For communications professionals in southern Africa

SOUTHERN AFRICAN WIRELESS COMMUNICATIONS

MAY/JUNE 2022 Volume 26 Number 5

- Critical communications and the challenges faced
- Angola: Africell launches mobile services
- Satellite broadband speeds up mining operations

Kennedy Chinganya, Managing Director

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KADIUM

Space-based mobile network test satellite primed for launch

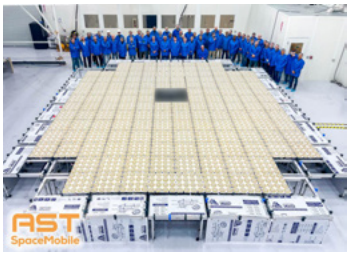
AST SpaceMobile, which is creating the first and only space-based cellular network accessible directly from standard mobile phones, will launch its BlueWalker 3 test satellite during the week of August 15, 2022.

The planned satellite constellation aims to directly connect to cell phones around the globe, including markets where we operate in Africa such as Democratic Republic of Congo (DRC), Ghana, Mozambique, Kenya, Tanzania and Ethiopia, subject to regulatory approval and other requirements.

BlueWalker 3 carries a 693-square-foot phased array that is designed to test cellular broadband communications directly with standard mobile phones, from space, for the first time. AST SpaceMobile has invested approximately US$85m in the satellite's development and the company's engineers have successfully conducted more than 800 ground tests with BlueWalker 3.

Furthermore, the BlueWalker 3 mission is expected to complete the company's initial research and development program and facilitate integration testing with mobile network operators including Vodafone.

"The launch of BlueWalker 3 is the culmination of years of effort by our engineers to let us test connecting the phone in your pocket, with no modifications to the phone, directly with one of our satellites in space," said Abel Avellan, chairman and chief executive officer, AST SpaceMobile. "This revolutionary technology supports our mission to eliminate the connectivity gaps faced by more than 5 billion mobile subscribers today moving in and out of coverage and bring cellular broadband to approximately half of the world's



population who remain unconnected. We want to close the gap between the digital 'haves' and 'have nots'."

AST SpaceMobile said the actual launch date remains subject to change and is contingent on several factors, including final testing, final integration, ground transport, timely readiness of the launch vehicle and other unknowns including, but not limited to, weather conditions or technical problems.

The launch of the test satellite is scheduled to take place at Cape Canaveral, Florida.

Zimbabwean regulator launches system to monitor telecom traffic

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) has introduced a new traffic monitoring and revenue assurance system to restrict financial leakages from telecommunications services.

This move will help enable the regulator to combat network fraud, enforce billing integrity and revenue assurance and deal with disputes over national interconnections.

The system gives POTRAZ the ability to measure and calculate various statistics on national and international telecommunications traffic.

"It should be emphasised at this point that the telecommunications traffic monitoring and revenue assurance system does not have the capability to monitor content and conversations," said Jenfan Muswere, minister of ICT, post and courier services. "The system is limited to interacting with the signalling segment of the network and does not have access to traffic channels."

The new system replaces the previous self-declaration regime for mobile network operators. According to POTRAZ, the information and declarations previously provided by operators could be inaccurate, damaging revenues. This initiative of the regulator is part of the government's objective to develop the telecommunications sector, which "is one of the main pillars for stimulating economic growth" and development to achieve Vision 2030.

"This commissioning facilitates the implementation of a system based on state-of-the-art technology that will effectively monitor telecommunications traffic and collect accurate data in real time," added Gift Machengete, chief executive officer, POTRAZ. "This will give the authority better visibility of market dynamics, which is essential for effective, efficient and forward-looking regulation."

Asia-Africa-Europe-1 Consortium picks Infinera's ICE6 solution

Asia-Africa-Europe-1 (AAE-1) Consortium, which owns one of the world's largest consortium cable systems, has selected Infinera's ICE6 coherent 800G solution Infinera to boost connectivity across European, Asian, African and Middle Eastern markets.

Optical networking solutions business Infinera says AAE-1's submarine upgrade will double the current capacity, providing in excess of 100 Tb/s and making it the largest-scale submarine upgrade in history.

AAE-1's cable system spans 25,000 kilometres of submarine and terrestrial networks, connecting 19 countries led by a consortium of 19 leading operators. Infinera has been charged with increasing its submarine network capacity and provide diverse, resilient connectivity across the three continents.

Unlike other cable systems, AAE-1 terminates at two points of presence in Singapore for enhanced route diversity and is the only next-generation cable that extends farther into Asia via diverse terrestrial routes across Thailand to provide connectivity to Vietnam, Cambodia and Hong Kong.

This unique routing enables AAE-1 to deliver one of the lowest-latency routes between Hong Kong, India, the Middle East, Africa, and Europe.

Infinera further adds that by upgrading with its fifth-generation ICE6 technology on the GX Series Compact Modular Platform, AAE-1 can leverage a submarine optical network solution that features the highest level of spectral efficiency, long-codeword probabilistic constellation shaping (LC-PCS), Nyquist subcarriers, and the ability to seamlessly upgrade its line system to enable L-band transponders on some of its terrestrial network segments.

InterSAT selects ST Engineering iDirect for tech upgrade

Satellite communications specialist ST Engineering iDirect will provide internet service provider InterSAT Communication Services FZCO with a technology upgrade to deliver enhanced services to its customers across the African continent.

The upgrade to its existing Evolution platform will allow the latter to leverage new technologies and efficiencies to remain competitive in an increasingly challenging market.

One of the largest internet solutions providers, InterSAT serves a portfolio of different verticals, providing essential satellite-based connectivity across the entire African continent to NGOs, SMEs, governments, oil and gas companies, and the broadcast sector. The company is focused on offering connectivity and investing heavily in state-of-the-art technology that makes service delivery better and faster.

The platform enhancements include the upgrade to powerful very small aperture terminal (VSAT) hub technology with universal line cards (ULC) and high-performance and scalable processing technologies with the iGateway. These features allow InterSAT to remain competitive in the African market by pursuing new opportunities whilst benefiting from powerful performance and efficiencies driven by DVB-S2X and Adaptive TDMA, the company says.

InterSAT has partnered with antenna manufacturer and ST Engineering iDirect partner Kymeta and will start to deliver mobile connectivity services to the rail and maritime sectors to connect users on the move. The company is also breaking into the Outside Broadcast (OB) market, offering contribution links to media houses and has kitted

out its OB demonstration truck.

"We have utilised ST Engineering iDirect technology for the last 15 years, since the company's inception," said Subrata Roy, chief technology officer, InterSAT. "We have continued to upgrade the system as the technology evolves. We like the intuitive interface of the Evolution platform. It's straightforward to operate, and the technology enables us to get the very most out of the available capacity, making us more efficient, flexible and cost-effective for our customers."

Azercosmos and Signalhorn to provide satellite services in Africa

Azerbaijan's satellite operator Azercosmos OJSC, has signed a cooperation agreement with the Swiss company Signalhorn to provide uninterrupted, secure and high-quality satellite services throughout Africa via the C Band capacity on the Azerspace-1 satellite.

Moreover, Azercosmos and Signalhorn will provide broadband satellite services and a wide range of satellite applications for humanitarian projects in Africa using the iDirect satellite communications platform.

"Our cooperation with Signalhorn will further strengthen our position in the African region, and our advanced, reliable and flexible solutions will lead to new projects," said Mark Guthrie, chief commercial officer (CCO), Azercosmos.

In turn, Signalhorn's CCO Nigel Gibson said that the new agreement will ensure continued cooperation between the two companies and increase the number of Azerspace-1 satellite users in Africa.

"We are confident in the reliability of our service with our partner Azercosmos," Gibson added.

Azercosmos along with Azerspace-1, Azerspace-2, and Azersky satellites, facilitates the reception of signals from satellites of other satellite operators and via a fibre-optic network.

In 2021, Azercosmos exported services worth around $45.3 million to 41 countries. The company's revenues from the export of services accounted for 89 percent of its total revenues. The top five countries to which Azercosmos exported services last year were France, Malaysia, the UK, the US and the UAE.

DRC operators refuse to pay US$20m bill

Telecommunications operators in the Democratic Republic of the Congo (DRC) are refusing to pay the new taxes imposed on them by the Regulatory Authority of Posts and Telecommunications of Congo (ARPTC).

The first invoices sent via the consulting firm 5C Energy amount to circa US$20m for the period from March 24 to mid-May 2022.

In a statement on Tuesday, June 7 DRC's national chamber of commerce said the new tax threatens to squeeze the sector, which already has taxes well above the average in sub-Saharan Africa. "All operators in the Congo have rejected these invoices as irregular and therefore unenforceable," the statement said.

The dispatch of these first invoices follows the application of Decree No. 22/11 of March 9, 2022, setting the terms of calculation and rates of income from the services of the ARPTC. This new tax replaces the Mobile Device Registry (MDR) tax, which was abolished on March 1, ending an annual levy on telephone credit recharges introduced by ARPTC in September 2020.

The new tax is expected to cost telecom operators US180m per year. To cope with this, they said that they had no choice but to "increase the tariffs of various services on which the government has decided to apply these new charges". According to the telecom companies, the government's measures could push back investors in addition to unnecessarily increasing the burden on households in an already difficult socio-economic context.

Intelvision and Vodafone to introduce a new cable system in Seychelles

Seychelles telecoms operator Intelvision is planning to introduce a new cable system across the archipelago.

The company has signed a partnership agreement with British operator Vodafone for this purpose. Expected to last 15 years, the cooperation between the two companies is supported by the International Finance Corporation (IFC), which is financing the project to the tune of US$20m.

It is understood the deal will facilitate connectivity between Seychelles and Meta's (ex-Facebook) future 2Africa submarine fibre optic cable network to be deployed in the second half of 2023. With a contributed capacity of over 600 Gb/s of international bandwidth, the new cable system will serve as a complement to the existing Seychelles East Africa System (SEAS). The agreement will also enable Intelvision to provide 4G and 5G mobile networks across Mahé, the archipelago's largest island, as well as all other inland islands.

This announcement comes three months after Seychelles connected to the Pakistan East Africa Cable Express (PEACE), the second such infrastructure after SEAS in 2011. These various investments reflect the government's efforts to limit the negative impact of the pandemic on the local economy and accelerate recovery by focusing on the digital economy.

Mukesh Valabhji, chief executive officer, Intelvision, said the new cable will revolutionise the internet experience in Seychelles and strengthen the local telecommunications infrastructure. The collaboration is expected to reduce connectivity costs for national telecom operators and the public, as well as stimulate competition for fixed broadband and mobile data services.

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Murray Wales, Principal Consultant at DXC Technology – Connect, and an experienced integrator of complex communication solutions, highlighted the value of the longer form frequencies: "When running large mines, organisations spread their operations across vast sites, often including ports or railway facilities, and across difficult or hazardous terrain. These could include mountainous and heavily forested areas, with variation between snow topped peaks and tropical vegetation. Torrential rain is a frequent operational hazard, as of course is the huge distance to first aid or maintenance support.

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Sepura's VHF TETRA solution enables users to take advantage of powerful mission critical solutions.

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Rwanda agrees satellite deal

The Rwanda Space Agency (RSA) signed a memorandum of understanding (MoU) with the Global Satellite Operators Association (GSOA), which will see the two parties explore ways to improve satellite communication services and accelerate digital inclusion in the country and across Africa.

According to GSOA secretary-general Aarti Holla-Maini, the agreement will facilitate the development of satellite communication services in Rwanda and provide support to the RSA to ensure that satellite spectrum are used for sustainable development.

In its report *The Mobile Economy Sub-Saharan Africa 2021*, the GSM Association (GSMA) revealed that mobile internet penetration was just 28% in 2020 while the mobile penetration rate was 46%. However, telecom operators and governments are looking for solutions to allow people access to telecom services, especially those living in rural areas with little or no terrestrial telecom service coverage.

The deal comes two years after the RSA was created, making Rwanda one of the few African countries with a space agency. Other African countries with space agencies, include Algeria, Angola, Egypt, Kenya, Morocco, Nigeria, South Africa, Tunisia and Zimbabwe.

South Africa to ban sale of 2G devices

South Africa will ban the importation and distribution of 2G devices by end-February 2023, according to the country's communications minister.

Speaking at the 2022 World Telecommunication Development Conference in Kigali, Rwanda, Khumbudzo Ntshavheni said the ban would help the "rainbow nation" shut down its 2G and 3G networks by 2025. The rationale behind the decision is to enable a robust programme to modernise South Africa's networks, Ntshavheni stated.

She said South Africa's mobile network operators would fully deploy 4G and 5G networks by 2025.

Ntshavheni also explained that these moves complement SA Connect, South Africa's broadband connectivity drive.

"The goal of SA Connect is to ensure that all South Africans have access to the internet by 2024," said Ntshavheni, before adding that the programme is driven through four initiatives.

Among these is satellite communication, with Ntshavheni announcing that South Africa is ready to launch its own satellite.

"The satellite will address both media and broadband connectivity objectives and will entrench our technology and data sovereignty," she continued.

SA Connect's other three initiatives all centre around connectivity at publicly-owned facilities.

MTN has said that it will likely switch off its 3G network before it can decommission 2G because the network remains in wide use for machine-to-machine applications. Vodacom previously announced plans to turn off its 2G network by 2024.

Cell C has said the prices of 4G and 5G-compatible devices were a significant barrier to switching off older network technologies.

In 2021, Vodacom called for regulatory intervention to stop the sale of cheap 2G-only cellphones in South Africa.

These devices are sold through independent retail chains such as PEP, Ackermans, and Mr Price.

Zimbabwe primed for first satellite launch

Zimbabwe is set to launch its first satellite, ZimSat-1, into orbit in July, after nearly a year-long delay caused by the Covid-19 pandemic.

The nanosatellite will be launched from the Japanese KIBO Module – Japan's science module for the International Space Station (ISS). The satellite is expected to enhance mineral exploration, monitoring of environmental hazards and droughts, mapping human settlements and disease outbreaks, among many other capabilities.

The programme is considered the first baby steps of the country's fledgling space programme, which was launched in 2018 following the launch of the Zimbabwe National Geospatial and Space Agency (ZINGSA).

ZimSat-1 was built by local engineers working with the Kyushu Institute of Technology in Japan and will be launched by the Japan Aerospace Exploration Agency.

ZINGSA coordinator Painos Gweme told The Sunday Mail that the satellite will be launched between July and August depending on weather conditions.

Once ZimSat-1 is in orbit, Zimbabwe will become the 14th African country to enter space. The nanosatellite is an earth observation CubeSat, which falls under the small satellites category deployed by new space-faring countries.

Egypt has the most launched satellites (nine), followed by South Africa (eight), Algeria (seven), Nigeria (six) and Morocco (three). Ghana, Sudan, Ethiopia, Angola, Kenya, Rwanda and Mauritius complete the list.

Since its launch, ZINGSA has developed a National Wetlands Masterplan through its Geospatial Science and Earth Observation department. The department also developed a Revised Agro-Ecological Map for Zimbabwe, which was last updated in 1960.

Tanzania: mobile money transaction fees reduced by 43%

Mobile money (MoMo) subscribers in Tanzania will be much better off after the government said it would reduce mobile money transaction fees by 43%.

In efforts to raise its revenue collections the government in 2021 imposed a tax on mobile money causing an outcry from the public.

However, Tanzania's finance and planning minister Mwigulu Nchemba said in parliament on June 14, while presenting the national budget for financial year 2022/23, that the government was taking steps to help MoMo users.

"I propose, amendments to the National Payment System Act, CAP 437 by reducing mobile money transaction levy on sending and withdrawing monies from a maximum of Sh7,000 currently to a maximum of Sh4,000 on each transaction," he said. "Along with that, I propose to extend the base and include all electronic transactions. This measure is intended to reduce the cost of living for Tanzanians, especially during the current period of ongoing economic crisis, and to rationalise the transaction levy."

Meanwhile, Tanzania has registered 3.2 million more mobile money subscribers in the first quarter of 2022. The country had 35.7 million subscribers as of March 2022, which was up from 32.5 million in January, according to a report.

"Figures show an increase in the use of mobile financial services in the country, which has been increasing year after year or every quarter," the Tanzania Communications Regulatory Authority (TCRA) said in its first quarter report released at the end of May.

Intelsat and Ragasat partner in DRC

Intelsat has partnered with the Democratic Republic of the Congo (DRC) satellite services company Raga Sat to launch a platform capable of providing new connectivity solutions in the Kingabwa district in Kinshasa City.

The former has chosen the central African nation after successful experiences in Japan, the US and Germany.

"Through this platform, we are empowering service providers and mobile operators to expand their network," said Jean-Philippe Gillet, vice president of Intelsat. He added that "it's a network extension, but it's also a network quality extension".

In setting up this platform, Intelsat and Raga Sat RAGASAT, are pursuing an ambitious goal of providing new solutions that cover rural territories and provide connectivity to all people who need it.

Gillet added that the new platform also offers the possibility of providing back-up services to those already existing.

"Throughout the country, mobile operators will be able to connect more people. It's not only people, but it's also roads, it's regions that we want to cover," he said. "All this is done with a reduced investment."

A platform shared among multiple customers and allows for rapid and reduced investment deployments means that mobile operators will be able to use this service to provide connectivity to their subscribers and expand their coverage area.

"This teleport is the culmination of several years of effort, sacrifice, perseverance and determination to make a difference in the telecommunications sector in order to ensure optimal service, professional, for all customers, to international standards," added Philippe Israel, director general, Raga Sat. "The long-term vision is not only to increase the overall penetration of broadband Internet in the city of Kinshasa but also to provide solutions that will allow mobile operators to extend their network across the country in order to increase the connectivity rate."

For him, the opportunity to collaborate and accompany the

world leader in satellite sector Intelsat is a pride for RAGASAT. This will allow both entities, he said, to continue to contribute to the vision of the Congolese Head of State, Felix-Antoine Tshisekedi, to make broadband Internet accessible to all.

The ceremony saw the participation of the famous basketball player Mutombo Dikembe, who is a shareholder in the project.

Türksat 5B ready to serve Africa

Türksat 5B telecommunication satellite has reached orbit and is now in its orbital slot of 42 degrees east longitude, covering north, eastern and southern Africa.

The new satellite, which will also cover the entire Middle East, the Persian Gulf, the Mediterranean, as well as Turkey's neighbouring countries, was launched

in December 2021 on SpaceX's Falcon 9 rocket from Space Launch Complex 40 at Cape Canaveral in Florida.

It was launched to geostationary transfer orbit, where it reached 42 degrees East to provide high throughput Ka and Ku-band services.

"After a five-month journey [launched by SpaceX on December 19th 2021] Türksat 5B reached orbit on May 17th," said Adil Karaismailoğlu, the Turkish, transport and infrastructure minister. "Performance and orbit tests were conducted successfully. Now it is time to put the satellite in service."

The satellite was built by Airbus Defense and Space and ordered back in 2017. Thanks to its onboard electric propulsion it has a potential life expectancy of approximately 35 years.

Another new craft will also soon join Türksat's fleet. Türksat 6A will

launch in 2023 and is being built in Turkey at the TUSAŞ facilities in the capital, Ankara.

Tanzania gets 5G help from China

Tanzania will benefit from China's support in promoting the distribution of information and communication technologies, after the countries signed a deal for the adoption and development 5G mobile technology in the country.

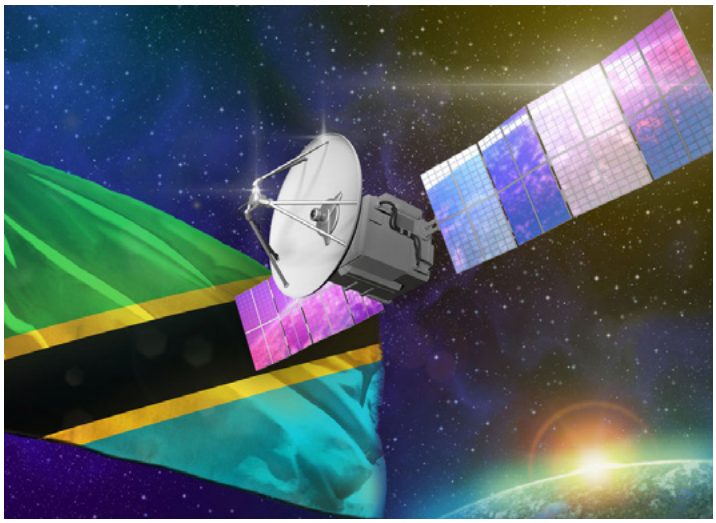
Discussions also covered the deployment of telecommunication services in inaccessible areas (especially in rural areas), cybersecurity, Tanzania's candidacy for the International Telecommunication Union (ITU) Council.

"Basically, we also agreed to further improve the issue of online security, especially in the area of capacity building of our ICT experts, technology exchange programs that will enable the development of cross-sectoral economic development sectors such as agriculture, health, internet commerce, etc.," said Nape Nnauye, Tanzania's minister of information, communications and information technology.

This partnership comes less than a month after the Tanzanian authorities authorised investments in 5G, much to the delight of operators such as Vodacom, which has been displaying its ambitions for this technology since 2020.

Tanzania will therefore benefit from the experience and expertise of Chinese technology companies such as Huawei and ZTE for the deployment of 5G and related technologies.

According to the signatories, this agreement is expected to boost economic development and increase employment, especially for youth, through technological innovation," added Chen Mingjian, China's ambassador to Tanzania.



China also pledged to continue to cooperate with Tanzania to ensure that the goal is achieved.

In April 2021, Tanzania's president Samia Suluhu met with the leaders of the Chinese Chamber of Commerce in the country to discuss various issues pertaining to trade and investment. The Chamber informed that 800 Chinese companies are ready to invest in Tanzania in telecoms as a priority.

Namibia: MTC and regulator end 10-year dispute over fees

Mobile Telecommunications Limited (MTC) and the Communications Regulatory Authority of Namibia (CRAN) recently settled out of court a decade-long dispute over the legality of regulatory fees levied by the regulator.

According to Emilia Nghikembua, executive director, CRAN, the agreement ended a "long, protracted and costly litigation process. She said it is "a crucial step in restoring a harmonious working relationship" between the two institutions for the benefit of information and communication technology (ICT) consumers. The parties also agreed to withdraw all cases pending between them in the High Court.

In 2012, MTC and other industry players had challenged Section 23 of the Communications Act 8 of 2009 in the High Court to determine the constitutionality of the regulatory charges applied by CRAN. The said section provides that the regulator may, "by regulation, after following a rule-making procedure, impose a regulatory charge on communications service providers to cover its regulatory costs." It was finally replaced in 2018.

"We are particularly pleased that we can now jointly focus on promoting technological innovation and the deployment of advanced facilities and services to support Namibia's social and economic growth," Nghikembua added.

Cell C prepares for 5G deployment

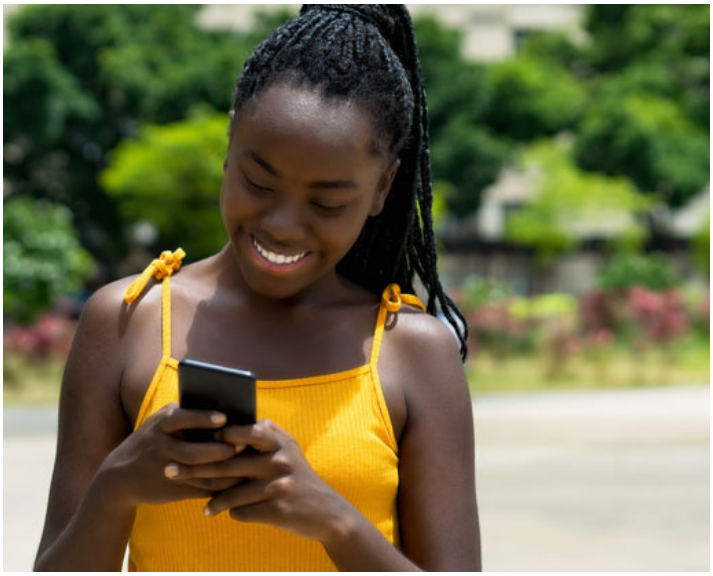
South African operator Cell C plans to add fifth-generation (5G) mobile technology to its network, a senior official told local media.

Schalk Visser, the company's chief technology officer, told local media that plans are underway to roll out the technology.

It is understood Cell C is currently in talks with its infrastructure partners to deploy 5G. However, a commercial launch date for the technology has not been disclosed. The announcement comes three months after the auction of South Africa's high-speed telecom spectrum. Cell C walked away with 10 MHz in the 3,500 MHz band for US$18m.

In October last year, Cell C said it had upgraded nearly 40% of its network to vRAN (virtual radio access network). This allows it to run its baseband functions as software on other network operators' hardware. Cell C continued to upgrade, with the transition to vRAN nearly 50% complete. These upgrades will facilitate the company's expansion of 5G across the country.

Cell C's ultra-broadband investments come against a backdrop of accelerating demand for broadband connectivity across the continent, driven by digital transformation and new digital consumption patterns of the population. Once deployed, 5G should enable the telecom company to retain its subscribers by providing them with ultra-fast connectivity and to attract new ones. This will enable it to expand its subscriber base and improve its revenues, the operator said.



Moov increases internet speed

Moov Africa Gabon Telecom said all subscribers to its Duo Fibre Jet and Duo Fibre Super Jet services will see their FTTH power quintupled up to 500 megabits per second at no extra cost.

To make this possible, the first internet provider in central Africa has decided to multiply the speed by up to five times.

"Today we are reaching a new milestone with the exclusive launch in Gabon and the sub-region of the first FTTH connection with a speed of 500 megabits/s," said Zouheir Jorio, director general, Moov Africa Gabon. "True to our commitment to the democratisation of broadband, we already offer the service in the country's hinterland."

In 2014, the operator became the first in central Africa to launch a 4G network. In 2016, it was the turn of the fibre to the home (FTTH) internet network to be launched on the Gabonese market before the operator experimented with the 5G network in 2019.

The announcement was made in the presence of the president of the Regulatory Authority for Electronic Communications and Posts (ARCEP), Lin Mombo.

In April, Moov Africa Gabon Telecom won the award for the fastest fixed network and the fastest mobile network in Gabon by Ookla via its Speedtest application.

Al Nahla Group to invest US$120m in Smile Communications Tanzania

Pan-African telecom group Smile Telecoms Holdings, which operates in Tanzania, the Democratic Republic of Congo (DRC), Nigeria and Uganda will benefit from a US$120m financing from its majority shareholder Al Nahla Group.

The company, which was under threat of liquidation in March 2021, can now expand its network footprint in Tanzania, among other things.

Zuweina Farah, country manager, Smile Tanzania, said the new investment will enable the mobile operator to continue offering the best 4G LTE broadband internet services in Tanzania. Using the latest technology in the field, the company plans to provide its subscribers with "speeds of up to 50 Mbps."

The investment pledge follows Smile's restructuring plan announced in early February, which included "the takeover of the company by the super senior lender and additional new funding from the super senior lender."

In March 2021, Smile Telecoms was threatened with liquidation, mainly due to a US£365m debt raised five years earlier to finance its growth ambitions. However, the company was able to count on the last-minute rescue of Nahla Group, which invested US$51m after the approval of the operator's debt restructuring plan by its creditors. Public Investment Corporation (PIC), the pension fund of South African civil servants, which had lent US$50m to Smile Telecoms in exchange for 7.69% of its shares, was exercising its put option on its shares, which expired March 31, 2021.

Smile Group said the new funds implemented through the restructuring plan will strengthen and enable the company to "safeguard its operations and achieve its business objectives". Specifically, the group will further strengthen its position in its various markets, boost its operations and improve its efforts to achieve better telecom performance for consumers.

Talking critical

Tero Pesonen, chair of TCCA's Critical Communications Broadband Group and TCCA Board Vice-Chair

Managing the deployment of mission critical broadband applications

Around the world, the emergency services and other first responders are increasingly using broadband applications to augment existing mission critical voice and narrowband data services. This is catalysing a focus on the quality of 'mission critical' applications. Unlike consumer apps, mission critical apps may be supporting users in life or death situations, and there can be no weak link in the ecosystem. This means that the successful implementation of mission critical applications will be a complex task. TCCA, the global representative organisation for the critical communications ecosystem, has published an advisory white paper that looks at the key considerations that need to be taken into account when developing and deploying true mission critical applications.

Authored by TCCA's Critical Communications Broadband Group (CCBG), the white paper provides guidance for Public Protection and Disaster Relief (PPDR) operators and users as they define their strategies for deploying and managing mission critical applications utilising broadband systems. In parallel, the paper aims to inform application developers on the specific requirements for delivering mission critical solutions over broadband systems.

Operators of public safety networks need to clearly understand users' requirements and the risks they are prepared to accept when deploying mission critical applications. Different user groups have different requirements – it is important that these are well understood and addressed by the operator's application strategy.

Absolute trust

The paper emphasises the importance of the user experience. Users must absolutely trust their communications services, whether the network, the device or the application. Broadband technologies will enable a wide array of new applications to greatly enhance the effectiveness, productivity and safety of public safety users and other critical organisations. However, the introduction and management of these new applications on to mission critical networks will require careful planning.

For users to gain trust and confidence in using mission critical applications on broadband networks, users first need to understand where they can expect the applications to be available. In the UK, for example, the Emergency Services Mobile Communication Programme (ESMCP) has the 'ESN (Emergency Services Network) Assure' application that provides cumulative understanding of the broadband radio network coverage. This is an important step forward and helps the emergency services to measure and report on ESN coverage in their area, and report where improvements need to be made.

End-to-end assurance

To be truly mission critical, apps need to achieve end-to-end mission critical Quality of Service (QoS) levels in terms of priority, pre-emption, availability, security and resilience to ensure user trust. From secure hosting environments for the application servers, through the transport and cellular networks to the devices and their associated operating systems, each needs to be mission critical in its own right.

TCCA also highlights that to do their job effectively, first responders will typically require both mission critical and non-mission critical applications to be used on the same device. The white paper considers the use and potential misuse of device resources and how they are shared between the applications running on the device. As mission critical applications may depend upon services provided by third parties, the whole chain of device and application support must be carefully managed to avoid degraded operation.

Mobile application development moves very quickly compared to traditional government projects. Many applications provide new functionality every month, of which the users will want to take advantage. The validation and testing process should support this speed of development by, for example, having a lightweight process for minor updates of existing applications, or accepting validation or certification done by selected similar organisations.

Security and bug fix updates for the mobile operating systems (OS) are important and should be deployed without extra delay. Minor updates to mobile OS are also common, and major updates with large changes typically take place yearly. Validating applications for each user or agency separately would be cost prohibitive for many applications. Work under way by TCCA and the Global Certification Forum to establish common interoperability testing for Mission Critical Services (MCX) protocols will enable a vibrant competitive interoperable market, as has been achieved through TCCA's TETRA IOP process.

Although targeted primarily at the PPDR sector, the white paper will also be of interest to any organisation requiring or dealing with mission critical broadband applications. The full paper, 'Mission Critical Broadband Applications: A guide for deploying and developing mission critical applications using broadband technologies' can be read at www.tcca.info/about-tcca/tcca-resources/whitepapers/

"The African telecommunications market shows a clear path towards digitalization. Omdia predicts that 95% of the LMR installed base in the region will be digitalized by 2025," says Ildefonso de la Cruz, a principal analyst in the public safety & critical communications group at OMDIA.

"Commercial telco networks show growth potential in mobile and fixed broadband that will come from a technology shift driven by service providers to recover from the effects of the COVID-19 pandemic. Telcos are looking for ways to monetize their network assets and exploring innovative partnerships with regulators solutions providers and vendors.

"Due to the cost sensitivity in the region, when it comes to mission-critical technology there will be a preference for LMR with slow adoption of LTE to enhance existing mission-critical voice networks. However, OMDIA forecasts the broadband mission critical device market and service revenue to double up from 2021 to 2025."

Seacom negotiates US$260m in IFC financing for expansion project

Fibre optic specialist Seacom is negotiating up to US$260m in financing from the International Finance Corporation (IFC) to expand its footprint to at least 12 countries in Africa.

The proposed investment from the World Bank's private sector financing arm for emerging markets, includes US$100m from its own funds and US$160m raised from other commercial banks and shadow lenders.

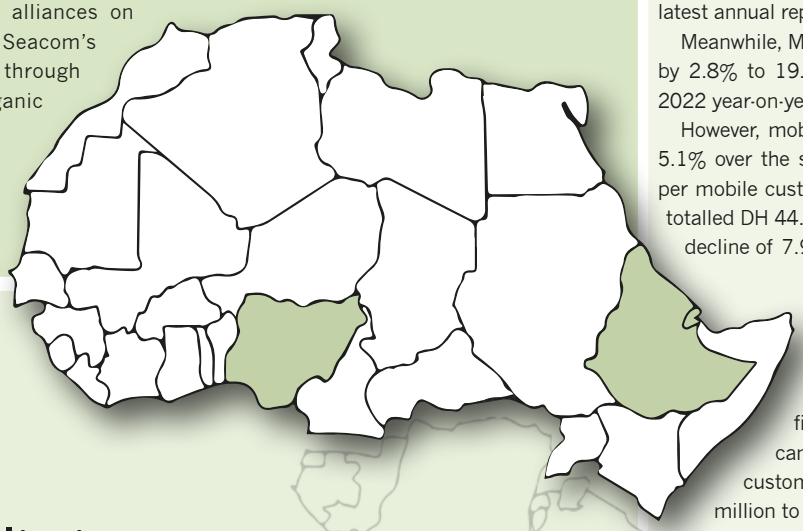
It is estimated the total project cost is US$563m.

Through the project, IFC will help Seacom expand its business services capabilities for SMEs, medium-sized and large companies in South Africa, as well as east and west Africa.

The company will leverage its 21,000 km fibre network and its strategic alliances on the 2Africa and Equiano cables. Seacom's growth strategy will be achieved through strategic acquisitions and organic growth initiatives in its markets.

If approved, the funding support will add to Seacom's financing operations to expand its geographic footprint across the continent and diversify into the provision of business services. Back in 2019, the company conducted a study on the market potential for fibre optic services in Tanzania, Uganda, Kenya and Rwanda with funding from the US Trade and Development Agency (USTDA).

According to IFC, Seacom's successful expansion of submarine or terrestrial cable capacity is expected to lower the wholesale price and level the playing field among retail operators, thereby improving the competitiveness of retail markets with improved accessibility and quality of connectivity in the target countries concerned.



Airtel Uganda applies for extension to listing deadline

Airtel Uganda has applied to the Uganda Communications Commission (UCC) for a one-year extension to the December 15, 2022 deadline to list on the Uganda Stock Exchange (USE).

Under the country's National Telecom Operator (NTO) licence, the operator is obliged to comply with the sector policy, regulations and guidelines requiring the listing of part of its shares on the USE.

It is also a requirement of the Capital Market Authority (CMA) that all foreign-owned telecommunications companies to list 20% of their shares on USE according to its 2021-2025 realigned Strategic Development Plan.

Under new licencing rules, service providers must guarantee the listing of shares on USE as well as network coverage to at least 90% of the geographical location of Uganda

within five years from the effective date of the licence.

"The current Uganda Communications Regulations 2020, creates a public listing obligations for all NTOs licencees and specifies that 20% of the shares of the operator must be listed within two years of the date of the effective date of the licence," said Airtel Uganda. "We have applied to the UCC for an extension on the deadline."

The operator made the official application April 5 this year, according to its financial report for the period ended March 31, 2022, but gave no reasons for the request.

Airtel Uganda is the country's second largest operator with 10 million subscribers.

Maroc Telecom customer base hits 76 million

Maroc Telecom Group (MTG) said its IAM customer base grew to 76 million in the first quarter of 2022, with the company opening new bases in sub-Saharan Africa.

IAM is Morocco's largest internet provider with premises across the continent in countries such as Burkina Faso, Côte d'Ivoire and Mauritania.

The customer base increased by 3.6% from the same period last year, while MTG gained north of 2.8% Moroccan customers and 4.4% more from its African subsidiaries.

The number of customers signing up to the company also increased by nearly 2% in 2021 compared to 2020, according to its latest annual report.

Meanwhile, MTG mobile clients in Morocco grew by 2.8% to 19.86 million in the first quarter of 2022 year-on-year.

However, mobile revenues in the country fell by 5.1% over the same period. The average revenue per mobile customer in the first quarter of 2022, totalled DH 44.9 per month (US$4.59), which is a decline of 7.9% from the first quarter of 2021.

The mobile customer base in sub-Saharan Africa increased by 4.4%, from 49.6 million people in last year's first quarter, to 51.78 million in this year's first quarter. The biggest increase came from a 13.7% rise in mobile customers in Mauritania, from 2.66 million to 3.03 million.

Egypt's NTRA removes illegal networks in Giza

The National Telecom Regulatory Authority (NTRA) in Egypt has removed unlicensed wireless networks in major areas in Giza governorate, the watchdog said. Unlicensed networks had a negative impact on the quality of telecom services in Haram, Faisal, Kirdasa and the surrounding areas. This resulted in quality issues in terms of voice and data transfer services. Service levels were consequently boosted at such areas, according to the measurements conducted by NTRA post removal. In fact, this step comes in line with the NTRA's role to govern and regulate the telecom market as well as improve the levels of service provided for users.Many users living in Haram, Faisal, and Kirdasa complained about poor service quality in these areas.

NCC opposes operators' proposed 40% tariff hike

An annoucement from The Nigerian Communications Commission (NCC) acknowledged the receipt of a letter from the Association of Licensed Telecommunication Operators of Nigeria (ALTON) requesting a 40% increase in the tariffs of certain telecoms services.

According to the regulator, this proposal cannot be implemented at this time, as the issue requires a rigorous cost-based study and due process.

"In line with international best practices and established regulatory procedures, the NCC ensures that its regulatory activities are guided by regular empirical cost-based studies to determine the appropriate costs (top price and floor price) within which service providers are allowed to charge their subscribers for the services provided," a statement said.

Since mid-March, operators mooted a possible increase in telecom service rates due to higher operating prices. In early May, the Association of Licensed Telecoms Operators of Nigeria sent a letter to the NCC in which it proposed a 40 percent increase in the cost of calls, SMS and data.

Subscribers objected, claiming it was inappropriate, especially given the economic difficulties they are currently facing.

The NCC issued a reminder to telecom operators that any proposals to increase tarriffs, must be refered to the NCC first, even if such proposals might be justified.

MTN committed to investing more in Ghana, says CEO

MTN is committed to investing more in Ghana despite the current economic environment, said visiting group executive Ralph Mupita.

Speaking at a media engagement in Accra, he said his company has taken the decision because of Ghana's role in the group and return on investments.

"We want to have a sustained investment programme so that in a market like Ghana, every Ghanaian has the capacity to enjoy the benefits of a modern connected life," Mupita said. "And we are not changing view. So, if we are true to that vision, then we must sustain the CAPEX [Capital Expenditure]; and therefore we are not going to review that commitment when it comes to investment in Ghana."

Mupita's comments come on the back of fears that due to the current challenges facing the economy which has resulted in inflation hitting 23.6% in April 2022 as well as rising taxes on the company's operations, MTN might have reviewed its capital expenditure.

However, Mupita said the company is committed to aligning itself to a programme like the Ghana Cares initiative by the Ghanaian government.

Angola: Africell claims two million new subscribers in one month

Africell, the US business and first wholly foreign-owned operator licensed to provide mobile services in Angola, has signed up two million subscribers just one month after launching its operations in the country.

The company officially started commercial operations in Angola April 7, joining Angola Telecom, Unitel and Movicel. The commercial launch comes 14 months after the US group was awarded Angola's fourth unified telecommunications licence. It was granted as part of a national reform initiative to welcome more competition and innovation in key sectors of the economy, including telecommunications.

In February 2021, Africell settled the financial obligations related to its telecom licence. Since then, the company has invested more than U$150m in the market to build a high-quality 5G-capable network with an initial capacity of more than 6 million subscribers.

These various investments by the company have been made possible by the new investment-friendly climate that president João Lourenço has put in place.

With the introduction of new products and services, Africell plans to bring more competition to the Angolan telecom market. The company also aims to stimulate economic growth and social development by creating more than a thousand jobs, mostly for Angolans.

Airtel Africa to raise US$194m via debt from IFC

Airtel Africa has proposed to raise US$194 million through debt from the International Finance Corporation (IFC), the company said.

The subsidiary of Indian giant Bharti Airtel said it will use the funds to support network investment plans across seven subsidiaries as well as refinancing the existing loans.

"IFC will support the project with a debt package of up to USD 150 million from its own account and up to USD 44 million in mobilisation from MCPP (Managed Co-Lending Portfolio Program) funds," IFC said in a disclosure on its website.

The funds will be used to support the telco's operations and investments across Chad, Democratic Republic of Congo, Kenya, Madagascar, Niger, Republic of Congo and Zambia.

Airtel Africa is an integrated mobile network operator in 14 countries across sub-Saharan Africa.

Airtel Kenya secures 10-year telecoms licence

Airtel Kenya has forked out US$5m (Sh581m) to the Communications Authority of Kenya (CA) as part payment for its operating and spectrum licence running from 2015-2025.

The operator now has a balance of US$15m (Sh1.7bn), which it is expected to settle over the next three years. The latest tranche adds to a recent US$10m (Sh1.1bn) for a separate spectrum increase and which it will be allowed to use for a decade.

Cumulative pay outs to the regulator stand at US$15m (Sh1.7bn).

"Under this agreement, Airtel Kenya agreed to pay a total of $20 million (Sh2.3bn) in four instalments over the next three years," the telco's parent firm Airtel Africa said in a statement. "The first instalment of US$5m (Sh581m) has been paid and for the balance amount, a deferred payment liability has been recognised in the consolidated financial statements."

The payments are the outcome of an out-of-court settlement with the Kenyan government.

Licence renewal hits MTN Rwanda's post-tax profits

MTN's decision to pay off its US$91m licence renewal fees under a 10-year amortisation agreement in its Rwanda arm has had a 39.6% "negative" impact on its profits after tax for the quarter period, the mobile operator said.

Following a renewal of its licence last year, the firm will make the second instalment payment in July this year. Payment for the fees for the licence, valid for a period of 10 years, follows renewal of the permit by the Rwandan government last year.

"Following the renewal of our operating license in 2021, we are well on track to complete the second instalment of the Licence Fee payment by July 2022," said Mitwa Ng'ambi, chief executive officer, MTN Rwanda.

Amortisation of the licence has "resulted in a negative impact on profit after tax which closed at US$3.9m", the company added. MTN Rwanda posted an after-tax profit of about US$6.6m in the previous contrasting period.

MTN has 6.5 million mobile subscribers in Rwanda, with data users accounting for 2.2 million of these and 3.8 million making up its mobile money user base in the country.

Data service revenue "maintained its positive momentum, rising by 13.8%" solidified by "increased subscribers and usage and supported by increased network capacity".

The number of homes connected to the telco's fixed wireless and fibre-to-the-home has now surpassed 4300, boosting its active data user acquisition for the quarter by 453 000.

Mobile money users were also 12% stronger, contributing to a 24.5% uplifting in overall service revenues to US$48.8m.

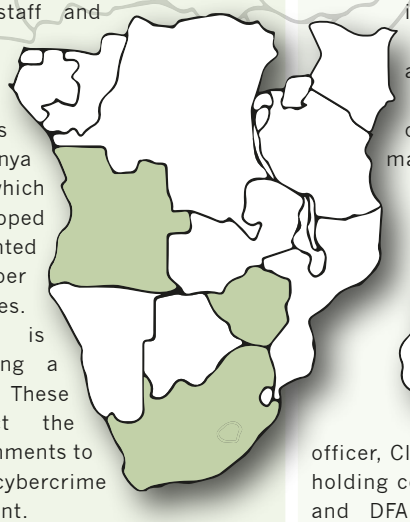
Lesotho: telecom operators to begin SIM card registration

Cell phone operators in Lesotho will have to start registering their subscribers' SIM cards from June 24, in a process that will take place over a period of twelve months.

Vodacom Lesotho and Econet Lesotho, the country's two main telecommunications companies, said they were ready to begin the operation on the scheduled date. "We have contributed to what has now been enacted as law and we would like to inform our customers that we are ready to start registration on the date indicated," said Mohale Ralebitso, managing director, Vodacom Lesotho. "We will start with the piloting process of ensuring that the processes and devices we have purchased are effective to start rolling out registration across the country."

The operators will use national identification and civil registration to identify customers during the operation. For corporate SIM cards, one proxy will be selected per company for registration. SIM cards that are not registered at the end of the process will be removed from the network service provider's system and decommissioned.

In December 2021, both houses of parliament approved the Citizens' SIM Registration Bill in Lesotho, after first rejecting it in order to conduct further "consultations with various stakeholders. Since then, network operators have stepped up investments to ensure that the process runs smoothly. Vodacom says it has already invested US$8.1 million to prepare for the launch. These funds have been used to recruit new staff and purchase devices.



Lesotho will join several African countries such as Kenya and Nigeria, which have developed and implemented telecom subscriber registration policies. South Africa is currently preparing a similar process. These initiatives reflect the ambition of governments to combat the rise of cybercrime across the continent.

SIM card registration is of strategic importance to operators and the nation because it will allow them to know "that a certain phone number belongs to a certain individual and that he or she is certainly the only owner" in order to avoid cases of sim boxing, financial scams, kidnapping, terrorism and related crimes.

Registration is provided for in the Communications (Subscriber Identity Module Registration) Regulations 2021.

CIVH merges Vumatel, DFA into one large fibre firm

South Africa's Community Investment Ventures Holdings (CIVH), the Remgro and New GX-controlled parent company of Dark Fibre Africa (DFA) and Vumatel, said its two fibre network assets will be managed under a new infrastructure company.

In a statement, the company says this decision is a strategic step to meet ongoing customer and business requirements and increase open-access offerings across the networks.

The move comes as competition in the South African fibre market continues to heat up in what has now been termed the "fibre land grab".

However, CIVH says the infrastructure entity's name has not yet been announced.

Although its two most significant operating subsidiaries (DFA and Vumatel) will be incorporated into this new infrastructure entity, CIVH says each business will initially continue to operate separately.

Dietlof Mare and Byron Billett, current executives of Vumatel, have been appointed chief executive officer and chief financial officer, respectively, of the new infrastructure business.

Andries Delport will continue as chief executive officer of DFA and will be an integral part of the infrastructure company management committee.

"The fibre-to-the-home market is constantly evolving, especially in the open-access environment, and fibre network operators have to be able to evolve at the same pace," said Raymond Ndlovu, chief executive officer, CIVH. "The establishment of this holding company will enable both Vumatel and DFA to expand their open-access network infrastructures to meet customer requirements, with the ultimate goal of connecting more of South Africa to high-capacity fixed-line infrastructure," he said.

Vumatel pioneered fibre-to-the-home in South Africa and has since connected thousands to the internet in Cape Town, Durban and Johannesburg. The company, which has a footprint in excess of 600,000 homes, anticipates there are at least a further 700,000 homes in emerging markets.

‘Leaders say internet is important for growth’

More than a quarter of senior business executives believe improving internet connectivity is vital to continuing economic growth in sub-Saharan Africa where around 28% of the population are connected to the internet, according to new research for blockchain-based mobile network operator World Mobile.

Around 27% of executives say it is important to boosting growth, while nearly two-thirds (65%) say its role in boosting economic growth will increase over the next three years as societies become more digital and technology focused.

“Central to continuing growth in sub-Saharan Africa is internet connectivity and its importance will only grow in the future. World Mobile’s network based on the sharing economy sells affordable network nodes to local business owners, so they have the power to connect themselves and others while sharing the rewards,” said Micky Watkins, chief executive officer, World Mobile. “This will enable more people to access the opportunities that internet connectivity creates.”

World Mobile is working with the government in Zanzibar where it is launching a hybrid mobile network delivering connectivity supported by low altitude platform balloons. It plans to expand the network throughout the continent and is in discussions with government officials in Tanzania and Kenya, as well as other territories underserviced by traditional mobile operators.

The balloons will be the first to officially launch in Africa for commercial use, offering a more cost-effective way to provide digital connection to people and is the first step in its mission to help bring nearly four billion people online before 2030 in line with the UN and World Bank’s SDGs.

World Mobile’s study surveyed senior executives at companies with combined annual revenues of US$6.75bn based in Angola, Botswana, Cameroon, Ethiopia, Ghana, Nigeria, South Africa and Tanzania.

Talking satellite

Martin Jarrold, Vice President International Programme Development, GVF

Getting space business qualified

GVF, through its training division – SatProf, Inc. – has for 21 years been engaged in the provision of satellite earth station/terminal installer training and certification. This year, GVF’s Silver Anniversary, we have added to our training/education portfolio, taking an additional direction with the satellite industry’s first comprehensive online non-technical education programme and curriculum to offer individual courses, full modules and a “Space Business Qualified” (SBQ) certification path.

With the SBQ, GVF is once again working with SatProf. Our other partner is Space & Satellite Professionals International (SSPI). The three satellite industry trade groups have a combined 80-years of experience in space industry education and in launching this new online learning programme we will satisfy the need of new and established businesses and employees in the commercial space industry to learn about all aspects of the business, enabling industry professionals to become “space business qualified.”

The 21-years of GVF’s work in installer training and certification – having the objective of building a global force of qualified VSAT installation technicians available in local areas to support expansion of VSAT networks everywhere – resulted from the industry’s increasing recognition that training is a first line of defence against satellite radio frequency interference (RFI).

The industry has long agreed that improved training reduces uplink errors and improves equipment maintenance and installation practices. The World Broadcasting Unions-International Satellite Operations Group (WBU-ISOG) – since 2015 the World Broadcasting Unions-International Media Connectivity Group (WBU-IMCG) – has formally adopted a resolution supporting industry initiatives for training. Today, GVF training has reached over 20,000 students globally, pursuing some 30+ courses across, for example, VSAT installation, marine terminal operation & installation, teleport & news gathering up-linking, mobile terminal operation, numerous general theory topics & equipment-specific training.

The space and satellite industry has grown far beyond the dreams of its pioneers and the handful of governments that initiated it. The commercial space industry is today a mature, fast-expanding, complex business. With a total size estimated at well over US$1 trillion dollars, it reaches deeply into dozens of vertical markets and other industry sectors. It is essential in the provisioning of communications, data and the digital transformation of much of the global economy and has become an invisible but indispensable part of everyday economic activity. Its growth is being fuelled by the financial community’s involvement as massive numbers of startups and new business models form within it. However, no industry course has offered a comprehensive learning experience to teach this, until now, and it was at the Satellite 2022 show in Washington DC on 21 March 2022 that the launch of SBQ was announced.

SBQ courses fill this gap, adding to the industry’s online training toolbox a body of non-technical education designed to improve the knowledge and performance of existing employees, increase the marketability of those seeking a job in the industry, and provide employers with an inexpensive way to both increase productivity and enhance employee retention in a hyper-competitive labour market.

The courses are taught through a mix of self-paced, interactive tutorials, videos, illustrations, and testing to validate understanding and reinforce learning, with fundamentals courses leading to more specialised courses in satellite communications, earth observation, spacecraft and launch. The programme will enable learners to focus on specific topics or to work through the course series to achieve their choice of certifications. A Free “Welcome to the Business of Space” course is offered as an incentive for individuals and companies to examine the courses being offered.

A full description of the SBQ courses can be found at www.SpaceBQ.org. You can also email info@SpaceBQ.org for information, and stay informed on current and future developments by joining the growing community on LinkedIn and Twitter and following #SpaceBQ.

After more than two years prevented from undertaking international travel I will shortly be resuming my travels to satellite industry events. First on my agenda is an event which takes place in Dubai in the UAE, but which additionally addresses much of Africa and south Asia. At CABSAT 2022 GVF presented and moderated three Summit sessions, which were held on 17 & 18 May:

- **‘Stakes and Solutions in Responsibly Managing Space’** Sustainability is a global priority across all industries and organisations, and should extend beyond our planet too. This panel addressed multiple facets of sustainability with discussion points covering why we should care about our impact on space, whose responsibility it is to keep space clean, the risks of not responsibly managing our impact, and the tracking of orbital objects, including other solutions and best practices, to help us responsibly manage our use of space.

- **‘Disruptive Evolution in the Satellite Ground Segment’** Satellite’s ground segment, antennas in particular, is undergoing game-changing innovation. With the rapid growth of satellite networks in non-geostationary satellite orbits (NGSOs), and applications including machine-to-machine and people communications this part of the satellite industry is evolving to deliver, the panel addressed developments in the use of metamaterials, in power efficiency and in interference prevention, examine how satellite will reach full potential in delivering services across business, government, and consumer, together with discussing the benefits and challenges to adoption of flat panel alternatives to traditional parabolic antennas.

- **‘Driving a New Space Innovation Paradigm with Artificial Intelligence and Machine Learning’** AI and ML are being increasingly applied to foster innovation in the satellite and wider space industries. Impacting multiple areas of space operations, the panel explored how the satellite industry is leveraging AI and ML to revolutionise business. The panel will touch upon areas including optimisation in satellite autonomous control, in-orbit servicing/refuelling, and spacecraft decommissioning, data-gathering, analytics and management, and advances in software-defined networks and the design of new satellite terminals.

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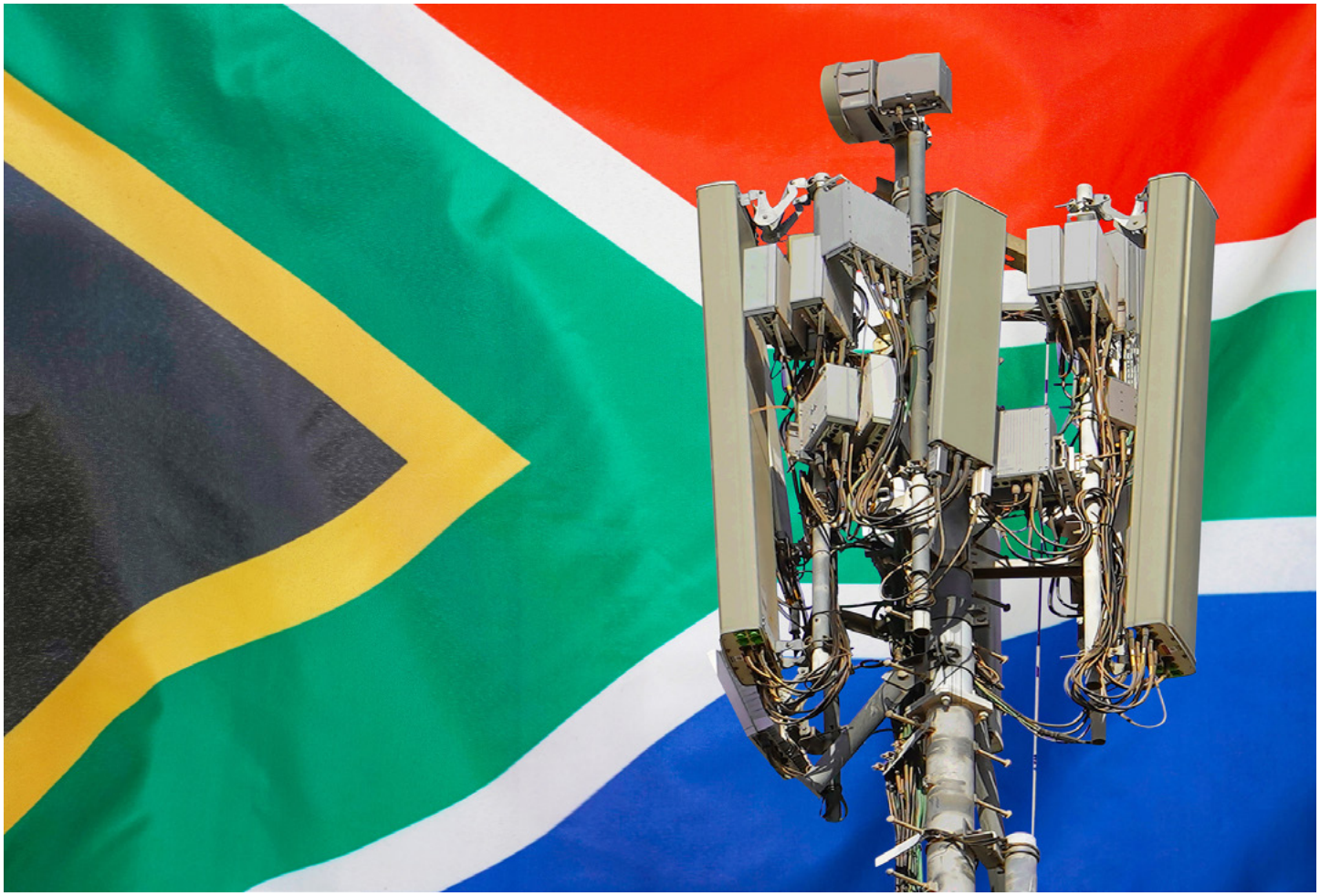

Critical communications: dealing with disaster

Recent floods in parts of South Africa have caused widespread devastation – putting critical communications under the spotlight. Robert Shepherd speaks to those keeping the continent connected

The tragedy of the recent floods in South Africa's KwaZulu-Natal province brought critical communications to the fore – but not necessarily for the right reasons. Devastating landslides and gushing water damaged or completely destroyed north of 900 base stations for MTN and Vodacom alone. Not only did the 'act of God' and the resultant impact on the province's infrastructure highlight the immediate benefits of a flexible internet telephony network, but many businesses were also left without critical communications to their employees.

As one can imagine, this made search and rescue missions even more difficult to conduct. In this most recent scenario, help was at hand courtesy of an unlikely and unorthodox hero – South African VOIP wholesaler, Wanatel, which highlights how voice over IP (VOIP) has risen to the challenge in these devastating scenarios. A cloud-based VOIP PBX (private branch exchange) system uses the internet to make calls, so it doesn't require nearly as much physical infrastructure or hardware as a traditional phone system. Furthermore, it also allows businesses to make or take calls from anywhere on any internet-enabled device, regardless of location.

"We teamed up to assist our network of resellers in KZN in diverting calls, facilitating rerouting to other branches or mobile contact numbers," Evan Damon, wholesale channel manager for Wanatel said at the time. "Usually our resellers run their own customer networks, using the functionality behind the scenes to manage customer VOIP

"It has been proven time and time again, all around the world, that having robust and reliable communications systems is essential when managing major events, whether planned or unplanned"

accounts. This week, though, it was all hands on deck, to support and help every reseller to get their customers connected as quickly as possible." Damon points out that the flexibility of a cloud-based VOIP system is the key. By redirecting calls, changing top-ups to accounts and ensuring communications are essentially rerouted to avoid outage, communication can be reinstated and diverted from damaged or destroyed infrastructure.

Of course, when it comes to mission critical situations, nothing is more important than the emergency services because we're talking about life and death situations. So, when it comes to the response to disasters, it's only natural that questions will be asked about the state of mission-critical networks the length and breadth of Africa.

Mobile network operator Vodacom won plaudits back in 2017 when the Midrand-headquartered telco Vodacom successfully demonstrated the first broadband multimedia trunking solution on a commercial LTE network in Africa. The solution makes it easier and faster for public safety industry to communicate and it incorporates latest multimedia functions which makes it quick to avert disaster situations.

Vodacom partnered with Chinese tech giant Huawei for the demonstration to use Huawei's LTE integrated Trunked Radio (LiTRA) application to demonstrate a broadband multimedia trunking solution which runs on the operator's commercial, nationwide LTE network.

That said, it was five-years-ago and things have moved on since – not to mention a number of disasters.

No country or continent is more important than the next, but when it comes to natural disasters, countries with inferior infrastructure will be hit hardest by natural disasters. Africa houses most of these nations. In other words, one could argue that some countries need robust critical comms more than others. Time for some facts.

The World Bank Group, Africa's Pulse, October 2021 edition reveals that, overall, when it comes to climate-related natural disasters, droughts have affected the most people. What's more, it's primarily those living in the Horn, Sahel, and southern regions on the continent.

After droughts, flooding incidents affect the most people across the continent, even if they are concentrated in a few countries: Kenya, South Africa, and Mozambique experienced 75% of the region's floods and storms. Notably, Kenya and South Africa individually were most affected by drought.

Somalia experienced the highest death toll from natural disasters, due to its 2010 drought. Mozambique had the second-highest death toll, largely caused by Cyclone Idai that battered the country in 2019.

"It has been proven time and time again, all around the world, that having robust and reliable communications systems is essential when managing major events, whether planned or unplanned," says Mladen Vratonjić, board chair

of TCCA, the global representation organisation for the critical communications ecosystem. "TCCA is a strong advocate of open standards technology. This encourages competition, helping to keep quality levels up and costs down, ensuring a wide choice of suppliers, catalysing innovation and preventing the emergence of expensive proprietary products. We would urge governments of all African countries to ensure they are implementing the best possible services for their first responders and emergency services – the quality of the communications can be the difference between effectively managing a crisis situation, or seeing a disaster turn into a tragedy."

Paul Ward, director of international commercial and marketing activity for ETELM, a manufacturer of TETRA infrastructure technology based in Paris, France, says his company has a rich history on the continent.

"ETELM has supplied many mission-critical communications infrastructure solutions to the Africa region for over 30 years," he explains. "We supply essential communications for a variety of sectors in the region including transportation, oil & gas and security applications. We recently supplied a complete mission critical system to Kenya Wildlife for protection of endangered animals against poaching etc. This is a critical application in providing communications to support anti-poaching operations to optimise the task of preventing poaching of all endangered wildlife in the area."

Another key supplier in Africa is Sepura, which operates in the transport and utilities sector, providing tough radios in hazardous, heavy use environments.

To give you an idea as to Sepura's pedigree in Africa; in 2010 kitted out South African police when the country hosted the FIFA World Cup.

Three years later, Sepura has won a contract to provide mobile radios to the South African Police Service (SAPS) throughout the Gauteng province.

In 2020, Sepura partner Consort Digital deployed a complete communications solution to the island of Mauritius, providing voice and data communications via Sepura TETRA radios to the new Mauritius Metro Express.

"Our mobile and hand-held radios are used by rail, metro and bus organisations to ensure their staff are kept safe and in contact with the control rooms during operations. Sepura also operates within public

safety," says Terence Ledger, worldwide sales director, Sepura.

You'd be forgiven for thinking mainly foreign companies are responsible for the inner workings of Africa's mission critical delivery and

"In Africa, the problem we have encountered in our not so extensive experience is that investments often depend on subsidies or require the participation of a wide range of actors, which tends to slow down projects a lot"


Kennedy Chinganya, Altron Nexus

"Our technology has played an integral part in the emergency responders' ability to operate – for example the rapid response to the recent Parliament Building fire in Cape Town was due to our systems operating within the City of Cape Town's Emergency Response Centre"

infrastructure. Enter Altron Nexus of Sandton, South Africa, which delivers resilient and feature-rich solutions to various critical sectors of the economy, including the public safety sector, rail and road transportation services, mining and energy industries and commercial and retail groups. In terms of critical comms networks and devices, the company builds and operate a wide variety of network technologies including TETRA, digital mobile radio (DMR), GSM-R Rail Mission Critical network, and push-to-talk/video over cellular (PoC).

Kennedy Chinganya, managing director, Altron Nexus says his company offers "the full stack of critical comms applications" including command and control platforms such as computer aided dispatch, intelligent video surveillance, biometric access control, remote control centres and integration with other customer specific systems.

"We provide a holistic offering taking into consideration the full spectrum of our customers' typical needs, these are then tailored toward clients' specific requirements through our professional services and managed services capabilities," he adds.

Chinganya cites examples of where Altron Nexus has deployed several networks within the safety and security sector. "Our technology has played an integral part in the emergency responders' ability to operate – for example the rapid response to the recent Parliament Building fire in Cape Town was due to our systems operating within the City of Cape Town's Emergency Response Centre," he says. "During the riots and the recent flooding disasters in KZN our DMR networks showed incredible resilience allowing the users to maintain operations. Looking further back, Altron Nexus assisted with deployment of equipment for the Knysna fires during June 2017. Assistance was provided to a number of municipal governments with our Push-to-Talk Over Cellular (PoC) and DMR solutions during the Covid-19 pandemic."

Ledger says that although "we can't quote or reference any specific occasions as we do not have the customer permission to do this", he does talk generically about Sepura radios being used in a couple of general situations. "The (Sepura's) radios are used by police/fire/ambulance teams to aid operations as they occur, which can be civil disobedience, natural disasters, etc." he adds.

Still, that's not to say deployment isn't without its problems. After all, Africa's terrain doesn't always lend itself well to technology, signals etc.

"Availability of frequency can be problematic – especially in Africa the availability of UHF frequency can be an issue," Ledger adds. "Other than that, the main issues are the same as anywhere – budget, experience and environmental issues to consider, ensuring that

the most appropriate solution is understood and deployed by the customer."

Kennedy explains how "the prospects to deploy mission critical communications and infrastructure is in high demand across Africa" when looking at various countries and their requirements and dependencies. He adds that to take advantage of this, an effective enabling environment is essential. "The critical communications sector is a particularly important contributor to modern economies as it enhances resilience, productivity and sustainability within these critical verticals we've mentioned," Kennedy continues. "Africa is a region with extremely high potential, but there are still certain social and infrastructural deficits that hamper the growth prospects. The overall impression is of progress but, as mentioned above and highlighted through the challenges, Africa lags behind most other regions – there's work to do."

When it comes to the main cultural, social and political issues encountered when trying to deploy critical comms kit and networks in Africa, Kennedy says that further to those he has already mentioned, it's important to emphasise two issues.

"Firstly, due to relatively low per capita GDP and low economic growth rates on average, public sector agencies struggle to access sufficient funding for these projects.," Kennedy continues. "At Altron Nexus we are always available to assist in consulting and assisting with business and operating models that make these more feasible. Secondly, such critical comms networks tend to be much needed in areas of political and social upheaval and this makes the deployment and operation of these networks especially challenging – issues such as theft, vandalism and violence in certain areas, for example one of our projects in northern Mozambique."

Kennedy says One of the biggest challenges involves a limited base of skilled resources to deploy and operate these solutions – we continue to build up a skilled workforce and make efforts towards enhancing education and training levels to mitigate this while enhancing livelihoods.

Another challenge is relatively poor infrastructure. Road and rail infrastructure is not always in good condition, which makes transporting goods and skilled staff difficult for certain deployments. This also creates challenges with regards to the lack of access to electricity in certain areas in Africa, where alternative solutions need to be developed which in turn increases deployment costs and timelines.

Ward says "As we have supplied systems for railways and oil and gas, the technology is often deployed in remote un-manned stations," adds Ward. "Due to the vastness of the region many sites are some distance away from personnel, security of equipment can be a particular issue - so remote/security monitoring and CCTV transmission are requirements essential to ensure the integrity of the system."

Theunis Botha, who works on the sales & IT teams at Africa Radio Distributors, a distributor and reseller of various RF related technologies and products, says there are three main issues.

The first is cost. "Although it is a definite contributor to the struggles of deploying critical communications systems, it is not the only deterrent," he says. "Some projects would have funding made available, and usually it is from an international source. The products available are trusted, tested and tried in many environments in other non-African countries and has become the benchmark for solutions deployed locally. There would be a lot more of these deployments if we had locally developed solutions and products to match the benchmark solutions at an 'African' cost. Purchasing in our currencies at United States dollar rates will keep Africa from delivering critical communication where needed most."

"Purchasing in our currencies at United States dollar rates will keep Africa from delivering critical communication where needed most"

Another issue is stock and product availability – or lack thereof. "It is well known that Africa doesn't get first pick with a lot of things," Botha adds. "When there are stock shortages like the one experienced currently, one feels that we would be the last to receive deliveries. Decreased supply/manufacturing capabilities of most OEM that we distribute is not nearly meeting the demand experienced from almost all industry verticals. Back orders and resultant lead times are at an all-time high, and risk of cancellation of existing projects is an inevitable end to some projects. Lacking availability of best-in-class solutions and products, puts Africa further behind in terms of what we can deploy as a solution.

Last but by no means least, Botha cites education/expertise. He argues that not enough skilled people in the areas where deployment takes place. "If the knowledge of solutions was available to more semi-skilled workers, the solutions delivered would be so much better," Botha says. "A lot of training is available online but once again the internationalisation of the cost makes it difficult for your average African service provider to obtain the skills necessary to supply, deploy and even propose the best suited solutions. This does not consider the difficulty in deploying a scoped solution effectively and accurately. This might even cause a disparity between the engineered and delivered solution, which will result in distrust of the technologies and/or OEM involved with the failed solution."

Another seasoned vendor in this space is ST Engineering iDirect, a provider of VSAT ground infrastructure and technology innovations to the world's satellite operators and service providers. It prides itself on providing solutions to enable end users to quickly deploy satellite communications anywhere in the world.

"Satellite connectivity is critical for first response efforts, especially when terrestrial networks are destroyed or are unavailable," says Pieter-Paul Mooijman, regional vice president, Africa, ST Engineering iDirect. "First response teams may use satellite connectivity on-the-move to build situational awareness, at a disaster site to coordinate lifesaving efforts, and after a disaster to assist recovery operations. As emerging technologies are introduced to disaster response—such as drones and IoT devices—greater bandwidth is needed."

ST Engineering iDirect and its broader ecosystem partners (VSAT network operators/service providers and integrators) actively participate in emergency response situations globally.

"The ST Engineering iDirect platform is designed for network operators to meet a broad range of customer requirements from narrowband to demanding high-bandwidth applications across all markets," adds the spokesman.

Teltronic is a Spanish company with almost 50 years of experience in the design, development and manufacture of integral communication solutions has had more opportunities in the transport sector than in public safety and emergency attention.

"In Africa, some of our references are the Algiers Metro, or the tramways of Oran and Constantine (all of them in Algeria) as well as the Moatize-Nacala line, a mining train with more than 900 kilometres of track along the jungle of Mozambique and Malawi, which was a real challenge for us," says Josep Jonch, sales director, at Teltronic. "In public safety, we have some references in Mozambique, Botswana and South Africa.

Jonch also talks about challenges faced by mainly foreign companies.

"We think that the great challenges come from the cultural differences that exist; it is not something that happens only to Teltronic, but also to many Spanish and European companies," he adds. "In Africa, the problem we have encountered in our not so extensive experience is that investments often depend on subsidies or require the participation of a wide range of actors, which tends to slow down projects a lot."

While Africa does continue to face challenges in the critical comms space - be they cultural, financial, political or something else, the will is there. Like many things, progress takes time. ■

On the road to 5G to support Africa's digital agenda

Robert Shepherd sat down with Nicolas Blixell, vice president of Ericsson Middle East and Africa to talk all things 5G

Is the progress Africa has made with 5G so far good enough?

Africa is home to over a billion people, and it is also a continent with the most growing economies. ICT is essential for the region's development, and adequate ICT service deployment and digital connectivity will play a crucial role in achieving economic sustainability in the continent. We believe that ICT is the catalyst for digital transformation, with mobile networks being the crucial ingredient in increasing Africa's economic competitiveness in the global arena.

As digital infrastructure and transaction become increasingly impactful to the development of the African societies and economies, affordable broadband access will need to be extended to over a billion individuals to bridge the digital divide and enable them to reap the benefits of the digital economy. Prospects of 5G in Africa will accelerate the regional digital agenda.

The Ericsson Mobility Report shows us that more than 340 million people will be connected to mobile broadband across sub-Saharan

Africa and by 2025 and mobile data traffic in Africa will rise by more than 50% year-on-year – by far the highest growth rate worldwide. Connectivity will power Africa's digital future and in achieving a positive impact on people's lives. However, smarter, AI fueled networks will accelerate Africa's digital agenda, and drive the progress and prospects of 5G in Africa.

Ericsson works with key service providers across the continent, helping them create new services, explore untapped customer bases and capitalize on digital ecosystems.

It has been claimed that 5G currently offers limited and uneven coverage, is only available in specific locations, with highly populated areas as the key focus. Meanwhile, 5G is on the horizon. How would you answer that?

With the advent of 5G, the criticality of networks has become as significant as their capacity. Ericsson works closely with network providers to implement the best building practices and design methodology to equip the modern 5G Site with mission critical support systems and future-proof hardware – while keeping sustainability and safety top of mind. Ericsson has addressed the 5G mid-band and high-band coverage limitations by developing a flexible 5G Carrier Aggregation solution.

5G Carrier Aggregation is a game-changer for delivering extended coverage and increased network capacity and higher data speeds. It supports control and data traffic on the uplink using a lower frequency band which increases coverage, and on the downlink with a mid or high-frequency band which increases capacity and data throughput.

The close proximity 5G masts have to each other have led to concerns about health aesthetics. Are the concerns valid?

Over the past 50 years a large amount of research on radio waves and health has been conducted. More than 30 independent expert groups and health agencies, including the World Health Organization, have reviewed the available scientific data and have all come to the same conclusion: there are no established health effects from radio waves emitted from mobile phones and base stations complying with international limits. Ericsson's radio products are tested for compliance with relevant regulations and standards on electromagnetic fields before they are delivered to the market.

Why are 5G upload speeds not very fast?

Today, as demand for cloud gaming, immersive media, and video streaming services grow at a faster rate than ever, 5G enables faster mobile broadband speeds and greater network capacity. We are aware that the key to building a better 5G is to achieve high network performance. Ericsson Uplink Booster efficiently extends 5G mid-band coverage by a considerable margin. Uplink Booster is an innovative software solution which relies on a superior architecture and sophisticated software algorithms for 5G massive MIMO mid-band. The key benefits of Uplink Booster are extended coverage, improved uplink throughput and higher spectral efficiency. We remain committed to pushing the boundaries and ensuring our customers have access to the best mobile connectivity possible.

5G is a battery thirsty technology. What is Ericsson doing to navigate this?

Reducing the level of energy consumption associated with cellular network operations is a strong focus area for Ericsson, and a key sustainability improvement goal. We look at a lot of things in R&D and one of the most important things is energy consumption and reducing our carbon footprint. We have improved our energy usage by 40% on new technology versus our older releases and so operators are able to deliver the same 40% reduction. Typically, 40% of an operator's operational expenditure is on power, which means that if they can reduce consumption, they will improve their carbon footprint and give more competitive rates to the end users.

Are the fears around cybersecurity valid?

Every business is now a digital business, and a weak security can result in companies facing significant loss and risk to business continuity. Cybersecurity is a critical element in all forms of telecommunications. The good news is 5G has the best security you can get. That's because it's embedded in the product so it can be used for the most important aspects of business. Ericsson is uniquely positioned as we understand telecom and IT environments, offering decades of talent, practices and tools to manage the cyber security business process. Our services offer significant total cost of ownership optimization backed with telecom grade reliability when it comes to managing the cyber security business process.

How do you accommodate the less rich nations when it comes to 5G roll out?

Ericsson has been connecting Africa for over 100 years and has built the wireless networks for every generation – from the early 1G networks to the first advanced 5G networks.

The African continent has very high potential for a new era of socio-economic prosperity which could be achieved by leveraging new technologies that make it easier to conduct business, raise productivity and efficiency while encouraging an inclusive society.
Ericsson is working with key service providers across the continent, helping them create new services, new customer bases and new digital ecosystems:

Our promise and commitment towards Africa are to always support a world where digitalization is transforming the ecosystem, enabling sustainable growth, economic development and creating opportunities for all.

Subsequently, Africa in Motion is Ericsson's mission to empower a sustainable and connected Africa. We are proud to play an active role in not just providing network excellence but also ensuring the nation is equipped to address digital opportunities with the right talent by fast-tracking and training potential leaders and innovators to engage with the most exciting technology on the planet. ■

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Angola's fourth unified licensee Africell launches mobile services

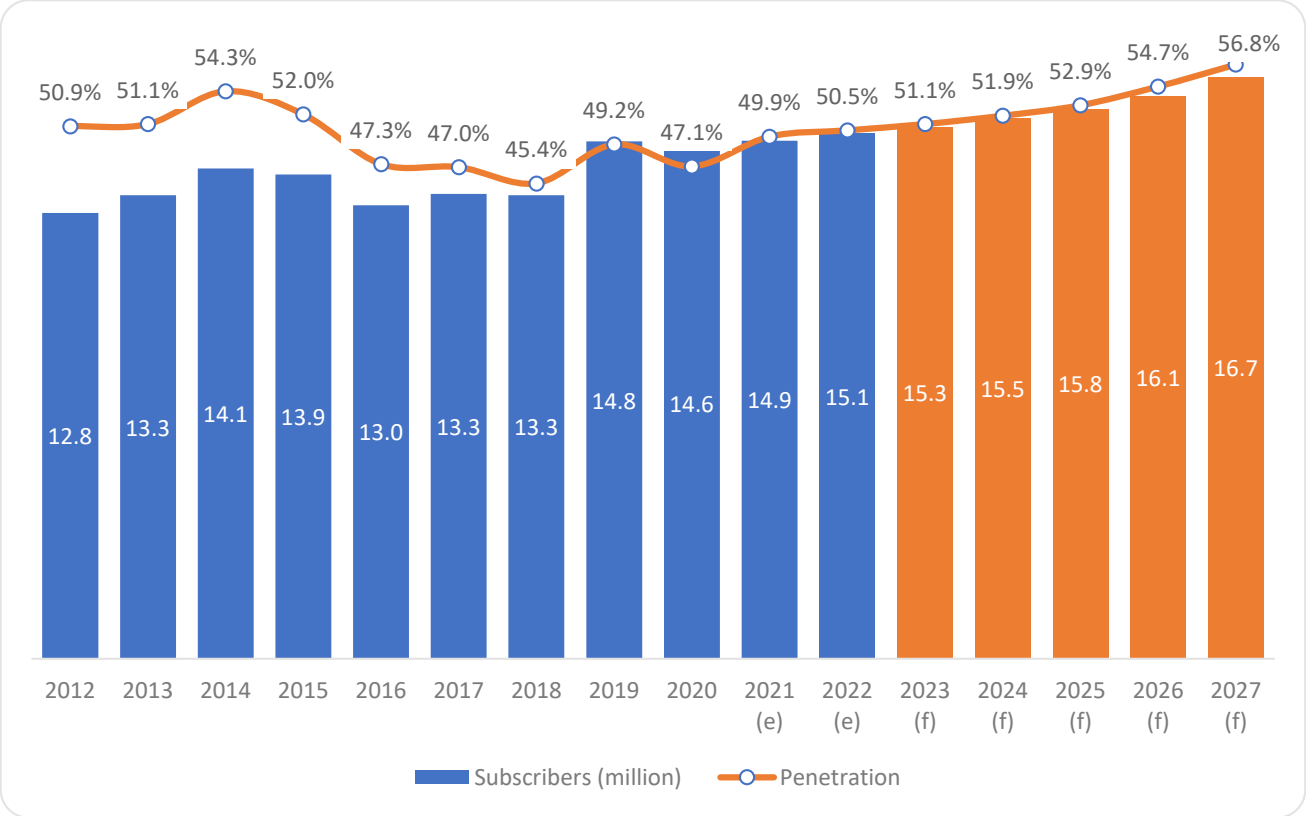
Sébastien de Rosbo,
research manager, BuddeComm

Angola's telecom sector in recent years has benefited from political stability, which has encouraged foreign investment in the sector. The government and regulator have also set in train mechanisms to open up the telecom sector to new competitors, with Africell having secured a universal licence and in so doing becoming the country's fourth MNO. Following an extensive investment program, the company launched mobile services in April 2022.

The MNOs were slow to develop LTE services, instead relying on their GSM and 3G network capabilities. Angola Telecom did not launch LTE services until mid-2018. This tardiness was partly due to the relatively high cost of LTE-capable handsets, which has discouraged users from upgrading. As a result, there has been slow progress in LTE network development, with only a small proportion of the country covered by network infrastructure. Despite the evident remaining usefulness of LTE and 3G in relation to current data demands, there has been some progress made with 5G. The Ministry of Telecommunications in early 2021 set up a 5G hub to assess 5G user cases, while Unitel and the new MNO Africell since mid-2021 have contracted vendors to provide 5G-ready transmission networks. The regulator in November 2021 granted licenses to Africell, Movicel, and Unitel to enable them to offer 5G services, with spectrum in the 3.3-3.7GHz range having been set aside for such services.

The government has continued to develop telecom infrastructure to help diversify the country's economy and lessen its dependence on offshore crude oil production, which accounts for almost all exports and up to 80% of tax revenue. By extending and upgrading telecom networks the government expects businesses to become more efficient and for e-commerce to become a more prominent feature of economic growth. In addition, networks will facilitate rural access to education and health care. However, there is much progress to be made if the country is to improve the business climate and attract investors.

Chart 1 – Growth in the number of mobile subscribers and penetration – 2012 – 2027



Source: BuddeComm based on regulator data

Table 1 – Growth in the number of mobile subscribers and penetration – 2012 – 2027

Year	Subscribers (million)	Penetration
2012	12.785	50.9%
2013	13.285	51.1%
2014	14.053	54.3%
2015	13.885	52.0%
2016	13.001	47.3%
2017	13.324	47.0%
2018	13.288	45.4%
2019	14.830	49.2%
2020	14.645	47.1%
2021 (e)	14.850	49.9%
2022 (e)	15.058	50.5%
2023 (f)	15.250	51.1%
2024 (f)	15.500	51.9%
2025 (f)	15.760	52.9%
2026 (f)	16.120	54.7%
2027 (f)	16.670	56.8%

Source: BuddeComm based on ITU and regulator data

Key developments:

- **Africell Angola launches commercial mobile services;**
- **Regulator awards spectrum in the 3.3-3.7GHz range to the MNOs for 5G services;**
- **State takes full control of Unitel;**
- **Angola and the DRC agree to coordinate spectrum at their borders;**
- **New data centre is opened, quadrupling capacity in the country;**
- **Government cancels plans for an IPO for Multitel, deciding instead to offer its 90% stake in the operator via a tender;**
- **Government ITC and Communications ministries merge to form the Ministry of Telecommunications, Information Technology and Social Communication;**
- **Tender for an operator to manage Angola Telecom's national backbone and metropolitan networks is extended;**
- **AngoSat-2 satellite launch put on hold due to Russia's war against Ukraine;**
- **INFOSI aiming to connect an additional 160,000 people to free Wi-Fi;**
- **Regulator again cracks down on informal SIM card sales;**

Satellite broadband speeds up mining operations

YahClick, the satellite broadband service of UAE-based global satellite operator Yahsat, digs deep to help the mining sector of Sudan

The mining sector plays a significant role in the Sudanese economy with the country emerging as one of the largest gold producers in the world. In an increasingly competitive environment, mining corporations need to make decisions quickly to minimize risks to their business. These decisions can be made only after assessments of operational information from multiple sites. To gain competitive advantage, companies urgently require internet-based communication systems, which can facilitate transfer of data in real time.

Mining is concentrated in areas that are generally inaccessible, and outside the range of terrestrial telecom networks. As a result, data transmission can become quite challenging - underground areas are difficult to access with traditional radio waves weakening and unable to penetrate obstacles and mine surfaces. Besides, there is a high probability of wired communication systems getting damaged in landslides or explosions.

Satellite networks have enabled mining

"After installing YahClick's satellite internet solution, we could successfully introduce modern systems for greater operational safety and secure data exchange at our mine that had previously been isolated from the world, as the nearest cellular network is 150 km away"

YahClick customer, Nizar El Tijani

companies to overcome all technological barriers and provide high-speed broadband to remotely based work teams. Satellite communications systems ensure that users are able to exchange real-time information regardless of location, thus accelerating the decision-making process.

YahClick's customer required satellite broadband, public Wi-Fi and Point-to-Point services to link multiple work sites and crew on the move. Covering 180 remote locations, the project commenced in February 2021. By June 2021, YahClick's satellite broadband service was activated at 40 sites across Sudan. Due to the remoteness of locations, transportation of terminals and other hardware proved to be difficult. Fuel shortage, vehicle malfunctions and non-availability of spare parts further complicated the deployment process. To expedite work, YahClick's support personnel switched to travelling in convoys, instead of solitary vehicles. Moreover, they ensured that the equipment had a stable power source in off-grid areas, working closely with the client's IT department to set up the internal network and identify locations to install the terminals. YahClick's' ecosystem consists of Ka-band links, Mikrotik routers, Mesh access points, network controllers, Point-to-Point access points and IP phones.

Connecting the unconnected remains a challenge in Sudan, because of major coverage and usage gaps in terrestrial broadband and mobile internet. With mining activity concentrated in areas unserved by cellular networks, companies have no options, other than satellite broadband, to connect remote sites and manage operations.

In early 2021, a gold prospecting company approached YahClick for high-speed satellite broadband to link its multiple work sites, monitor onsite operations and dormitories. It also needed public Wi-Fi and Point-to-Point services to supplement communications among workgroups on the move. Since maintenance of terrestrial systems is difficult in remote environments, the customer expected a robust and scalable solution capable of withstanding extreme conditions, while delivering uninterrupted communications.

Uniformly available across North Africa and highly affordable, YahClick's high-speed satellite broadband service can simultaneously serve multiple sites and workgroups. For the project, YahClick created an ecosystem consisting of Ka-band satellite links, Mikrotik routers, Mesh access points (AP), network controllers, Point-to-Point access points (AP) and IP phones.

High-speed broadband is now available at locations, where internet was previously non-existent. Efficiency has improved significantly, and mobile workforces are able to survey remote belts and expand operations without having to worry about gaps in connectivity.

YahClick has been commissioned to provide its services for five years. Post installation, internet is readily available in areas, where it was previously non-existent. The customer is able to survey isolated belts and expand operations without worrying about lack of broadband connections. Satellite internet has considerably reduced the time and effort spent in exchanging information from remote camps to the headquarters.

Moreover, YahClick could successfully create a highly responsive system that is contributing to the expansion of the client's business, and the advancement of local communities. Internet usage has increased exponentially within the neighbouring communities, as satellite broadband is universally available. They now rely on YahClick to learn and reach out to the world through e-classrooms and other online platforms. ■

"The availability of YahClick internet has greatly improved the lives of workers in the mining industry by boosting social communications with their families, enabling electronic banking services and helping overcome distances"

YahClick customer, Mohamed Sheikh El Din

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Curvalux antenna

Curvalux is a UK-based company, which is rapidly making inroads into the African fixed wireless access (FWA) space. The Curvalux Edge Node 2.0 antenna system operates on a 160MHz channel at a 60° sector in Wi-Fi 6 and includes 16 narrow beams working simultaneously using dual polarization enabling frequency re-use of limited available spectrum and high-capacity MIMO technology. The low side lobe level narrow multiple beams with high isolation offers good interference mitigation this results in improved C/I ratio hence more availability of capacity in 5GHz. *curvalux.com*

Motorola's wireless bluetooth earbud

Motorola says this wireless earbud "has a simple, discreet design for business users wearing professional attire or for public safety users working undercover". This earbud has an inline microphone designed for transmissions in loud environments and comes with three sizes of eartips for optimal comfort. It comes with a long cord to offer flexibility in where you clip the PTT on your belt or shirt pocket. Note: this earbud must be connected to the appropriate push-to-talk pod. Police officers and other first responders wanting a secure solution with fast pairing will need to order the (NTN2571), while professional users wanting a cost-effective wireless solution must order (NNTN8127). *motorolasolutions.com*

'A fast and versatile solution'

D-Link reckons the DAP-1665 wireless AC1200 dual band access point is a fast and versatile solution for bringing wireless AC to an existing wired network or extending a current wireless network. The latest draft 802.11ac technology, the company says, delivers combined speeds of up to 1200 Mbps, "so you can create a high-speed wireless link between networks, or quickly transfer large files wirelessly between computers on the same network". What's more, the DAP-1665 features the latest 802.11ac wireless technology, capable of delivering combined speeds of up to 1200 Mbps over two bands. Use the 2.4 GHz band's 300 Mbps for web surfing, email and chat, while simultaneously using the lower-interference 5 GHz band for network bridging, downloading, and file transfers. The DAP-1665 can be configured to operate in several modes, allowing you to customize it to your networking needs. Access Point mode allows the device to act as a central hub for wireless users, giving them access to your existing wired network. Wireless client mode is available to enable the DAP-1665 to connect to another access point and provide network and internet access to a remote wired device such as a gaming console or media centre. Bridge mode allows you to create a high-speed wireless link between two wired networks (LANs), alleviating the need to install additional network cabling. Bridge mode with AP adds

the functionality of a wireless access point to your bridged network, so wireless clients can access resources on both networks. Repeater mode extends wireless coverage of your existing wireless network to cover "dead" spots and reach farther into your home or office. *dlink.com*

GL's validation and regression testing for emergency services mobile networks

GL Communications has introduced automated testing of voice quality and coverage for emergency services in wide-area mobile networks. Validation and regression tests can run continuously to generate thousands of measurements per day in various spaces.

Emergency services mobile networks include land mobile radio systems and often interface with the Public Switched Telephone Network (PSTN). These networks are used by police officers, firefighters, and other first responders and must reliably transmit audio between endpoint devices.

In responding to emergencies, clear communication between personnel is mandatory. Poor voice quality and long latency can lead to miscommunication resulting in catastrophic consequences such as loss of life and damage to critical infrastructure. Clear voice quality is needed not just outdoors but in vehicles, aircraft, buildings, and underground as well.

"Objectively measuring end-to-end voice quality in a wide range of scenarios spanning different locations can be challenging but is essential," said Robert Bichefsky, director of engineering, GL Communications.

"GL recently released a whitepaper proposing a systematic way to test voice quality over emergency services mobile networks. The resulting testing will identify gaps in coverage, potential sources of interference, and other obstructions. This will allow the users to identify and eliminate vulnerabilities in their emergency services mobile networks and better protect their citizens." *gl.com*

Dual mode LTE and TETRA critical communications solution

Sepura has launched a Dual Mode version of its SCU3 Broadband Vehicle Device, increasing the options available to critical communications users. The upgraded model has a built-in TETRA module, enabling users to combine Mission Critical Voice with the power and flexibility of data connectivity via LTE networks. The Class 3 TETRA module in the new SCU3 Dual Mode device supports Direct Mode in the 380-473MHz band, meaning critical communications users in public safety, transport, mining and utilities can benefit from the reliability and audio quality delivered by TETRA.

The Dual Mode option allows organisations to run hybrid fleets, with vehicles and control rooms using the Dual Mode device and frontline staff using TETRA hand-portable devices for critical voice communications. It offers support for 2G, 3G and 4G voice and supplemental services (such as SMS and voicemail) and can also support high-definition video. Earlier this year it received GCF certification, ensuring its compatibility for use on mobile networks around the world. *sepura.com*

Good for emergencies

All Kenwood's NEXEDGE NXDN and NEXEDGE DMR models feature Emergency Key and Emergency Call features as standard, while more advanced models additionally offer built-in or optional GPS modules, Lone Worker and Emergency Advanced Motion Detection Function. These are designed to be incorporated within a robust health and safety and lone worker policy. In addition to its ITU recognised NEXEDGE NXDN fully scalable digital systems, Kenwood says it can offer ETSI compliant dPMR and DMR Tier 2, Tier 3 Trunked and Simulcast solutions. For more localised operations requiring a simple turnkey communication solution Kenwood offers its ProTalk digital license-free PMR446 and

ProTalk DECT fully duplex digital wireless intercom systems. *kenwoodcommunications.co.uk*

New from Peplink

With 9.3dBi gain, the Maritime 10 is a single-cellular antenna that can keep you connected even farther away from the shore, according to Peplink. Small and 5G ready, this antenna is a future-proof choice for any maritime applications. As the name suggests, the Maritime 10 is designed for Marine Applications IP68 rated, durable omnidirectional antenna, with UV-stable housing, providing the best signal reception. It's also designed for 5G and offers wide bandwith · Wide frequency range (600-4200MHz) supporting LTE

and 5G connectivity. Peplink also says installation is easy as the solution supports standard marine 1" 14 TPI thread mount and also has an L-shape mount for non-standard installations. *peplink.com*

'The perfect wireless enterprise solution'

Allied Telesis brings to market the TQ6702 GEN2 Wi-Fi 6 (8x8) wireless Access Point. The company reckons the eight spatial streams on the solution enhance performance, "placing the device at the top of the class for bandwidth". What's more, the firm says support for real-time applications like streaming video makes the TQ6702 GEN2 ideal for education, healthcare, manufacturing and busy commercial environments. Allied Telesis also says the high-throughput TQ6702 GEN2 maximises the benefit of Channel Blanket technology without compromising on overall performance. It joins other "hybrid" access points in the Allied Telesis range that offer compatibility with legacy wireless clients and interference-free high-density AP installations. "We've combined the power of Wi-Fi 6 and 8 spatial streams with our Autonomous Wave Control (AWC) wireless management platform," says Chris Dyke, sales director UK & Ireland at Allied Telesis. "AWC enables a self-tuning wireless network that automatically reconfigures itself for the best possible performance. With our Channel Blanket (AWC-CB) technology, a high-capacity single wireless blanket can connect all

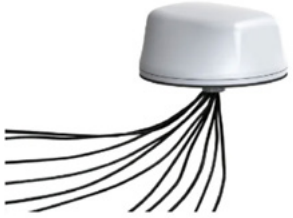
devices in a building without worrying about interference or limited capacity. It's truly 'seamless roaming'." The new TQ6702 GEN2 Wi-Fi 6 access point joins Allied Telesis' existing range of enterprise, small business, and outdoor access points. *alliedtelesis.com*

Mobile Mark upgrades LTM series antennas

Mobile Mark's new LTMWG946 is an upgraded version of the LTM 900 series. It combines 11-antenna elements: 4x 5G Sub-6, 6x Wi-Fi 6E and a GNSS element in one antenna housing. The company claims this solution provides extensive MIMO coverage on both 5G Sub-6 and WiFi 6E. The LTM Series antennas now can be configured with Up to 6 Wi-Fi elements. The cellular elements for the LTMWG 900 Series are optimized to cover up to 7.2 GHz.

The LTMWG946 is designed for 5G Sub-6 fixed networks such as CBRS & C-band private networks with supplemental Wi-Fi 6E coverage. This upgraded LTM series antenna is compatible with advanced multi-band routers that are designed for high speed, large data transfers using 5G or Wi-Fi 6E, but is also backwards compatible for 4G LTE & Wi-Fi 2.4/5 GHz networks. In addition, it is customizable with fewer Wi-Fi elements. Typical antenna applications include vehicle fleet management and public transportation.

This compact antenna measures only 5 ½ inches in diameter and less than 2 ½ inches in height. The antenna is lightweight but sturdy, according to Mobile Mark, which makes it easier to install. *mobilemark.com*



Look out for...

BT trials new quantum radios for 5G & IoT networks

BT in the UK announced a pioneering trial of a new hyper-sensitive quantum antenna technology using excited atomic states that could boost the capability of next generation 5G and IoT networks.

Atomic Radio Frequency (RF) receiver technology represents a revolutionary new way of detecting radio waves that could find much weaker signals than conventional receivers. The receiver works by using a quantum effect called "electromagnetically induced transparency" to form a highly sensitive electric field detector. BT's trial represents the first time a digitally-encoded message has been received on a 3.6GHz (5G) carrier frequency. Previously, simple audio has been received using much higher frequencies but this trial is the first industrial demonstration using digital modulation within one of EE's main commercial 5G frequency ranges.

This new type of receiver may reduce mobile network energy consumption, enable Internet of Things (IoT) devices to become more cost efficient and longer lasting and support lower-cost smart cities and smart agriculture. The new technology could in future form the basis of ultra-sensitive 5G receivers for use in very low power passive mobile networks.

"Our programme has huge potential to boost the performance of our next generation EE network and deliver an even better service to our customers," says Howard Watson, chief technology officer, BT. "Although it's early days for the technology, we're proud to be playing an instrumental role in developing cutting edge science".

Researchers at BT Labs in Martlesham are now working to miniaturise the equipment and find the optimum RF modulation and signal processing for potential use in future generations of radio networks.

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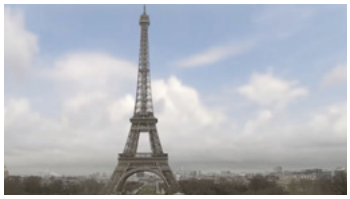
Orange France, Ericsson partner for 5G converged charging solution

Orange France and Ericsson have signed a five-year agreement which will make Ericsson Charging the strategic monetisation platform for operator's 5G subscribers.

The standards-based, cloud-native Ericsson Charging solution will serve the nearly 28 million Orange France Customers, roamers-in and private mobile radio users and 20 million IoT devices based on a container based deployment using Ericsson Cloud Native Infrastructure Solution (CNIS). Ericsson Charging will be integrated with legacy business-to-consumer (B2C) and business-to-business (B2B) billing platforms, resulting in optimized cost and agility across Orange operations.

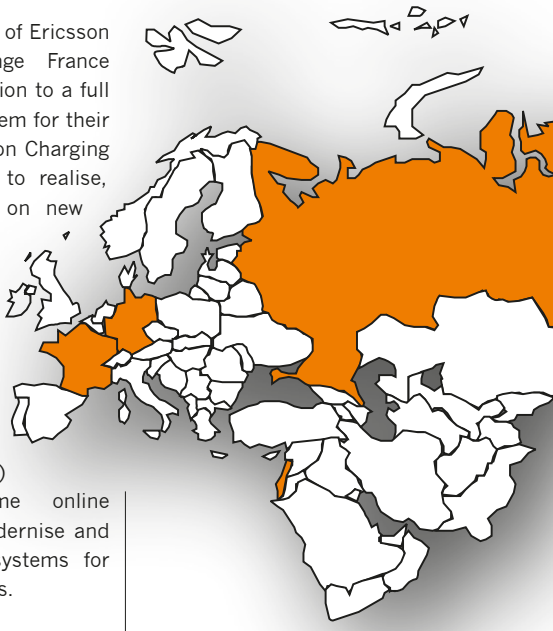


Highly configurable network services are expected to play a major role in the digital transformation of industries in the 5G era. These will also drive new requirements for charging operations.

"Ericsson Charging solution will provide us with advanced technology and the ability to accelerate our time to market for new products and services, delivering optimised operational costs, and improving our overall customer experience with real-time information," said: Emmanuel Lugagne Delpon, chief technology officer, Orange France.

Franck Bouétard, head of Ericsson France, added: "Orange France wants to drive its evolution to a full converged charging system for their 5G network. The Ericsson Charging solution enables them to realise, create, and capitalise on new digital opportunities".

This agreement builds on the long-term Ericsson-Orange France partnership. In 2019, Ericsson was selected by Orange France as its business support systems (BSS) provider for real-time online charging system to modernise and standardise charging systems for prepaid and hybrid users.



Russia's MTS starts selling used and discounted smartphones

Russia's biggest mobile operator MTS has started selling discounted and used smartphones, offering consumers cheaper alternatives as inflation bites and Western brands suspend shipments against the backdrop of the country's invasion of Ukraine.

Smartphones from Chinese brands Huawei, Honor and Xiaomi, as well as South Korean manufacturer Samsung are now available for up to 50% less than new devices at stores and online. MTS said the brands offered and locations where they are sold would be expanded.

"This is a good opportunity for our company to offer consumers an additional way to save on purchases of quality gadgets," said Pavel Sukhovarov, head of retail network development, MTS.

US tech giant Apple paused all product sales in Russia in early March, one of many Western companies to distance itself from Moscow since it sent tens of thousands of troops into Ukraine in February in what Russian president Vladimir Putin calls a special military operation.

Meanwhile, MTS has indefinitely postponed the planned sale of its tower assets.

The operator initially said that it was considering a sale back in November 2021 and was tipped to finalise an agreement in the first half of 2022. However, sanctions and the collapse of the rouble potential impacted negotiations. MTS owns circa 23,000 towers.

"We are continuing to look at different scenarios, we see interest in the asset and are in contact with potential investors," the operator said.

Deutsche Telekom, Ericsson turn to wind, solar for 5G site

Deutsche Telekom and Ericsson conducted a trial in which they transformed a live radio site using a management solution to efficiently harness solar and wind energy while optimising power supply and demand.

The companies noted that the main aim of the partnership is to identify and validate energy efficiency and energy cost cutting solutions based on optimised energy consumption and control and increased usage of renewable energy sources.

Located in the Bavarian municipality of Dittenheim, the site has been partly-powered by energy from solar panels since the initiative began more than a year ago. Now, the Swedish gear-maker and German operator have added a wind turbine, capable of providing up to five kilowatts of additional power, as a second renewable energy power source.

"At Ericsson, we are committed to working with our customers to support them in cutting their carbon emissions," said Heather Johnson, vice president for sustainability and corporate responsibility, Ericsson. "This partnership is a great example of how we're achieving this through our best-in-class energy efficient equipment, which can be operated entirely with renewable energy."

The simultaneous integration of the two renewable energy sources was made possible by the Ericsson Power System, a new Ericsson energy management product. This integration means the site can theoretically be operated on a stand-alone basis without utilising its cable connection to the electrical power grid.

Israel: Bezeq Telecom Q1 profit rises

Bezeq Israel Telecom reported a rise in first-quarter net profit after Pelephone mobile phone service and Yes satellite TV unit attracted more subscribers.

The country's largest telecom group said it made 322m shekels (US$96m) in the first quarter excluding one-time items, versus 299m shekels a year earlier. Revenue rose 1.5% to 2.26bn shekels.

Mobile unit Pelephone - Israel's third largest mobile operator - recorded quarterly net profit of 56m shekels, up from 8m shekels a year earlier.

The operator said revenue grew 11.5% to 437 million shekels driven by recovery in roaming revenues, growth in 5G plans and total subscribers.

Elsewhere, Pelephone's subscriber base rose to 2.583 million - 624,000 of them connected to its 5G network - from 2.492 million a year ago.

The company said its new fibre network now reaches 1.25 million households and it has 143,000 subscribers.

Meanwhile, Bezeq's satellite TV unit Yes posted a net profit of 10m shekels compared to breaking even a year earlier, as it added new subscribers while transitioning to Internet-based broadcasts.

UAE state-controlled telco becomes largest shareholder in Vodafone

Emirates Telecommunications Group has acquired a 9.8% stake in British carrier Vodafone for US$4.4bn, making it the largest shareholder in the company.

The state-controlled UAE group, formerly known as Etisalat and now rebranded e&, said the investment allowed it to "gain significant exposure to a world leader in connectivity and digital services". Furthermore, the investor said the transaction provided a "compelling and attractive valuation".

The Abu Dhabi-listed group said it planned to be a long-term shareholder in Vodafone and that there were currently no plans to make an offer to purchase the mobile network operator outright.

"We are looking forward to building a mutually beneficial strategic partnership with Vodafone with the goal of driving value creation for both our businesses, exploring opportunities in the rapidly developing global telecom market and supporting the adoption of next-generation technologies," Hatem Dowidar, chief executive, said in a statement.

For its part, Vodafone said it looked forward to building a long-term relationship with its new major shareholder.

The purchase pushes e&'s stake in Vodafone ahead of BlackRock Inc., the Vanguard Group and HSBC Holdings, according to Bloomberg data.

Canada: banning Huawei and ZTE is the 'right decision'

Canada is banning two of China's Telecoms, Huawei and ZTE from working on its 5G phone networks, calling the move "the right decision".

The ban means Canadian telecoms firms will no longer be allowed to use equipment made by the two telecom equipment giants and comes after a review of Huawei equipment back in September 2018 by the Canadian authorities.

Minister of innovation, science and industry Francois-Philippe Champagne said the move would "protect the safety and security of Canadians".

Huawei has come under increased pressure in recent years as the US cracks down on Chinese companies that it believes are enabling or undertaking activities that could threaten its national security.

The UK, US, Australia and New Zealand have all banned or restricted the companies on their high-speed networks.

"Let me be very clear: We will always protect the safety and security of Canadians and will take any actions necessary to safeguard our telecommunication infrastructure," Champagne told reporters. "In a 5G world, at a time where we rely more and more in our daily lives [on] our network, this is the right decision."

A spokesperson for Huawei Canada said the Chinese firm met the news with huge disappointment.

"This is an unfortunate political decision that has nothing to do with cyber security or any of the technologies in question," the spokesperson added. "Over the past 13 years, Huawei Canada has devoted itself to helping Canadian carriers build out their wireless networks and provide quality services for the Canadian people. Huawei equipment, including both hardware and software, has been routinely and closely scrutinized by the government and its security agencies according to stringent quality standards. There have been zero security incidents caused by Huawei equipment throughout this entire period."

The spokesperson said Huawei is "proud" of its security record in Canada.

Brazil hosts 5G backhaul demo via LEO satellite

Telesat and Telefónica completed the first 5G Low Earth Orbit (LEO) satellite backhaul demonstration in Brazil and Latin America.

The testing campaign was managed with Telefónica Global Solutions (TGS), the Telefónica Group's satellite service provider, with the help of its engineering teams together with those of Telesat. The Telesat Phase 1 LEO satellite layer 2 backhaul link was connected to TGS's 5G test environment.

An 85cm Intellian gyro-stabilized Ka-band terminal with a 10 Watt BUC connected Telefónica Global Solutions' data streams to the Phase 1 LEO, validating that a small, carrier-grade terminal can achieve the desired performance to properly support a 5G backhaul network.

"Building on our successful LEO test with Telesat in Europe, we were eager to evaluate the performance of the Phase 1 LEO integration with a 5G network," said Eloy Rodríguez Villa, SVP global wholesale customers, Telefónica Global Solutions. "With the performance results achieved being close to fibre connectivity, Telesat Lightspeed provides a compelling value proposition for our 5G network rollouts across the globe."

Numerous applications were tested across the satellite backhaul link, including upload and download speed, as well as video streaming. Network measurements of latency, jitter and bitrate were recorded throughout the testing campaign – they all met the functional requirements for integration with a 5G core network.

Mauro Wajnberg, general manager, Telesat Brasil, described satellite backhaul as a perfect application for Telesat Lightspeed, "with the ability to deliver multiple Gbps into remote communities with transformative performance and economics".

Paraguay regulator launches mobile coverage tender

Paraguayan telecoms regulator Conatel launched a coverage tender, funded with resources from the universal service fund.

The latest tender is aimed at expanding network infrastructure for mobile telephony services and internet access and data transmission.

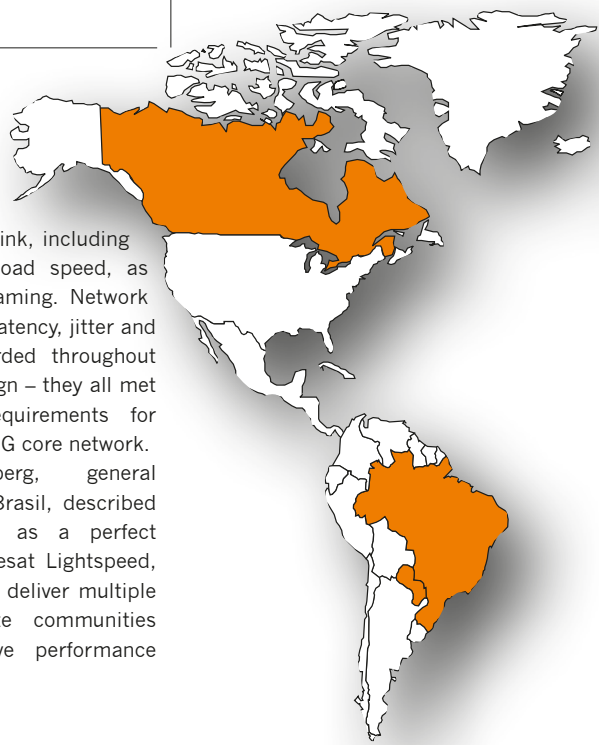
Conatel set a maximum subsidy of 5bn guaraníes (US$700,000) and the bidder requesting the lowest amount will win.

Coverage areas include the Yacacvash indigenous community, a basic school in San Roque González de Santa Cruz, the Margariños community and parts of the Ramal Oeste 193 road.

Offers may be submitted between May 30 and June 20 and envelopes will be opened that same day, Conatel said.

Three previous Conatel tenders in 2020 and 2021 were related to the expansion of the emergency system.

Earlier this year, the regulator approved the telecommunications development plan that aims to increase broadband coverage to 80% of the population by 2030.



Q&A

Waheed Adam
executive chairperson
iTouch

What was your big career break?

At the age of 19, I moved on from the outbound call centre into the sales team of the same company. It started off as a challenge to the sales manager at the time as I thought his team should be doing better. However, the role became something I thoroughly enjoyed and embraced full time, giving up my studies as a lawyer. I became the top salesperson for the next few years and assisted in training new staff. But as it was in South Africa, a person of colour was not given growth opportunities while traditional management were not as young as 21 either. With this double whammy of possible stagnation, I decided to leave the company at the age of 22 and start my own business. This decision changed my life forever, and needless to say, for the better. And this brings me to a saying that lived with me ever since; "through tragedy comes opportunity".

"Being an entrepreneur is not all glorious as so many believe. It can be a tough and lonely journey at times. More often than not we see businesses fail in their first three years"

Who was your hero when you were growing up?

Being born and brought up in apartheid South Africa was a confusing time for a little kid when all you are told, and as a result feel, that you are inferior to others. However, there comes an age when you realise how wrong this is and I became a youth activist. This was a brutal and dangerous environment but fighting for one's rights and freedom was all necessary. I can tell stories that makes a James Bond movie feel lame. So, my heroes were the many that stood up bravely and sacrificed their world and for some, sadly their lives. One such person was my sister, Feroza Adam who valiantly stood up to the apartheid regime. She was arrested, stalked, beaten, but eventually saw her vision of a new dawn in 1994 when Mandela became our first democratic president. Feroza served as the youngest parliamentarian in the new dispensation at the age of 32. She sadly died the same year in a car accident. Ironically this was on the eve of Woman's Day, as fighting for Women's rights was something she was very firm on. All this a week before her 33rd birthday.

What would you do with US$1m?

Further invest in property, buy crypto, perhaps even an NFT, and take a long holiday.

As a passionate father to three children, ages 24, 8 and 5, my entire being now is about building and securing their future by giving them great education and life lessons that will give them the best chance of success in a highly competitive world. It will be money well-spent, don't you agree?

Where would you live if money was no object?

How do you beat Cape Town? I don't profess to have seen the entire globe, but I have travelled a fair bit. Cape Town has everything you would want. The natural beauty, and great weather and the lifestyle this brings, from hiking, cycling, mountain biking, swimming, surfing, kite surfing, and so much more. Then there are the warm and friendly people, a cultural mixing pot that goes back generations. There is the ease of doing business particularly with the growth of virtual and remote working, great schools of international standards (if you have kids like me), and the most delectable fresh foods, also to be found in so many amazing restaurants. And all this at a price much more affordable than most parts of the world.

A second option would probably be Palma de Majorca, which offers a great lifestyle particularly at retirement age. This would be my South African winter escape. Spending time on a yacht in the Mediterranean Sea sounds like a great way to enjoy life too.

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

Food security... we have heard over and over that the world's population is far too high and hence we are depleting its resources. I am of a different opinion in the sense that the earth can provide much more if utilised correctly, and if the corporate world were less about profit and more about sustainability. We have all heard about food dumping in order to regulate food pricing, something I believe is a cardinal sin. Technology is also playing a huge role in improving output of crops, both in traditional farming and using new methods of food production such as aeroponics, amongst others. We can do away with starvation and poverty by also focusing on some level of subsistence farming, even if we begin with a small veggie garden at home. Now there is a business opportunity too!

Which law would you most like to change?

Corporate Law must change from being profit driven to one that is about sustainability. If a Board of Directors' primary mandate is to ensure the company is profitable and that becomes the only driving factor, it often comes at the cost of everyone else that builds and supports the company, including the consumer. But, if the mandate had to change and be more about sustainability, inclusion and environmentally conscious, we will not see people go hungry and we'll likely to live on earth a lot longer as a species.

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

Persist until you succeed... Being an entrepreneur is not all glorious as so many believe. It can be a tough and lonely journey at times. More often than not we see businesses fail in their first three years. While there are many reasons for failure, often it's the attitude and belief of the entrepreneur that changes due to the harsh reality of the business world. Not giving up on your passion and dreams is key to your success. Persist until you succeed!

"I can tell stories that makes a James Bond movie feel lame. So, my heroes were the many that stood up bravely and sacrificed their world and for some, sadly their lives"

If you could dine with any famous person, past or present, who would you choose?

Sofia Loren...her persona exudes femininity and at a time when male dominance was high. She earned the attention and respect of her peers, male and female alike. She crossed cultural barriers to become the success she is known for. And of course, her beauty is classic. She must have an amazing tale to tell while she would likely be sipping a glass of red wine, South African of course!

What's the greatest technological advancement in your lifetime?

The internet... it is impossible to even imagine the world without the internet. Everything we do now is somehow enabled by the internet. Whether it is virtual meetings now ever popular since the pandemic, e-commerce, advertising your business, social media, the world of Crypto, NFT's and the Metaverse, or simply a much cheaper option of a video call to your loved one abroad, and so much more is still to come. ■

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