anxiety among staff and attempting to push some out by isolating, intimidating and demoting them or transferring them away from their families.

## Facebook enters cryptocurrency arena

 US social media giant Facebook has unveiled plans to launch a new cryptocurrency called Libra.

Set to launch in 2020, Facebook said users would be able to make payments with the currency via its own apps, such as messaging service WhatsApp.

It added that firms such as Uber and Visa were also likely to follow suit and recognise the digital currency as legal tender.

However, concerns have been raised about how people's money and data will be protected, as well



**Libra is set to launch in 2020**

as over the potential volatility of the currency.

Facebook said Libra would be independently-managed and backed by real assets, and that paying with it would be as straightforward as texting.

It is the latest foray by a tech giant into the payments sector, after Google Pay, Apple Pay and Samsung Pay – although none of those services are currently related to cryptocurrency.

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