For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

SEPTEMBER/OCTOBER 2024 Volume 29 Number 2

- Connecting Africa - one device at a time
- Can LEO help connect Africa?
- Data sovereignty and the MNO

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EDITORIAL:
Editor: **Amy Saunders**
Designer: **Ian Curtis**
Deputy editor: **Gerry Moynihan**
Contributors: **Kevin Graham, Helen Weedon, Patrick Johansson, Gary Barton, Rob Pritchard, Sandra Wendelken**

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

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

Production & circulation: **Karen Bailey**
karenb@kadiumpublishing.com
Tel: +44 (0) 1932 481728

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

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First National Bank calls for Africa to seize AI sovereignty and implement ethical solutions

Professor Mark Nasila, head of advanced analytics, chief risk officer and retail banking at First National Bank, has called for Africa to take control of its artificial intelligence (AI) sovereignty by actively shaping AI frameworks and implementing ethical solutions customised to the continent's unique needs.

Nasila spoke at the summit on 'Africa's AI Sovereignty: Unleashing the Potential for Home-Grown Innovation and Self-Reliance,' where he highlighted the rising concern about the uneven distribution of AI progress, with North America and China already accounting for 70% of the expected value of US$16 trillion.

Nasila proposed that Africa should contribute to global frameworks for AI development and adoption, rather than passively accepting frameworks produced elsewhere. He argues that Africa should only adopt responsible and ethical AI frameworks that are relevant and applicable to African circumstances.

Nasila also presented the concept of 'AI factories,' decentralised hubs of innovation that can drive the development of intelligent products and services adapted to Africa's specific needs. This is expected to enable Africa to participate in the AI value chain beyond simply consuming products and services, allowing the continent to industrialise and become self-sufficient.

"We have an opportunity to put our minds together so that we can redirect the future of AI, so that we don't end up being so dependent, so that our national priorities can contribute to the global frameworks," said Nasila.

Zimbabwe to establish e-passport centres

Zimbabwe is planning to establish three e-passport centres in Zambia, the UK and the US, following a trial of an e-passport office at the Zimbabwe Consulate in Johannesburg, South Africa.

Centres will be equipped with the latest technology to ensure that passports are processed quickly and securely. Registrar-general Henry Machiri said that the e-passport offices will provide convenience to Zimbabweans living outside the country.

"We are committed to ensuring that our diaspora community has access to essential documents without undue hardship," said Machiri.

The Johannesburg e-passport office has witnessed success since its inception, with around 7000 e-passports distributed to applicants.

"The e-passport office in the Johannesburg consulate in South Africa began processing e-passports on 18 June 2024. As of 20 September 2024, a total of 6, 967 e-passports had been issued," said Machiri.

The Civil Registry Department intends to expand the e-passport service to the Zimbabwe Consulate Cape Town. Before the end of the year, the e-passport centres will be supplemented by an online platform for passport and national identity card applications via the Zimbabwe Population Registry System.

Vodacom to support smart city solutions

Vodacom's enterprise unit is working with local governments to implement smart city solutions for use cases such as utilities management, healthcare, education and security.

Now, under a five-year transversal contract with the National Treasury, Vodacom Business said it is delivering digital solutions that will enable municipal governments to make services more efficient and inclusive.

"We aim to use our experience and expertise in understanding government needs to achieve their smart city goals," said Vodacom Business Director Videsha Proothveerajh. "This includes digitalising utilities management, healthcare, education and security, which streamline operations, enhance efficiencies and improve the lives of citizens."

Vodacom Business' smart utilities management system uses connected smart meters to provide real-time information on consumption and enable more accurate billing and revenue collection.

On the healthcare front, Vodacom Business offers a stock visibility solution for healthcare facilities to better keep track of equipment, supplies and dispensing of medication, and a smart dispatch system that allows users to track ambulance requests. Meanwhile, the AitaHealth smartphone-based platform helps community health workers to deliver preventative care services at home.

Vodacom Business has also developed and deployed a citizen engagement app that enables two-way communication and collaboration between citizens and municipalities, including logging service requests and tracking their progress.

Uganda considers new internet route via Tanzania to bolster redundancy

Patrick Kabonero, coordinator of the Northern Corridor Integration Projects (NCIP) in Uganda, has announced that the country is considering a new internet route via Tanzania.

"Currently, 100% of Uganda's internet traffic to the rest of the world goes through Kenya. Under the NCIP, we are negotiating an alternative route through Tanzania, which will be managed by the private sector," said Kabonero.

In addition to the new route via Tanzania, the countries of the East African Community (EAC), of which Uganda is a part, decided to invest in the installation of a satellite to provide internet to the entire sub-region. However, this option, which is expected to cost around $300 million, may take time to materialize.

With a new internet route, Uganda could reduce its dependence on undersea cables passing through Kenya, better meet the growing bandwidth needs of its population, or promote economic development and digital innovation.

The real deal

Having led the pan-African telecommunications group Paratus for the past two years, Schalk Erasmus has realized there are often different ways to steer the ship. His renewed vision is focused on what truly makes a business successful and he says it's not only about pure economics.

"We all know it's important to be financially successful", says Erasmus. "But I believe it's equally, if not more important, to remember why you started the business and what you stand for because if you stick to that you will be successful. We believe in real people, real service and real value. Lose sight of that and you lose all sense of what's real while also compromising your economic goals."

In setting out the Group's five-year plan in 2022, Paratus was not shy about its ambitions in Africa. While the goals are still very much in place, Schalk Erasmus is refining their focus. In addition to setting monetary targets, the group aims to increase its customer base by 600,000 additional connections by 2028.

Erasmus explains: "We have always said that we want to be a part of the transformation of Africa by building exceptional infrastructure and delivering excellent service. While this is still very much at the heart of our mission, what we really want to do is to connect more people and enrich their lives. In turn, we want our people to be passionate about delivering this mission. It is very simple because if we are true to that goal, we cannot help but be even more successful. I believe that when you only focus solely on the bottom line, and making money as your driving force, much of your ethos is challenged along with the joy of doing the work."

Erasmus uses the Parthenon for his business analogy, the foundations of which are the people and the network infrastructure including Data Centres, cable landing stations and teleports; the pillars are the verticals, the services like internet connectivity, fiber and satellite; and the roof is where the value added services offering, cover and safeguard all the business operations.

From a start-up 21 years ago, Paratus has already achieved many of its goals to become a major telco player with an impressive footprint in Africa. The cornerstones of the Paratus success to date are founded on the group owning and continually investing in its own infrastructure, building capable teams in all the sub-Equatorial African countries in which it operates and in serving customers across the continent with a seamless quality network service. From fiber networks to data centers and teleports, Paratus is laying the foundations to connect more and more people across the African continent. Through its extended network, the Paratus group also serves customers in over 30 African countries. It was the appointed as the landing partner for the Equiano subsea cable in Namibia and it has already built four data center facilities in three African countries with a fifth under construction. Other significant achievements include the investment to create the continent's East-West fiber route and the express route from Johannesburg to Europe via the Equiano subsea cable.

Erasmus believes the best way to focus on the pan-African plan is to expand the Group's footprint, connect more people, and to make a difference wherever the Paratus network crosses.

"It gives us immense joy to connect communities via fiber or satellite connections to the internet for the very first time. As we enter new territories, we aim to leave minimal environmental impact and give back to the communities in which we operate. This is the way to do business. To empower people with what they need and to leave as little negative impact of doing so ... to do right by the people and the planet."

While pushing through with an aggressive expansion programme, Erasmus says that disruption on this scale can only be successful if you understand that there must be other positive impacts to consider. "We need reality checks as we expand, so we actively search for ways in which we can improve situations. For example, we recently connected a community in Mozambique that previously had no link to the internet. By installing a LEO satellite link at Santa Maria, located on the East coast of the Machangulo Peninsula, we now provide internet connectivity to approximately 1000 people including a school. This is transformation in practice; it is what makes us tick and this is how we can help empower the people of this continent, with minimal environmental impact."

His disarming honesty mixes with competence, bravado and humility to make Erasmus a unique and engaging personality. By challenging his own methods, he fosters awareness among his colleagues. He likes listening to ideas and strives to be available to both his colleagues and customers. He believes true accountability comes from being open to suggestions and from being approachable. His passion for the environment, people and governance guides his thinking and actions. Although he admits to always wanting to fix things, he realises that sometimes the best approach is to simply listen.

Knowing the importance of always listening and learning, Erasmus inspires his team to do the same, and to enjoy what they do. As he says: "We are, at the heart, a people's business. We are connecting people. We are providing the tools and the network to make it happen in Africa. This is our mission and our joy. It is what has made us successful and as we connect more and more people, we will help to create yet more success for others."

If the man at the top of an African born telco is saying that Paratus is different because it delivers real service and real value, then the Group's continued continental success is very real too. ■

Schalk Erasmus (CEO Paratus Group)

AngoSat-2 connects 300,000 people in 2 years

Capacity from AngoSat-2 has allowed to connect about 300,000 people, almost two years after the start of its commercialization, according to the National Space Program Management Office (GGPEN).

However, the institution adds that more than 80% of the country's 36.7 million inhabitants still do not have access to the internet.

The country has signed partnerships with Infrasat, MSTelecom and ITA for the operation of the satellite and the distribution of capacities to telecom companies. Luanda has also launched the 'Connecta Angola' project to provide free internet connectivity in remote areas, with a focus on public institutions. By October 2023, 150 areas spread across 16 out of 18 provinces had already been covered.

This low adoption could be explained by the fact that VSAT terminals to receive signals do not yet cover the entire country. In addition, service coverage does not systematically mean adoption and use of services. The GSMA estimates that about 60% of people covered by mobile Internet in sub-Saharan Africa do not use the service, partly because of the high cost of devices that can connect to the Internet.

The AngoSat-2 satellite has the potential to expand mobile internet coverage in Angola. However, challenges, such as limited access to smartphones, may hamper the real adoption of the service.

Madagascar considers slashing prices

Malagasy authorities are considering lowering the price of telecommunications services to boost the population's access to the internet, according to Stéphanie Delmotte, Malagasy Minister of Digital Development, Posts and Telecommunications (MNDPT).

"The time has come to align with international best practices. I believe that soon we will have the opportunity to announce good news regarding Internet prices. No matter what happens, we are committed to reducing Internet costs, so that the majority of the population can access these data services," said Delmotte.

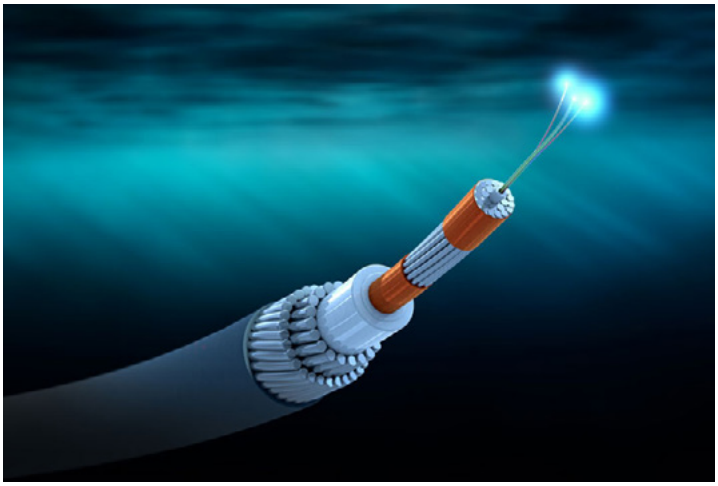
This initiative is part of the Malagasy leaders' desire to increase the Internet penetration rate in the country. They have carried out various actions in this direction, including the expansion of the missions of the telecom development fund last September. The objective of this structure, created in August 2006, is to reduce the digital divide. According to DataReportal data, Madagascar had 6.31 million internet users at the beginning of 2024, with a penetration rate of 20.6%.

The cost of accessing mobile internet in Madagascar represents 15.5% of the monthly gross national income (GNI) per capita, according to the ITU's 'Measuring Digital Development - ICT Development Index 2024' report. The organization recommends that this cost does not exceed 2% of the monthly GNI per capita, while the average on the African continent was 4.5% in 2023.

Zambia-Burundi subsea cable connect

Burundi and Zambia are to be connected via an underwater fibre optic cable, following an agreement at the Digital Government Africa Summit.

The memorandum of understanding (MoU) paves the way for the cable to be submersed in Lake Tanganyika, connecting the Northern province of Zambia with Burundi's southernmost province of Makamba. A yet-to-be named private firm has been contracted for the project.



Burundi will become the ninth country to be connected to Zambia by cable, after Angola, Botswana, Democratic Republic of Congo, Malawi, Mozambique, Namibia, Tanzania and Zimbabwe.

"The connection of the two countries will make Zambia a regional hub for information and communication technology," said Felix Mutati, Zambia's science and technology minister.

NetOne launches 5G in Zimbabwe

NetOne has launched 5G with the support of Huawei, promising its subscribers 'faster speeds, reduced latency and improved connectivity.'

The 5G rollout is part of NetOne's planned actions to regain its market leadership position. The company is banking on meeting the growing demand for high-speed connectivity and plans to abandon 2G and 3G in favour of later mobile technologies. It recently commissioned 275 4G base stations across Zimbabwe.

NetOne had 4.25 million mobile subscribers as of 31 December 2023, for a market share of 28.4%, according to the Posts and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ). Rival Econet – which launched 5G in 2022 - dominates the market with 10.44 million subscribers, representing a market share of 69.7%.

The deployment of 5G is expected to enable NetOne to increase its revenues. In addition to meeting the growing demand from its current and future subscribers, the public company intends to focus on the Internet of Things (IoT). It plans to target easily profitable sectors such as manufacturing, construction and mining.

Madagascar announces new affordable fibre

Stéphanie Delmotte, Madagascar's Minister of Digital Development, Posts and Telecommunications (MNDPT), has announced a new fibre optic offer for less than 10 euros per month to promote digital inclusion.

Telecom operator Telma launched a fibre optic offer at 49,000 ariary, offering 100GB and a speed of 200Mbps.

"We looked at what the appropriate rate was for the purchasing power of the majority, when we did the calculations, we need an unprecedented offer in Madagascar. It is really a small part of what is currently being done and we think that it must be less than 10 euros per month so that households can benefit from the Internet," said Delmotte.

The Malagasy government aims to make digital technology a driver of development, by increasing the Internet penetration rate, which is essential to achieve this goal. According to DataReportal, Madagascar had 6.31 million Internet users at the beginning of the year, representing a penetration rate of 20.6%.

South Africa to target rural-urban divide with broadband

The South African government has revealed plans to close the connectivity coverage gap in rural areas as a key initiative to empower poorer communities and stimulate economic growth.

South Africa's Minister of Communications and Digital Technologies, Solly Malatsi, announced a two-part strategy to enhance connectivity. The first involves the need to lower regulatory hurdles for companies to invest in affordable and reliable broadband. Secondly, he called for the prices of 4G and 5G devices to be reduced, making them more accessible.

Malatsi issued a policy directive to ICASA, clarifying his department's position on the recognition of equity equivalent programmes, for urgent consideration. He explained that, due to the global nature of multinational firms, their ability to comply with "equity ownership requirements" is constrained.

"Giving millions of South Africans access to broadband would therefore constitute one of the biggest empowerment programmes the South African government has ever undertaken," said Malatsi.

Zimbabwe calls for more affordable handsets

Zimbabwe's Minister of ICT Tatenda Mavetera has called on ICT stakeholders to provide more affordable smartphones to market in an attempt to bridge the digital divide.

"Improving connectivity needs to be complemented by access to affordable and efficient devices. The concept of free Wi-Fi zones also needs to be discussed as we look for ways to further promote access to ICT," said Mavetera.

The Zimbabwean authorities wish to improve access to digital services for the population.

Africa's ICT technology exports up 5.4% in 2023

In the full year of 2023, African exports of information and communication technology (ICT) services reached $9.2 billion, registering a growth of 5.4% compared to the previous year, according to the latest report out from Tralac (Trade Law Centre).

North Africa dominates the market with $4.49 billion in ICT services exports in 2023, followed by East Africa ($2.05 billion) and Southern Africa ($1.4 billion). West Africa and Central Africa exported $1.06 billion and $240 million respectively.

African digital services exports cover a wide range of areas in both region and activity. In Ghana, business, specialised and technical services, including business process outsourcing (BPO), accounted for 77% of total services exports, according to a 2023 World Trade Organization (WTO) report. Meanwhile, in Morocco, outsourcing of engineering services, such as software development, electronic design, mechanical engineering and civil engineering, is booming, with an annual growth of 35% between 2019 and 2022.

Despite this momentum, African exports of ICT services represent only 0.85% of the global total. The continent therefore has significant room for improvement to assert itself as a major player in the global digital economy.

The lack of harmonization of regulations and standards among African countries is hampering cross-border trade in ICT services. In addition, challenges such as poor infrastructure, lack of digital skills and limited access to finance are hampering the widespread adoption of digital solutions.

Equinix launches first IBX in SA

Equinix, Inc has opened its first International Business Exchange (IBX) data centre in South Africa.

The new Equinix facility - JN1 - is located in Germiston, Johannesburg, and is already welcoming new customers and partners. JN1 is a key facility within the Equinix global network, designed to support and enhance growing digital infrastructure and connectivity in the region including access for businesses of all sizes to cloud and connectivity services from this new Johannesburg base.

The new facility provides over 20,000 square feet of colocation space in its initial phase, with plans for expansion to more than 100,000 square feet at full build out. The site boasts significant power capacity making it suitable for high-density deployments with the capability to implement liquid cooling to support those deployments. JN1 has 700 cabinets in its initial phase, with plans for 3,475 cabinets when fully built out.

Vodacom Lesotho launches start-up incubator

Vodacom Lesotho's Software Factory Hub, a four-month incubation programme designed for innovative tech start-ups that are registered in Lesotho, has officially been launched, underscoring the company's commitment to fostering and empowering local tech talent in the country.

The primary goal of the programme is to equip emerging tech start-ups with essential expertise in the fields of cybersecurity, software development and agile methodologies. This will in turn enhance their technical capabilities and foster innovation in key areas that are critical to their growth and success in today's fast-paced digital landscape.

"This idea was hatched after realising that a substantial proportion of tech solutions were predominantly sourced from companies in South Africa and further afield," said Sekoala Tšukulu, Executive Head, Information Technology and Billing, Vodacom Lesotho. "This underscored a prominent gap in the domestic tech landscape, particularly evident in the deficiency of local entities in meeting stringent compliance, governance and other technical requirements. This shortfall was particularly conspicuous during Vodacom Lesotho's quest for a capable local tech partner when we were developing the Vodacom Lesotho App."

Peiso Moiloa, a representative of Peiso Media Group, a participant in the programme, said that the programme's emphasis on developing high-tech skills will effectively empower entrants to craft and implement innovative solutions tailored to the specific needs of local businesses and the broader community.

The thorough selection process involved detailed assessments covering technical capabilities, governance structures, and compliance standards, culminating in the shortlisting of just five companies from an initial pool of 37 applicants. Following the conclusion of the programme, a significant cash prize will be awarded to one of the participating tech startups, aiding in the facilitation of their expansion and growth initiatives.

All the technology enterprises partaking in the initiative will enjoy privileged access to Vodacom Lesotho's extensive technological infrastructure and support mechanisms. Upon successfully completing the programme, these startups will be formally recognized as approved suppliers for Vodacom Lesotho, thereby positioning them to collaborate on a diverse array of technological solutions tailored for both Vodacom Lesotho and various other entities within the country.

Zimbabwe embarks on digital border management

Zimbabwe has installed 14 electronic gates (e-gates) at Robert Gabriel Mugabe International Airport, marking the first phase of the country's new Online Border Management System (OBMS).

The e-gates automate immigration operations, eliminating the need for actual human intervention, and aim to make the process easier for travellers while also improving security at entry and exit points. The OBMS platform is anticipated to drastically shorten processing times, relieve congestion at crowded border stations, and combat criminal operations including human trafficking, drug smuggling, and money laundering.

"The e-gates will allow a traveller to enter the country after scanning their passport and capturing biometric data, including taking a picture of the traveller, if the traveller has no outstanding offences or crimes, the e-gate allow the traveller to pass," said Raphael Faranisi, ministry of home affairs and cultural heritage permanent secretary ambassador. "E-gates, as a component of the online border management system, will reduce cross-border crimes, especially human and drug trafficking, as well as money laundering."

The government plans to install the system at the Victoria Falls International Airport, the Joshua Mqabuko Nkomo International Airport and the Beitbridge Border Post.

Telecom Namibia ushers in whistleblowing hotline

Telecom Namibia has announced the launch of a dedicated whistleblowing hotline, a new initiative aimed at fostering transparency, ethical conduct, and accountability across all levels of the organization.

The whistleblowing hotline – 'The Jiva Tip-Off Hotline' - will serve as a confidential and secure channel for employees, stakeholders and public to report any misconduct, violations of company policies or unethical practices like fraud, corruption and bribery which they may encounter, that is applicable only to Telecom Namibia.

The whistleblowing hotline will be managed by Deloitte, an independent third-party consultant to ensure confidentiality and impartiality. All reports will be investigated thoroughly, and appropriate actions will be taken to address any issues uncovered.

Key Features of the Whistleblowing Hotline include 24/7 availability; confidentiality and anonymity; a user-friendly interface; multilingual support; independent oversight; protection against retaliation; and stringent protocols.

The whistleblowing hotline is part of a broader effort by Telecom Namibia in reinforcing commitment to ethical practices and compliance with regulatory standards. By providing a safe space for reporting misconduct, the operator aims to not only protect its organization, but also empower employees, stakeholders and public to uphold the values it stands for.

Intelsat 33e total loss

Intelsat has reported that the anomaly it disclosed on the Intelsat 33e satellite has resulted in the total loss of the satellite.

On 19 October, Intelsat announced a service outage on the Intelsat 33e satellite, affecting customers in Africa, Europe and parts of the Asia-Pacific, resulting in a loss of power and service to customers.

It is now coordinating with manufacturer Boeing and government agencies to analyse data and observations. It has also convened a Failure Review Board to complete a comprehensive analysis of the anomaly. Since the anomaly, Intelsat has been in active dialogue with affected customers and partners.

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Going further in critical communications

60% of MEA CSPs adopting 5G for digital transformation

Research from Nokia reveals that 60% of CSPs in MEA region are adopting 5G to enhance their digital transformation.

While 4G subscriptions are projected to stabilize by 2027, 5G adoption is anticipated to surge dramatically, signifying a pivotal shift in the region's technological landscape.

Nokia's Mobile Broadband Index Report 2024 highlights the continued rapid adoption of 5G technology in the region, projecting that by 2029, 5G subscriptions will reach 519 million, with 48% of total data traffic expected to be driven by 5G.

5G is playing a critical role in the region's future connectivity landscape, with nearly 23% of all mobile subscriptions in the MEA region expected to be 5G by 2029. This accelerated adoption is particularly evident in the Gulf Cooperation Council (GCC) sub-region, where 90% of all mobile subscriptions are projected to be 5G by 2029. This growth is largely driven by significant government investments in 5G infrastructure and robust support for advanced connectivity solutions.

The rise of 5G technology is not only increasing the number of subscriptions but also transforming the region's data traffic dynamics. By 2029, 5G and 4G networks are expected to account for over 90% of the total data traffic in the MEA region. In the GCC alone, 90% of all data traffic is predicted to be carried over 5G networks.

Fixed Wireless Access (FWA) powered by 5G is also increasingly being adopted, growing from 11% in 2022 to 38% by 2029. This surge in FWA adoption is driven by the need for faster internet speeds and lower latency, particularly in underserved or remote areas.

"The adoption of 5G is increasingly important for countries across MEA to meet the rising demand for data services," said Mikko Lavanti, Senior Vice President for Mobile Networks, MEA at Nokia. "This transition accelerates digital transformation while allowing CSPs to unlock new revenue opportunities. Nokia's services empower CSPs to unlock the full potential of their networks, delivering advanced connectivity solutions that are critical for the region's development."

Talking critical

Kevin Graham, TCCA CEO

Looking to the new capabilities of 5G for critical communications

TCCA promotes the use of standardised technologies to deliver mission-critical communication systems that are secure, available, resilient, interoperable and, ultimately, trusted. It also supports other standardised narrowband technologies, and with the establishment of its Critical Communications Broadband Group (CCBG) some 14 years ago, TCCA recognised the need to deploy 3GPP mobile broadband critical communications, which in many cases will complement or replace narrowband networks.

We are now in the 5G era, and with 5G rollouts advancing, the opportunities to further enhance critical communications are becoming clear. 5G is an ever-evolving technology with new features still being added. For example, network slicing is designed to allocate specific required resources to meet the requirements of different user groups, while multi-access edge computing (MEC) servers can enable low latency applications by moving processing closer to the edge.

Through 5G innovative features and technological innovation, 5G is envisioned to support unprecedented and diverse mission critical applications and use cases. These include:

- Isolated Operation for Public Safety (IOPS) – enabling continuous site operation even with backhaul link damaged
- Non-Terrestrial Networks (NTN) – enabling extended terrestrial coverage through satellite, and direct satellite to device connection
- Multimedia Broadcast and Multicast Services – improving broadcast, multicast and public warnings/ messaging systems' efficiency
- Unified Access Control – reducing signalling and processing in Next Generation Node B (gNB), ensuring network stability during high traffic loads/congestion
- National Roaming – enabling the roaming into multiple networks from commercial mobile network operators to public safety networks in situations of limited coverage

5G technology will essentially deliver improvements to users in two distinct ways: enhancing use cases initially enabled by 4G LTE in terms of scaling up these services to more users within a given locality; and addressing new and emerging use cases made possible with advancements in technology such as ultra-low latency mobile connectivity. Both will provide important user benefits, ranging from enhanced situational awareness - using advanced video recognition capability, artificial intelligence analysis of data collection and new immersive user applications - to greater use of remote and specialist expert analysis of incident ground environments for first responders. The information between agencies can be shared more easily via cloud-based application platforms. The net result is that the cooperation between first responders can be more effective and efficient, improving the safety of users and saving the lives of others. From a technology perspective, 5G will provide a plethora of new capabilities, most notably enhancing mobile broadband services with ultra-reliable low latency communications and supporting massive machine-type device deployments. Whilst these capabilities will be available across all bands, lower sub-1GHz spectrum allowing greater macro coverage while the benefit of some will be more pronounced at higher frequencies due to correspondingly larger channel bandwidths supporting higher capacities.

Security has been one of the main considerations in 3GPP standards development, ensuring that the resulting technology is trustworthy. Each generation of 3GPP standards has incorporated security improvements - underpinned by advancements in hardware and software - and against the backdrop of an ever-evolving threat landscape. Hence the security of 5G is a further enhancement over 4G LTE.

The global ecosystem committed to 5G will undoubtedly drive further standardisation and development of mission-critical services. Industry is also investing in and delivering solutions capable of providing new ways of monitoring network performance and assuring service levels using complementary software technologies such as automation, analytics, and artificial intelligence.

5G continues to make inroads in Africa. According to the GSMA as of September 2023, 27 operators in 16 markets across the region had launched commercial 5G services. More markets are expected to follow, with operators in an additional 10 countries making a commitment to launch 5G. 5G coverage in the region is still mostly limited to major cities, but there is growing evidence that 5G coverage is ramping up in some countries. In South Africa, for example, 5G coverage reached 41% of the population as of September 2023.

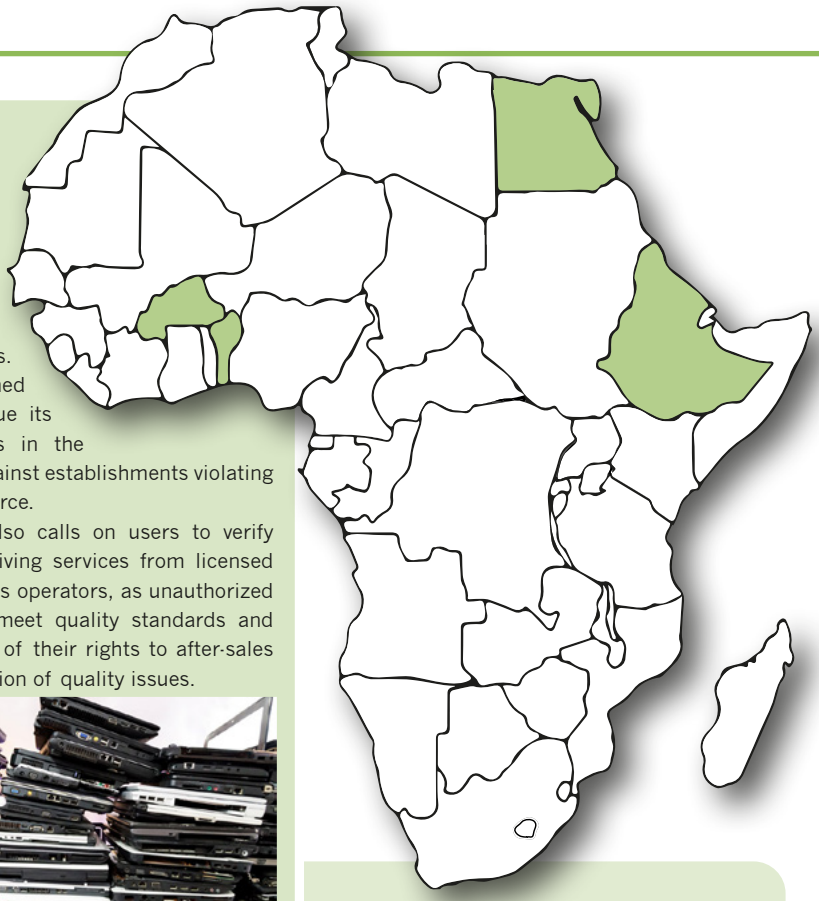
Whilst a significant amount of progress has been made by the critical communications community in establishing mission-critical broadband spectrum, standards, technology and a competitive marketplace, there is still more to achieve. We must continue to expand collaboration efforts with commercial mobile network operators (MNOs) to deliver and enhance mission critical mobile broadband services for critical communication users, leveraging 3GPP defined capabilities and utilising shared and/or dedicated spectrum for private deployments and rapid deployables.

We must continue to prioritise, resource and support further 3GPP-driven standards definition and testing for features of particular benefit to the critical communications community and drive conformance, certification and interoperability.

We must continue to identify any new 5G functionality that could be of benefit to critical network operators looking to deploy solutions involving multiple MNO infrastructures and hybrid private/ commercial options, such as improvements in handover performance, security and interworking and interoperability in general.

The work of TCCA enables international collaboration on service deployment experiences and sharing of best practice. We recognise that the introduction of a next-generation technology requires careful consideration, including aspects such as coverage, security, resilience, capacity, performance, interoperability, and integration into user operations. In general, each organisation will, at their own pace, go through an evolution process, this technology shift providing the opportunity for new operational models to become institutionalised over time.

TCCA's vision is advancing global critical communications for a safer, more connected world. Our mission is to empower critical communication users with secure, trusted, and standardised technologies. We will work to help ensure that 5G fulfils its full potential in helping the critical communications sector deliver the best possible services and support for those users.



Egypt seizes illegal telco equipment in fresh raid

Egypt's National Telecommunications Regulatory Authority (NTRA) has announced the seizure of illegal telecommunications equipment.

The seizures were carried out as part of large-scale operations aimed at dismantling unauthorized telecommunications networks in several governorates.

ANRT conducted judicial operations in the Greater Cairo region and in some governorates of Upper Egypt, in collaboration with the telecommunications and national security investigation departments. These interventions made it possible to dismantle two illegal networks comprising 5 antennas, 152 routers and several computers used for the management and operation of unauthorized Internet services.

These networks targeted more than 3,000 subscribers in the El-Minya and Luxor regions, generating illicit profits. According to Article 72 of Law No. 10 of 2003 governing telecommunications, offenders face prison sentences ranging from six months to five years, as well as fines ranging from $1,000-10,300.

These operations aim to eliminate illegal practices in the telecommunications sector in Egypt, practices that harm the quality of services provided to users. The ANRT affirmed that it will continue its regular campaigns in the coming months against establishments violating the legislation in force.

The Authority also calls on users to verify that they are receiving services from licensed telecommunications operators, as unauthorized networks do not meet quality standards and deprive customers of their rights to after-sales service and resolution of quality issues.

Ethio Telecom aims to hit 55 million mobile money subscribers

Ethio Telecom is targeting 8.6 million new subscribers for its mobile money service Telebirr in the current 2024/2025 financial year, which will bring its total user base to 55 million.

The operator plans to increase the number of Telebirr agents by 28%, to reach 275,000, and to double the number of merchant partners, to total 367,000. In addition, it aims to improve digital financial services, digital local money transfers, online payments, as well as international online transactions, while increasing the number of remittance partners.

These initiatives will enable Ethio Telecom to consolidate its position in the mobile financial services segment of the Ethiopian telecom market, in the face of emerging competition. M-Pesa, Safaricom Ethiopia's platform, already had 4.5 million registered subscribers as of 31 March 2024, seven months after the launch of its commercial operations.

ARCEP lays in to Togocom and Moov Africa Togo for 'lacking innovation'

Michel Yaovi Galley, director of the Electronic Communications and Postal Regulatory Authority (ARCEP), has criticized Togocom and Moov Africa Togo for their lack of innovation in service offerings.

Galley said that telecom operators must rethink their strategies by promoting the use of services rather than the sale of terminals. He also urged consumer associations to exert more pressure to encourage operators to improve quality and lower prices.

"No innovative and novel approach in the provision of mobile services in Togo. From 2G to 4G currently, we continue to design offers as we did 10 years ago," says Michel Yaovi Galley.

According to a recent ARCEP survey, the overall satisfaction rate for mobile services is 51% in 2024. Operators could consider collaboration to develop non-terrestrial network solutions, such as satellite connectivity, or advance AI technology and its integration into the mobile industry. However, the satisfaction survey results also highlight that the reasons for dissatisfaction are mainly the unavailability of services, rates considered high and poor quality of service.

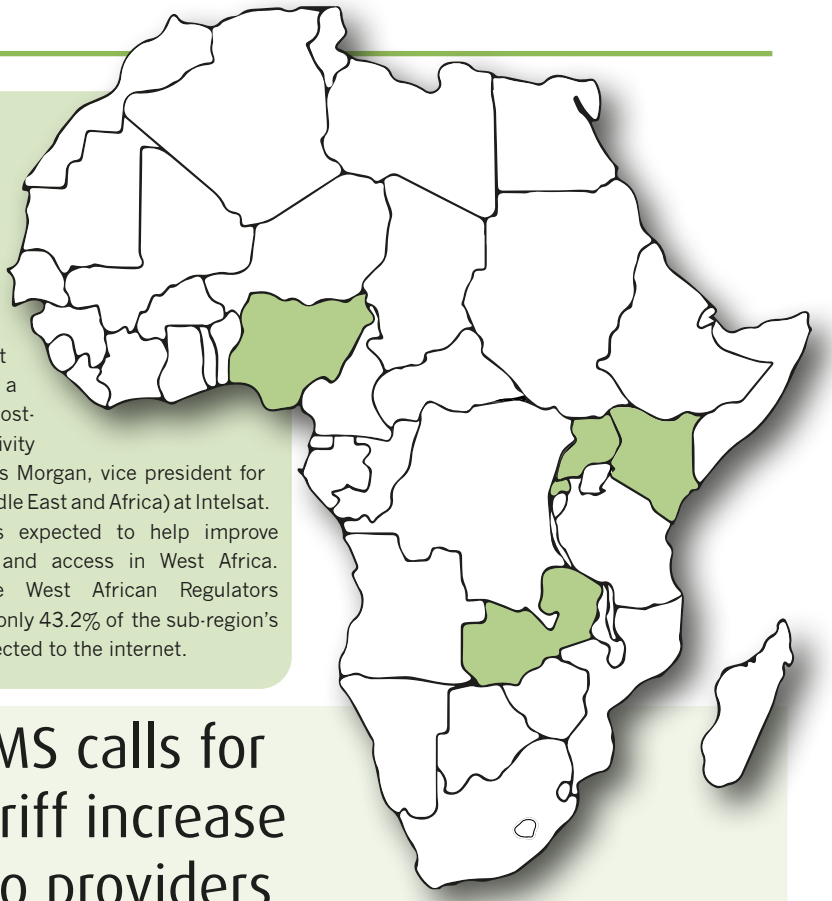
Burkina Faso's operators discuss infrastructure sharing

Telecommunications players in Burkina Faso are seeking to strengthen the sharing of telecoms infrastructure to facilitate their deployment on a national scale.

The Burkinabe government is seeking to generalize access to telecom services. 1,700 dead zones have been identified in the country, 1,000 of which should be covered by 2027. Official figures indicate that mobile phone coverage is at 85%, compared to 64% for 3G Internet and 46% for 4G Internet.

The International Telecommunication Union (ITU) believes that infrastructure sharing can lower the cost of deploying networks, particularly in rural areas or marginal markets. However, the effectiveness of infrastructure sharing can be undermined by operators' desire for leadership and the risk of collusion can endanger competition.

Intelsat launches CellBackhaul to enhance internet coverage



Intelsat has provided a solution to help internet service providers and telecom operators improve their service coverage in West Africa.

The 'Intelsat CellBackhaul' platform is based in the Open Access Data Centres (OADC) data centre in Lagos, Nigeria. The new solution involves connecting telecom towers in remote areas to the main network using satellites.

"Satellite technology is essential to bridge the digital divide. To connect unconnected populations in rural and remote areas, satellite backhaul is often the most viable option for a fast, reliable and cost-effective connectivity solution," said Rhys Morgan, vice president for EMEA (Europe, Middle East and Africa) at Intelsat.

This initiative is expected to help improve internet coverage and access in West Africa. According to the West African Regulators Assembly (WARA), only 43.2% of the sub-region's population is connected to the internet.

Kenya ups the ante with new ISPs

Kenya's parliamentary committee on communications, innovation and information has approved new internet service providers (ISPs) to operate in the country to increase competition in the segment while ensuring strict compliance with laws protecting consumer rights and data privacy.

The move comes amid concerns from Kenyan telecoms operator Safaricom. In a recent letter to the Communications Authority (CA), Safaricom suggested that the regulator require satellite internet providers to collaborate with local mobile network operators, instead of granting them standalone operating licenses.

Kenyan President William Ruto said that the introduction of Starlink in the Kenyan market in 2023 had created competition, pushing existing players like Safaricom to provide better services.

NATCOMS calls for 10% tariff increase for telco providers

The National Association of Telecommunications Subscribers (NATCOMS) has urged the Nigerian Communications Commission (NCC) to approve a 10% tariff increase for telecom providers.

According to the group, this will assist to reduce the sector's escalating operational costs, which has been a long-standing issue. Adeolu Ogunbanjo, national president of NATCOMS, reiterated the critical necessity for this tariff adjustment.

For the past few months, Nigerian telecom companies have been advocating for an increase in telecom tariffs and canvassing for policies that they feel will benefit them and boost their capacity to invest in networks. In August 2024, Nigerian telcos threatened to stop services and implemented load-shedding schedule due to budgetary constraints. While the NCC acknowledged the difficult environment, the regulator allegedly believes this is only a ploy to justify a pricing increase.

Nonetheless, Ogunbanjo voiced concern about the worsening quality of telecom services supplied by these companies, claiming that the current economic climate makes it increasingly difficult for them to maintain standards: "telecom services have significantly declined in quality, and operators are facing mounting pressures."

He noted that, despite increased operational expenditures over the last 11 years, there has been no matching increase in service tariffs. This lack of adjustment has left telecom businesses in a risky financial situation, necessitating collaboration among stakeholders to find a sustainable solution.

Kenya's mobile subscriptions up 1.95%

The number of active mobile subscriptions in Kenya increased to 68 million as at the end of March, representing a penetration rate of 132.1%, according to the Communications Authority (CA).

The figure is up from 66.7 million subscriptions at the end of December 2023, representing an increase of 1.95% over the three-month period.

Safaricom tops the subscription list with 44,666,368 subscribers, followed by Airtel with 19,858,255, Finserve (Equitel) with 1,497,283, Telkom Kenya with 1,478,668 and Jamii Telkom with 545,819 subscribers.

The growth is attributed to customer win-back campaigns run during the period. The CA also notes that mobile money subscriptions have grown to 38.7 million, translating to a penetration rate of 75%. The growth in mobile money is attributed to the removal of withdrawal codes for transactions sent from M-Pesa to Airtel Money, which means that funds can now be transferred directly into an Airtel Money account. The total mobile data subscriptions also stood at 51.3 million, of which 72.6% were on mobile broadband.

5G mobile subscriptions rose from 509,737 to 653,716, while 4G mobile subscriptions now sit at 27.6 million, 3G and 2G are 9 million and 14 million respectively. The total available international internet bandwidth capacity in the country also grew by 20% to 20 744.3Gbps.

Rwanda to invest $200 million in fintech

Rwanda intends to invest $200 million in locally based finance technology (fintech) enterprises between 2025-2029 as part of the Fintech Strategy 2024-2029, which was released by the Ministry of Information and Communications Technology as Innovation.

Its main goal is to propel Rwanda to the number one fintech hub in Africa and into the top 30 globally, up from fifth on the continent and 61st in the world today.

"The substantial growth in fintech investment is anticipated, particularly in jurisdictions characterised by a conducive environment for innovation, availability of investment ready fintechs and robust regulatory frameworks," said ICT Minister Paula Ingabire.

Zambia removes digital taxes

Zambia has attracted $58 million investment in digital infrastructure following the removal of tax on importation of digital infrastructure since 2021.

According to Technology and Science Minister Hon. Felix Mutati, the investment has helped the country connect itself to all its eight neighbours through fibre optic technology. Since the removal of tax on importation of digital equipment, the country has attracted a lot of investment by the private sector.

Mutati reported that tax on digital equipment was scaring investors and forcing them to hold their investment. He said that government realized that for investment to enter the country, there was need for tax incentives. As such, the government is promoting incentives, innovation and investment in order to promote more private sector involvement in the economy.

South Sudan's operators hike service prices

South Sudan's three main telecom operators - MTN, Digitel, and Zain - have announced tariff increases to match with the Central Bank's US dollar reference rate.

In a joint statement MTN South Sudan, Zain South Sudan and Digitel Holdings said that the National Communications Authority and the Bank of South Sudan (BOSS) had agreed to adjust the telecom tariffs in response to recent Boss official exchange rate increases.

The adjustments will occur in three phases from October to December 2024. The first change took place on 18 October 2024, with the next to come on 18 November and 18 December.

The providers said that the adjustment will secure the country's telecoms sector's long-term viability in the face of unpredictable economic conditions. They stressed their commitment to provide dependable and affordable services to their clients through network investment, despite the adverse economic environment.

Talking satellite

Helen Weedon, managing director, Satcoms Innovation Group

Can LEO help connect Africa?

South Africa's Liquid Intelligent Technologies recently signed a deal with Eutelsat Group that will see enterprise-grade Low Earth Orbit (LEO) satellite services being made available in Africa. The companies claim it will lead to enhanced performance for services across the continent. Will this help make Africa more connected and ultimately bridge the digital divide?

The state of connectivity in Africa

Africa is widely reported as lagging behind in internet connectivity. A report by SES in 2022 cited just 33% internet penetration. While it seems it has risen quite considerably since then, we are still looking at around 43%, much lower than elsewhere in the world. And there are bigger problems when you look at the regional differences. According to the SES report, while as many as 50% of people in urban areas are connected, this drops to 15% in rural areas. And of course those rural areas are also less connected in terms of other infrastructure, access to medical support and education, making the internet connectivity all the more important.

There is also a massive difference in different areas. For example, Gabon has reportedly the highest rate of internet access, with an estimated access rate of 64.9% of the population, while Zambia has the lowest rate of internet access, with only an estimated 6.9% share of the population having access. At the same time, access to computers and tablets is very low across Africa. In fact, according to a report by World Bank Group, only around 11% of individuals live in a household with access to a computer. Interestingly 43.9% have access to radio and 38.6% to a television, while as many as 76% have access to a mobile phone.

While Africa still lags behind, there has been recent movement to further connectivity in the region. Last year, SES introduced an additional satellite, SES-26, to provide much needed connectivity to the Middle East and Africa. We have also seen some satellite launches from countries across Africa, including Uganda and Kenya, and others are reportedly working on their own projects. However that comes with a high price tag, which is not feasible for many African countries. The East African Community (EAC) is trying to address that by collectively investing in a satellite to improve regional internet connectivity.

And, of course, the recent announcement by Liquid Intelligent Technologies and Eutelsat is set to see further connectivity brought to the region, perhaps most notably as it will use LEO satellites to deliver that.

The impact of better connectivity

It is clear that better connectivity would improve the lives of people across Africa. Findings from World Bank Group would suggest the enhancements would be staggeringly significant in fact, helping to dramatically increase economic growth. According to its report, a 10% increase in broadband penetration in Africa could increase GDP per capita by around 2.5%.

Internet connectivity is something we take for granted in other regions of the world. While we would likely all agree we would be lost without it, it can be hard to imagine what that actually means but the impact is wide-reaching. For one thing, delivering better connectivity enables better education and provision of information, which leads to better job prospects. The World Bank Group findings suggest that high-speed internet boosts employment, with individuals nearly 14% more likely to be employed.

Better connectivity can also improve healthcare provision, offering online healthcare services to treat patients better; improve agricultural production, by providing access to information to improve productivity; enhance governance, making governments more accountable with data more readily available and making it easier for citizens to contribute; as well as helping to improve social wellbeing with better connections. Improving connectivity also enables small businesses to succeed and grow.

Can LEO help?

Despite a flurry of activity aimed at getting Africa online, it is clear that we still have a long way to go to bridge the digital divide. The announcement by Liquid Intelligent Technologies and Eutelsat is significant as it will see LEO satellites being used to enable that connectivity. Why does this matter? The main advantage of LEO for a region such as Africa is the huge cost savings compared to more traditional satellites. While it is true that you need more satellites to cover a specific geographical area, the cost to launch much smaller satellites into an orbit that is considerably closer to earth, is a lot lower, making the overall costs lower. The relative proximity also makes the operational costs lower meaning that service provision can be more affordable.

There has been a great deal of discussion over recent years about the need for the ground segment to keep pace with LEO. Maximising the potential of LEO requires simpler, more integrated ground solutions to be provided at a lower cost than ever before. The growth of LEO and the upcoming mega constellation launches has therefore led to innovation in the ground segment, with solutions launching to get us there.

There is already an abundance of lightweight antennas built for LEO, that are easy to install and at a much lower price point than previously possible. This could make rollout across Africa much more attainable. However, when it truly gets interesting is when we see the widespread introduction of satellite-to-cellphone connectivity. Given that 76% of people across Africa already have access to a mobile phone, this will certainly be a game-changer.

Ericsson: preparing Africa for next generation technologies and a sustainable digital future

Amidst rapid digital transformation across the continent, Ericsson continues to forge its path-enabling communications, upskilling a generation, and supporting rampant network expansion. Amy Saunders spoke with Patrick Johansson, President of Ericsson Middle East and Africa, to garner his views from this new role - examining everything from the continued rollout of 5G through to the challenges of the skills divide.

5G remains in its infancy across the continent; how do you see it developing, and how is Ericsson acting to advance its rollout?

Ericsson has been connecting Africa for over 100 years and has built wireless networks for every generation – from the early 1G networks to the first advanced 5G networks. 5G technology is still in its early stages across Africa, but its development is rapidly gaining momentum. We anticipate a transformative impact on the continent as 5G adoption accelerates, particularly with the projected increase in 5G subscriptions across sub-Saharan Africa. This increase will constitute 28% of the region's mobile subscribers by 2029, signaling significant progress.

We are committed to advancing the rollout of 5G in Africa through several key initiatives. Our Ericsson Spectrum Sharing (ESS) solution allows CSPs to repurpose their existing 4G spectrum for 5G, which streamlines the deployment process and enables faster, more efficient rollouts. We are also collaborating with service providers to modernize infrastructure, ensuring they are equipped to meet the growing demand for high-speed, reliable connectivity.

Moreover, Ericsson is focused on developing intelligent energy-saving technologies like our Radio Access Network (RAN) energy-saving software, which optimizes network performance while significantly reducing energy consumption. This is critical for addressing challenges related to power supply, particularly in rural areas. Through efficient monitoring and AI-supported tracking, we have identified areas for optimization, which can result in up to 12% annual reduction in RAN energy use. This is critical for addressing challenges related to power supply, particularly in rural areas.

Furthermore, Fixed Wireless Access (FWA) has emerged as a pivotal tool for addressing Africa's broadband needs. While 4G FWA provides an initial steppingstone, the potential of 5G becomes evident through its ability to deliver fiber-like speeds, complementing the fixed broadband in a country. Remarkably, several African markets, including Angola, South Africa, Nigeria, and Zimbabwe, have already started to offer 5G FWA services. This pivot towards FWA can be attributed to its cost-effectiveness, rapid deployment capabilities, and inherent flexibility, making it an enticing choice over traditional fixed services.

In addition to improving infrastructure, we work closely with governments, CSPs, and industry stakeholders to foster collaborations and public-private partnerships that support investment in 5G technology.

Earlier this year, we completed the first 5G trial in Egypt in partnership with Telecom Egypt, covering key spots in the country's New Administrative Capital. Furthermore, we collaborated with Vodafone Egypt to modernize and expand the capacity of its mobile network by introducing Ericsson's triple-band radio 4466 which reduces tower load, shortens deployment time, and supports sustainability efforts through lower energy consumption. We also supported Moov Africa Bénin in handling the data flow for around 45,000 attendees at the WeLovEya music festival in the city of Cotonou in Benin and many more partnerships that highlights the acceleration of 5G deployment across the continent.

How are Africa's telcos responding to growing sustainability pressures?

African telcos are increasingly responding to growing sustainability requirements driven by the global shift towards environmentally friendly business practices and rising regulatory expectations. Ericsson is responding to these challenges with a comprehensive sustainability strategy deeply embedded in our operations and across our partnerships with our customers in Africa.

Ericsson's sustainability efforts in Africa focus on reducing carbon emissions, energy consumption, and environmental waste while enhancing the efficiency of telecom networks. One of the key areas of focus is energy-efficient technology. Ericsson has introduced innovations like the Ericsson Radio System, which makes 5G technology 10 times more efficient than 4G, allowing operators to meet the growing demand for connectivity while consuming less energy. This is part of our Breaking the Energy Curve initiative, where we work closely with African telecom operators to deploy energy-saving solutions that reduce total network energy consumption.

At Ericsson, we believe that ICT can empower other industries to move towards the low-carbon economy. According to Ericsson research, the sector has the potential to reduce total industrial emissions worldwide by up to 15%, even though it is responsible for only 1.4% of the global carbon footprint.

For instance, the Ericsson 6626 Radio—which is deployed in over 20 African countries—can reduce power consumption by up to 50% and lighten the load on telecom

Patrick Johansson, President of Ericsson Middle East and Africa

towers. Another notable example is our partnership with Airtel Niger, where we deployed Ericsson's dual-band three-sector Radio 6626 to provide a 5G-ready, energy-efficient network, reducing energy consumption by over 60% and lowering carbon emissions by 0.4 tons per site annually.

We also partnered with Vodafone Egypt for an innovative network modernization initiative. Vodafone Egypt became the first service provider globally to deploy Ericsson's triple-band Radio 4466, which supports simultaneous 2G, 3G, 4G, and 5G operations. This breakthrough not only enhances user experience and network performance but also contributes to sustainability goals by reducing energy consumption by up to 15%.

Ericsson is also promoting the adoption of solar-powered rural site solutions to extend connectivity to remote areas in a sustainable way. In collaboration with MTN Benin, we are providing reliable mobile broadband services to rural communities using 100% solar-powered sites. These 29 rural sites run entirely on renewable solar and battery power, reducing the carbon footprint of network infrastructure and supporting telecom operators in hard-to-reach areas where traditional energy sources are unreliable or unavailable.

Beyond our focus on telecom network efficiency, we have established ambitious environmental goals. By 2040, Ericsson aims to achieve Net Zero greenhouse gas (GHG) emissions across our value chain, and have already made significant strides, including surpassing our first science-based targets aligned with the Paris Agreement. By 2030, we plan to reduce value chain emissions by 50%, working towards their broader climate goals while supporting African operators, such as MTN, in achieving similar commitments. Together with MTN, we have pledged to the Road to Zero strategy.

In addition to these technological innovations, Ericsson's sustainability initiatives include a Product Take-Back Program, which ensures that obsolete equipment is responsibly disposed of or recycled. Over the past 10 years, Ericsson has processed over 10,000 metric tons of e-waste in Middle East & Africa, a majority of which have come from customers in over 28 countries in Africa. A key example is our collaboration with MTN Benin, where, since 2021, we have recycled more than 123 metric tons of waste electrical and electronic equipment (WEEE) through the Ericsson Product Take-Back Program. This circularity initiative helps reduce e-waste, a growing concern in the telecom industry, and further underlines our commitment to circularity in Africa.

Through Ericsson's Africa in Motion vision, we emphasize our long-term dedication to a connected and sustainable Africa. Today, we are at the forefront of the telecom industry's efforts to meet sustainability challenges while supporting the continent's economic and digital growth.

With a variety of IT upskilling projects underway across the continent, how much of a problem is the skills gap, and what are your expectations for it in the next five years?

The skills gap in Africa remains an obstacle, particularly in the face of rapid digital transformation and the growing demand for advanced digital skills. While the continent has made strides in embracing technology, much of the workforce is often unprepared for the demands of Industry 4.0.

In the next five years, the skills gap will likely persist, but through concerted efforts, the gap can be narrowed. We are heavily invested in bridging this divide through advancing our digital education programs and partnerships. Initiatives like Connect To Learn, launched in 2010, and the Giga initiative in collaboration with UNICEF are designed to provide digital learning opportunities to young people across Africa. We have recently conducted together with Unicef a visit to two of the schools that benefited from the initiative together with our partner Airtel and we heard from teachers and students the effect and the impact of connecting a school. Ericsson is also a leading private sector partner in the Digital Transformation Collaborative led by UNESCO, advising governments on the digital transformation of education. To date, Connect To Learn has reached 485,000 children and young adults in 43 countries.

Adding on to Ericsson's Connect To Learn and Giga Initiatives, through our partnership with Free Senegal and the Ministry of Education, we've created digital ecosystems in schools, providing connectivity, digital tools, and training for teachers and students. By implementing FWA solutions, we're enabling fast, reliable internet access and bridging the digital divide in education.

In addition to programs targeting students, Ericsson's Gen-E Graduate Program equips recent engineering graduates with the skills necessary to thrive in the telecom industry. In collaboration with the Smart Africa Digital Academy (SADA), we also offered upskilling opportunities for over 100 policymakers and regulators across 19 countries in Africa to ensure the development of a digitally capable workforce of the future from both the public and private sectors.

In what ways has Ericsson committed to the digital advancement of Africa, and what are the company's biggest success stories from recent years?

Ericsson has been a committed partner in Africa's digital transformation journey for over a century, playing a pivotal role in shaping the continent's digital future through the deployment of advanced networks and innovative solutions. Our mission, encapsulated in the "Africa in Motion" initiative, is to empower a sustainable and connected Africa, where digitalization drives economic growth, fosters development, and creates opportunities for all.

Our team of experts possesses deep knowledge and extensive experience in every corner of Africa, coupled with remarkable talent to provide innovative solutions to meet any need.

A key area of impact is our work in expanding financial inclusion. For instance, MTN's Mobile Money platform, powered by the Ericsson Wallet Platform, has transformed mobile financial services in Africa. As the continent's largest mobile money service, MoMo operates in 17 markets, empowering over 69 million users. In 2022, we were honored with the Glotel Award for Mobile Financial Services Mastery in recognition of this solution, which processed over 9.5 billion transactions that year alone.

In addition to financial inclusion, our efforts extend to gender and economic inclusion as well. In collaboration with MTN Uganda, we launched a financial literacy program aimed at women entrepreneurs, training them on leveraging MoMo for business growth. This initiative, launched on International Women's Day, emphasized both financial inclusion and gender empowerment, helping women unlock their full potential.

Another significant milestone is our collaboration with Telecom Egypt in testing 5G across key locations in Egypt's New Administrative Capital. This trial showcased Ericsson's 5G technology, achieving maximum throughput and demonstrating the potential of next-generation connectivity to support smart city initiatives.

Moreover, our Private 5G solution has been instrumental in transforming South Africa's mining sector through our collaboration with Comsol. By enabling advanced use cases such as Autonomous Vehicles and Augmented Reality, this partnership is driving operational efficiencies, improving safety, and supporting sustainability goals in the industry. ■

Enterprise sales verticalization: the pragmatic approach for telcos

Gary Barton, Research Director, Enterprise Technology & Services; and Rob Pritchard, Principal Analyst, Enterprise Technology & Services, GlobalData

Most telecom companies operating in the enterprise market periodically alternate between verticalized and horizontal sales strategies. While verticalization promises increased enterprise sales via deeper sector-specific partnerships, it often leads to unrealistic expectations and strategic recalibration. To achieve sustainable growth, telcos should adopt a pragmatic approach, focusing on their core horizontal strengths - such as secure connectivity and data services - while targeting specific sectors only where they can add real, scalable value, observes GlobalData, a leading data and analytics company.

Gary Barton, Research Director for Enterprise Technology and Services at GlobalData, comments: "Over three decades of working with telcos, GlobalData has seen many ambitious statements about building expertise in specific verticals either in-house or through establishing partner ecosystems. However, while there are examples of telcos being successful in certain industry verticals, often this success is built on opportunism rather than developing a deep relevance to that vertical."

Robert Pritchard, Principal Analyst at GlobalData, adds: "There are examples of point solutions in areas such as IoT in certain verticals, and co-developed solutions, but these remain the exception rather than the rule."

"If you scan service provider web sites or enterprise segment sales organizations, you will more often than not find a list of industries such as finance, manufacturing, retail, and so forth. However, if you take a deep dive into the sector 'solutions' they tend to be generic elements of the service provider's core portfolio often with no vertical value-add."

There are a few sectors that do benefit from more specialist propositions – notably in the industrial and finance sectors where there are interconnected ecosystems, or in the public sector where certification by Government bodies can be a prerequisite for market access.

With IoT (Internet of Things) services there are repeatable use cases which can be applied to multiple verticals, for example in telematics for vehicle and asset tracking. Other solutions such as 'smart' building monitoring offer a value-added service, but this is not truly vertical-specific. Equally, Artificial Intelligence (AI) and analytics can assist retail customers for 'smart stores' and these can also be complemented by the facilitation of customer Wi-Fi access – but this is a matter of applying a technology to a vertical, as opposed to innovating a sector-specific solution.

One key battleground is solutions selling (i.e., complex and individualized projects), but this depends on bespoke developments, which can be on behalf of the customer, co-created with the customer, or developed in partnership with, for example, a systems integrator. Note that this is not usually sector-specific, but customer-specific. Sometimes, however, these tailored solutions can be packaged and productized for the broader customer base.

The growing complexity of the technology landscape is driving the need for greater specialization in many verticals including manufacturing, banking & finance, healthcare, pharmaceuticals, and transport & logistics. This need for specialization is a reason for telcos to be drawn to a vertical approach through fear of seeming irrelevant to enterprises in these sectors. But the level of specialization required is also a reason for telcos to be cautious of this approach.

Barton continues: "It is tempting to believe that all enterprises in a given vertical buy technology in a similar way and have similar requirements, but there are a growing number of sub-verticals, which all behave differently. Telcos cannot realistically develop the depth of understanding to address all these highly nuanced needs. Furthermore, doing so will lead to targeting increasingly smaller numbers of businesses thereby reducing the total addressable market and preventing the scale necessary to achieve desired margins."

There is also the issue of vertical definition: is Tesla an automotive company or a software company? How many different verticals is Amazon active in? Unfortunately, in the same way that defining enterprises by their number of employees is a crude measure, so the same can be true for definition by vertical – and there are plenty of variants within sectors, even highly regulated ones such as finance.

Telcos' core capabilities in connectivity and data networking make them naturally horizontal. This can make it more difficult for network operators to be vertical specialists as they work with enterprises of all kinds. However, this broad appeal is more a strength than a weakness. Telcos are selling solutions that all enterprises need. The challenge for providers is to nuance their messaging around the business benefits of their solutions.

In the context of such a fragmented market, telcos face a dilemma. They need a way to segment their market and tend to use simple filters like geography, sector, and number of employees: it is what they have done for years and the data is fairly readily available, be it office locations, Standard Industrial Classification (SIC) codes, or employee counts from company filings.

This is not ideal, but it is what it is. Within this context, service providers need to construct organizations for their go-to-market strategies. The one most have adopted is based on the above criteria because there is no perfect solution – otherwise everyone would be adopting it. The challenge is how to make the best of the situation. Marketing and product management work to provide the essential business benefits and technology advantages of services available, then complement these efforts with use cases and associated collateral. They should also work hand-in-glove with sales to align broader trends across enterprises with the challenges faced by individual customers and any vertical-specific issues.

The goal is to develop platforms that support service bundling and to have a sales force trained in cross-selling these platforms. This can range from bundles of services for smaller businesses, most of whom face broadly similar technology challenges, through to solutions for the most complex global enterprises that add a bespoke twist to the standard platform solution.

Pritchard adds: "Insights into strategic challenges and possible solutions will always be welcome – for example, moving applications and data to the cloud is a challenge which can be tackled by service providers, addressing security, bandwidth needs, orchestration, and so forth. This will be a trend common across all verticals, but one that still needs nuancing to meet the challenges faced by a specific sector, for example to address data sovereignty or compliance with regulations."

"An emerging opportunity of particular interest is the potential to exploit Generative Artificial Intelligence (GenAI) to analyse service provider data on broader customer trends. This could provide invaluable insight into the commonalities in service adoption by vertical and help sales to mould propositions to match sector buying trends."

Barton concludes: "Telcos should be aware that services such as internet/cloud access, mobility, and SD-WAN/SASE are essentially horizontal. Instead of seeking deep vertical relevance in their core portfolios, telcos should demonstrate how their solutions are the crucial enablers for enterprises' wider digital transformation journey across all sectors. Secure, reliable connectivity has clear business value whichever enterprise you are talking to." ■

Transforming Africa – one device at a time

Is IoT truly digitally transforming Africa? We explore the extent of its reach across the continent; and how those in the value chain can support its expansion...

The Internet of Things (IoT) plays a pivotal role in enabling digital transformation across industries by connecting physical devices to the digital world.

With enhanced data collection and analytics; automation and operational efficiency; smart infrastructure and cities; improved decision making, safety and security; IoT enables businesses to become more agile and efficient. By integrating IoT into their strategies, organisations can unlock new opportunities, enhance decision-making, and create competitive advantages.

"IoT is a real game changer for advancing digital infrastructure. There are so many use cases, from capturing real-time data from connected devices, to offering deeper insights into operations, customer behaviour and market trends," opines Feraz Ahmed, CEO at Hayo. "Taking a data-driven approach helps businesses to optimise their processes, develop new services, and ultimately make more informed decisions."

"IoT has the potential to transform Africa's digital landscape by enabling countries to move past more traditional infrastructure. Not only do urban areas stand to benefit, but rural communities can also take advantage of these advancements – in a huge range of use cases, including some not even invented yet," adds Michael Karlsen, CEO and Co-Founder of Onomondo.

According to Chen Porat, SVP APAC & Africa, floLIVE, IoT has already begun to shift paradigms across multiple sectors in Africa. However, to fully realise IoT's potential in transforming Africa, Porat believes that we need to address critical challenges:

1. **Limited geographical cellular coverage:** Many parts of Africa still lack adequate cellular infrastructure, which is essential for widespread IoT deployment.
2. **Unreliable network coverage:** Even where infrastructure exists, network reliability can be inconsistent, which hinders the efficacy of IoT.
3. **Cross-border connectivity:** Mobile connectivity allows devices to remain connected as they move, such as in transportation or asset monitoring use cases. Geographical borders can create challenges in network switching, leaving coverage gaps.

"A multi-IMSI SIM solution is key here, enabling devices to automatically switch between networks as they move between countries and to provide the widest coverage within each country," says Porat. "IoT will most certainly be a touchstone in digitising Africa and overcoming these connectivity barriers will ensure that IoT can scale and thrive across the continent."

"Deploying IoT solutions is one of the most practical first steps in helping individuals perceive the practical value of adopting new technology and helps community leaders and governments translate the benefits of a digital transformation mindset into economic terms," shares Kenta Yasukawa, co-founder and CTO of Soracom. "An IoT solution does not need to be complex or made up of sufficiently advanced technology to look like magic. Success starts with getting buy-in from people within communities who are forced to devote time and resources to performing jobs that, in and of themselves, do not create net new value; they just preserve it. IoT has become so ubiquitous, accessible, and affordable that in the age of the cellular phone, it makes it easier to recognise the value of adopting new technology. For example, a solution that can monitor water levels of remote reservoir tanks for livestock herds saves long hours of overland travel and fuel expenses each week. This activity does not generate income but is a necessary job because the cost of a leak or running out of water could be disastrous."

Feeling the benefit

IoT offers immense potential for a variety of applications across Africa.

In sub-Saharan Africa, North Africa and East Africa, the continued adoption of IoT within agriculture is set to be a game-changer. IoT-based sensors can optimise water usage by delivering water only when crops need it, reducing wastage in regions facing water scarcity. Sensors can

monitor soil moisture, temperature, and nutrient levels to help farmers make data-driven decisions on crop management. Meanwhile, IoT-enabled wearables can track livestock health, movement, and location, enabling farmers to monitor animal well-being.

"Africa is not unlike large portions of Texas in the United States," opines Yasukawa. "Most of the land is highly remote and unpopulated, lacks reliable infrastructure, and has large tracts of inhospitable land with challenging terrain. It's in these remote regions where many natural resources are important to the local and national economy. Remote monitoring, asset tracking, and remote-control applications are natural fits for the kinds of use cases one might anticipate from the region, such as ecological surveying or agricultural monitoring."

"In agriculture, we see great potential for precision farming in East and West Africa," agrees Ahmed. "On the other hand, healthcare can benefit from remote patient monitoring, especially in rural areas. Urban centres like Lagos, Nairobi, and Johannesburg are prime candidates for smart city applications, while water and energy monitoring are crucial in the water-scarce regions of Southern and North Africa."

With the uptick in smart city projects amidst rampant urbanisation, countries like South Africa, Kenya, Nigeria, Egypt, and Rwanda are seeing the benefit of IoT for real-time traffic monitoring and smart traffic lights to reduce congestion in rapidly urbanising city centres; smart waste management solutions; smart street and building lighting systems which automatically adjust brightness based on real-time conditions, reducing energy consumption; and security cameras and sensors to monitor public spaces to enable more effective emergency response systems.

Meanwhile, rural and underserved areas, especially in East Africa, West Africa, and parts of Southern Africa, stand to benefit from remote health monitoring, telemedicine, and cold chain monitoring for the movement and storage of vaccines and medications. Expanding access to medical services, improving health outcomes in remote communities, and enhancing the efficiency of healthcare delivery systems offers up a whole new way of life for those residing in rural regions.

Smart grids and meters and off-grid power solutions promise to usher in a new era for even the most remote African villages. In rural sub-Saharan Africa, IoT-powered solar home systems and mini-grids can be remotely monitored to optimise performance and detect faults, while pay-as-you-go solar providers in Kenya and Tanzania use IoT to manage payments and system functionality, increasing access to clean energy.

Essentially, "wherever there's an analogue process today, we believe that IoT can help to make it smarter and more efficient – either through improved data collection or automation," says Karlsen. "Smart metering and asset tracking have grown substantially, helping us to manage everything from energy consumption and water usage to livestock and vehicle locations."

MNOs: the good, the bad, and the ugly

The growing adoption of IoT in Africa is having a significant impact on MNOs, reshaping their roles, services, and business models. Moreover, as IoT devices proliferate and more industries adopt connected technologies, MNOs are emerging as key enablers of the IoT ecosystem.

The expansion of new revenue streams via connecting smart meters, sensors, wearables, and connected vehicles opens up new opportunities for MNOs to provide IoT-specific data plans, machine-to-machine (M2M) communication services, and tailored solutions for enterprises. Additionally, beyond basic connectivity, MNOs can also provide value-added services such as device management, analytics platforms, and IoT security solutions. These services allow MNOs to capture a larger share of the IoT value chain and offer customised solutions for industries like agriculture, logistics, and healthcare.

"Many MNOs have realised that by enabling IoT, they can do more than just serve local companies. They are now partnering with global connectivity providers to offer seamless coverage, both locally and internationally," says Porat. "For instance, we see MTN partnering with Sateliot to incorporate satellite connectivity, which expands their reach beyond terrestrial networks. MNOs are also learning how to monetise their local coverage by offering eSIMs to travellers and outbound customers. The MNOs that will succeed are those that can form strong partnerships, creating roaming agreements that leverage their own IMSIs to provide coverage across the continent — like what Bayobab is doing."

"The growth of IoT applications would benefit regional MNOs to gain additional revenue streams by leveraging the infrastructure they have built for consumers," adds Yasukawa. "If necessary, the base stations they have installed can have software upgrades to expand their support for low-data frequencies such as NB-IoT and Cat-M LTE. Demand for IoT connectivity also gives an opportunity for MNVOs in Africa to show another example of leapfrogging by leveraging NTN satellite connectivity for solutions that cannot be served by cellular networks."

However, it's not all roses. With the expanded uptake of IoT, heavy network investments are required to meet demand; business focuses are evolving towards enterprise solutions for agriculture, manufacturing, healthcare, and logistics, necessitating a shift in strategy; data volumes are skyrocketing, placing unprecedented demands in data storage and processing capabilities; and new cyber-threats are becoming increasingly prominent.

"I believe the growth of IoT brings both opportunities and challenges for MNOs," states Ahmed. "MNOs need to adapt their business models and develop strategic partnerships to fully capitalise on the IoT ecosystem."

"The surge in IoT adoption is putting significant pressure on Africa's MNOs," adds Karlsen. "Many lack the software required by businesses for successful IoT deployment, such as real-time device management and data analytics. When you consider the challenges of load shedding and inconsistent network coverage, it's clear that supporting an increasing number of connected devices isn't easy."

The introduction of new cellular technologies such as LTE-M, NB-IoT, and 5G is forcing MNOs to make a critical decision, says Karlsen. "Either invest in these technologies to keep up with technological advancements or risk falling behind. And this is more than just staying current; it's an opportunity to move beyond outdated 2G and 3G networks and into technologies better suited for IoT applications. The challenge here is to consider their current customer base's needs, so it is a balance of being forward-looking while still serving your customers."

Spectrum, spectrum, spectrum

Across the globe, 2G/3G networks are sunsetting to enable frequencies to be reallocated to 4G/5G. Which is all well and good for the advancement of broadband delivery, particularly in congested urban regions and underconnected rural areas; however, many IoT/M2M devices, particularly those used in agriculture, utilities, and transportation, still rely on 2G and 3G. These devices often have long lifecycles, meaning many are still in operation and difficult to replace quickly.

"Reallocating 5G frequencies will likely have a significant impact on IoT networks. While 5G enables advanced IoT applications that require high data rates and low latency, such as autonomous vehicles and real-time analytics, it also marks the beginning of the end for legacy 2G and 3G networks," explains Karlsen. "For businesses that rely on older IoT devices, this poses a significant challenge. They will need to switch toward technologies that are most appropriate for their specific use cases, taking into consideration both regional availability and commercial viability."

Nevertheless, the refarming of frequency for 5G is expected to have a largely positive impact on IoT networks in the long term, particularly in terms of network performance, capacity, and the ability to support a broader range of IoT use cases.

Indeed, one of the key benefits of 5G is its ability to handle a massive number of connected devices more efficiently than previous generations of mobile networks. 5G networks, especially in the low-frequency bands (sub-1GHz), are ideal for massive IoT deployments, where large numbers of low-power, low-data devices need to connect to the network. The reallocation of frequencies for 5G will thus help IoT networks manage the surge in connected devices.

"Reallocating frequency for 5G should hugely enhance the capabilities of IoT," asserts Ahmed. "5G's higher bandwidth and lower latency will support more sophisticated IoT applications, particularly those requiring real-time data

processing. Despite that, existing IoT networks using technologies like NB-IoT and LTE-M will continue to be useful for many applications. The key will be effectively managing this hybrid network environment to support diverse IoT needs."

"Expanding the availability of 5G frequencies would drastically increase the accessibility of mobile and remote video-based applications, especially those that would transmit video files for real-time AI analysis or for improved accountability for things such as worker safety. These are applications that are becoming more common in IoT as well," adds Yasukawa.

An IoT renaissance

The future of IoT in Africa is incredibly promising, and, as more industries recognise the value of IoT in optimising processes, improving safety, and reducing costs, we will see a greater reliance on IoT to drive digital transformation.

"MNOs and MVNOs will play a crucial role in the continued expansion of IoT across the continent," asserts Porat. "These operators are actively exploring new ways to monetise their networks by offering IoT-specific services. Partnerships between MNOs and global connectivity providers, as well as the deployment of multi-IMSI solutions, will ensure seamless cross-border connectivity, especially for transportation and logistics. Satellite connectivity will also be a game-changer, especially for remote and underserved areas where traditional cellular infrastructure is either unavailable or unreliable. With increased competition in the satellite IoT market, connectivity will become more affordable, making it easier for businesses and governments to deploy IoT solutions in even the most challenging environments."

"It's also likely that we'll start to see the emergence of innovative, Africa-specific IoT solutions that address local challenges. Improving infrastructure and decreasing costs means that IoT will become even more accessible, helping to drive innovation and economic growth across the continent," adds Ahmed.

"We anticipate a steady acceleration in IoT adoption across Africa, driven by lower device costs, new device use cases being developed, the wider adoption of network technologies, and a growing need to address local challenges," agrees Karlsen. "We expect a surge in localised solutions, with African innovators developing IoT applications designed to their region's specific needs. Collaboration between governments, local MNOs, and international partners will be essential to make steady progress on making IoT connectivity and devices more accessible and successful."

In the coming years, there will likely be a surge of innovation across Africa as IoT becomes more affordable and accessible.

"I expect Africa to experience an IoT renaissance over the next decade due to an ever-increasing availability of proven low-cost IoT solutions," shares Yasukawa. "The only limitation is the availability of connectivity for those solutions. As connectivity becomes more accessible to individuals and remote communities, technical literacy and adoption of IoT should increase across Africa as new novel and potentially life-changing solutions are devised. I anticipate that telecommunications infrastructure will continue to expand as a result of the increase in large corporate interests. As mining, oil and gas exploration, and other industries serve as the catalyst for more infrastructure, this not only allows those organisations to deploy more established IoT solutions within the region, it will find its way into the local businesses and communities." ■

Data sovereignty and the MNO

Africa's hunger for new data centres is well established; but what does the influx of new facilities, players and capacity mean for the continent's MNOs?

It's a simple, inarguable statement of truth: "Africa most definitely needs more data centres," asserts Wojtek Piorko, managing director, Africa at Vertiv. "If you apply simple mathematics to the question, the answer is clear: we have around 300MW of whitespace in Africa, similar to that of Italy, but for an entire continent. Comparatively, while Africa's population is around 1.4 billion, Italy's is just 60 million. In addition, Africa has a young, data-hungry population – with more than 60% below 25 years old. The continent is also going through a wave of digitalisation, with dynamic investments from abroad and a lot of government-drive local ones."

The entire continent is home to unprecedented digital transformation as mobile networks advance in both coverage and sophistication; internet user numbers continue to climb; and data consumption skyrockets.

"Africa has a growing demand for stronger networks and secured internet storage, especially with the rise of e-commerce, tech startups, e-banking, and e-governance essential services," opines Nsikak Ekere, communication associate, Bridgia. "However, the few data centres cannot efficiently withstand the high energy usage. In a report by Dai Magister, Africa had about 645 million online users in 2023. Seeing the surge in the volume of data, more construction of data centres that are fast and can sustainably connect users with the green economic future of the continent is imperative."

Data centres have a key role to play in supporting this transformation and growth, from improving connectivity and latency; supporting emerging technologies like AI, cloud, 5G, IoT, etc.; enabling data sovereignty; supporting local content and applications, which in turn helps boost job creation and the local economy; creating resilient digital infrastructure with built-in redundancy; and bridging the digital divide to enable broader inclusion to essential services.

However, "for 2024–2025, data centres need increased funding from investors in building, maintaining, and upgrading new data centres to efficiently deliver services to Africa's over 1.4 billion population," shares Ekere. "And to effectively leverage the advantages of the AI era and the estimated $7 billion market Dai Margin projection in revenue by 2028, South Africa, Egypt, Nigeria, Kenya, Côte d'Ivoire, Morocco, and Senegal must incorporate powerful cloud and computer edge systems embedded in their data centres to withstand the traffic of data generated, stored, and transmitted."

The impact on MNOs

Expanding data centre capacity has a significant positive impact on the continent's mobile network operators (MNOs), offering improved network performance, cost efficiency, scalability, enhanced customer experience, compliance with regulatory requirements, new revenue opportunities, and a competitive edge in the market.

For the mobile network, more local data centre capacity means reduced latency for data serves, granting faster and more responsive mobile internet experiences for users. Local data centres also provide redundancy and backup solutions, ensuring more reliable network operations and reducing downtime. Moreover, hosting data and applications locally can reduce the costs associated with data transfer and storage compared to relying on international data centres; and, as data centres scale up, MNOs can benefit from shared infrastructure, reducing their capital expenditure and operational costs. With more local data centres, operators can scale their operations more efficiently to meet increasing demand, as well as deploy new services and applications, responding more effectively to market needs.

"Expanding the capacity of data centres in Africa through enterprise cloud-based data will help MNOs store volumes of data in African data centres, thereby retaining financial value for Africa's economic ecosystem," agrees Ekere. "The impact will localise data centres in Africa closer to MNOs to enable effective performance and reduce costs. To achieve this, Africa will need a stable power supply and a good cooling system to test-run and create new data centres."

The rollout of 5G remains in its infancy across the continent with a little over 5% of the populace covered by the latest generation of mobile technologies. Data centres are an essential component of 5G networks,

providing the necessary computational power and low-latency infrastructure. As such, the expansion of local data centre facilities promises not only to support the rollout of 5G, but with it, a better customer experience with improved performance; and the opportunity to launch new digital services like mobile banking, streaming, e-commerce, etc., enhancing competitiveness for MNOs amidst a landscape of stalling core service revenues.

Piorko highlights that while traditionally MNOs have driven data centre capacity, with global colocation players entering Africa, the MNOs must up their game: "MNOs must decide whether they want to be part of the data centre market, and if so, in order to be competitive, they need to consider either upgrades of existing outdated infrastructure or new investments. Some have already decided to invest, even establishing separate companies to achieve this."

The build or buy debate rages on - with ownership comes full control of the data infrastructure; tighter integration with existing infrastructure; and the option to deploy proprietary technologies without restriction. However, the high costs, slower build-out times and the need for skilled personnel to manage the facility can be off putting. Outsourcing, on the other hand, is more cost efficient, scalable, and flexible, and allows the operator to focus on its core business while still gaining access to the latest technologies – at the cost of loss of control, security and sovereignty.

"Many MNOs find it expensive to operate their own data centres because of infrastructure, power, and ethical data privacy laws in collection, transmission, and storage, particularly in countries like Nigeria," says Ekere. "But, the procedure also allows MNOs to operate their own data centres at different levels of user data protection for a given time frame, ensuring they are categorised under a tier: collection, transmission, or storage. It also provides a market for carrier-neutral data centres to independently offer connectivity to telcos and other users through its outsourcing services to hard-to-reach areas."

Data sovereignty

As of December 2023, 36 out of the 54 African nations have data protection laws and/or regulations. 16 countries have signed the African Union Convention on Cyber Security and Personal Data Protection adopted on 27 June 2014 (the Malabo Convention) and 13 have ratified it.

"Sovereignty is becoming increasingly important to Africa's data flow. Data privacy laws have been implemented in around 65% of African countries thus far, with draft laws under consideration for three more, and the hope is that the rest will certainly follow," says Piorko. "This will create a lot of growth opportunities for the data centre market."

In line with other countries across the globe, stringent new laws on data sovereignty stand to offer adopting African nations a boost to their national security. Storing data within national borders helps protect against cyber threats and espionage from foreign entities and allows governments to monitor and regulate data flows more effectively, ensuring that critical data is not misused or accessed by unauthorised parties. Ensuring that data is stored and processed within a country allows for better control over data privacy and protection and means that countries can enforce stricter data protection measures.

"It is important that Africa has data control and security at all times to prevent third-party breaches," explains Ekere. "Now is the time to have data centres with sustainable regulations and legal policies for every country in Africa."

Tough new data sovereignty laws come with economic benefits, too. Keeping data local encourages investment in national data infrastructure, such as data centres and related services, boosting the local economy and creating new jobs in the tech sector, including data management, cybersecurity, and IT support.

Looking ahead, as digital economies grow and cyber threats increase, it is likely that more African countries will adopt data sovereignty laws to protect their citizens and national interests. This will be heavily influenced by global trends, pressures and trade agreements, which may push African nations towards adopting stricter data sovereignty laws to align with international partners. However, implementation will take time as the data centre boom is only just taking hold; and some countries may decide that enforcing data localisation could increase costs for businesses.

"There must be collaboration and strategic knowledge sharing to assess, monitor, and visualise the economic and industrial value of data flows throughout the 54 African countries and beyond. This is crucial in mapping the continent's data flow and cloud security architecture to become independent and sovereign," adds Ekere.

The future is digital

The future of data in Africa is poised to be dynamic and transformative – with more than a little help from data centres.

We can expect to see a proliferation of local data centres come online to meet the increasing demand for data processing and storage, and potentially hybrid models being increasingly adopted by MNOs, combining own-operated data centres with carrier-neutral facilities to balance control, cost, and scalability. Industry experts believe this expansion will go hand-in-hand with cloud adoption, with MNOs increasingly offering cloud services to both businesses and consumers.

The next five years will likely see more African nations implement stringent data protection and sovereignty laws, requiring MNOs to store and process data locally. As such, MNOs will be investing heavily in compliance frameworks to meet these regulatory requirements, ensuring data security and privacy. Amidst booming data volumes and increasing global cyber threats, these new stringent data regulations will help protect government, business and consumer data.

"Africa will record great successes in the near future because of the upward trends in subscriptions and digitalisation," shares Ekere. "Operators and relevant stakeholders must strive to scale up data centres using new models and reliable power while underscoring the drastic potential of their subscribers and innovations to drive solutions into the global market. The market value of African data is worth billions, but when compared to America, Asia, and Europe, it lags." ■

Airtel joins the hyperscalers

Airtel launched its Nxtra data centre business in Africa in 2023, with plans to develop five hyperscale data centres in major cities across Airtel Africa's footprint that will complement its existing edge sites.

"A rapid increase in data centre capacity is needed to support the growth potential of Africa's digital economy," asserted Airtel Africa's group CEO, Segun Ogunsanya.

The first site will be a 38MW data centre in Lagos, Nigeria, which will be designed to host high-density racks and to operate with a PUE of 1.3. Ground was officially broken on the site at Eko Atlantic City on Victoria Island; Airtel expects the facility to be live by the first quarter of 2026.

The second Nxtra data centre will be constructed in Nairobi, Kenya. All combined, Nxtra's facilities will offer 180MW of capacity, distributed across 13 major data centres and more than 48 edge data centres. Ogunsanya said that the establishment of Nxtra data centres will enhance data sovereignty, security, and preservation within the continent.

"Data is a key driver in our economy. Not only do we need to connect our people, we also must invest in the digital economy, and through the investment that companies like Airtel have made in our economy, we are fully able to participate in the digital economy," said Nigeria minister of communications, innovation and digital economy Bosun Tijani.

Meta fined $220 million for data mishandling

July saw Nigeria fine Meta $220 million following the Federal Competition and Consumer Protection Commission accusing Meta platform Whatsapp of collecting and using users' personal data without their consent.

"The final order imposes a monetary penalty of $220,000,000.00 (at the prevailing exchange rate where applicable), which is consistent with federal competition and consumer protection regulations," said the FCCPC in a statement.

Nigerian authorities have been investigating since 2021 whether local users were given a choice about whether WhatsApp would collect their personal data. The investigation also found that Meta treated Nigerians differently than other jurisdictions.

According to a Meta spokesperson, the group will appeal the decision by Nigerian authorities.

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The continuing importance of digital two-way radio technology

Sandra Wendelken, market insights manager, Tait Communications

While 5G technology grabs headlines around the globe and in Africa for its many extraordinary wireless advancements, two-way radio technology deployments continue to grow at a steady rate and provide mission-critical voice communications for enterprises and public sector agencies. Even with the continued growth of two-way radio, the importance of broadband technology for critical communications solutions cannot be overstated. Both broadband and radio technologies have their place in our industry.

The transition from analog to digital two-way radio technologies is underway in many African markets. Globally, digital subscribers accounted for 72% of the total installed base in 2022. While shipments of analog two-way radio terminals are declining in Africa, digital two-way radio shipments are increasing and serve most of the market, according to Omdia.

Advantages of two-way radio

There are many benefits of radio technology for public safety agencies, utilities, oil and gas firms, transportation agencies, and many other organisations that require secure, reliable communications within a defined footprint. While private 5G networks are topping the list of potential future revenue drivers for mobile network operators, two-way radio networks were the first private networks originating decades ago and bringing many advantages.

Reliability. Two -way radio networks are one of the most reliable forms of communications networks. Mobile radio sites are generally built to 99.999% reliability with backup generators for power during extreme weather events. Major cellular system failures have happened already in 2024 to several mobile operators around the globe. During emergencies, two-way radio networks continue to work when other networks are out of service.

Security. Digital radio standards have built-in security protocols to ensure secure communications. No network or technology is foolproof and bad actors continue to evolve their strategies, but two-way radio networks provide one of the most secure communications options for organisations.

Coverage. Two-way radio networks are built to an organisation's specific coverage requirements. With strong network design, two-way radio sites are placed to maximise coverage where needed. Repeaters and other in-building systems enhance coverage in difficult places such as tunnels, mines, basements, and stairwells.

Diverse Communications. Field workers often need to communicate within teams of colleagues. First responders talk with dispatch centers and with their fellow police officers, firefighters, and emergency management service (EMS) technicians. Radio technology provides the benefits of quickly relaying information to a group or speaking directly with a colleague. In addition, two-way radios provide for direct mode communications, allowing radio-to-radio connectivity. This is an important feature for fireground communications and other emergency scenarios and one that has been difficult to replicate in cellular network services.

Control. Organisations that deploy two-way radio networks control the system and can make adjustments to best fit their requirements. If the organisation does not have the technical staff to maintain the network, two-way radio equipment providers and services firms can offer ongoing managed services of the network and devices so the company or agency can focus on their mission.

Broadband options. Having access to reliable data is essential for police officers, firefighters, utility workers, transportation agency employees, field staff at energy firms, and many other employees in mission-critical industries. The number of options for broadband services is increasing, the technology is evolving, and new use cases will continue to help workers be prepared to do their jobs more safely and efficiently. Two-way radio networks are evolving to include broadband technology or to be used seamlessly and effectively alongside broadband networks.

Digital technology options

When an organisation's communications network reaches the end of life, there are several digital radio technology standards that can be deployed depending on the organisation's requirements. Digital standards are important because they ensure an open, flexible technology environment that contributes to a multi-vendor market with competitive pricing.

Project 25 (P25). P25 is one standard for the design and manufacture of interoperable digital two-way wireless communications products. Developed in North America with state, local and federal government representatives and Telecommunications Industry Association (TIA) governance, P25 has gained worldwide acceptance for public safety, security, public service, and commercial applications. Radio equipment that demonstrates compliance with P25 can meet a set of minimum requirements to fit the needs of users. While the P25 standard was originally created for public safety professionals, the technology is also used globally by utilities, transportation agencies, and other mission-critical infrastructure entities. P25 systems can operate in conventional or trunked modes, with two phases of the technology.

The P25 Compliance Assessment Program (CAP), overseen by the U.S. Department of Homeland Security (DHS), ensures interoperability between the equipment from the various P25 manufacturers. The TIA TR-8 Working Group that oversees P25 standards continually updates the standard, with recent enhancements to security for example.

> "While shipments of analog two-way radio terminals are declining in Africa, digital two-way radio shipments are increasing and serve most of the market, according to Omdia."

Digital Mobile Radio (DMR). DMR is a digital radio standard specified for business mobile radio users developed by the European Telecommunications Standards Institute (ETSI) and first ratified in 2005. The primary goal is to specify affordable digital systems with low complexity. DMR provides voice, data, and other supplementary services. Products designed to the standard's specifications are sold in all regions of the world. Most mission critical DMR deployments are comprised of Tier 2 conventional technology and Tier 3 trunked systems. The Applications Interface (AIS) was developed by members of the DMR Association with the goal of enabling applications to benefit from interoperability between an application and DMR infrastructure from different vendors.

The DMR Association also developed the DMR Interoperability Process (IOP) so that users and equipment suppliers benefit from a truly open multi-vendor market for DMR equipment. The interoperability process is a formal and consistent test mechanism allowing manufacturers to test that their products are compatible. The association lists more than 200 members on its website.

TETRA. The TETRA standard, also developed by ETSI, is a suite of standards covering different technology aspects, including air interfaces, network interfaces and its services and facilities. TETRA has been developed in releases (phases) known as TETRA Release 1 and TETRA Release 2. While the standard originated in Europe, with the first use cases in public safety, the technology is currently deployed in networks around the world across multiple vertical markets.

TETRA association TCCA also developed an Interoperability Certification process (IOP) to enable an open multi-vendor market for TETRA equipment and systems. The Interoperability Certification Process is managed by TCCA's Technical Forum (TF) with targets and priorities set jointly between users, operators, and manufacturers. TCCA has various working groups and releases white papers around topics related to the standard.

Eskom gains reliability and safety gains with DMR

Eskom is a state-owned electricity generation, transmission and distribution business in South Africa. It is the largest producer of electricity in Africa and one of the world's largest utilities in terms of generation capacity and sales. In fact, the utility produces 95% of South Africa's electricity and exports energy to neighboring countries.

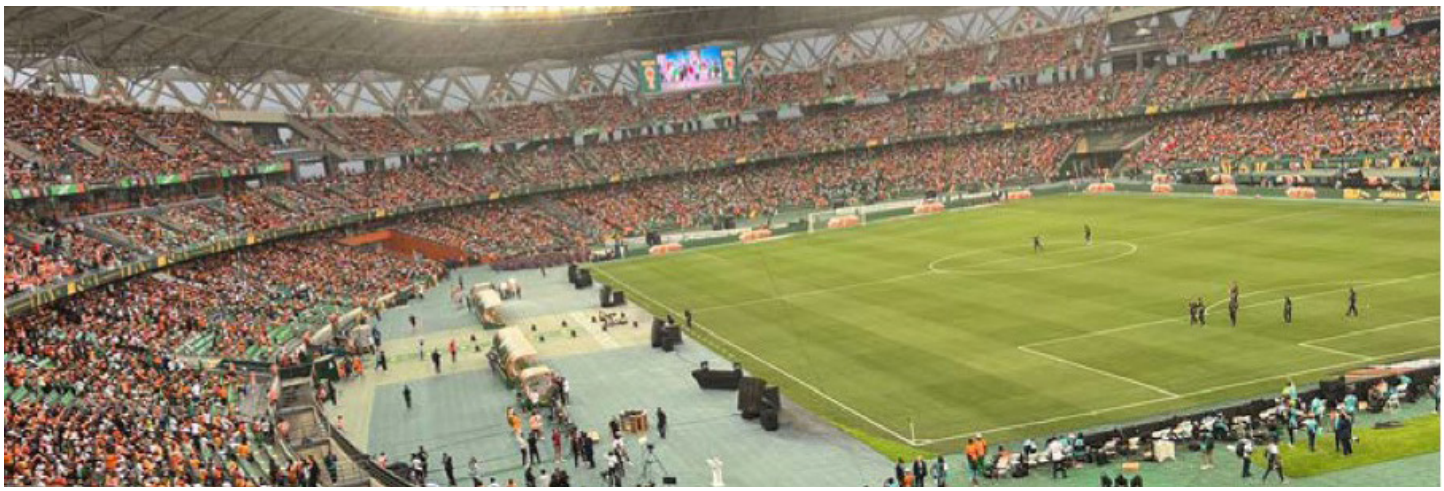
For many years, Eskom considered its options to upgrade from its existing conventional analogue network. In 2017, the company released a tender for a DMR Tier 3 network. Tait Communications supplied initial equipment to enable the company to undertake deployment and system testing. A subsequent order for the remaining network components was shipped in February 2024.

Eskom's final system includes seven regional DMR Tier 3 sub-networks, node controllers, a gateway, numerous base stations, and network monitoring software. The utility will also deploy 3,000 portable radios from three different manufacturers, demonstrating the value of selecting open standards. Eskom is not locked into one vendor's portable radio products or pricing.

The network has provided Eskom with efficiency, reliability and safety gains. The move to DMR has enabled the company to reduce the number of sites it operates by about 50%. Further efficiencies are expected with monitoring and control of the new network in a single site at Eskom's central control management centre in Johannesburg, with the back-up centre in East London.

Of course, Eskom and all organisations must assess their requirements and user needs before moving forward with any technology upgrade or deployment. Many factors will determine which digital two-way radio technology best fits an agency's requirements. Once a technology has been selected and deployed, the digital communications network can enhance the safety, productivity, and security of the organisation for years to come.

Digital mobile radio is growing steadily in South Africa and most African countries. With the many advantages that two-way radio networks offer and the interoperable and cost-effective digital standards that can address many mission-critical requirements, that upswing is expected to continue through at least the end of the decade. ■



Digital DAS connectivity for AFCON 2024

The African Cup of Nations (AFCON) attracts fans, players, and officials from across the continent. Expectations are high, and attendees demand a rich digital experience enabled by seamless communication and internet access.

To keep fans connected and engaged, Orange Ivory Coast needed to deliver excellent wireless performance and availability during high-density use; fast, reliable internet access at events amid surging data demand; and overcome coverage limitations in challenging stadium environments.

"AFCON is a very important tournament for the CAF (Confédération Africaine de Football) and the countries hosting the event," says Samuel Buttarelli, Vice President Sales EMEA & APAC, CommScope. "Success means significant investment in modernising venues hosting spectators and visitors. The event also attracts international travelers from different parts of the world who expect good user experiences. Mobile network providers want to make sure they're delivering a level of service aligned with the expectations of both domestic subscribers and international roamers."

Meeting the challenges

Orange Ivory Coast needed technology partners that could meet these stringent requirements, to ensure spectators would enjoy a full range of digital amenities and services.

AFCON 2024 posed several distinct technical challenges: hosting 40,000-60,000 spectators, AFCON venues are extremely high-density environments. When capacity soars for major events, network congestion and signal degradation issues escalate as well. Even as population density surges, attendees still expect fast, reliable internet access for live streaming, social media sharing, and real-time updates.

The layouts of the stadium environments themselves also created specific challenges. Conventional mobile networks struggle to provide adequate coverage within stadium confines, particularly in hard-to-reach areas with architectural complexities and obstructed signals.

Digital DAS solutions

To address these challenges, Orange Ivory Coast partnered with CommScope and Leadcom/STA.

"CommScope delivered its state-of-the-art ERA digital Distributed Antenna System (DAS) supporting both 4G and 5G in three stadiums. The ERA DAS technology is based on a central hub where capacity from different mobile network providers is pooled and a certain number of radiating points are installed inside the stadium connected back to the central hub by optical fibre," explains Buttarelli.

Designed to deliver flexible, high-performance connectivity, CommScope's all-digital ERA distributed antenna system offered Ivory Coast Stadiums a simple yet economical solution. Operating on standard IT infrastructure — Category 6A and fibre — these solutions allow the organization to provide high capacity with 'five bars' of coverage throughout large sports venues.

CommScope ERA digital DAS leverages digital signal processing to enhance coverage and capacity at each event, mitigating interference and improving signal quality. Designed with scalability in mind, the modular form factor of ERA digital DAS allows for seamless expansion to accommodate evolving connectivity demands during AFCON.

Tailor-made deployment

"The project requires strong local partners to manage in-country logistics and installation work," adds Buttarelli. "There is a big focus on meeting the available budget, and the system is designed and optimised to deliver the best performance. In addition, the project must be scalable and easily expandable in case additional capacity needs to be installed for specific events, such as when the local national team is playing."

A dedicated team of engineers from Leadcom/STA installed and integrated ERA digital DAS equipment across AFCON venues, ensuring seamless interoperability with existing network infrastructure. ERA's centralized management platform enables venues and their service providers to monitor network performance in real time, identify potential issues, and optimize system configurations remotely.

CommScope and Leadcom/ STA collaborated closely with Orange Ivory Coast to tailor the deployment of ERA digital DAS to specific venue requirements, ensuring comprehensive coverage and optimal performance. For example, the Stade Olympique d'Ebimpé is a multi-purpose stadium that can host football, rugby and athletics. This massive site required coverage for up to 60,000 attendees, as well as 5G coverage in VIP indoor areas. At a final match, additional tickets were sold, yet the solution was still successful at delivering excellent performance. A VIP speed test during the match in crowded areas demonstrated download speeds of an impressive 141Mbps.

CommScope, Leadcom/STA, and Orange Ivory Coast also deployed the solution at the multi-purpose Stade Félix-Houphouët-Boigny, as well as the Stade Bouakéis, with capacities of 45,000 and 40,000, respectively. These sites also delivered remarkable results, even with cell sites at 100% capacity.

An unmatched experience

Utilizing CommScope solutions and advanced digital DAS technology, Orange Ivory Coast not only addressed the connectivity challenges inherent in high-density environments, but also provided attendees with an unmatched digital experience.

At each deployment, successful data rates were consistently achieved, even when stadiums had reached full capacity. The solution's Advanced Integrated Monitoring and Operating System (AIMOS) also played a critical role. This comprehensive monitoring platform for DAS and repeaters provides automated support with robust fault, configuration and inventory management capabilities — minimizing time and labour associated with manual network management tasks. Successful AIMOS monitoring reports were sent every 30 minutes before and during each match.

To further enhance the solution, CommScope worked closely with Orange Ivory Coast to optimize their outdoor macro sites to improve performance. The deployment has forged a lasting relationship for innovation as well as a repeatable template for success. ■

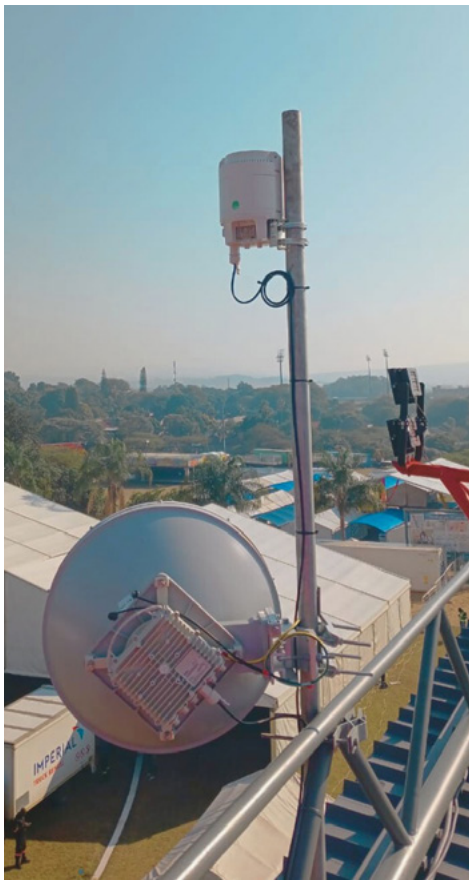
Innibos Festival wins big with multi-gigabit backhaul

The famous Innibos Festival in South Africa recently took place at Hoërskool Bergvlam in West Acres Mbombela (Nelspruit). This multicultural educational institution showcases a truly South African experience, featuring a diverse range of musical acts, stage productions, and other artistic attractions. The festival was held from 29 June to 2 July.

A multi-gigabit challenge

The Innibos event organizers were anticipating 40,000 attendees each day. Based on their previous experiences and events, it was clear that public cellular networks would not be able to handle the high demand for connectivity in such a crowded area. The main challenge was ensuring that there would be enough capacity to meet the event's expectations within the venue at any given time.

The other requirement was to ensure connectivity to a dozen Wi-Fi access points spread out across a wide area. This area includes two separate stages and relaxation and commercial areas. Typical Wi-Fi access points have a limited range, so it was important to find a solution that would allow for sustainable and uninterrupted service delivery.



It became evident that Innibos would require massive bandwidth, reaching multi-Gigabit levels, to account for the expected amount of video content that would be transmitted wirelessly from performance stages and other areas to a central production studio located on the premises. To provide that bandwidth, many operators and solutions providers would typically consider using a fibre link; but laying fibre for a temporary event is simply too expensive and time-consuming. However, fixed wireless has increasingly become the preferred method of connectivity in this region, as it offers a faster deployment time coupled with the ability to move the solution from place to place...

Fibre-like backhaul

Skywire duly won the contract to provide a high-capacity wireless backhaul link to the event venue, as well as blanket connectivity for Wi-Fi access points, and other devices throughout the venue.

"Adcomtec, a partner of Siklu, was contacted by Skywire to provide a wireless solution with a large capacity in a short amount of time (less than 6 weeks)," said Ted de Boer, Adcomtec Senior Business Development Executive. "Adcomtec helped by gathering the necessary equipment, determining the cost and delivery schedule, speeding up the shipment, and delivering on time (even on a Sunday) to meet the deadline and ensure a successful and smooth event."

To meet the backhaul requirement, Skywire looked for the nearest fibre POP with a clear line-of-sight to the event's arena. A path analysis to a nearest fibre POP, some 3.8km away, revealed a marginal line-of-sight that could only be executed if a very narrow beam based fixed wireless could be deployed. As a result, the decision to select Skywire's preferred fixed wireless solution, a Siklu EtherHaul™ multi-Gigabit 80GHz radio, was made rapidly.

For onsite connectivity, Skywire needed to backhaul 12 high-end Wi-Fi 6, dual-band access points operating at the highest rate. To ensure carrier-grade, multi-gigabit service delivery, those access points would need to be backhauled with a non-Wi-Fi frequency wireless distribution network. After reviewing the project's wide area and the available equipment options, Skywire selected Siklu's MultiHaul TG solution, which utilizes the ultrawide, interference-free, and license-exempt 60GHz band. Skywire deployed eight MH-TGT280 terminal units, serviced by two MH-TG-N366 meshed nodes, installed at each stage area. The integrated solution enabled instant fibre-like backhaul connectivity to all Wi-Fi APs and other devices throughout the venue.

Network deployment – in a matter of days

Skywire's engineers managed to connect the event's arena to their remote fibre-POP within a few hours and turned to establish the mesh coverage at the event's area.

To further simplify and accelerate the installation, the engineers utilized the MH-TG-T280 integrated gigabit switch capable of delivering PoE-out, to both serve and power Wi-Fi access points. Skywire was able to complete the deployment of this robust temporary network in a few days.

Key to this deployment was its temporary nature, as Skywire quickly identified the high re-use value of all the equipment installed at Innibos, as it can be easily reassembled within days and reconfigured for future events. ■

STARLINE 1.8GHz ESD amplifier upgrades networks for DOCSIS 4.0

CommScope's STARLINE® 1.8 GHz Extended Spectrum DOCSIS®(ESD) amplifiers have now come to market, offering operators the ability to upgrade their networks in anticipation of next-generation architectures like DOCSIS 4.0, while fully monetizing their current network assets and better serving their consumers.

The BLE® 180 Line Extender and MB180 MiniBridger® amplifiers offer operators a simple and economical solution for introducing ESD to DOCSIS 3.1 networks as well as a clear path to DOCSIS 4.0. Both amplifiers support ultra-high-split operation of up to 1794MHz in the downstream and up to 684MHz in the upstream to maximize network reliability and data rates.

"By deploying the amplifiers in mid-split or high-split 1.2GHz networks now, MSOs can optimize the performance of their DOCSIS 3.1 networks while taking an important step in future-proofing, before eventually upgrading taps and nodes," said Guy Sucharczuk, SVP & President Access Network Solutions. "This incremental approach defers the costs per homes passed associated with an immediate DOCSIS 4.0 network upgrade—the perfect way to both plan for the future and protect an investment in next-generation technology."

The amplifiers support the gain and tilt required for 1.2GHz operation via a simple plug-in. The plug-in enables the increased gain operators require to upgrade high-loss spans that would otherwise require the installation of a booster amplifier, cable, and passive upgrades as well as moving amplifiers within the network — eliminating the costs and service interruptions associated with these upgrades and improvements.

The new amplifiers feature a smart setup feature activated via a downloadable app for laptops, iPhones, and Android devices. The app greatly simplifies the process of setting up and configuring the amplifier for use in the field. Pluggable frequency split filters are accessible through each amplifier's RF module, enabling technicians to change the operating frequency of the amplifier in the field quickly, easily, and economically.

Wi-Fi HaLow access point meets Matter IoT gateway

Edgecore Networks' new EAP112 integrates Wi-Fi HaLow access point and Matter IoT gateway functionalities to address the growing demands of IoT applications. The EAP112 offers long-range connectivity, energy efficiency, and robust performance, making it an adaptable solution across various environments.

The EAP112 supports Wi-Fi 6, Wi-Fi HaLow (802.11ah), BLE, Zigbee, Thread, and LTE/CBRS, providing comprehensive coverage for IoT applications such as smart agriculture, smart cities, multi-dwelling units (MDUs), and industrial monitoring. Its versatile design makes it suitable for both indoor and outdoor deployments, with a rugged construction capable of withstanding harsh outdoor conditions. It can operate between -30°C and 50°C and features an IP65-rated enclosure for water and dust resistance, broadening its application in extreme environments.

This device broadens its support to encompass key wireless communication protocols essential for IoT applications, such as BLE, Zigbee, and Thread, enhancing short-range wireless connectivity. Moreover, it steps into the realm of long-range IoT applications with Wi-Fi HaLow, boasting widespread coverage, deep penetration, and a robust connection capacity for a multitude of devices.

Recognizing the critical role of backhaul transmission in network

infrastructure, the EAP112 embraces LTE-A and CBRS frequencies, as well as traditional wired Ethernet. In specific scenarios, the Wi-Fi HaLow technology facilitated by the EAP112 also doubles as a backhaul network solution.

In addition to its cutting-edge connectivity features, Edgecore Wi-Fi is introducing a new Wi-Fi HaLow and Matter IoT device management platform on its cloud-based controller, ecCLOUD, allowing seamless management of Wi-Fi HaLow cameras and Matter-compliant IoT devices. This platform simplifies network provisioning, configuration, and monitoring, enhancing both the user experience and network performance.

Integrated microgrid power for communications towers

Caterpillar Inc. has introduced an integrated microgrid power system for telecommunications towers capable of reducing diesel fuel consumption and associated carbon emissions by up to 80% while decreasing total owning and operating costs.

Available initially from Cat® dealers in Africa and the Middle East, the system employs solar PV panels, and a Cat diesel generator set to power the telecommunications system while fully charging an energy time-shift storage system. Power is drawn from energy storage when solar power is not available at night or in inclement weather.

Hybrid power systems can reduce total owning and operating costs, substantially decrease fuel consumption and associated greenhouse gases, and maximize system reliability. They are particularly well-suited for applications in remote areas where grid power is intermittent or unavailable and fuel delivery is challenging and costly.

The system features a modular design enabling the addition of components to increase power output for rising traffic and network upgrades over time.

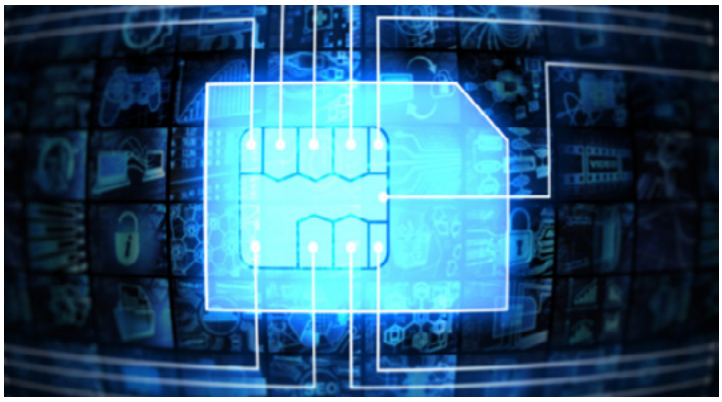
This field-proven system can be offered through an Energy-as-a-Service agreement, which supplies a turnkey solution for addressing power needs and climate-related goals without requiring customers to purchase or maintain system assets. Optimized, deployed and supported by select Cat dealers, this agreement enables telecommunications customers to amortize start-up costs and outsource responsibility for service and maintenance while reducing the risk of obsolescence.

"As customers embark on the energy transition journey, they are seeking tailored solutions to meet their requirements," said Stephanie Baughman, Retail Vice President for Caterpillar Electric Power. "Our hybrid solution for telecommunications towers combines next-generation power technologies with industry expertise and a flexible service agreement that delivers a sustainable, reliable and cost-effective solution to our customers."

IoT platform to advance MNO monetisation

Hayo has launched its global Internet of things (IoT) platform, which supports Machine-to-Machine (M2M) and consumer IoT use cases, and can be used by both mobile network operators (MNOs) and enterprises.

MNOs can white label and resell Hayo's platform as their own to monetise the growing opportunities in IoT around the world. It makes it simple to capture new revenue and serve enterprise demands across verticals like agriculture, healthcare, transportation and more.



"We are continually innovating in digital solutions to solve real-world challenges with simple and powerful solutions, and IoT is a very exciting space to be in," said Feraz Ahmed, CEO at Hayo. "Launching our IoT platform is an important step in our roadmap. It will not only enable business customers to create new revenue streams, but also have a positive impact on local people's lives. IoT has a huge variety of use cases across multiple industry verticals. It's accelerating digital transformation, enabling seamless connectivity between medical devices, boosting efficiency and profits for local farmers, and so much more."

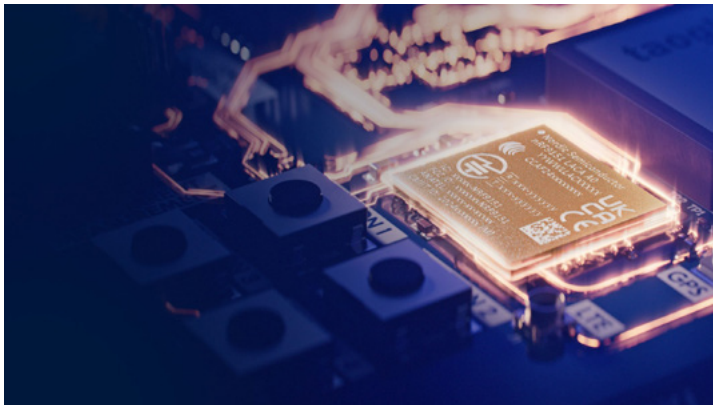
Hayo's IoT platform is powered by a cloud-native full core network, with high speed and performance to enable devices to seamlessly communicate and share data intelligence. It utilises advanced AI algorithms to analyse and derive meaningful insights from this data, facilitating informed decision-making for businesses. This enhances operational efficiency, automates processes, and unlocks new possibilities for businesses in today's rapidly growing digital ecosystems. The platform also provides real-time billing, multi-IMSI SIM management, automation, seamless connectivity management, monitoring and more.

Hayo provides expert support end-to-end to help MNOs maximise IoT monetisation, and the web portal can be fully customised with our customers' logos, brand colours and imagery. The global carrier network makes it simple for MNOs to seamlessly expand their global reach to areas not covered by existing roaming agreements. It's a highly fast and cost-efficient way of entering the market, with no upfront investments and a flexible business model.

Innovative SiP to accelerate IoT deployments

Nordic Semiconductor has released its smallest and lowest power System-in-Package (SiP) - the nRF9151, and its associated nRF9151 Development Kit (DK).

The nRF9151 is a fully integrated, pre-certified SiP featuring an application MCU for extensive application development or use as a stand-alone cellular modem. This simplifies the development and deployment of scalable products across massive IoT markets, including industrial automation, asset tracking, smart city, smart metering, and smart agriculture.



The nRF9151 represents a significant advancement in cellular IoT technology, offering a cost-effective and globally accessible solution. Its comprehensive and compact solution includes hardware with a programmable application processor, software, cloud services, development tools, and world-class support.

The nRF9151 supports 3GPP release 14 LTE-M/NB-IoT global coverage and DECT NR+. Exclusive features include a significant footprint reduction, which allows for more compact products without performance compromises. In addition to Power class 3 (23dBm), the nRF9151 also supports Power class 5 (20dBm) output power, leading to 45% reduced peak power consumption thanks to the unique nRF9151 low power design, which decreases the cost of battery-powered products. The nRF9151 will also add support for Non-Terrestrial Network (NTN) support in future firmware release.

Available with SIM Cards from Onomondo and Wireless Logic preloaded with free data, the nRF9151 DK is the ideal starting point for cellular IoT application development. The DK is supplied pre-flashed with Nordic's Serial LTE Modem application for interfacing through AT Commands. This also enables the nRF9151 to be used as a stand-alone cellular modem, simplifying its integration into existing customer solutions. Developers can get started with other firmware samples from the Quick Start tool.

Look out for...

Breaking records with PSE-6s technology

Faced with the challenge of ever-expanding demands placed upon connectivity infrastructure, the world's leading tech players are collaborating to achieve more capacity, affordably. In one recent development, OTE Group and Nokia have announced two new optical transmission rate world records using Nokia's sixth generation of super-coherent Photonic Service Engine (PSE-6s) technology.

The field trial, which used Nokia's 1830 PSI-M optical transport solution, ran over OTE Group's national dense wavelength division multiplexing (DWDM) network, connecting IP Core data centres and routers in Greece. Two optical nodes were installed in Patra and Athens to boost performance over the specific fibre optic routes.

Nokia and OTE achieved record-breaking speeds in a live network in real conditions, transmitting 800Gbps on a single channel over 2,580km, and 900Gbps over 1,290km. This was achieved over a DWDM link transmitting a full load of DWDM channels over 4.8THz of spectrum and supported a total network capacity of 25.6Tbps per fibre. The companies also demonstrated 1.2Tbps transmission on a single channel over 255km.

Running an optical solution with Nokia's PSE-6s allows the increase of network capacity and spectrum utilization, reduces energy consumption per bit by 40%, and minimizes the network's carbon footprint.

The trial demonstrates the successful application of delivering high-capacity, long-haul DWDM transmission, paving the way to elevate data transmission capabilities to meet the growing demands of social media, cloud computing, and video streaming.

"We are proud to have developed, constructed and operate one of the most advanced long-haul backbone DWDM networks globally. This network has demonstrated world-record performances, as evidenced by our recent field trial. Our aim is to deliver top tier performance in the most cost-effective manner. In collaboration with our partner, Nokia, we look forward to further advancements in our DWDM technology," said Michalis Papamichail, OTE Group Core Network Devops and Technology Strategy Director.

Satellite IoT market expands at steady pace

A new report from Berg Insight - The Satellite IoT Communications Market - addresses a market growing at what the independent industry analyst and firm describes as 'a good steady pace.'

Only 10% of the Earth's surface has access to terrestrial connectivity services, which leaves a massive opportunity for satellite IoT communications. Satellite connectivity provides a complement to terrestrial cellular and non-cellular networks in remote locations, especially useful for applications in agriculture, asset tracking, maritime and intermodal transportation, oil and gas industry exploration, utilities, construction and governments.

Both incumbent satellite operators and more than two dozen new initiatives are now betting on the IoT connectivity market. The global satellite IoT subscriber base grew to surpass 5.1 million in 2023. The number of satellite IoT subscribers will increase at a compound annual growth rate (CAGR) of 39.2% to reach 26.7 million units in 2028. Satellite IoT connectivity revenues are forecasted to grow from Euro302.9 million in 2023 to approximately Euro1.35 billion in 2028. However, the monthly ARPU is expected to drop to Euro4.20 by 2028.

BT switches on first self-powering mobile site

BT Group has switched on its first self-powering mobile site, with approximately 70% of its energy needs expected to be generated by the on-site solar panels and wind turbine.

The site was identified through an environmental assessment which calculated its viability for renewable power. Power is generated through a combination of solar and wind energy which is then used to charge the batteries which power the on-site mast.

In the event of there being insufficient renewable energy source available and the battery power being fully discharged, a generator powered by Hydrotreated Vegetable Oil (HVO) fuel acts to simultaneously provide back-up power to the mast and charge to the batteries, ensuring the site continues to deliver connectivity to customers. HVO is itself classed as a green fuel, produced as it is from a variety of waste and residual oils.

BT Group expects the site to deliver approximately 17,000kWh of wind and solar energy per year – the equivalent of 100,000 hot showers – as well as cost savings upwards of £10,000. While the Shropshire Hills site serves as a trial, BT Group has already identified hundreds of additional locations which have the potential to derive much of their power from on-site renewable sources, in particular in coastal or

hilly locations.

"Delivering ubiquitous coverage is critically important in an age where connectivity has never been so central to everyday life, but it absolutely must be done in a responsible and sustainable manner. It's paramount that we increase the energy-efficiency of our networks, and so we're really excited about the potential of self-powering sites in enabling us to meet both our sustainability and connectivity ambitions," said Greg McCall, Chief Networks Officer, BT Group.

With an ambition to become a net zero business by 2031, improving the energy efficiency of its networks – which account for around 89% of its total energy consumption – is a major priority for BT Group. The self-powering site is the latest innovation aimed at addressing this and follows the roll-out of energy-saving cell-sleep technology across its RAN estate earlier this year, as well as the successful retirement of its legacy 3G network.

Nokia to reinforce Vietnam's 5G

Nokia and Vietnam Posts and Telecommunications Group (VNPT), one of Vietnam's leading telecommunications operators, have announced a new partnership to deploy 5G technology.

This significant development marks a new milestone in the long-standing collaboration between the two companies, reinforcing their commitment to providing a strong digital infrastructure in Vietnam. Nokia is also manufacturing its 5G products locally in Vietnam highlighting its commitment to the region.

As part of this agreement, Nokia will deploy equipment from its state-of-the-art 5G AirScale portfolio, powered by its energy-efficient ReefShark System-on-Chip technology. These provide premium connectivity, low latency, enhanced network capacity, and reduced power consumption. Nokia will also deploy its AI-based 5G MantaRay network management solution which will greatly improve VNPT's network operation efficiency.

"Collaborating with Nokia will enable VNPT to rapidly deploy a world-class 5G network and meet the growing demands of our customers in Vietnam, 5G will serve as the foundation that will drive Vietnam's economic development and societal progress, thereby accelerating its journey towards becoming a digital economy," said Huynh Quang Liem, VNPT's CEO.

"Nokia is proud to be VNPT's strategic partner in introducing 5G which will deliver future-ready communications solutions that will help accelerate Vietnam's digital future. Our local 5G production is further enhancing our strong bond with the country," said Tommi Uitto, Nokia's President of Mobile Networks.

US Cellular Corporation to sell $1 billion of spectrum

US Cellular Corporation has entered into an agreement with Verizon Communications (Verizon) to sell a portion of its retained spectrum licenses for a total consideration of US$1.0 billion in cash.

The deal involves Verizon purchasing spectrum licenses in the cellular band, as well as select licenses for spectrum in the cellular, AWS, and PCS bands. The agreement is subject to conditions and potential adjustments, which could occur if court orders prevent the transfer of certain licenses, if regulatory approvals impose burdensome conditions, or if there are changes related to a T-Mobile Short-Term Spectrum Manager Lease.

UScellular agreed to sell Verizon 663 million MHz POPs of its cellular (850MHz) spectrum licenses, as well as 11 million MHz POPs of its AWS and 19 million MHz POPs of its PCS licenses, for a total of US$1.0 billion.

UScellular has also reached agreements to sell a total of 12 million MHz POPs of its spectrum licenses across the CBRS, C-Band, and 700MHz B/C Block bands to two additional mobile network operators.

Each of these transactions is contingent upon the closing of UScellular's proposed sale of its wireless operations and select spectrum assets to T-Mobile.

Following these transactions, UScellular's retained spectrum will include 3.4 billion MHz POPs of low and mid-band spectrum (700MHz, 3.45GHz, CBRS, and C-Band), along with 17.2 billion MHz POPs of mmWave spectrum. UScellular will continue to explore opportunities to monetise these retained assets.

The closure of the newly announced deal is subject to regulatory approvals.

Viasat tests D2D service with BSNL

Viasat has tested direct-to-device (D2D) satellite connectivity in India for the first time, in collaboration with BSNL, part of a move that aims to expand satellite services for consumer and IoT devices globally.

Viasat detailed that it tested satellite-powered two-way and SOS messaging services on a commercial Android device for attendees at the India Mobile Congress. The messages were sent 36,000km to one of Viasat's geostationary L-band satellites. Viasat stated that the results demonstrated that satellite services to smartphones are 'technically feasible' for Indian consumers and businesses using its satellite network.

"D2D could help transform the Indian production and supply chain, making it more efficient, sustainable, and safer. It could also support automotive applications, enhancing safety and condition-based maintenance," said Viasat CTO, Sandeep Moorthy.

BSNL Chairman and Managing Director, Robert J Ravi, added that D2D technology has the potential to "enhance direct communications for critical services, disaster recovery, and even rural connectivity across India."

Bangladesh's regulator fines MNOs

Bangladesh's telecoms regulator has reportedly fined Grameenphone, Robi Axiata and Banglalink for breaching regulations on promotional SMSs, despite operators saying the regulations are impractical and too restrictive.

The Bangladesh Telecommunication Regulatory Commission (BTRC) has reportedly fined the telcos BDT500,000 each for sending more than three promotional SMSs per day to their customers, which is a violation of a BTRC directive issued last year on data and related packages. The BTRC has been issuing warnings to telcos for the past year, asking for explanations as to why they were violating the directive.

According to the response from Grameenphone, one problem is that the rate of successful SMS deliveries averages around 68% because of system limitations and handset issues. For churned or inactive customers, the rate is as low as 30%. As a result, SMSs often need to be re-sent. Banglalink said that the bulk of its customers still use 2G devices users with limited access to digital channels, so SMS is the only way to reach them with new promotions. Meanwhile, Robi said that its SMS platform operates separately from its data and voice platforms, making it technically infeasible to restrict the number of SMS sent.

RACSA to deploy Costa Rica's first 5G SA network

Nokia has partnered with RACSA (Radiográfica Costarricense SA) to deploy the first 5G standalone (SA) network in Costa Rica.

The deployment will see high-speed, low latency 5G connectivity made available in urban centres including San Jose, Cartago, and Limon, as well as rural communities across the country.

The initial rollout phase saw 30 sites installed in major cities with a further 170 due later this year, with plans to expand to 500 sites in subsequent phases. The deployment enables faster internet access and supports the development of IoT applications, including those critical to public safety, energy, healthcare, and education.

The network also provides high-performance Fixed Wireless Access (FWA) services to a wide range of businesses, including small and medium enterprises, public sector organisations, and consumers. GSMA Intelligence has forecast that FWA will grow exponentially compared to other broadband solutions over the next decade due to its ability to provide high-speed connectivity to regions without existing telecoms infrastructure.

Powered by Nokia's integrator partner Datasys, RACSA has implemented solutions from Nokia's AirScale radio portfolio including Massive MIMO radios, remote radio heads, and base stations. In addition, Nokia's MantaRay Network Management solutions will deliver a unified, automated view of RACSA's network, enhancing both monitoring and management capabilities. To support the 5G standalone (SA) RAN architecture, Nokia has also integrated its 5G SA Compact Mobility Unit (CMU) Core into the network.

"The utilisation of Nokia technology represents a pivotal step in Costa Rica's digital transformation which RACSA has been playing a key role in for the last 103 years," said Mauricio Barrantes, General Manager of RACSA. "By deploying the first 5G network in the country, we are not only improving connectivity for businesses and government entities but also enhancing the quality of life for our citizens. The high-speed, reliable network will support innovative applications that contribute to the country's overall economic and social development."

Brisanet, Ligga/Sercomtel and TIM win spectrum with lowest bids in reverse auction

Brisanet, Ligga/Sercomtel and TIM have been declared the winners of Brazil's first reverse mobile auction, held by the Ministry of Communications, the regulator Anatel and Seja Digital, the group involved in effecting the transition to digital TV broadcasting in Brazil, which has opened up 4G spectrum.

This event marks the first 100% digital auction to choose operators to install and operate telephony and mobile internet antennas in 59 unserved remote locations.

Brisanet, Ligga/Sercomtel and TIM will operate in the states of Bahia, Minas Gerais, Mato Grosso do Sul, Pará, Paraíba, Maranhão, Pernambuco, Rondônia, Tocantins and Ceará. They will have 90 days, which may be extendable, to install and operate the infrastructure.

The auction was held in the reverse format, in which the participants who gave the lowest bids for each location won. The event had a ceiling of BRL108.8 million and was concluded with a 41% discount. The difference will be allocated to other stages of the project, with at least one more round of reverse auction planned. Cloud2u and Claro were also bidders.

The investment will be BRL64 million, a saving of 41% compared to the auction reference value. Operators were able to choose one or more locations from the list and make a single bid for each one, below the limit stipulated in the notice. The company that adopted the lowest subsidy amount won.

According to Carlos Baigorri, president of Anatel, the first edition of the auction was considered a success. It will be a pilot for others to be carried out to use the remaining balance of BRL250 million in available resources.

Chunghwa Telecom modernises network with 5G RAN

Chunghwa Telecom has awarded a major 5G contract to Ericsson to modernise its mobile network, focusing on energy efficiency and sustainability.

The partnership aims to enhance 5G network capabilities while reducing carbon emissions, supporting Chunghwa's Net Zero 2045 target, which was recently validated by the Science Based Targets initiative (SBTi).

The contract includes Ericsson's 5G RAN portfolio, featuring the dual-band Radio 4490HP, which reduces embodied carbon by 54% and energy usage by over 40% compared to older legacy models. The new radios enhance multi-band capacity, uplink performance, and energy efficiency, ensuring a sustainable and future-ready network, according to Ericsson.

Chunghwa Telecom will also leverage Ericsson's AI-powered Intelligent RAN power-saving technology to optimise energy consumption without compromising network performance. This AI-driven solution automates the monitoring and optimisation of complex networks to predict network load and enhance energy efficiency.

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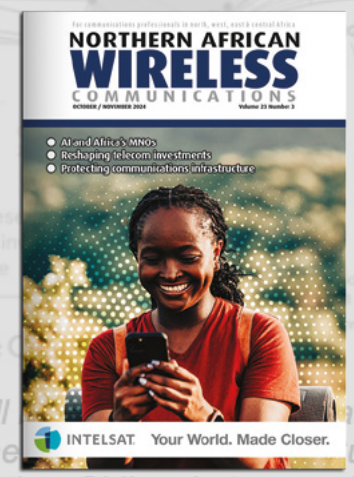

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