

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

# NORTHERN AFRICAN WIRELESS COMMUNICATIONS

APRIL/MAY 2019

Volume 18 Number 2

- 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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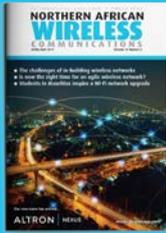


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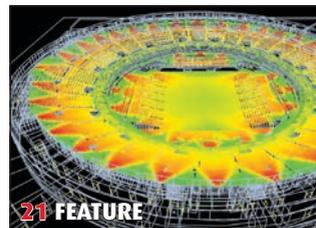
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# CETel to deliver connectivity in remote areas of northern Africa

Central European Telecom Services (CETel), the German provider of satellite, fibre and wireless enabled communications solutions is delivering connectivity in remote areas of northern Africa via Intelsat's EPIC 37e satellite.

The land-locked areas of Chad and south of Libya have little or no terrestrial connectivity and require stable, reliable and efficient solutions for their data and voice transmissions. Intelsat's fifth next-generation HTS (high throughput satellite) delivers a Ku-band spotbeam to this region that CETel uses to serve its customer base spanning various market verticals.

"Our global operating customers rely on our high-quality service

solutions that allow them to maintain operations even in harsh geographic and socio-economic environments. At the same time, communications can be utilized to have a positive impact on the local community and therewith our solutions often also play an integral role in our customer's CSR-policies," said Guido Neumann, CEO of CETel.

CETel said it plans to migrate and activate initially 200 VSAT-sites into this new established network within the next six months.

Services being delivered include a hub-based solution, leveraging low investment costs at the remote sites. The coverage enables cost-effective network solutions with low-cost terminals for this region.



**The EPIC 37E satellite delivers a Ku-band spotbeam to land-locked areas of Chad and south of Libya that CETel uses to serve its customer base spanning various market verticals** PHOTO: INTELSAT

## Sonatel targets Gambia market expansion

Senegalese telecom firm Sonatel is set to strengthen its position in west Africa by entering the Gambian market.

Sonatel said that it has entered into an agreement for the acquisition of 91.6 per cent of the share capital of XOOM Wireless. The agreements are said to be subject to approval by Gambian authorities.

XOOM Wireless is said to hold an internet service provider (ISP) licence in the Gambia and offers a full spectrum of high-speed wireless packages including VOIP and other hosting services in the country.

Sonatel said the acquisition will

be carried out in partnership with Teranga Capital, which will hold a minority stake in the company and that through this acquisition.

Kalifa Faal, founder of XOOM Wireless said, in his opinion, that the deal will boost Gambia's internet capacity, enhance quality, access and will be cheaper. He also cited that Gambians over the years have been struggling with access and affordable internet.

In addition to its market share in Senegal, growth operations have allowed Sonatel to market shares in four countries: Mali, Guinea, Guinea Bissau and Sierra Leone.

## Airtel Uganda and URA partner to ease tax payment

Airtel Uganda has joined forces with the country's tax collection body to ensure people find it easy and convenient to pay their bills.

The two bodies have launched an Airtel Money payment mode, dubbed Airtel Easy Tax, which will facilitate the payment of all taxes while offering the telecom's subscribers convenience, reliability and efficiency.

In just a few steps, users will be able to register a payment and pay their taxes from the convenience of their home, office, or even while on the go. The tax collection body said that the initiative will be key in

achieving two specific objectives.

The first one is to improve "voluntary compliance" through the delivery of an improved and convenient service with efficiency at a reduced cost to taxpayers especially in the Small and Medium sector. Secondly, it will effectively account for government revenue, while minimising reconciliation challenges associated with payments especially those conducted online.

To access the Airtel Easy Tax service, users must dial \*185\*4# and then select URA, before following the prompts to make tax payments and clearances.

## Telecom Egypt signs agreement for PEACE cable system

Telecom Egypt has signed a landing party agreement worth USD45m with Pakistan and East Africa Connecting Europe (PEACE) Cable International Network and PCCW Global, the international operating division of HKT, the Hong Kong telecom service provider.

The company clarified that PEACE is a 12,000 km long cable system with landings in Pakistan,

Djibouti, Egypt, Kenya and France that provides open, flexible and carrier-neutral services for its customer base.

"The PEACE cable will cross Egypt through new diversified terrestrial routes between the Zafarana and AbouTalat cable landing stations, where Telecom Egypt will provide PEACE with brand new state of the art landing

facilities," said the Egyptian firm.

Telecom Egypt's managing director and chief executive officer Adel Hamed said that the deal marks the addition of another cable system to Telecom Egypt's vast network of submarine cables, "exhibiting clearly that Egypt is the ideal digital route and partner of choice" for international traffic from the east to the west.

"Telecom Egypt boasts several differentiation factors in the submarine cable industry that will enable it to realise its vision to become a regional and African digital hub for content providers," Hamed added.

Headquartered in the capital Cairo, Telecom Egypt has 17 subsidiaries operating across British Islands, western Europe, northern Africa and the Middle East.

# Egyptian mobile business to invest heavily in network

Etisalat Misr has ringfenced USD167.3m to modernise its network in Egypt.

The company's president and chief executive officer Hazem Metwally said the plan was to secure more revenue from internet services as the business works to offset the impact

of a decline in subscriber numbers. This figure is more than half of the amount (EGP4.5bn or USD251m) the company planned to invest in Egypt this calendar year.

The upgrade is expected to contribute significantly towards the operator's aim to achieve double-digit

growth in revenue at the end of 2019.

In 2018, Etisalat's revenue increased by almost 16 per cent to circa EGP13.6bn.

The data business accounted for around 30 per cent of this income and the operator said it aims to increase that figure to 35 per cent

in the 2019 business year.

Metwally added that there is no immediate requirement for a new licence. "At the moment we do not need new frequencies immediately, but we may need them in the future," he said. Etisalat Misr is a subsidiary of Etisalat UAE.

## Somali MP calls for forces to withdraw

A member of the Somali parliament has called for all Kenyan soldiers to pull out of the country, accusing the Kenyan Defence Forces (KDF) of vandalising telecommunications masts on the border.

Dahir Amin Jesow, an outspoken lawmaker, accused Kenyan forces of helping telecom giant Safaricom in the trade battle with Somalia telecom companies providing phone services in border areas.

The call came as Somalia's leading service provider, Hormuud, said a USD1.9m loss was caused by the vandalism allegedly carried out by Kenya.

KDF has been blamed for destroying satellite dishes in Khadijo-Haji village near Bula Hawa town, telecommunication mast in Bardhere district, mast in Elbade town in Gedo, satellite dishes in Elwak, mast and engine in Dhobley and masts near Qoqani town.

According to a parliamentary report, KDF serving under Amisom destroyed communication infrastructure belonging to two telecommunication companies in Somalia valued at close to USD2.5m in the last seven years.

The Lower House Posts and Telecommunication Committee said the Kenyan forces destroyed telecommunication masts, solar panels, generators and fuel tank reserves belonging to Hormuud Telecom and Somtel.

## Côte d'Ivoire mobile industry and GSMA team up to tackle theft

Côte d'Ivoire's mobile industry has joined forces with trade body GSMA to support a major new initiative to guard against the use of stolen devices.

The scheme is part of the launch of the GSMA's 'We Care' initiative in the country, a series of industry collaborative actions aimed at providing mobile users with a more secure and reliable mobile environment.

To mark the opening of the 'Mobile 360 – West Africa' event in Abidjan in April, representatives from the GSMA; local mobile operators Moov, MTN and Orange; national operators association UNETEL; and the ARTCI (Autorité de Régulation des Télécommunications/TIC de Côte D'Ivoire), agreed to work together to protect citizens and businesses from stolen or counterfeit mobile devices. The fraudulent use of lost equipment is an on-going challenge in the country.

Under the terms of the agreement, operators will take steps to upload details of reported lost or stolen devices to the GSMA IMEI 1 database to share with the wider ecosystem in order to reduce national and



**Around 12 million stolen devices were blocked last year as part of the scheme**

international device crime.

Access to the database and industry collaboration will allow operators to exchange undesirable International Mobile Equipment Identity (IMEI) information. The global GSMA IMEI database is updated daily through reports from more than 100 operators around the world. The service protects one billion people worldwide. Around 12 million stolen devices were blocked last year as part of the scheme.

"With this initiative, mobile

operators are taking an active role to ensure a trustworthy environment for consumers through public-private collaboration," said Akinwale Goodluck, head of sub-Saharan Africa, GSMA. "Once implemented, Cote d'Ivoire will be the first country in sub-Saharan Africa with multi-operator participation in GSMA blacklisting, essentially providing all customers with the ability to report and block lost or stolen devices across multiple networks."

## Orange rolls out 4G to Guinea

Orange has launched its 4G mobile technology in Conakry, making the service available in all the areas of the capital: Kaloum, Dixinn, Ratoma, Matoto and Matam.

As part of a second phase, it will be deployed to cover the whole country, in accordance with the guidelines set by the specifications, which provides coverage for at least

90 per cent of the population.

Sékou Dramé, managing director of Orange Guinea, said that 4G would give the company the opportunity to offering the country and its people growth and development opportunities to which they aspire to shine in the sub-region, the continent and globally.

The launch of 4G by Orange

occurred almost two months after the company obtained a global 10-year licence valid, for some USD90m. With the launch of the 4G, Orange takes comfort in its position as the market leader with 67 per cent market share ahead of Cellcom and MTN, its main competitor.

Orange rolled out the 4G technology in Conakry in early May.

# Moroccan police arrest 100 'fictive call centre' suspects

Police in the Moroccan cities of Casablanca, Marrakech, Oujda, Meknes and Khenitra arrested 100 suspects with links to unauthorised call centres.

A statement from the General Directorate of National Security (DGSN) said the suspects were accused of the "theft, transfer, and piracy" of phone calls.

The accused, whom authorities are referred to as "fictive call agents," are thought to be part of a network of unauthorised call centres that have established their business to benefit off authorised centres and telecom firms in Morocco.

DGSN established that the modus operandi of the "vast network of fictive call centres" was to call their victims via a foreign telephone number.

The telephone of the victim was left to ring for a very short time — once in most cases — tricking the customer to call back,

according to DGSN. They chose foreign numbers to lure victims to call back much sooner than they would have normally, under the false impression that it must be an important call from overseas.

Once the victim called back, DGSN

said, they immediately transferred to one of the fictive centres whose agents' job was to keep the caller on the line for as long as possible.

The end game was to "exhaust the victim's balance" and have the telecom company pay for the

remainder of the call duration in foreign currency. The losses have so far been estimated at MAD2m.

At the time Northern African Wireless Communications went to press, 94 call agents and six managers affiliated to the fictive network had been arrested.

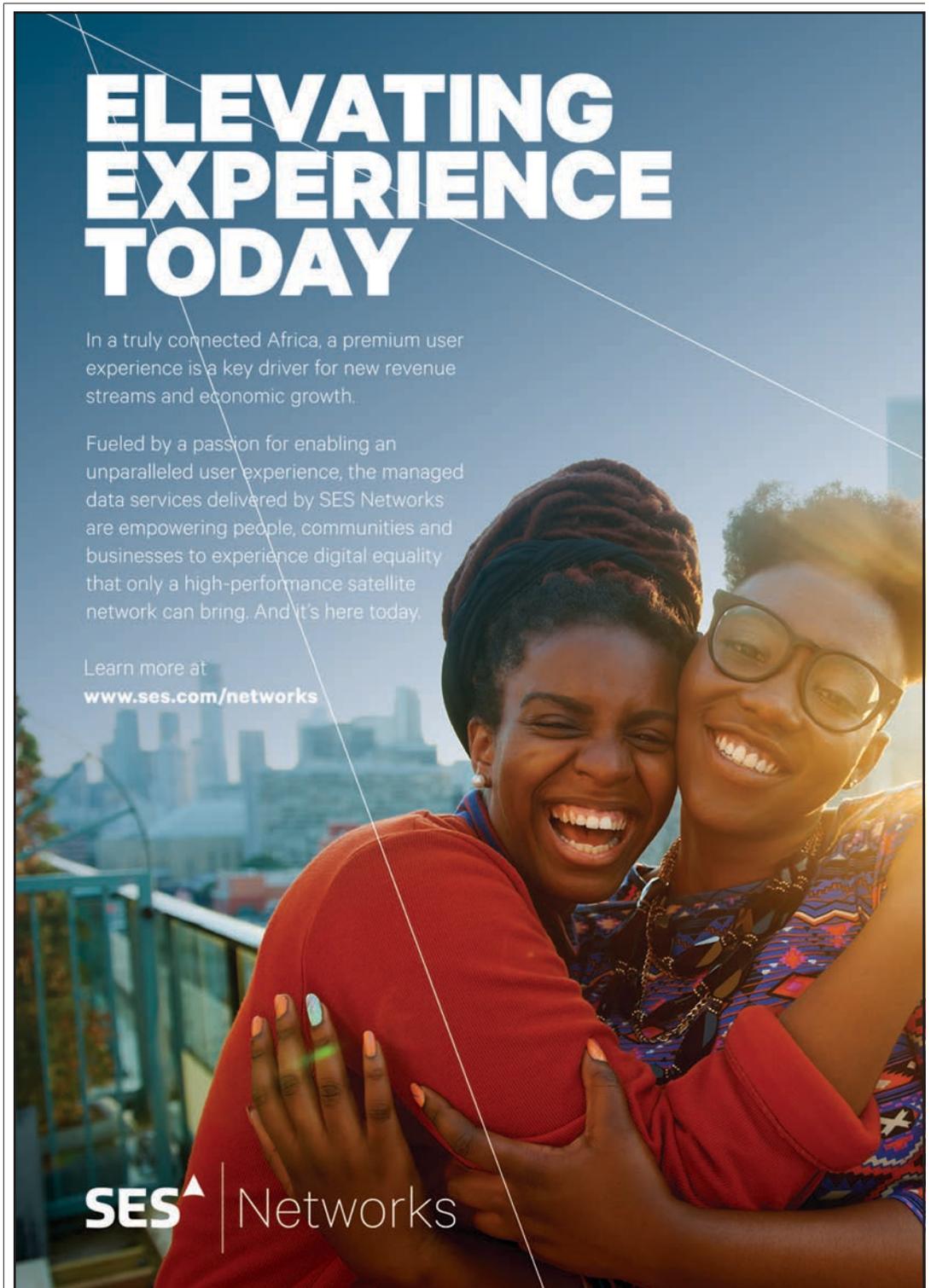
## Togo struggling with mobile internet

Less than a quarter (20 per cent) of the Togolese population uses mobile internet, according to recent data from the Global System for Mobile Communications Association (GSMA).

The report also found that 19 per cent of the population, adults mostly, are covered by mobile broadband but cannot access it via their smartphones.

In west Africa as a whole, 61 per cent of the population has no access to broadband even if the number of smartphone users is expected to double by 2025.

At the close of 2018, the west African mobile industry officially employed 200,000 people and 800,000 informally. The sector contributed USD52bn to the region's economy. That figure is expected to rise to nearly USD70bn in 2023, according to GSMA.



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## Kenya Air Force accused of structural damage

Somalia's Hormuud Telecom has accused the Kenya Air Force of destroying communications masts in Jaldyese Village near Afmadow.

The firm said that the attack in late March was the 10th one since June last year, some of which had killed or injured their staff members.

"Hormuud Telecom regrets the senseless and unlawful attack by the Kenya Air Force on our masts at Jaldyese village near Afmadow," the company said.

A major breakdown in communications and outage meant, residents could not access phone calls, internet and mobile money services.

The company said it was gathering forensic evidence which it will hand over to any investigating authority since the actions were unjustifiable in international law.

"In our view, the unlawful actions of the Kenya Air Force, and those leading the Kenya operational effort are driving a deep wedge between the majority of the civilians who want peace and the efforts of the international community, the UN and AMISOM", it added.

Hormuud called on the international community and human rights organisations to put in all efforts to prevent the attacks and hold the Kenyan government responsible.

# Huawei ready to roll out 5G for football fans

Huawei will roll out a 5G phone network for the first time during this summer's Africa Cup of Nations, according to Egypt's minister of communications and information technology.

The Chinese company will introduce the technology at the 75,000-capacity Cairo International Stadium, which is set to host 10 games including the final during the competition.

"Egypt wishes to cooperate with Huawei in the field of artificial intelligence, technology transfer and with 5G," said the minister, Amr Talaat.

Huawei is a major manufacturer of equipment for next-generation 5G mobile signal with almost instantaneous data transfer that will become the nervous system



The Cairo International Stadium or "Stad El Qahira El Dawly", has an all-seater capacity of 75,000 and is set to host 10 games during the competition

of Europe's economy, in strategic sectors like energy, transport, banking and health care.

The biennial Cup of Nations takes place between June 21 and July 19 in Egypt.

## Liquid Telecom connects Mombasa hospital

Liquid Telecom Kenya has used its high-speed fibre network to connect the main hospital in Mombasa to seven of its outreach centres in the coastal region, bringing healthcare closer to the community.

The roll-out of services started in August 2018 in a bid to improve access to medical services that would often not be consistently available in some of the more rural communities. This includes online consultations

and diagnostic services.

"Travel costs were often prohibitive for patients," said Hemed Twahir, medical director at Aga Khan Hospital, Mombasa. "For example, patients coming from Voi to Mombasa spend around KSh700 on bus fares, which is a major cost at a time when most of the population struggle to buy even basic medication, and often cannot afford to visit the hospital for follow up appointments."

Liquid Telecom's internet network has also enabled the hospital to run e-learning courses covering continuous medical education (CME) and continuous nursing education (CNE) between the main hospital and outreach clinics. It also includes public hospitals such as Rabai, Tsangansini and Mariakani, to exchange knowledge and discuss medical case management – in a collaborative process that drives best-practice treatment plans.

## Rwandan platform-as-a-service start-up enters Uganda

Ared, the Rwanda-based platform-as-a-service start-up known for its "Smart Business in a Box" solar-powered kiosks, has made Uganda its first international market.

The kiosks, known as Shiriki Hubs, are run mostly by women and people with disabilities, using a micro-franchise business model. They offer services such as Wi-Fi, intranet solutions for offline users and phone-charging services.

The app offers additional services, including airtime, mobile money, prepaid electricity and tax payment services.

Ared has now moved into Uganda, rolling out a total of 10 kiosks in Kampala and also the refugee camps of Arua district, where citizens belonging to lower income groups can charge their mobile devices, buy airtime and access the internet.

The expansion was financed by US impact investor Gray Matters Capital through its gender lens sector agnostic portfolio coLABS.

"We will work with partners whom we call area developers who will franchise our model in the different areas of Uganda," said Henri Nyakarundi, founder and

chief executive officer of ARED. "Our focus is on NGOs and private sector enterprises whom we'd like to be roped in. They will buy the hardware – the kiosk; train micro franchisees and use our licensed software. ARED will of course support them along the way."

In addition to leasing the kiosks via the franchise model, Ared is also planning to partner telecom service providers in Uganda to build distribution channels at community level.

"We will be looking to target countries in western Africa next year. While the cultural ethos may



The kiosks offer services such as Wi-Fi, intranet solutions and phone-charging

PHOTO: ARED

differ, what remains common pan-Africa is the unreliability of power supply. It is this adversity that we'd like to convert into an opportunity," added Nyakarundi, who added that ARED has begun working on a pilot in Côte d'Ivoire.

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# Cameroon targets telecoms guilty of irregular installations

Telecom operators in Cameroon whose infrastructure fail to adhere to installation norms will be sanctioned and their infrastructure dismantled, the country's watchdog has warned.

Philemon Zoo Zame, director general of the Telecommunication Regulatory Board (TRB) pointed to Camtel, MTN Cameroon, Orange Cameroun, Nexttel and IHS Cameroon – key owners of telecommunications infrastructures totalling over 5,000 pylons.

The regulator said most of the operators were proceeding with the installation of masts in urban residential areas without respecting engineering guidelines.

Zame claimed operators also failed to adhere to maximum limit of exposure to radiation, height restriction (150m maximum), as well as the distance between masts (750m in residential areas and 2km in other areas) and were reluctant to share network infrastructure.

The TRB added that the



**It is claimed that operators were proceeding with the installation of masts without respecting engineering guidelines**

unnecessary and incoherent multiplication of transmission pylons and the non-sharing of network infrastructures by telecom

operators have a negative impact on the environment, urbanisation, public safety, public health and tariff plans of operators.

## Maroc Telecom introduces “smart greenhouse”

Maroc Telecom last month revealed a preview of its “smart greenhouse”, a tool to improve agricultural production and operating profitability.

The “smart greenhouse” facilitates the management of greenhouses on large farms by capitalising on historical data (weather, crop development) in order to anticipate management actions for a production of better quality.

This tool can collect and analyse the bioclimatic indicators of the greenhouse in real time and transmits them, via the Maroc

Telecom network, to an analytics platform hosted on the cloud of Maroc Telecom.

It will allow farmers to follow the activity at a distance and set up actions to adjust the management parameters of the greenhouse automatically.

The “smart greenhouse” was introduced at the 14th International Agricultural Show in Morocco (SIAM), Maroc Telecom revealed a preview of its “smart greenhouse”, a tool to improve agricultural production and operating profitability.

## Algérie Télécom hits back at blocking allegations

Algérie Télécom (AT) has rejected allegations that the contents of “some websites” were blocked in Algeria last month, and said that no restrictive measures were taken.

The company's reaction came after it was accused of blocking access to some news portals, just hours after the publication of a document relating to the activities of minister of post and telecommunications technologies, information and communication, Houda Feraoun.

“Following the defamatory statements targeting Algeria

Telecom, made by some website managers, according to which, their sites have been blocked in Algeria, AT has clarified the public opinion that these accusations are defamatory and unsubstantiated” read a statement issued by AT.

AT added that “blockages of websites are only in a legal framework” and it would seriously consider legal action against defamatory statements.

No further information was available when *Northern African Wireless Communications* went to press.

## Tata helps to bridge the digital divide in Africa

Tata Communications Transformation Services Limited (TCTS), the telecom transformation and managed services provider, has partnered with Africa Development Solutions (ADS Group) to build a fibre infrastructure backbone across the continent. The aim is to enable a digital economy that can empower societies and communities, in line with the Smart Africa vision. TCTS will perform pre-feasibility assessments with ADS for African nations, studying existing as well as planned fibre infrastructure and deploy a strong multi-country connectivity infrastructure backbone.

The Smart Africa initiative prioritises ICT “as a key enabler”

and the pivot to drive the continent's socio-economic development agenda. The initiative works towards improving scalability and accessibility of connectivity within and to urban, suburban and rural areas in Africa. The partnership between TCTS and ADS aims to drive deployment of ICT in the continent with the aim to promote equitable and sustainable development across African nations.

As a first step, TCTS and ADS are jointly coordinating the delivery of the ‘Western African Digital Pool’, which consists of deploying internet connectivity over seven African countries, including Guinea-Conakry, Guinea-Bissau, Sierra-Leone, Senegal,

Côte d'Ivoire, Liberia and Mali.

The project will be conducted in conjunction with Smart Africa and is considered a major step towards the implementation of a single digital market in Africa. Proposed technologies may include aerial fibre and free space optical cables to ensure fast deployment, and best quality at affordable prices. TCTS and ADS plan to deliver the required infrastructure upon completion of the preliminary studies, currently undergoing the first phase.

“Over the past few years, ICT has emerged as a significant contributor to the African economy,” said Madhusudhan

Mysore, executive chairman and chief executive officer at TCTS. “At TCTS, we see this as an important landmark in the evolution of digital economy in Africa as connectivity becomes a prerequisite to the socio-economic development of the continent. TCTS has vast experience in leading telecom firms in Africa to accelerate and de-risk their transformation journey.” Mysore added that the partnership will further strengthen TCTS' presence in Africa and enable it to “contribute more broadly in the knowledge sharing and nation building initiatives” that will boost the competitiveness of the African continent.



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## MTN Nigeria goes public

MTN Nigeria finally listed 20 billion ordinary shares at N90 per unit on the premium board of the Nigerian Stock Exchange (NSE), some three years after it revealed it initially revealed plans to do.

The official listing of the Johannesburg-based company took place May 16th at the Stock Exchange House in Lagos.

The price valued the telecoms company at N1.84 trillion.

MTN Nigeria decided to list on the NSE in 2016 after agreeing to pay a USD1.7bn fine to settle a sim card dispute with the Federal Government.

Nigeria accounts for a third of MTN's annual core profit while indigenous investors own 19.4 per cent of the company.

Chairman of MTN Nigeria, Paschal Dozie, led the chief executive officer Ferdi Moolman and other top members of staff of the company to the event. Dozie addressed a full house of reporters, brokers and dignitaries, whom had gathered on the 9th floor of the NSE. "We will soon come back for the IPO," he said.

## Lava flows into Ethiopia

Indian mobile handset brand Lava International has strengthened its position in Africa by entering Ethiopia and South Africa this year.

Lava already had a presence in Tanzania as well as in north, east and west African nations.

"This expansion in Ethiopia and South Africa has presented us with ample opportunities to take the company to newer heights internationally," said Vikram Parmar, business head Africa, Lava International. "The development also allows us to connect the people of various geographies through our products and services which at the same time help us to increase our brand recognition." He added that this vision would lead to better advancements and developments, while opening a pool of job prospects for the citizens of those markets.

# NCC blames power supply for poor telecom services

The Nigerian Communications Commission (NCC) has blamed the poor telecom services being delivered to customers on inadequate power supply by the electricity distribution companies in the west African nation.

Musa Diabu, the manager, technical department at the NCC, made the claim in April when the commission held a "sensitisation programme" on the need for citizens to collectively protect telecom infrastructure in the country rather than leave it to security personnel only.

Diabu said Nigeria needs approximately 158,000 metres of optic fibre to provide adequate broadband across the country, adding that what it currently has is 38,000 metres.

However, director zonal operations



The NCC offices in Abuja, Nigeria PHOTO: NCC

Amina Shehu, speaking through the principal manager, Ekiola Oladisun, said that despite the numerous challenges being faced by service providers, Nigeria broadband

penetration has continued to increase. The latter said that though the country had achieved a lot in the telecom industry, there are still huge challenges ahead.

## NATCOM accused of mismanagement

Sierra Leone's telecom regulator NATCOM promoted favouritism and unfair competition within the telecom industry between January 2015 and July 2018, it has been alleged.

The allegation followed a technical audit and is understood to have cost the country approximately USD68m.

The full audit report, prepared by members of the African Organisation of English-speaking Supreme Audit Institutions (AFROSAI-E) in South

Africa and three auditor generals from Ghana, Kenya and Tanzania, also implicates operators Africell, QCell, as well as national carrier Sierratel and fibre optic management company SALCAB.

"NATCOM arbitrarily charged USD150,000 per year to all the mobile operators without any statutory instrument report reads," the report read.

It added that over Le7.0bn

(about USD800,000) of the UADF (Universal Access Development Fund) was used to cover salaries and administrative expenses instead of its intended use for improving infrastructure to enhance universal access to telecom services.

Operators have until June 30th, 2019 to refund monies owed.

The full audit report was presented to the finance ministry on April 2nd, 2019.

## Egypt 'to be Africa's data gateway', says Telecom Egypt chief executive

Egypt is set to become the African hub and the gateway to the continent, according to the chief executive of Telecom Egypt.

Abdel Hamed, who took over the leadership of Telecom Egypt earlier this year, made the declaration when he opened the Capacity North Africa conference in Cairo in April.

He said that Egypt "is the second country in the world in terms of submarine cable connections", but

"we need to transform from just transit and build upon these cables. North Africa needs more internet exchanges and data centres to keep content in Africa".

Hamed also called for Alexandria, on Egypt's Mediterranean coast, to become a data centre hub comparable with the French city of Marseille. The electricity supply "has doubled in Egypt in the last four years", he added. "We have a 35 per cent surplus. It is



Adel Hamed, chief executive officer at Telecom Egypt

PHOTO: TELECOM EGYPT

not the cheapest in the world, but it is reliable. We have all the factors for a data centre business."

## Sudatel aids sat launch

 Sudatel, through one of its companies Sudasat and Hajar Group, and in partnership with Canar Telecom, helped send Arabsat 6A satellite into orbit. The satellite will allow Sudatel-owned Sudasat to provide broadband communications and broadband services across Sudan to internet service providers, VSAT subscribers and mobile network operators. It also provides multi-purpose solutions for commercial and government sectors. The launch was watched by Sudatel CEO Eng. Tarig Hamza Zain Elabdein, who is also the chair of the board of directors at Sudasat.

## NEC looking at new market

 NEC has expressed its interest to enter Ethiopia's telecom and information technology market, according to the Ethiopian Investment Commission. Kassa Tekleberhan, the Ethiopian ambassador to Japan, held talks with Toshiya Matsuki, executive vice president at NEC to find a way forward. During the discussion, the company commended Ethiopia's plan to fully and partially privatize state-owned enterprises as well as expressed its demand to boost its presence in Ethiopia's telecom and information technology market.

## NCA to tackle bogus phones

 Ghana's National Communications Authority (NCA) has taken steps to reduce the volume of counterfeited phones in the national telecom market. The regulator announced that it would authenticate imported phones before their introduction into the local market. Even though the government had taken numerous measures in the past to address the challenge of counterfeited phones, there were still importers who had found ways to navigate the measures. This time, NCA's technical laboratory will not only check phones' IMEI but it will also test their features.



## Talking satellite

Martin Jarrold, chief of international programme development, GVF



## Africa's satellite ascendancy

Africa's mobile communications market has been satellite-dependent for decades, ever since roll-out of early 2G networks was built on a foundation of cellular backhaul over satellite. Today, as Africa's wireless operators continue an accelerated roll out of 3G and 4G networks, satellite is being used to deliver backhaul, particularly to serve remote/rural areas, quickly, reliably and cost-effectively. The total number of satellite-backed cell sites in 3G and 4G networks is expected to grow to well over 10,000 by 2020, just to keep up with customer demand and in order to avoid the prohibitive costs of (non-satellite-based) backhaul in remote locations.

Also well-recognised is the growth in VSAT (very small aperture terminal) networks serving Africa's expanding enterprise sector, but that growth is particularly evident outside of the already historically strong VSAT country-markets, a phenomenon leveraging-off the same availability of HTS (high throughput satellites) capacity over the continent that is serving increased broadband access for consumers.

In addition, more developments have proven that Africa's domestic ascendancy in the satellite field comes as the continent reaches an inflexion point in its: (1) information and communications technology (ICT)-related social and economic development generally and (2) in its contributions to, and its future derived benefits from, space-based communications and non-communications-related space activities specifically.

April 2019 also showed that across Africa the leveraging of opportunities

surrounding satellites and space-related activity has never been greater. Many nations – Egypt, Algeria, Angola, Morocco, Ghana, Nigeria, South Africa, Kenya, Ethiopia, and Mauritius – are now introducing or have announced satellite programmes to kickstart wider innovation. Tunisia has now joined this list. However, whereas many of these newer space-nations are looking primarily at 'smallsat' technologies for the Earth observation applications arena – recognising that remote sensing information has the potential to improve agriculture, guard against deforestation, improve disaster planning, facilitate maritime domain awareness, enhance border security, etc., etc. – Tunisia is aiming towards building a future constellation of 30 communications satellites.

Collaboration between the Telnet Group and Russia's GK Launch Services – established by Roscosmos, the Russian state space corporation and authorised to conclude commercial contracts for the launch of spacecraft using the Soyuz-2 family launch vehicles from Russian spaceports – will see lofted to orbit during 2020 the Challenge One satellite. The Challenge One spacecraft will be a development of a scientific research and innovation programme exploring the practical applications of new ICT concepts, ultimately leading to the deployment of a complete communications constellation.

Additionally, in 2020, Angola plans finally to get a 16 C-band plus 6 Ku-band transponder communications payload to geostationary orbit on Angosat-2, the replacement for Angosat-1 which failed shortly after attaining orbit in 2018. Its National Space Programme Management Office (GGPEN) has defined Angosat-2's footprint coverage as Angola, Africa and parts of Europe.

Africa's commitment to satellite-related

endeavour is not only manifest as a result of a general recognition that designing and building 'smallsats' can help promote national capacity-building and development objectives, but more specifically in the identification that the applications to which they are applied can foster the achievement of a range of particular scientific and technological goals.

It is also the result of international geo-politics, the pursuit, by other actors, of economic influence, and associated bi-lateral collaborations between national space agencies – those of the bigger, long-established, space-nations and those of the much smaller and new-entrants to an increasingly commercialised space ecosystem. One example falls within the realms of China's Belt and Road Initiative and features Ethiopia's journey to orbit.

One facet of Beijing's increasing influence over the economies of Africa has taken the form of both state-run and private space companies selling "Made in China" satellites to the continent's space-ambitious nations. Whilst the China-Ethiopia space connection is not as well-known as the China-Nigeria technology transfer relationship – wherein China gifted USD550m to Nigeria for the purchase of two Chinese-built spacecraft – with Chinese help Ethiopia too will soon be heading to space.

Ethiopia's space ambitions have accelerated in recent years, with the creation of a space science council and the 2016 establishment of the Ethiopian Space Science and Technology Institute (ESSTI). Assuming that the national space programme proves resilient enough to survive political and economic uncertainties, Ethiopia wants to reduce reliance on foreign telecoms by launching its own communications satellite and to develop and manufacture its own satellites for national security, disaster management and response, weather monitoring, and crop and land management applications.

However, firstly will come the China-aided satellite-build. The satellite – an Earth observation platform to collect data on climate change – will have its Ethiopian specification-design and manufacturing costs 75 per cent funded by the Chinese. Launch will be from China; but command and control will take place from a centre in Ethiopia.



Ethiopian Space Science and Technology Institute, Addis Ababa, Ethiopia

PHOTO CREDIT: GOOGLE MAPS

# Orange launches Tunis 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 say they 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.

## 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.

## Algérie Télécom offers Ramadan discount

Algérie Télécom is offering discounted fixed call rates for the Islamic holy month of Ramadan, cutting the price of selected calls to national mobile networks and international landlines.

Fixed line customers will be able to benefit from a rate of DZD2 per minute for calls to national mobile networks made between 20:00 hrs and 08:00 hrs, down from DZD8 per minute.

The reduction on international numbers will apply from the third minute, when customers will be charged the cost of a national call (DZD3 per minute).

There are 10 countries covered

by the discount: Australia, Canada, China, France, Germany, Italy, Morocco, Spain, the UK and the US.

Algeria has one of the largest Muslim populations in Africa, with 42.5m making up 99.75 per cent of the country’s entire population.

Ramadan runs from Sunday 5th May to Tuesday 4th June.

## Safaricom ‘looking for new chief executive’

Safaricom, Kenya’s biggest telecom business, is seeking a replacement for chief executive, Bob Collymore, who is likely to step down in August.

Collymore has overseen a period of solid growth at Safaricom and the share price has increased by over 400 per cent since he took on the role in 2010. The company controls circa 62 per cent of Kenya’s mobile market.

Its popular mobile money service M-Pesa is used by two in five Kenyans. Guyanan-born British

businessman Collymore took nine months' medical leave in late 2017 to return to the UK to battle cancer and has indicated that August, when his current contract is up for renewal, would be an appropriate time to leave, according to reports.

**Vodacom partners with Amazon Web Services**

Vodacom has signed a strategic partnership with cloud giant Amazon Web Services (AWS), which will see the former become both a customer and a reseller of the latter's services.

"We have signed a strategic collaboration agreement with Amazon Web Services, which will make AWS our primary cloud provider," said Shameel Joosub, during the group's annual results presentation in Midrand. "We will also be a strategic partner, integrator and reseller for AWS services across Africa."

Joosub said he believes the partnership is a "game-changer" because it takes Vodacom beyond being just a big seller of the connectivity.

**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 strong operational performance in South Africa, Nigeria and Ghana.

The growth in service revenue was supported by 5.9 per cent

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.

**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 70 Km 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 450 Km of optical fibre to serve customers in the economic capital city of Benin.

**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 expand 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.

**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 into English as "Organisation for the Harmonization of Corporate Law in Africa". The OHADA Treaty is made

**PEOPLE MOVES & CHANGES**

Date	Name	New employer	New position	Previous employer	Previous position
28/3/19	Foster Plender	AfricaOnline (subsidiary of Gondwana International Networks (GIN))	Managing director	GIN	Consultant
20/5/19	Rajeev Sethi	Ooredoo Myanmar	Chief executive officer	Airtel Africa	Chief commercial officer
10/5/19	Damian Philip Chappell	Ooredoo Maldives	Chairman	Ooredoo Qatar	Chief consumer officer
1/6/19	Hauke Holm	DAMM Cellular Systems	Vice president R&D	Hytera Mobilfunk	Chief technology officer
31/8/19	Rafiah Ibrahim	Ericsson	Advisor to the CEO	NA	Head of market area Middle East and Africa

**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
22/5/19	Echotel International Proprietary	iWayAfrica Kenya	80 per cent stake	NA	Echotel International Proprietary has purchased a controlling stake in iWayAfrica Kenya

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.”

## 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 in Q1 2018.

“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 USD23m 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 USD130m, 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.

## Equatorial invests in mobile broadband

Equatoguinean mobile operator Muni has selected US-headquartered wireless backhaul specialist Ceragon Networks to modernise and expand its network to deliver 4G services

## LATEST COMPANY RESULTS

Date	Company	Country	Period	Currency	Sales (m)	EBITDA (m)	EPS (units)	Notes
27/3/19	C-COM	Japan	Annual	USD	13.53m	NA	NA	Sales figure is revenues. The company saw a 31.6 per cent increase year-on-year.
29/3/19	Huawei	China	Annual	USD	107bn	NA	NA	NA
23/4/19	C-Com	Canada	Q1	CND	2,948	NA	NA	Relates to revenues
25/4/19	Nokia	Finland	Q1	EUR	5.032bn	NA	NA	In the three months to March, revenues rose two per cent to EUR 5.032bn but were down two per cent on a constant currency basis.
25/4/19	Telia	Sweden	Q1	SEK	20.85bn	NA	NA	Revenues of SEK20.85bn (-1.0% vs cons).
25/4/19	Ericsson	Sweden	Q1	SEK	2.4bn	NA	NA	Net profit for the first quarter of 2019, partly as a result of the growth opportunities being afforded by 5G.
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.

covering the country's mainland and its island capital.

Muni said it aims to achieve nationwide mobile broadband service coverage, bringing better digital services to the people of this remote area. In pursuit of this target, Ceragon has deployed the longest-known microwave backhaul link – at least three or four times the length of typical microwave long-haul links.

The 4G long-haul microwave link spans 240km over the Gulf of Guinea, from the mainland shore to the island (typical microwave long-haul links only span as far as 50 - 70km). Ceragon said that the IP-20 platform delivers reliable and durable 4G backbone capacity over sea water and challenging climates, such as those present in Africa's tropical ocean seashore.

In addition, Ceragon's involvement means that the 4G network will utilise significantly fewer resources, such as energy consumption and real estate on towers – a key concern when deploying a network in a resource-scarce African landscape.

The project is valued at USD3.4m and Ceragon said it expected the project to be completed within 2019.

### 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 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," he said.

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 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 USD32m in 2018, down from the USD45m posted in 2017.

Overall operating revenue of USD326m was down by 36 per cent from USD513m in 2017, but revenue from operations in Sudan was up 49 per cent 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.

### Kenya's Jamii Telecom secures full 4G licence

Kenyan telecom firm Jamii Telecom, operator of the Faiba brand, now holds a full 4G operating licence for local service provision.

In December 2017, the business - owned by entrepreneur Joshua Chepkwony – paid KSh100,000 to acquire a one-year experimental

licence for ultra-fast broadband on the 700MHz spectrum.

The decision proved to be unpopular among local rivals, who accused the Communications Authority of Kenya (CA) of favouritism. They also claimed that the watchdog gave Jamii Telecom an operating licence without the usual public auction and waived the requisite KSh2.5bn spectrum fee.

When the trial license expired last year, Jamii Telecom asked the CA to extend it for another year to enable it to fully establish its operations.

The company has now acquired a full 4G license for Ksh2.5bn (approximately USD25m) and payment will be made in instalments, according to the CA.

Jamii a KSh250m deposit (for the licence which includes an annual sum of KSh11m for the spectrum frequency.

"Jamii Telecom has already paid the first instalment and they are no longer on a trial licence," said CA director general Francis Wangusi.

### Kenyan parliament to discuss Bill to hive off mobile money from telecom firms

Kenya's telecom service providers could be forced to break off mobile money from their core business if a new Bill is passed into law.

It follows proposals in the Kenya Information and Communications (Amendment) Bill, 2019, for a new regulatory framework for Kenyan telecommunication service providers.

The Bill would force telecom companies to split their core business from other ventures and seek regulatory approvals for each.

"A person may engage in any other business provided that such person shall; obtain the relevant licences from the respective regulators of any industry or sector ventured into; legally split or separate the telecommunication business from such other business; and provide separate accounts and reports in respect of all businesses carried out," according to the Bill.

Under the new laws, Safaricom, Airtel and Telkom Kenya would have to separate their mobile money offering from their core telecommunication activities to create new companies with separate accounts regulated by the Central Bank of Kenya.

The Bill would also give telecom businesses six months from the date it is signed into law to effect the separation.

### Tunisie Telecom and 3S to launch Tunisia's first IoT network

Tunisie 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 Tunisie 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.

### IN BRIEF...



Vodacom and MTN stand accused of fleecing their customers – particularly the poor ones – when it came to data, by South Africa's Competition Commission (CC).

Both companies charge more for data in South Africa than any other country they operate in.

The CC found that overcharging was especially acute for more under-privileged consumers who typically use small, prepaid data bundles.

Giving mobile operators until June to comment on the report, the CC's Tembinkosi Bonakele said the findings of benchmarking studies were disturbing. "International benchmarking confirmed that SA data prices are high, particularly for mobile pre-paid data," Bonakele said in an e-mailed statement.

"They found that lower-income consumers were exploited more compared with wealthier consumers."

Bonakele said those buying smaller data bundles pay up to twice as much compared with consumers who buy larger ones.

"The cost of mobile data is anti-poor and lacks transparency, with lower-income consumers being exploited compared to higher income consumers," he added.

Shares in Vodacom and MTN fell sharply on Wednesday April 24th after the CC released its scathing report.

Vodacom fell by 4.68 per cent, while MTN dropped 2.65 per cent.

The CC said it wants networks to introduce data price cuts immediately.

## GL introduces new Network Simulation Test Suite

GL Communications, the telecom test and measurement solutions specialist, has announced its End-to-End Wireless Network Simulation Test Suite (4G LTE + IMS, 3G, 2G).

GL says the new suite is enhanced to support variety of procedures for testing inter-operability between the networks simulating voice, and SMS (circuit switched (CS) traffic) and WEB HTTP browsing (packet switched (PS) traffic) with roaming/non-roaming users in the network. It adds that the test suite also supports a “massive number of subscriber profiles” (up to 64,000 Voice/SMS) using a single CSV database system shared across the 4G, 3G, and 2G networks.

“GL’s Wireless Network Simulation Test Suite (4G LTE + IMS, 3G, 2G) along with radio access elements is used to provide an advanced full-fledged “live network” at your company premises in any customized package to suit test requirements,” says Vijay Kulkarni, chief executive officer at GL Communications. “The test suite provides reliable integrated solutions to vendors and service providers for simulation, monitoring, troubleshooting any wireless network, including, 4G, 3G, 2G and upcoming 5G. The test suite is an invaluable tool for protocol characterization and testing, performance measurement, training, and education.” [www.gl.com](http://www.gl.com)

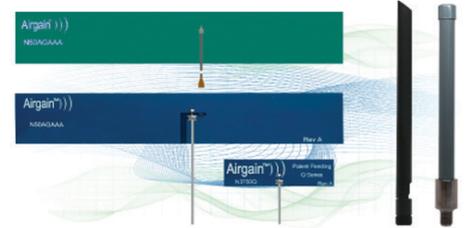
# Airgain releases new family of 5G antenna solutions

Fresh from the introduction of its embedded LTE antennas for LPWAN applications, Airgain has announced the release of its new family of 5G antenna solutions. The company says the new suite is designed to enable customers to easily add support for new 5G NR (Next Generation Radio) bands and deliver maximum performance with a range of form factors that fit their needs.

The new sub-6GHz (FGR1) NR antennas, according to the company, “leverage and build upon Airgain’s experience in development of multi-resonant, multi-band antenna design, providing ultra-wide-band performance out of a single antenna”. These new products enable customers to swiftly add 5G support to their small cells, gateways, access points,

and end user devices using a single antenna solution, it claims.

“The new 5G bands hold the promise of enabling much faster connections for equipment. However, they are incompatible with existing antennas, which means customers face the challenge of how they can swiftly and cost-effectively provide access to the new capabilities,” says Kevin Thill, senior vice president of engineering at Airgain. “Our new family of 5G antenna solutions gives customers a range of options for how they can add 5G support to their equipment, enabling them to choose the right antenna to match their equipment



form factor and use case and get their solutions to market quickly.”

Airgain says its new 5G NR antenna family features four new designs to match the needs of a range of equipment use cases. They are an embedded global broadband antenna, embedded Q-series CBRS antenna, external CBRS and C-band high performing omni dipole antenna and the CBRS and C-band high gain panel array reference antenna. [www.airgain.com](http://www.airgain.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.

## 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.

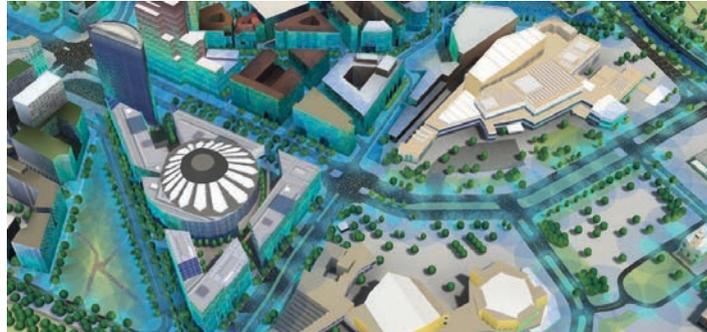


# HERE Technologies, Shields and Infosys team up

HERE Technologies, Shields and Infosys are collaborating on a powerful and cost-effective way to perform 5G network design and deployment.

The new solution, demonstrated at MWC 2019 in Barcelona, is designed to help enterprises including mobile network operators (MNOs) save both time and money when performing 5G radio frequency planning. The companies estimate that it would enable enterprises to reduce the time to identify real estate acquisition for 5G small cells as well as cut the cost of RF design by more than 40 per cent.

They reckon the solution is "a unique blend of technologies". Put simply, it embeds machine learning software and a service delivery framework from Infosys; expertise in RF and C-RAN (cloud radio access network) design from Shields; and large, precise, scalable 3D datasets derived from terrestrial LiDAR and other remote



sensed content from HERE.

The experience of HERE in extracting features and 3D derivative objects such as poles, trees, terrain models and buildings "lends a new level of precision to RF planning for 5G mmWave networks that far surpasses the accuracy of conventional GIS data", it is claimed.

In theory, that means greater efficiency in the mmWave RF planning process. Furthermore, the partners

claim more accurate network planning takes the guesswork out of transmitter selection and placement. It also enables MNOs to cut costs by significantly reducing the number and length of physical site-surveys.

A further claim, that network design tasks take just a few days, MNOs can more quickly perform upgrades, install new equipment, add capacity or respond to environment changes. [www.here.com](http://www.here.com)

## Amphenol RF releases new line of 18 GHz N-Type connector series



Amphenol RF has released a line of 18 GHz N-Type connectors, which it claims is ideal for more rugged, outdoor applications that require low PIM performance.

The firm says the latest N-Type connectors are designed to reach an extended frequency range of 18 GHz, they feature the familiar threaded coupling mechanism and provide engineers with a durable,

weatherproof interconnect solution with excellent low PIM performance.

Amphenol also waxes lyrical about the "greater design opportunities" with a robust and familiar interface. The higher frequency and single body construction make this connector appropriate for applications that require durability and faster data transfer rates, the company says. Additional features include low

VSWR and insertion loss, high power handling and ruggedized construction.

These interconnects are fully interchangeable with N-Type connectors made to the MIL-C-39012 specification. They are said to be ideal for use in systems where reliable RF and mechanical performance is critical such as wireless infrastructure, military and industrial applications. [www.amphenolrf.com](http://www.amphenolrf.com)

## Digi international offers cellular extender

Digi International has made available its Digi EX15 cellular extender. The company claims that it is designed to be used for primary or backup LTE connectivity at LTE-Advanced Pro (CAT11) speeds and for quick installations and remote management through either Digi aView or Digi Remote Manager.

It is claimed that the Digi EX15 is an affordable LTE cellular solution that can protect businesses from

network disruptions, so they can mitigate the risk of lost revenue and damaged reputation if their primary broadband connection fails. As a reliable, scalable business continuity failover solution, with CAT11 support to boot, Digi says it supports even high-bandwidth applications including video streaming and internet-connected security cameras. This is in addition to primary connectivity for kiosks, ATMs and digital signage.

Digi EX15 cellular extenders reportedly are suited for large deployments and ship with everything needed for rapid installation. The Site Survey Battery identifies optimal mounting locations for strongest cellular signal. Meanwhile, the Remote Mounting Kit allows installation of the device to dry wall, drop ceilings, unfinished open ceilings or glass so users do not have to compromise effectiveness. [www.digi.com](http://www.digi.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 West Midlands facility

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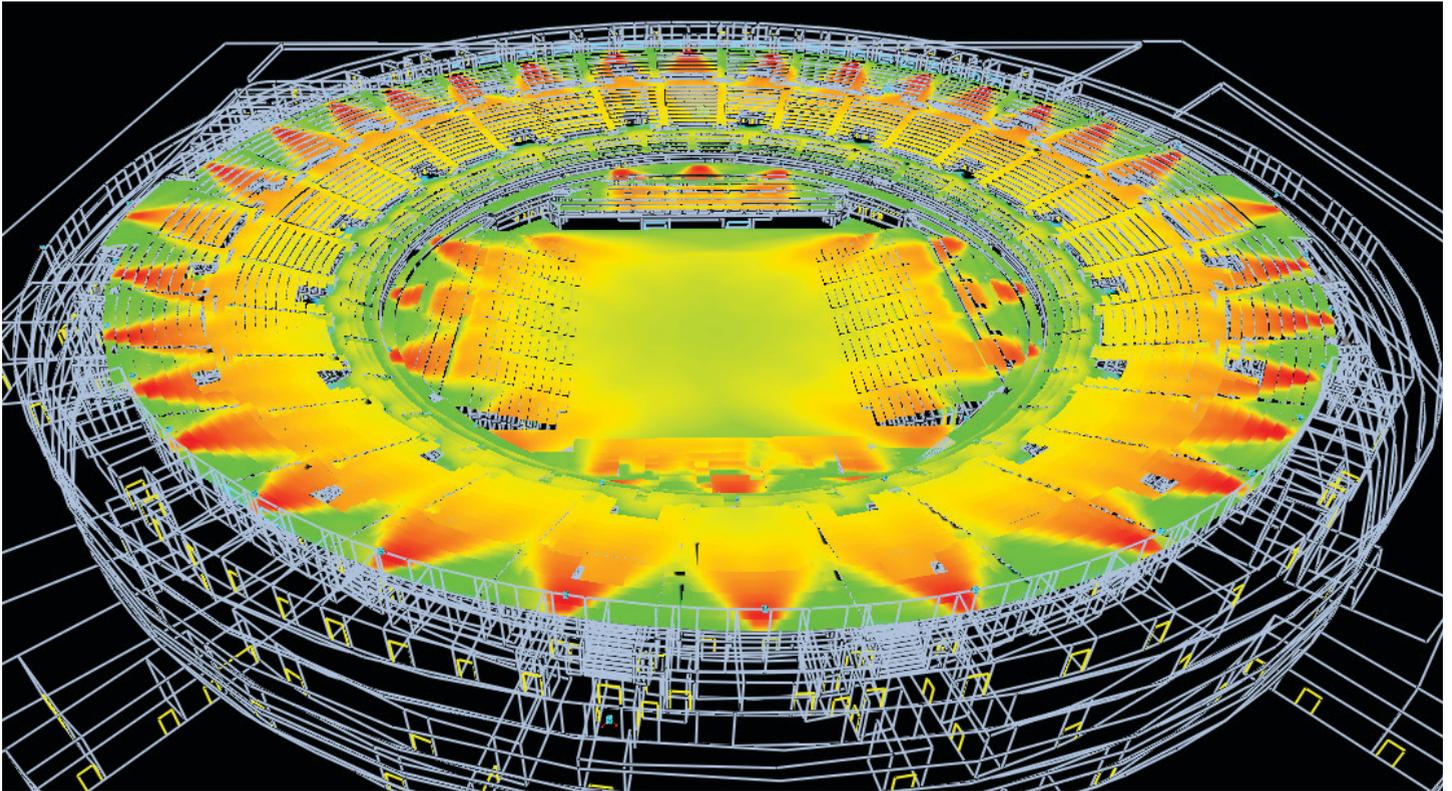
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# Filling the holes

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 aging 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 Sewllall.

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 Sewllall.

“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 Josphe 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.

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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.

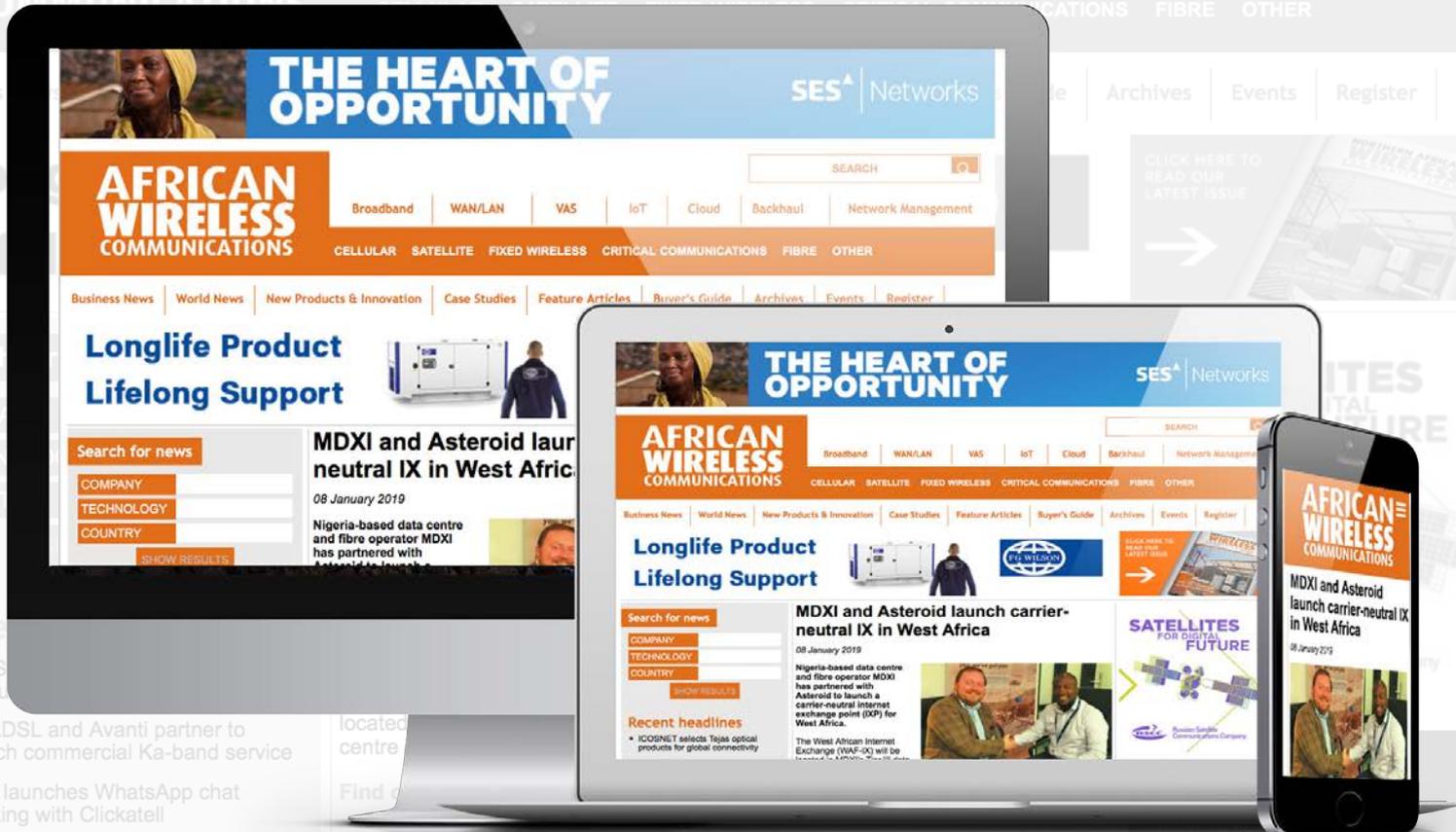
The same principle can be applied to other industries, for example the oil & gas industry, where specialist knowledge is needed in hazardous or hostile environments. In retail, smart stores are already leveraging 4G LTE connectivity and leading the way in testing and implementing customer engagement 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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## Kenyan regulator reports positive outlook for ICT

increased by 8.5 per cent to KES252.3bn (USD2.47bn) in the twelve months to June 2018, according to the country's Communications Authority (CA).

In its ICT sector statistics report, the regulator says mobile is still the dominant revenue



## 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 the 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.

# InfiNet solutions deployed to create digital oilfield

 Fixed broadband wireless connectivity specialist InfiNet Wireless has successfully delivered a wireless infrastructure solution at a major Kazakhstani oilfield to provide real-time control and accounting of oil production, marking a major step in the transition to a digital oilfield future.

InfiNet and JSC Karazhanbasmunai, one of Kazakhstan's major oil producers, collaborated to provide the solution at the Karazhanbas oil field located in Mangistau region. With telecommunications firm KRIS-Service responsible for the development and implementation of system of facility remote monitoring (SFRM), the solution was designed to automate oil production processes and reduce illegal oil turnover.

The infrastructure allows for the transmission of real-time data on the volume of oil produced, the number of different impurities, the condition of the equipment and



In total, 114 existing wells and 100 new wells were equipped with devices

other parameters of the automated system from the intelligent control stations installed at each well.

In total, 114 existing wells and 100 new wells were equipped with devices, from which data was

transmitted online to the operator's console to enable full control of the oil production process. The project includes a planned upgrade of 370 wells and installation of new ICS for 2,500 wells.

## Vietnam is fastest growing market for mobile payments in the past year

 Vietnam has witnessed the highest growth in mobile payments in the past year, according to the *Global Consumer Insights Survey 2019* conducted by PwC.

The survey, which covered over 21,000 respondents from 27 territories, showed that the percentage of consumers using these services in Vietnam increased to 61 per cent, up from 37 per cent last year. The increase was also the largest in the six southeast Asian countries that took part in the survey.

In Singapore, mobile payments climbed from 34 per cent in 2018 to 46 per cent in 2019.

The rest of Southeast Asia also saw increases in mobile payments with Thailand up 19 percentage points to 67 per cent, Malaysia up 17 percentage points to 40 per cent, and Philippines up 14 percentage points to 45 per cent.

Indonesia reflected the slowest increase in the usage of mobile payments with a rise of just 9 percentage points to 47 per cent.

In the Middle East, which was the second fastest growing region with regards to mobile payments adoption globally, the percentage increased by 20 percentage points to 45 per cent. However, China remained unchanged at 86 per cent. Across all territories, 34 per cent of consumers paid for purchases using mobile payments, up from 24 per cent a year earlier.

The survey further found that consumers in Asia are more socially engaged online than their counterparts in Europe and the Americas.

Respondents from Thailand, Indonesia and Vietnam led the way globally in making purchases directly through social media posts on platforms like Instagram and Facebook, with 50 per cent,

49 per cent and 48 per cent of survey respondents indicating they do so, respectively.

Globally, only 21 per cent of respondents made purchases directly through social media. Among product and service categories, the survey found that social media is most likely to affect purchasing decisions related to fashion.

"Social media platforms are already mature in Southeast Asia. The trend in online shopping, moving forward, is the consolidation of e-commerce players with fewer big players providing that gateway," said Charles Loh, southeast Asia consumer and industrial products consulting leader at PwC. "There seems to be a consolidator present in every market."

Elsewhere, nine per cent of global consumers said they use voice technology to shop online either weekly or even more frequently.

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## Mexico pilots new payment systems

 Mexico's central bank Banxico has begun trials of its cashless QR and NFC Cobro Digital electronic payment system with employees across a number of banking institutions.

The system works by using QR codes to make electronic transfers through mobile phones which are linked to a user's bank account.

For counter sales, the merchant generates a collection message in the form of a static or dynamic QR code or NFC message which is sent to the customer's mobile.

The financial institutions currently able to use the service include: BBVA, Bancomer, Citibanamex, Santander, Banorte, Banregio and Fincomun with more expected to join in preparation for a national rollout at the end of September.

Gerardo Esquivel, deputy governor of the Bank of Mexico, said the introduction of electronic payments aims to reduce consumers' dependence on cash and drive use of bank accounts.

"CoDi will be a mandatory payment system for all banks in the financial system," he said. "It will have a few months of evaluation and learning for its full implementation at national level and will become very important in terms of financial inclusion."

A additional aim of enabling cashless payments is to crack down on problems such as money laundering, tax evasion and corruption in the country.

# 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 "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.

## Ericsson chief executive 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 aging 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



Ericsson chief executive and president Börje Ekholm

PHOTO: ERICSSON

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."

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## Telecel buys out Limba

 Telecel Group has acquired Gibraltar mobile operator Limba for an undisclosed fee as part of an international growth plan. Limba is the British Overseas Territory's second mobile operator behind Gibtelecom. Telecel said its new acquisition can provide fixed services and sees it as a strategic gateway into Europe. Telecel already owns several mobile operators in Africa and has associated itself with local communities by supporting technology-related start-ups across the continent.

## Huawei given restricted role

 Britain will allow Huawei Technologies a restricted role in building parts of its 5G network as it seeks a middle ground in an unpleasant row between the US and China over the next generation of communications technology. Huawei, the world's biggest producer of telecom equipment, is under intense scrutiny after the US told allies not to use its technology because of fears it could be a vehicle for Chinese spying. "It's essential that we get the balance right, ensuring that our networks are built in a way that is secure against interference from whatever source, but also are competitive," said chancellor Philip Hammond.

## SP to build fibre network

 SP Telecom has commissioned PCCW Solutions as a consultancy partner to help design and deploy the company's planned alternative fibre network. SP has provided details of its plans to build an alternative to Singapore's next-generation national broadband network (NG-NBN). A joint venture between ST Engineering and Singapore Power Group, SP is deploying its network alongside the power lines operated by SP Group to create a separate fibre infrastructure to the NG-NBN.

# 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,



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

frustrating disaster response teams that require effective communications in order to coordinate emergency services 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."

## Japan to introduce 10 billion 14-digit mobile numbers by 2021

 Japan's communications ministry said it plans to create around 10 billion 14-digit phone numbers in anticipation of the upcoming 5G era.

The 14-digit numbers starting with the code 020 will be introduced by 2021 at the latest, while the current stock of 11-digit mobile numbers is expected to run out as

early as the 2022 financial year.

A panel of experts has proposed to introduce the new numbers once the necessary preparations are complete, and Japan's big three mobile operators NTT Docomo, KDDI and SoftBank have agreed to the proposal.

Now the ministry said it will draft a report on the matter as early as June 2019 and aims to

complete a ministerial ordinance before the end of the year.

New numbers will be allocated to the operators early if they complete the necessary upgrades ahead of schedule.

Japan currently uses 11-digit numbers starting with 090, 080 and 070 for mobile phones and with 020 for IoT devices.

## TDC shuns Huawei for Ericsson

 Denmark's biggest telecom group TDC has chosen Swedish firm Ericsson and turned its back on existing provider Huawei to roll out its ultra-fast 5G mobile network across the country.

The US and several other western nations have shut Huawei out of tenders for the development of

5G networks, because they are concerned about the company's close ties to the Chinese government.

"TDC has chosen Ericsson to build and deploy its 5G network," TDC chief executive officer Allison Kirkby said in a statement. "Over the past year, TDC has negotiated with several suppliers about the

upcoming 5G rollout."

However, there was no mention of Huawei, which had equipped TDC's network since 2014.

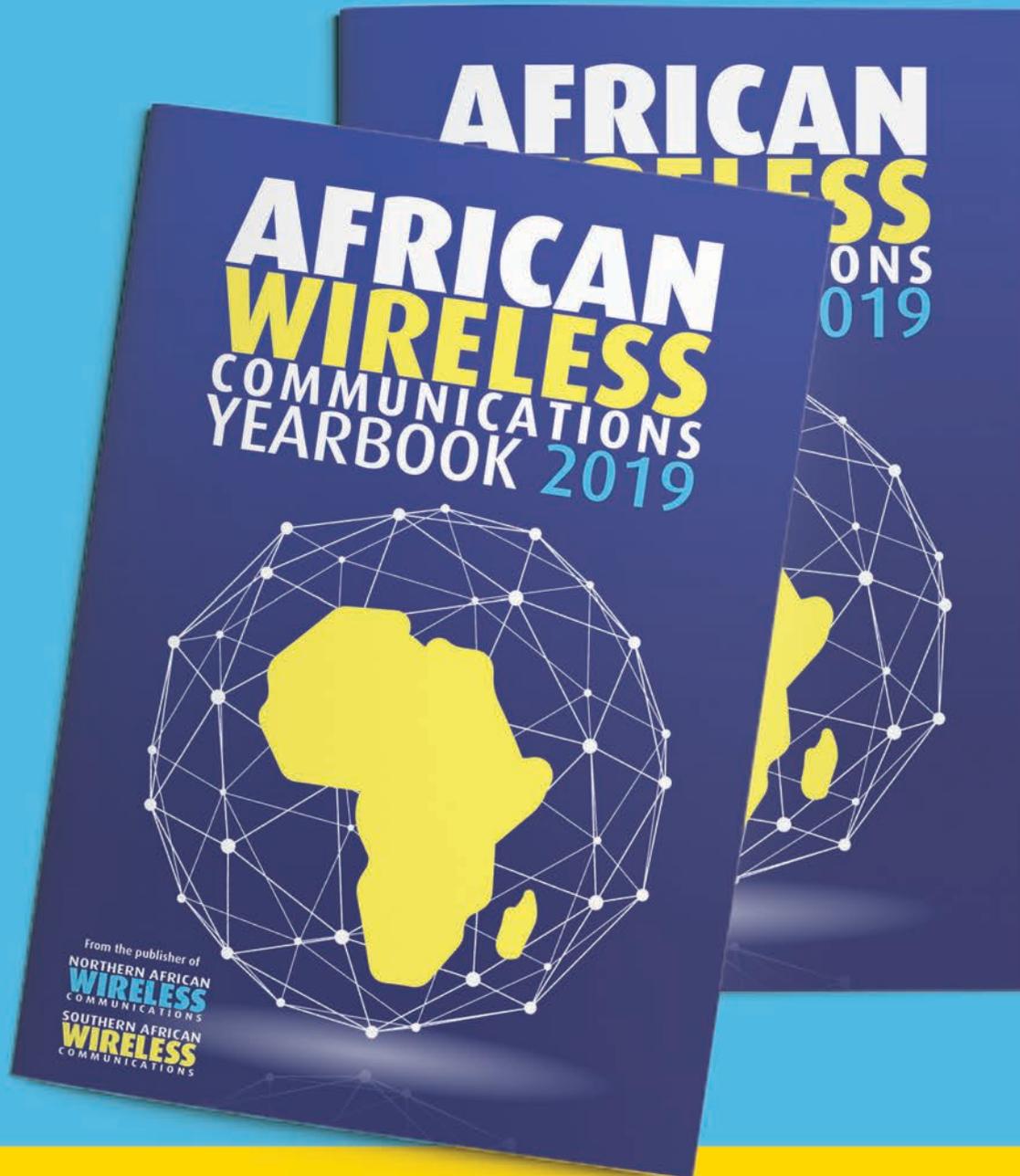
TDC did not disclose the value of the Ericsson deal, which will run until the end of 2023.

The firm said it hopes to offer its customers 5G by the end of 2020.

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