

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

# **NORTHERN AFRICAN** **WIRELESS** **COMMUNICATIONS**

DECEMBER 2021/ JANUARY 2022

Volume 20 Number 4

- Is the 'space race' for real and how long will it last?
- Libya's telecom sector returns to investment
- Sensor and satellite: the role of IoT in agriculture





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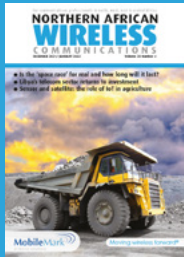


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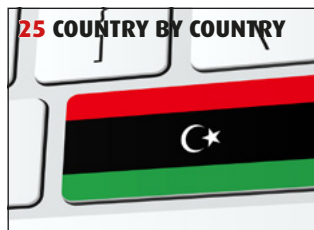
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# Cameroon MoMo users campaign against new tax

Mobile money users in Cameroon have launched a campaign against a new mobile money tax that has come into force under the country's 2022 Finance Law.

Users will have to pay a money transfer tax of 0.2% of the amount transferred or withdrawn. It applies to all electronic money transfer transactions but exempts bank transfers and transfers for the payment of other taxes, duties and levies.

Service providers, such as Express Union, Express Exchange, YUP, YooMee Money, BGFI Mobile Services and others, are obliged to collect the new tax and hand it to the government.

This development has been met with mixed reaction and many want

the government to scrap the tax.

Cameroonian techpreneur and CEO of AppsTech Rebecca Enonchong is fronting the #EndMobileMoneyTax online campaign.

She believes the new tax will slow financial inclusion whereas Cameroon has plans of becoming a digital economy by 2035.

"The new mobile money tax will especially hit the poorest, unbanked segments of Cameroon society. There is no such tax on wire transfers through banks. And it's paid twice. Once to send. Once to receive. And all for what? To pay for government excesses and corruption," Enonchong tweeted.

The new tax is also expected to affect the operations of big



players like MTN Mobile Money and Orange Money.

In August 2021, Cameroon's

president Paul Biya ordered for measures be taken to reduce the use of physical cash transactions.

## Ghana's Celltel allowed to roll out Wi-Fi project

Ghanaian internet and public data service provider Celltel Networks has been granted permission to roll out the Ghana Smart Cities Project, at an estimated cost of US\$300m.

The country's National Communications Authority (NCA) says that Celltel "is authorised to use 2.4GHz and 5.8GHz bands nationwide and VSAT Network Class 3 (1-49 terminals) nationwide to provide access to its clients".

The project will be rolled out in collaboration with various metropolitan, municipal and district assemblies across Ghana.

According to reports, Celltel must start operations within two years of getting the green light and is also

required to pay an annual fee on June 20 to keep the authorisation active.

The goal is to offer affordable subscription Wi-Fi packages and the project promises a nationwide Wi-Fi service that would come with Celltel-branded smart handheld desktop and home devices for subscribers.

Collaboration on co-location and infrastructure sharing are part of the rollout plans and there have also been pilots of the Wi-Fi service.

Celltel's offering also promises to provide specific solutions for health, education, security, religious and other institutions across the country, working with identifiable groups to provide tailor-made packages to suit their needs.



## Over 1,000 illegal towers discovered in Abuja

Authorities in Abuja said they discovered at least 1,300 towers that had been erected in the Nigerian capital without permission.

All of the towers, operating illegally within the Federal Capital Territory, are set to face action and probable decommissioning.

"In fact, recently, without mentioning the company, we have to bring down 126 illegal towers without documentation for them," said Babagana Adam, director of Department of Outdoor Advertisement (DOAS). "So, we have to regularise them and where they don't meet with the regulations, we have to decommission to

the Nigerian Communication Commission (NCC)."

The latter said Nigeria has circa 53,000 cell towers through IHS Towers (16,000+), ATC Nigeria Tower (5,000) and Pan African Towers (1,000). Airtel, MTN, 9Mobile and Globacom are the main mobile network operators in the country.

Meanwhile, research carried out by Statista found that there are currently 108.75 million internet users in Nigeria, which is approximately 51% of the population. It is very much a mobile-first, with the vast majority of users connecting to the internet via smartphones.





# Mastercard rolls out 'Tap on Phone' tech in Africa

Mastercard has joined forces with payment products and services company Network International to roll out Tap on Phone technology across Africa to expand digital payment acceptance, targeting SMEs in the region.

They are working closely with governments, financial organisations, fintech firms and the wider business community to create opportunities for SMEs across the region, the companies said.

The Tap on Phone technology will be powered by Mastercard Payment Gateway Services, giving an estimated 500,000 SMEs in the Middle East and Africa the ability to accept payments through a smartphone.

Network International and Mastercard say that in an omni-channel environment where consumers increasingly want more choice to pay the way they choose, Tap on Phone is an innovative and welcome addition to the payment ecosystem.

The companies have a long-standing partnership, bringing together Mastercard's expertise in payments and technology, and Network International's digital payments capabilities that have a



focus on security and innovation.

"Small businesses are crucial for systemic economic recovery, and by connecting more SMEs to digital commerce tools and affordable payment acceptance

solutions, we are putting in place a strong foundation that can facilitate sustainable growth," said Gaurang Shah, senior vice-president, head of products, EEMEA, Mastercard.

## Nigeria extends NIN-SIM enrolment process

The Nigerian government has extended the deadline for nationals to link their National Identification Number (NIN) to their Subscriber Identity Module (SIM) to March 31 this year.

In October 2021, Nigeria's federal government approved the extension of the deadline for NIN-SIM data verification to the end of 2021.

Although the number of enrolments are now said to have reached 71 million as of December 30, last year, the government thinks this figure has room for growth.

There are more than 14,000 enrolment centres set up across the country and it is estimated that three or four SIMs are linked to each NIN.

It is understood the extension will help the government to consolidate the gains of the process and accelerate the enrolment of Nigerians in key areas like remote schools, hospitals and worship centres, and the registration of legal residents.

Nigerians outside the country are also being targeted and the National Identity Management Commission (NIMC) has also set up enrolment centres in over 31 countries to cater for Nigerians in the diaspora.

## Djibouti Telecom readies deployments ahead of stake sale

Djibouti is extolling the virtues of the "sustained" network deployments by national carrier Djibouti Telecom as it prepares to sell a 40% stake in the incumbent operator, according to reports.

The operator has expanded its 4G/LTE network from the country's eponymous capital to encompass areas in all five of its interior regions and its broadband network now extends to the Tadjourah region, including the northern road corridor connecting to Balho. The government claims this will help Djibouti Telecom "to connect users of the corridor leading to Ethiopia to high-speed mobile internet."

In the south of the country, Djibouti Telecom is finalising the installation of 4G technology at its existing GSM sites in the

As Eyla, Galileh, Goubetto and HolHoll regions.

In August 2021, Djibouti's government set a deadline of September 16 for potential investors to express their interest in obtaining a 40% stake in Djibouti Telecom.

"The state of Djibouti does not consider the monopoly as an intangible dogma ... In the context of a development that has been experienced by the vast majority of African and emerging countries, the company must prepare to face competition from new entrants and the liberalisation of the sector, particularly in the cell phone sector," a government statement read.

Djibouti is one of the last markets in Africa in which the incumbent operator holds a monopoly over the telecom sector.





## Telkom Kenya launches T-kash app

Telkom Kenya has introduced “an easy-to-use application” that will enable its customers to access a wider service offering on its digital financial services platform.

The T-kash App will enable customers to send money to a mobile wallet within the Telkom network, to an M-Pesa wallet and soon to an Airtel Money wallet, or to a bank account. It can be used to buy airtime and data bundles for their own Telkom line or for another Telkom customer, pay bills, as well as make withdrawals and deposits at a T-kash agent.

“The launch of the T-kash App is

the culmination of extensive research on evolving customer trends, anchored on the need for simplicity, security, availability and a diversified service offering,” said Telkom’s chief strategy and business development officer, Julius Cheptony. “The result is an easy-to-navigate platform that seeks to simplify a customer’s experience with respect to mobile financial services.”

Last year, T-kash was integrated into the government digital services platform, eCitizen, enabling T-kash customers to pay for National and County Government Services that are to be found on the Portal. T-kash

customers are now able to make digital payments for services offered by the National Transport and Safety Authority (NTSA); Directorate of Criminal Investigations, Business Registration Service and Immigration Services.

Through T-kash, entrepreneurs in Mombasa, Nyeri and Kisumu Counties can also pay for their single business permits, trade licenses and e-construction permits.

This launch comes two months after Telkom, together with its partners, networks and telecommunications company Ericsson, and systems integrator



NEC XON, signed a Memorandum of Understanding (MoU) to add an additional 2,000 sites onto Telkom’s network, by 2023.

The T-kash App can be downloaded from the Google Play Store, the Huawei App Store as well as the Apple Store.

## Senegal to Cape Verde fibre optic link now complete

The Senegal Horn of Africa Regional Express (SHARE) submarine system linking the west African national with the Cape Verde archipelago has been completed, said HMN Technologies, the company behind the project.

Funded by the Senegalese state and operated by L’Agence de l’informatique de l’Etat (ADIE), the 720-kilometre-long telecom infrastructure, with a total capacity of 16 terabits, links the cities of Dakar and Praia. It will be officially commissioned in the first quarter of the year and will contribute to the exchange of information between the two countries.

Cheikh Bakhom, president and chief executive officer of ADIE, said that “the SHARE cable, the first submarine optical cable entirely owned by the Senegalese state, offers a great strategic opportunity for Senegal and the west African

region to have more Internet capacity and better resilience”.

HMN Technologies, formerly known as Huawei Marine Networks, specialises in the provision of advanced turnkey submarine network solutions. It has been deploying the SHARE cable since May 2020. The project is viewed as an essential pillar for the success of the Smart Senegal project, a key component of the Emerging Senegal Plan (PSE), which is the benchmark for the Senegalese government’s medium- and long-term economic and social growth strategy for 2035.

The Smart Senegal program aims to deploy network and telecom infrastructures and to set up technological platforms in order to significantly contribute to improving the living conditions of the population through greater security



in cities and access to education, health and public information in all of Senegal’s communes. It also aims to support the economic development of Senegal in the priority sectors of the Emerging Senegal Plan (tourism, agriculture, mining, education, etc.).

Bakhom added that “ADIE, by

operating a low latency, high quality and high-capacity optical submarine cable, is ready to provide network operators and Internet service providers with sufficient Internet bandwidth, which can benefit both local residents and businesses to stimulate the development of the digital economy.

## Helios Investment Partners exploring Africa’s MoMo market

Helios Investment Partners (HIP) is exploring the mobile payments segment in Africa, according to the private equity firm’s co-founder and managing partner.

In an interview with American newswire Bloomberg, Tope Lawani, said an “ongoing dialogue” is being maintained to figure out how his firm can help telecom operators leverage their mobile and digital payment platforms.

“There is a desire to carve out these businesses, and we have been in continuous dialog with such players,” Lawani said in an interview, without

naming specific firms. “Companies are trying to find ways of letting these units flourish and not essentially be suffocated by the traditional parts of business.”

He added that telecom companies are currently “trying to figure out ways to let these [fintech, ed.] units thrive and not be essentially stifled by the more traditional management elements. These are strategic investment opportunities for HIP that will help further strengthen its portfolio of telecom businesses.

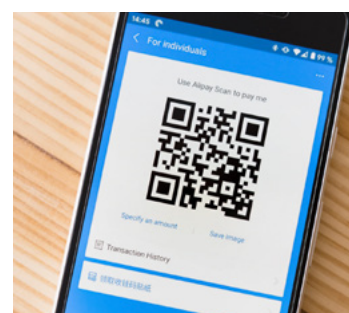
Helios has unveiled its interest in the fintech business of telecom operators

at a time when the digital and mobile payments sector is experiencing growth in Africa, driven by the coronavirus pandemic. Prior to the arrival of Covid-19, MoMo was more concentrated in east Africa (Kenya and Tanzania) while the west and other parts of the continent favoured cash.

Airtel Africa opened its capital to Mastercard last year, while MTN Group is looking to finalize plans to spin off its mobile and financial business by the end of March.

Currently, HIP is in the process of raising \$US1.25bn for future investments. In the mobile and

digital payments sector in Africa, the company is aware of the development of new revenue streams such as consumer credit from which telecom operators can derive new revenues.





# AFR-IX invests in 'Medusa' to boost connectivity in north Africa

Broadband connectivity provider AFR-IX telecom is preparing for the deployment of a new submarine fibre optic system, dubbed Medusa, which will link western and southern European countries to north Africa.

An application for authorisation has been submitted in Portugal, which will host one of the two ends of the telecom infrastructure. AFR-IX telecom is awaiting approval from the relevant authorities.

The project, which has an estimated cost of nearly €326m and is partially financed by the European Investment Bank with €163m, involves a system 8,700 km long, consisting of 24 pairs of fibres with a capacity of 20 terabits each.

This means a total capacity of 480 terabits for the telecom infrastructure, which will connect Lisbon and Sines in Portugal to Port Said in Egypt, with landing points in Spain, Morocco, Tunisia, Algeria, France, Italy, Cyprus and Greece.

"There is a combination of factors that lead us to invest in this cable: besides the fact that there are some submarine cables in the Mediterranean that are reaching the end of their life cycle (and need alternatives), we know that the telecommunications traffic generated in Africa has been growing at an average of 55% per year," said Norman Albi, president and chief executive officer, AFR-IX telecom.

The connectivity provider's investment in Medusa follows the increased demand for high-speed connectivity driven by Covid-19 since 2020.

According to Norman Albi, the new system will feature "state-of-the-art fibre technologies" and will have an "open" cable configuration, "which can be connected to any type of technology or brand." It will be commissioned in segments, with the west Mediterranean branch (Portugal, Spain, France, Italy and



Greece) expected to be ready for operation in the third quarter of 2024. The east Mediterranean

branch (Tunisia, Greece and Egypt) will be ready in the first quarter of 2025.

## Infinet Wireless interconnect Coca-Cola Bottling Company offices in Egypt

Infinet Wireless the global vendor of fixed wireless broadband connectivity solutions, helped Coca-Cola Bottling Company of Egypt to interconnect its offices in 26 locations using its point-to-point product InfiLINK 2x2.

The largest company of its kind in the region, the Coca-Cola Bottling Company describes the solution as "perfect" for a range of applications. The company is a joint venture multinational company, formed of more than 10,000 employees allocated among the head office, five

manufacturing plants and 42 depot facilities all over Egypt.

NextGen Communications, a well-known local telecommunications system integrator, was an intermediary partner that conducted consultations, compared products and reviewed key features as well as prices. The implementation process, with all the negotiations and calibration included, was over a three-month period.

The client is planning to extend the current network infrastructure for

better efficiency.

"Infinet Wireless offers products which, along with the design and support by NextGen Communications, succeeded to bring the magical blend of quality and cost-effective broadband wireless access connectivity that tackled all our requirements and met our expectations, helping our branches to be interconnected across the whole country," said Wael Kenaway, IT network and communications manager at the Coca-Cola Bottling

Company of Egypt.

Sherif El-Shazly, business development director at NextGen Communications, added: "As part of the huge infrastructure development, Coca-Cola Egypt has started the digital transformation journey for its 43 links across the country. Following a full assessment of a number of vendor options available in the market, Coca-Cola Egypt selected Infinet Wireless solutions as the most advantageous solution to meet their requirements."

## Liberia rebrands state operator as LTC Mobile

State-run Liberia Telecommunications Corporation/ LIBTELCO will be re-branded to LTC Mobile (Liberia Telecommunications Corporation Mobile) as it prepares to launch its new GSM network.

According to local news reports, the country's president George Weah (pictured) will made the first call on the operator's new network on January 18.

In its communication to the public,

the operator's management has emphasised that LTC Mobile aims to complement existing providers Lonestar Cell-MTN and Orange Liberia rather than seeking to replace either of them. LIBTELCO's remit was expanded to include GSM in August 2020, after Liberia's House of Representatives voted to amend the Telecommunications Act of 2007.

At the time, the committee overseeing the move claimed that it

would allow LIBTELCO to "provide world-class telecommunications products and services at cheaper, affordable prices for all Liberians that will enable growth of various sectors, such as education, healthcare, banking, energy and serving the masses, at large, for a sustainable economic growth of our society."

The operator's licence was formally issued in November 2020.



Liberian president, George Weah



# Telecom Egypt and GRID Telecom sign a strategic MoU to connect Egypt and Greece



**Cairo, 14 February 2022:** Telecom Egypt, Egypt's first integrated telecom operator and one of the largest subsea cables operators in the region, and GRID Telecom, subsidiary of the Independent Power Transmission Operator (IPTO) in Greece, signed a strategic Memorandum of Understanding (MoU) to connect Greece and Egypt using submarine cable infrastructure.

The MoU was signed at IPTO's headquarters in Athens by the Managing Director and CEO of Telecom Egypt, Mr. Adel Hamed and the Chairman and CEO of IPTO, Mr. Manos Manousakis. Present during the signing ceremony were Egypt's Minister of Telecommunications and Information Technology, Dr. Amr Talaat, Greece's Minister of Digital Governance, Mr. Kyriakos Pierrakakis, and the Chargé d' Affaires of the Embassy of Egypt in Athens, Mr. Mohamed Elghazawy.

The strategic agreement sets the ground for the exploration of different connectivity options

between Greece and Egypt, as well as the optimal utilization of Telecom Egypt's and Grid Telecom's state-of-the-art networks and international reach, through their existing and future optical interconnectivity to neighboring countries.

Bilateral talks between the Ministers and high-ranking government officials of the two countries also took place during the signing ceremony, covering a number of topics, namely Artificial Intelligence, Innovation, and Entrepreneurship.

With a domestic fiber optic network currently exceeding 4,000 km, Grid Telecom, IPTO's vehicle in the telecommunications market, is already offering diverse fiber connectivity between the island of Crete and the Greek mainland, in addition to its network infrastructure in Italy, the Balkans, and Central Europe, leveraging its position as a major, carrier-neutral hub in Europe.

Telecom Egypt's international network extends to over 140 landing points in more than 60 countries

across the globe. The company has invested extensively in its submarine cable infrastructure, which is the shortest and most reliable crossing path between Africa, Asia and Europe, making Telecom Egypt the partner-of-choice for many international telecom players over the years. Additionally, Telecom Egypt is working on multiple layers of its infrastructure diversity, such as establishing new submarine landing stations and crossing routes as well as investing in new systems and solutions that will cater for the rising global demand for international capacities.

**The Minister of Communications and Information Technology of Egypt, Dr. Amr Talaat, stated:**

"Egypt and Greece have deep rooted economic, political, and cultural ties, which have united the two countries for over thousands of years given that they are among the oldest civilizations known to humanity. The MoU signed between the two companies will contribute to strengthening bilateral cooperations in the field of communications

and information technology by maximizing data traffic that crosses the Mediterranean Sea, through Egypt and Greece. This will lead to future discussions about accelerating the construction of submarine cables between the two countries, which will facilitate the massive flow of data worldwide, which continues to increase exponentially.

Egypt's distinct geographic location makes it a regional data hub, as it transfers traffic to Asia, Africa, and Europe through more than 13 submarine cables, which are scheduled to increase to 18 cables within three years. There are also plans in place to complete HARP, the submarine system that will be circling the African continent by 2023."

**The Minister of Digital Governance of Greece, Mr. Kyriakos Pierrakakis, stated:**

"Today, we welcome the signing of the Memorandum of Understanding pertaining to interconnecting Greece and Egypt via submarine cable infrastructure. Exploring the possibility to deep dive into underwater connectivity, we trust this infrastructure that provides high quality, high volume of content and fast services. This is an important agreement between Grid Telecom and Telecom Egypt as the cables' route enables connecting points of presence in our countries and across continents, and secures the exponential growth of our respective digital markets."

*The Chairman and CEO of IPTO, Mr. Manos Manousakis, stated:*

"IPTO, building upon its ongoing collaboration with Egypt in the Energy sector, enters into a constructive partnership with Telecom Egypt that lays strong foundations for new international connectivity projects in the growing field of telecommunications between the two countries. IPTO's agreement to work with one of the world's leading subsea cables operators further advances our international growth strategy and can actively





contribute to Greece's emergence as a key telecommunication hub in the broader Mediterranean region."

**The Managing Director and CEO of Telecom Egypt, Mr. Adel Hamed, commented:**

"We are pleased to work with Grid Telecom, as this collaboration reinforces our strategy to further expand our international infrastructure and increase the geo-diversity of our assets. With Grid Telecom as an important strategic partner, we will be able to expand our reach to Europe via Grid Telecom's extensive network in and beyond Greece."

**The Director of Grid Telecom, Mr. Georgios Psyrri, said:**

"Grid Telecom, in its only three years of presence, has achieved major domestic and international business partnerships and is already recognized as a key provider in the wholesale telecommunications market. With this MoU, Telecom Egypt becomes an important partner and strong ally for our regional expansion and highlights the strong market confidence to our Company's further growth prospects".

## About IPTO

The Independent Power Transmission Operator (IPTO) is responsible for the operation, monitoring, maintenance and development of the Hellenic Electricity Transmission System, aiming to ensure safe and uninterrupted power supply across the country. IPTO's Ten Year Network Development Plan provides for the electrical interconnection of almost all Greek islands in the High Voltage System by 2029, the strengthening and modernization of the continental power grid as well as the facilitation of Greece's transition towards a cleaner energy mix. IPTO's 5-billion-euro investment program -among others- includes the emblematic Crete-Attica power link, the completion of Cyclades and Sporades interconnections and energy storage projects.

[www.admie.gr](http://www.admie.gr)

## About Grid Telecom

Grid Telecom is a Greek company established in January 2019. A 100% subsidiary company of ADMIE (Independent Power Transmission Operator-IPTO), Grid Telecom is IPTO's vehicle for providing telecom services to national and international Providers. Grid Telecom's fiber optic network (terrestrial and submarine) exceeds 4000km throughout Greece. The expansion of the fiber optic network will exceed 6000km throughout Greece in the next years, connecting islands with the core network. The company recently operates a DWDM network, providing ultra-fast capacity services.

For more information, contact:  
Email: [info@grid-telecom.com](mailto:info@grid-telecom.com)

## About Telecom Egypt

Telecom Egypt is the first integrated telecom operator in Egypt providing all telecom services to its customers including fixed and mobile voice and data services. Telecom Egypt has a long history serving Egyptian customers for over 160 years maintaining a leadership position in the Egyptian telecom market by offering its enterprise and consumer customers the most advanced technology, reliable infrastructure solutions and the widest network of submarine cables. Aside from its mobile operation "WE", the company owns a 45% stake in Vodafone Egypt. Telecom Egypt's shares and GDRs (Ticker: ETEL.CA; TEEG.LN) are traded on The Egyptian Exchange and the London Stock Exchange. Please refer to Telecom Egypt's full financial disclosure on [ir.te.eg](http://ir.te.eg)

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# Transsion and Here partner to enhance location accuracy

Transsion, the provider of smart devices and mobile services in global emerging markets has selected location data and technology platform Here Technologies to improve its location accuracy capabilities in emerging markets such as Kenya, Nigeria and Ghana.

The former will be able to identify accurate positioning of its devices both indoors and outdoors. This works especially when satellite signals of Global Positioning System (GPS) are not available, such as when the device is located indoors or the GPS signals are blocked by objects. As a result, Transsion will enable its smartphone users to locate devices, people, and objects faster, with higher precision and confidence.

“As a technology company

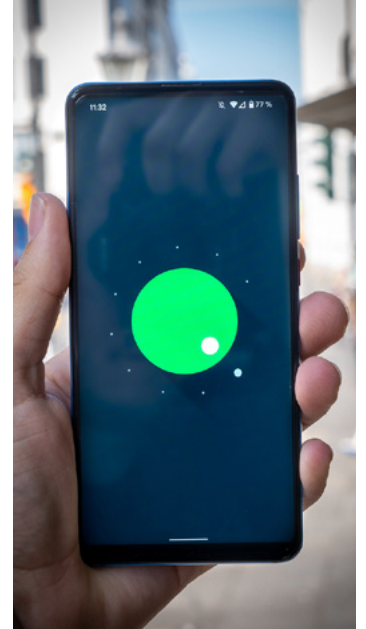
with a focus on global emerging markets, we’ve long been committed to supporting local communities there,” said Robin Wang, assistant president at Transsion. “We’ve decided to deploy with HERE because they have presented a stand-out, compelling solution for markets that lack advanced infrastructure such as Africa and India.”

One use case that the service will benefit is ride-hailing or ride-sharing. In Africa, ride-hailing has become increasingly popular over the years, with the number of users expected to grow 16% from 50.3 million in 2021 to 58.4 million by 2025. Traditional taxi companies are also pivoting their business model to include services that can be booked via mobile applications,

making it more transparent for customers than before.

“For ride-hailing services, being able to identify the exact location for pick-ups and drop-offs – whether it’s the right side of the street or the right entrance/exits within large venues such as airport or stadiums – makes a huge difference in improving user experience. That’s the difference Transsion is here to provide,” added Wang.

The global number of mobile internet users is expected to reach five billion by 2025, a 25% increase from 2020. This figure represents 60% of the world’s population, with much of the forecasted growth coming from emerging digital markets in Asia Pacific, sub-Saharan Africa, the Middle East and North Africa (MENA), and Latin America.



## New riverbed fibre links Congo to CAR

The Republic of Congo and the Central African Republic (CAR) are being connected by a 285km sub-river fibre, courtesy of Huawei and China Communications Services International (CCSI).

Part of a project plan to make the former a hub for information and communications technology in the region, the two Chinese companies started work on the project in January in Brazzaville, the capital of Congo. The city lies on the Congo River and has a direct river connection to Bangui, the capital of the CAR.

“We have come to launch the construction works of the fibre optic network between Congo and CAR, knowing that a large part of the border between the two countries is under water,” said Léon Juste Ibombo, Congo’s minister of posts, telecommunications and the digital economy.

Huawei and CCSI are using a cable-laying barge to run the fibre along the Congo River and the connecting Ubangi River.

Ibombo said at the ceremony:

“This barge contains the necessary equipment to be able to carry out the fibre optic interconnection work between our two states.”

Michel Ngakala, the project coordinator for the central African backbone, told media the work will consist of laying 285km of steel-reinforced fibre on the riverbed.

The interconnection of Congo to the CAR is part of phase two of the backbone project, which aims to interconnect the countries of the Economic Community of Central African States (ECCAS) with fibre. It is understood work will be completed before the end of the year.

Congo already has a link with Gabon and Cameroon.



## EnduroSat and SayariLabs launch Kenya’s first software-defined nanosat

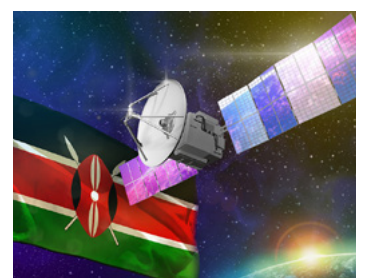
Kenyan space company SayariLabs and EnduroSat have signed a commercial agreement to launch Kenya’s first 3U software-defined nanosat called Taifa-1 (‘one nation’ from Swahili), to be launched by SpaceX’s Falcon 9 in Q4 2022.

The nanosat will be loaded with a hyperspectral, Earth-observation camera that will help customers with environmental, wildlife, agricultural monitoring, and land use mapping, in their mission of preventing calamities in the region. In the past decade, east Africa has been hit with heavy droughts and wildfires, causing water crises, and damages of local agriculture and food supplies.

“Over the past decades, space and satellite industries have been reserved for the wealthy and mighty,” said, Aaron Nzau, founder and chief executive officer (CEO), SayariLabs. He added that the company “is on a mission of democratising these industries for all interested players in the African region” and in making

Kenya a space giant in the next generation. “With the advancement of technology, this fantasy is quickly becoming a reality,” Nzau continued. “Our partnership with EnduroSat, a leading company in this industry, is a major game-changer and it strengthens our hope and belief of being a major space and satellite solution provider in Kenya, the African region and other parts of the world.”

Raycho Raychev, founder and CEO EnduroSat, added: “I am really proud to have the opportunity to support SayariLabs in their efforts to bring space closer to thousands of people in Kenya.”



## 'Cameroon MNOs compete to cash in on Afcon 2021'

Mobile network operators in Cameroon "are scrutinising" the Africa Cup of Nations (Afcon) to capitalise on business opportunities linked to digital infrastructure and communication, according to a report on IT Web Africa.

The website says that prior to start of the tournament, Judith Yah Sunday, general manager of state-owned operator Camtel confirmed via a message posted on Twitter, that the company had upgraded the quality of its services and put it in place state-of-the-art telecommunications infrastructure to ensure optimal coverage during the competition.

It also reports that MNOs have initiated promotional campaigns in a bid to increase returns or attract new subscribers.

Orange Cameroun, an official sponsor of Afcon, announced a competition whereby subscribers who make Orange Money transactions (transfer, payment or withdrawal) to the value of CAF5000 or more, or who subscribe to a bundle of at least CFA250, can win. The operator has also ringfenced 500 smart TVs and 15 cars.

MTN Cameroon has initiated a competition for subscribers who, based on certain transactions, stand a chance to win 500m2 pieces of titled land as a prize. The telco also has voice, SMS and data bonuses in store for its subscribers during the football tournament.

Meanwhile, MTN Cameroon, Orange Cameroun, Nexttel and Camtel have either set up their own fan zones or kiosks around general fan zones, offering customer services such as sale of SIM cards, identification, installation of specific apps, sale of mobile hardware, etc.

CAF said it was investigating the situation, the website said.



## Talking fraud

### Identity and authentication in Africa

It's time to review your organisation's approach and how it fits the world outside, writes Dario Betti, CEO, Mobile Ecosystem Forum (MEF).

The wave of digital transformation triggered by the pandemic has changed many organisations quickly – from governments to restaurants, organisations are now getting digitally ready. How has that impacted Africa? The region has seen a bout of growth with Fintech – an industry without some strong fundamentals on identity and authentication is not a stable construct. There is some good news here, but a lot of work to be done still. There are some important considerations to be made at a global level too.

African markets have embraced biometrics solutions. These are those solutions that measure a person's unique physical characteristics; usually fingerprints, face or eye recognition. They do not require high digital literacy which can be positive in some parts of markets but usually require a more advanced or specialised device. Solutions like that are more common for government use or as gatekeeping, where an office or institution may check digitally identity. For instance, in Zimbabwe the Public Service Commission (the government / civil service) implemented a biometric index of its workers. The scheme captured the fingerprints, DNA, iris and retina patterns of every official within government. It was announced in 2018 and rolled out in 2018. It showed that 3,000 salaried workers were non-existent. However, this large deployment has not yet been a truly digital identity solution – yet a welcome first step showing good results for the nation.

Many countries' laws on biometrics are still not truly ready for the digital age. However, there are already 24 countries with laws and regulations to protect personal data. We have often commented at MEF on the South African POPI (Protection of Personal Information) and found it as an advanced literature.

Unsurprisingly though, mobile remains the major identity solution for African countries. Many people in Africa still lack identity numbers or other forms of formal identification, yet now all aspects of daily life are converging to mobile. People are accessing services and curating a digital identity through their phones, and this trend is already particularly strong in financial services where many use mobile wallets.

Take the mobile money success in Kenya, m-Pesa. This can show an example of success in Africa, but also how it is important to keep on innovating on authentication. Safaricom in 2017 gave merchants access to photo identification technology. This was an attempt to limit fraud on its payment platform. Special, pre-programmed smartphones were given to m-Pesa agents to verify the identity of customers. These handsets allowed comparison via an app of the photo taken of the user the moment of SIM registration. M-Pesa's success made it more vulnerable to the attention of criminals and fraudsters.

In 2020, in Tanzania it became compulsory to register each SIM card against the biometrics of the users. In a successful move, the government found a way to distribute an equivalent to a digital ID card to the mass market linked to biometrics, effectively based on a mobile phone.

There are many mobile solutions to authenticate, and in Africa just as in Europe, one-time passwords – or codes sent to a nominated/registered phone number are growing in importance. The use of these services also allows to reach users who are not on data networks, or do not want to spend money on data access. Two Factor Authorisation (2FA) is now a mandatory requirement in most jurisdictions across Africa. Most of the banks and payment service providers across the continent have met this requirement with SMS OTP.

Myriad is a company that specialises in authentication for the African market and have championed the commonly used USSD channel. USSD is a signalling message presented temporarily on a phone screen. The content is not stored in the phone; it is a string of content or a menu of up to 182 characters.

It is available on old 2G devices as well as smartphones. This old GSM standard provides a basis for digital banking.

Security in personal data/authentication and identities is hardly an Africa only problem. In 2015, global fraud amounted to US\$3tn. By 2025 the figure from fraud and cybercrime will reach US\$10.5tn. The implication is that identity and access management to services are now the trojan horse for fraudsters worldwide.

What is the role of mobile in these personal data and authentication scenarios? Mobile is a truly personal service, always present and mass adopted: it has carved a role as an identifier. What is emerging is firstly a pronounced move towards device-based technology and using the hardware device itself to authenticate the user and produce a result, such as face ID or fingerprints. Secondly, it is the role that the mobile operator can play by using the unique assets of a mobile device and knowledge of the SIM. One application of leveraging the SIM is 'Mobile Connect' which has been very successful in India. A solution like this could be asking users to confirm a PIN code via their/phone SIM.

The solutions are still widely fragmented though; it should not be surprising that overall authentication is a fragmented market. The level of security that is required by each action is different and the level of acceptable ease of use for authentication or verification. To approve a large bank payment, you might want to use a highly secure one and are happy to wait a few more seconds but to check your medical records or pay for your groceries you might have expectations on security and immediacy.

Finally, we are seeing significant growth in approaches that are independent of either the device or mobile operator which can be used when a device may be unavailable – such as lost or out of a coverage area. A mobile identity (as well as other biometrics) would be maintained through a cloud-based interface or another distributed means of authentication.



Dario Betti, CEO,  
Mobile Ecosystem Forum (MEF)



## Safaricom confident over Ethiopia despite conflict

Kenyan mobile operator Safaricom is confident of its plans to operate in neighbouring Ethiopia - despite the ongoing internal conflict - and has stipulated a Capex investment target of US\$1.5bn-US\$2bn in the first five years.

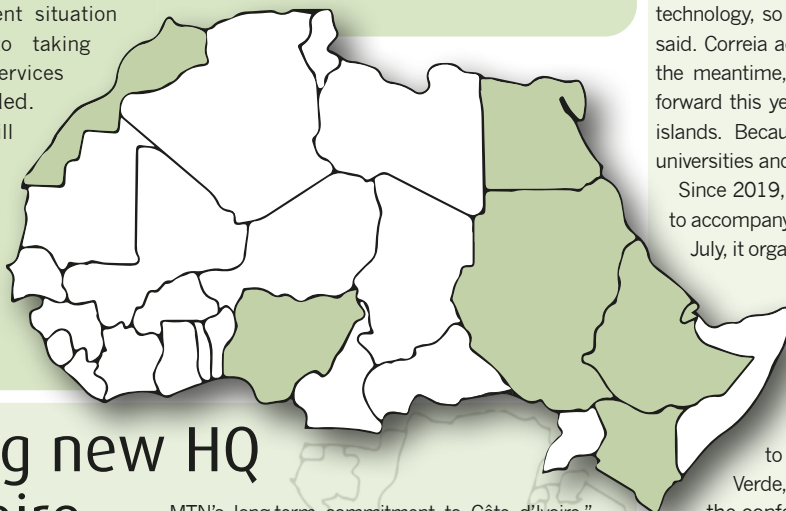
The news came as the company announced its target in its H1 FY22 results, although it did concede that the conflict could delay plans to begin operations by mid-2022, according to its licence.

"We are looking forward to launching commercial operations as projected, while cognisant of the current evolving political conflict in Ethiopia, as we proceed with our plans adapting to and assessing the situation as it evolves," said Peter Ndegwa, chief executive officer, Safaricom. "We hope for a fast and peaceful resolution to the current situation and we remain committed to taking telecommunications and digital services to the people of Ethiopia," he added.

The Ethiopian government is still intent on opening up the economy as it sees a large population (115 million with a median age at 17 years), growing GDP per capita (average at 7% over the last seven years) as some of the metrics that hold promise for telecommunications growth.



Safaricom said Ethiopia's low penetration of services - with telecommunications at 43% and mobile financial services at less than 2%, makes it an attractive market.



## MTN building new HQ in Côte d'Ivoire

MTN Group has launched the construction of a state-of-the-art headquarters for MTN Côte d'Ivoire, as well as the start of a local trial of 5G services in the port city of Abidjan.

After the conclusion of the Côte d'Ivoire-South Africa Business Forum in which MTN participated, a foundation stone-laying ceremony was held at a site at the Akwaba Business Park in Port Bouët, a suburb of the city.

The event was attended by South African president Cyril Ramaphosa and Ivorian prime minister Patrick Achi.

"The construction of this head office is indicative of

MTN's long-term commitment to Côte d'Ivoire," said MTN Group chairman Mcebisi Jonas, who led the MTN delegation alongside group president and chief executive officer Ralph Mupita.

The latter added: "Our strategic intent is to provide leading digital solutions for Africa's progress, and our presence here today illustrates the importance of MTN Côte d'Ivoire to the Group's overall portfolio."

MTN Group owns 58.8% of MTN Côte d'Ivoire, which is one of three mobile operators in the country and with a market share of circa 35%.

At the end of June 2021, it had 13.7 million subscribers, of whom 4.9 million were active data users..

## CVTelecom waits on gov decision before investing in 5G

Cabo Verde Telecom Group (CVTelecom), island nation Cape Verde's incumbent telecom operator, is waiting for the government to confirm whether China, the US or Europe will provide the country with 5G equipment before it begins investments in the next-generation technology.

That is according to João Domingos de Barros Correia, the director and chairman of the board of CVTelecom Group, who was speaking to Portuguese news agency Lusa.

"The state will have to make a certain concession, it will have to clarify what it wants in terms of 5G technology, so we can make the best decision," he said. Correia added that if the partner is chosen in the meantime, the company will be able to move forward this year with pilot projects "on the tourist islands. Because 5G brings a lot to tourism, in universities and also in port areas".

Since 2019, China's Huawei has positioned itself to accompany Cape Verde in the adoption of 5G. In July, it organised a conference on fifth-generation (5G) networks in the capital Praia.

It was in partnership with the multisectoral Economic Regulation Agency (ARME). The technology company took the opportunity to present its expertise to the deputy prime minister of Cape Verde, Olavo Correia, who was present at the conference.

CVTelecom sees in 5G an asset to contribute to the socio-economic development of the country, in addition to the growth of its revenues, which were posted at more than 1.8 million euros in 2020; a growth of 10.5% compared to 2019.



## Airtel Uganda to list part of its capital

Airtel Uganda is preparing to list part of its capital on the Uganda Securities Exchange (USE), the local stock exchange and said that "discussions are underway internally" on the move.

David Birungi, Airtel Uganda's public relations manager, said the telecom company will inform the public about the details of the deal once the discussions are complete. The operator will have to publish, among other details, the price of the

shares to be sold, the process of acquisition by local investors, the timetable of the whole IPO operation.

Airtel Uganda's proposed IPO comes about a month after rival MTN Uganda offered 4.47 billion ordinary shares at US\$200 (US\$0.057) per share. The company eventually raised US\$535,939,900,000 (US\$152 million) during its initial public offering (IPO), which ran from October 11 to November 22, 2021. The company officially went public December 6.

Under new rules established by the government in 2019, officially effective in 2020, any telecom licence renewal will see the affected operator to list up to 20% of its capital on the stock exchange within two years of acquiring the new operating title. Airtel Uganda paid US\$74.6m in December 2020 to continue operating in the country for 20 years. According to regulations, the company "must be in good standing" by the end of this year.

## Monty Mobile rescues Gambia's Comium

Monty Mobile, the UK-based VAS telecom solutions provider, intervened to save Gambian mobile operator Comium from permanent closure.

After long negotiations and mediations, buyer "achieved a healthy and peaceful financial and legal reconciliation" between Comium and the Gambian authorities. It has finalised a full debt restructuring in addition to a settlement of all unresolved fees for both years 2020 and 2021, along with safeguarding a source of living for more than 150 families.

Under the terms of the deal, Comium will proceed its operations under Monty Mobile's investment expertise and consultancy proficiency. The new owner said it aims to upgrade Comium's existing network with

ground-breaking technology by providing subscribers with advanced products and solutions, paving the way towards 5G networks technology.

This step will support the progress of Monty Mobile's mission towards integration of the world's community integration.

Monty Mobile has a history of working with a number African operators. In recent years it collaborated with Somtel of Somaliland for the implementation of two value-added services: My RBT (ring back tone) and missed call alerts.

It has also partnered with 9mobile of Nigeria and Glo Ghana, both of which chose Monty Mobile as their preferred international A2P SMS hub.

## Chad's government negotiates lower internet rates with operators

The Chadian government is negotiating lower internet rates with telecom operators, in a bid to make services more accessible in a country which is among the nations with the most expensive prices in Africa.

Exchanges were held to this effect in January between the minister of posts and digital economy, Idriss Saleh Bachar, with the managing directors of the cell phone companies Moov Africa and Airtel Chad, Mohamed Dkhissi and Djibril Tobe.

Moov Africa's website shows that a 1 gigabit (GB) prepaid mobile Internet package is charged at CFA1,000, which is valid for 24 hours.

For the less affluent, a 200 megabits (MB) package valid for 24 hours costs CFA400. At Airtel, a package of 200 MB valid for 24 hours costs CFA500 and 1 GB costs CFA1,500.

These rates are quite expensive compared to those charged in neighboring Cameroon, where Orange offers a package of 100 MB valid for 24 hours at CFA100 and CFA1,000 for 2 GB. This is the same rate at the competitor MTN. During discussions, Dkhissi and Tobe, Bachar said that the tariff proposals already made to the ministry are neither brilliant nor beneficial to Chadians, both in terms of price and duration of validity. He asked representatives of Moov Africa Chad and Airtel Chad to make further adjustments.

## Vodacom Group gets green light for majority stake in Vodafone Egypt

Vodacom Group of South Africa has won the backing of its shareholders to acquire 55% of Vodafone Egypt from Vodafone Group to the tune of R41bn (US\$2.7bn).

The buyer plans to issue 242 million new ordinary shares at R135.75 per share to finance 80% of this investment, while the remaining R8.2bn will come from its cash resources, the company said.

"This is an exciting and important step for Vodacom, as the acquisition of Vodafone Egypt will allow us to transition from a telecommunications company to a technology company," said chief executive officer Shameel Joosub.

The deal forms part of Vodacom's strategy to strengthen its presence in Africa and once completed, it will offer the company new growth opportunities beyond its key markets in sub-Saharan Africa. Vodacom will therefore benefit from Vodafone Egypt's financial services platforms, which concentrate more than 80% of the unbanked Egyptian population.

Vodacom Group said it expects the deal to be completed before the end of its 2021 fiscal year (March 2022).

## SAP appoints new president of EMEA South region

SAP's EMEA South region, which comprises Africa, will be headed by regional president Emmanuel Raptopoulos, the group said in a statement.

He succeeds Claudio Muruzabal, who has been promoted to president of SAP's global cloud success services organisation.

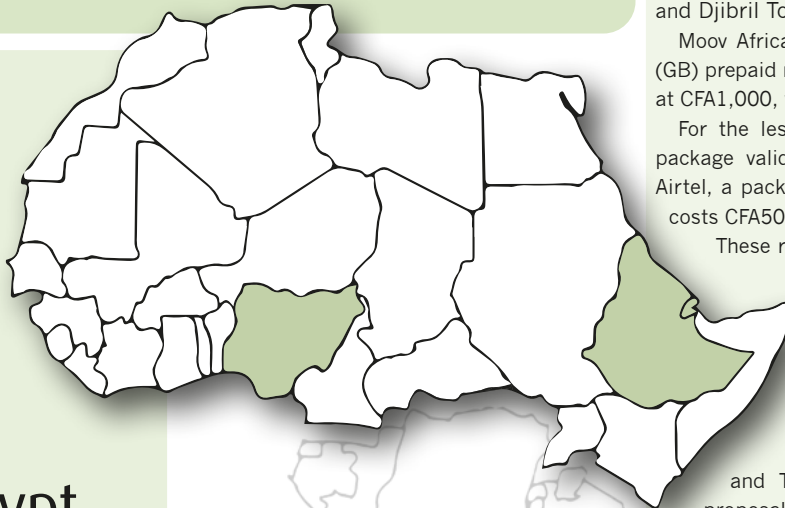
Raptopoulos will report to Scott Russell, head of the customer success unit and member of the SAP executive board.

"The voice of our

customers is loud and clear," said Russell. "They want to transition to and transform in the cloud for rapid innovation, exceptional experiences and next-level business outcomes.

Raptopoulos added: "EMEA South's next decade will be driven by cloud growth, anchored by our purpose, people and partnerships, and I am honoured to take on this new role. "The region represents a dynamic market for SAP, as agile organisations are transforming their businesses into intelligent and sustainable enterprises via the cloud."

As well as Africa, SAP EMEA South also encompasses southern Europe and the Middle East.





## SA's telecoms off to promising start following number portability finalisation

South Africa's telecoms sector is off to a promising start in 2022 with the finalisation by the Independent Communications Authority of SA (ICASA) of the number portability framework and the provision of a firm commencement date.

This is according to South Africa's Independent Service Providers' Association (ISPA) which has for a decade and a half been calling for the full implementation of number portability. That call was finally heard and ICASA December 15, 2021 published the relevant Number Portability Regulations in the Government Gazette.

Most importantly, ICASA proclaimed that the Number Portability Regulations will come into force on March 7, 2022. From this date local businesses, NGOs and call centres can change to a different service provider without having to change their 0800, 0860 or 087 number.

Further good news is the fact that ICASA also finalised the technical details of how number portability will actually work in its amendments to the Ordering System Specification.

"This welcome news also signals to business and consumers the necessity of holding off

on entering into further long-term agreements with providers," said ISPA regulatory advisor, Dominic Cull. "This is because the full implementation of number portability will soon see greater competition in providing telecoms services when it comes to non-geographic phone numbers."

He added that "the new two months will be an opportunity to investigate deals and determine if you're getting the best service and value offering from your incumbent provider".

Prior to ICASA's December 2021 announcement the issue around number portability was that while one million geographic numbers and eight million mobile numbers had been ported in SA, it remained impossible to port non-geographic numbers used by local businesses, non-profit organisations and consumers for toll-free, shared-cost, premium rate and Voice over Internet Protocol (VoIP) services (numbers starting with 0800, 0860, 0861, 0862 and 087).

This delay has now been dealt with and industry and the Number Portability Company (NPC) stand ready to port non-geographic numbers from March 7.

## MTN SA makes two new appointments

MTN South Africa has named Michele Gamberini its new chief technology and information officer (CTIO), while Megan Nicholas has taken on the role of managing director at MTN Supersonic, the network operator's fibre and broadband ISP.

Gamberini joins from Telecom Italia (TIM Group) where he gained 25 years of experience across the business at TIM Italy and most recently Global Group CTIO.

"Having worked in Italy, Spain, Greece and supported Brazilian technological choices, Gamberini had the unique experience of preparing the network evolution ahead of the 2004 Olympic Games in Athens," MTN said in a statement. "He holds a master's degree in electronics engineering."

MTN SA's chief executive officer Charles Molapisi added: "MTN SA has established itself as the benchmark for what network quality should be while also driving massive and compelling enhancements in the IT space. As we work toward our Ambition2025 strategy which is anchored on building the largest and most valuable platform business, I believe that Gamberini's wealth of experience will have a notable contribution towards enhancing our technology functions as well as providing a network that is second to none to all South Africans."

Commenting on his appointment, Gamberini said: "I am delighted to be joining such a high-performing business and a team within the technology and information systems environment that have proven themselves to be amongst the best in the world. I am most looking forward to continuing and growing the exceptional work the MTN network team has delivered over the years," Gamberini added.

Nicholas is an internal appointment, having last worked as general manager for residential.

"As part of our ongoing commitment to grow our Supersonic business in this ever-changing environment, we consider this appointment as one of the strategic levers," Molapisi added.

Nicholas said: "I am very excited to be leading the execution against our 2025 strategy to 'own the home' and I believe that Supersonic is an important contributor to achieving that ambition."

## PowerX appoints Green as non-executive director and strategic advisor

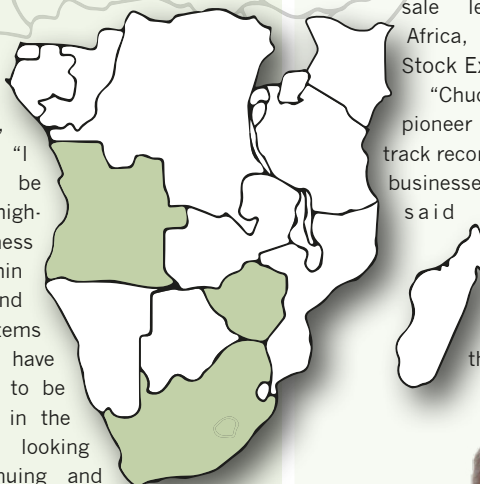
PowerX, the company that delivers large-scale data analytics and artificial intelligence (AI) to boost the performance of mobile towers, has named Charles C. Green III (Chuck Green) as director and strategic advisor.

The company said Green's appointment reflects his belief that AI innovation is a vital need for the tower industry. "It will help agile, highly skilled tower teams adapt to fast-changing needs, including the ever-growing demand for 4G / 5G connectivity and the requirement to manage the environmental effects of this fast-paced growth," the firm added.

Green was founding CFO and EVP at Crown Castle International from 1997-2001, the first Tower Company established in the world and the first listed on the New York Stock Exchange. He also co-founded Helios Towers Nigeria (HTN) in 2005 and was advisor and non-executive director for 10 years.

In 2009, Green co-founded and held the positions of CEO, then executive chairman for Helios Towers Africa, the pioneer of tower sale leaseback transactions in Africa, now listed on the London Stock Exchange.

"Chuck is a highly successful pioneer of the tower industry with a track record of building top class tower businesses that is second to none," said William Mitchell, non-executive chairman at PowerX. "We are excited at the complementary skills that Chuck brings to the PowerX team."



# Airtel Africa listed on LSE, grows in Nigeria

Airtel Africa has been made a part of the FTSE 100 Index with effect Monday, 31 January 2022, Indian parent company Bharti Airtel said.

The operator Airtel entered Africa in 2010 and through its mobile telecoms and mobile money services, Airtel Africa offers services to over 122 million people across the 14 African markets in which it operates.

"This is a significant milestone for Airtel Africa, which becomes part of the FTSE 100 in just two and a half years of listing on the London Stock Exchange, joining the most valuable companies," Bharti Airtel chairman Sunil Mittal said in an official statement. He added that Airtel Africa "is a strong player in the African continent, which has emerged as the next growth frontier globally".

Airtel Africa Plc was listed on London Stock Exchange in late-June 2019.

Meanwhile, Airtel Africa, a member of the SWOOT (Stocks Worth Over One Trillion), is now the most capitalised company listed on the Nigerian stock exchange, surpassing Dangote Cement, owned by Africa's richest man, Aliko Dangote.

It crossed the ₦5tn mark for the first on Friday as the stock gained 9.9% to close at ₦5.4tn. This is also the first time any Nigerian company has surpassed ₦5 trillion in market capitalisation.

Airtel first surpassed Dangote Cement as the most capitalised stock after it gained 10% closing at ₦1,271.



## Talking critical

### Land mobile radio options expand in Africa

Even as high-speed mobile cellular data services expand, the tremendous utility offered by simple push-to-talk voice communication is tough to beat. In the 2021 edition of Omdia's Licensed Mobile Radio Report, the installed base of these handheld portable and vehicle-mounted radios continues to expand. The lurking question, however, is what changes are in store as push-to-talk over cellular gains traction in the years to come.

Land mobile radio spans a variety of radio technologies, ranging from simple analog systems to complex, computer-driven digital trunked networks. But at its core, the land mobile radio market is focused on a fundamental goal: simply and efficiently getting a voice transmission to a group of listeners. For the user, the key to simplicity is a single button that initiates the voice transmission.

#### Push-to-talk simplicity wins

The simplicity of push-to-talk means that a user does not have to unlock a screen, look up a number, or make multiple button taps when initiating a conversation. This feature makes push-to-talk the preferred voice communications tool for enterprise teams on construction sites, airfields, bus fleets, and other dispersed work activities. All users need to hear the same message, and push-to-talk makes this possible. Likewise, in public safety agencies, the simplicity of push-to-talk is an essential feature that aids police and fire operations.

Land mobile radio (LMR) systems deliver the push-to-talk capability with narrowband radio signals in the spectrum below 1 GHz. As a narrowband technology, data transmission capabilities are minimal. Digital LMR systems such as TETRA or DMR support data transmission, but only as short messages. Older analog LMR systems are voice only, with no data functionality. For heavy data sessions supporting graphics, cloud applications, or video, users must turn to LTE or 5G mobile broadband technologies.

#### Analog begins to fade

Omdia's Licensed Mobile Radio Report tracks the market dynamics for push-to-talk radio communications. The 2021 edition concludes that the installed base of LMR users continues to grow, even as shipments

slipped during the COVID era. Omdia found more than 53 million LMR active users at the end of 2020, an increase of 1.7% from the prior year.

Significantly, Omdia found 65.4% of the total 2020 installed base were digital subscribers. These users will continue to grow, increasing by 35.8% in 2025. The reason for the growth is the efficiency and expanded features enabled by digital land mobile radio systems.

#### Africa remains analog as digital grows

The challenges of geography and economy make analog the dominant land mobile radio technology across northern and southern Africa. Still, modern cost-optimized digital technology such as DMR is becoming popular as systems get refreshed. TETRA also plays a role for security services that require the enhanced security features provided by the technology.

While push-talk-over cellular is slow to emerge across the African continent, the technology is gaining a foothold. In South Africa, hybrid TETRA and LTE devices are now deployed with the Johannesburg public safety agencies.

#### LTE and 5G disruption

Though land mobile radio systems have proven valuable tools for group coordination, the data limitations and high deployment costs are forcing enterprises and governments to shift from narrowband to broadband technologies. For enterprises,

a variety of push-to-talk over cellular solutions are available that operate over mobile LTE networks. Government users are turning to a standardized mission-critical push-to-talk over cellular technology that incorporates quality of service, priority, and preemption.

Unfortunately, however, a shift to LTE presents a particular challenge to public safety operations. The ability for users to communicate with nearby users, even when the network is not reachable, is paramount but not available with today's LTE devices.

Though the 3GPP standards effort that created mission-critical push-to-talk included the proximity services feature as a direct mode alternative, the capability has not entered the market. This gap means that the shift towards LTE and 5G depends upon hybrid push-to-talk devices that can handle LTE and a legacy LMR radio technology. Most major LMR device suppliers now provide hybrid options.

As the options for land mobile radio expand and users contemplate a future shift towards LTE and 5G communications, the fundamental need for simple group voice communications remains. For many years, and in many parts of the world, narrowband land mobile radio coverage will remain the foundation for enterprises and public safety.



Ken Rehbehn principal analyst at CritComm Insights, contributing principal analyst for Omdia



#### Middle East & Africa - the future

Omdia projects that this region will continue to adopt digital communications technology, and by 2025 it will be one of the most digitized regions in the world, with 95% of LMR users converting to digital.

In 2020, the Middle East and Africa was one of the LMR shipment markets that was most affected by the global pandemic and it experienced considerable decline in all the technologies including Cost Optimized Digital technology, TETRA shipments, P25 and TETRAPOL. Omdia projects a recovery from this market and forecasts it to reach above pre-pandemic levels by 2024.





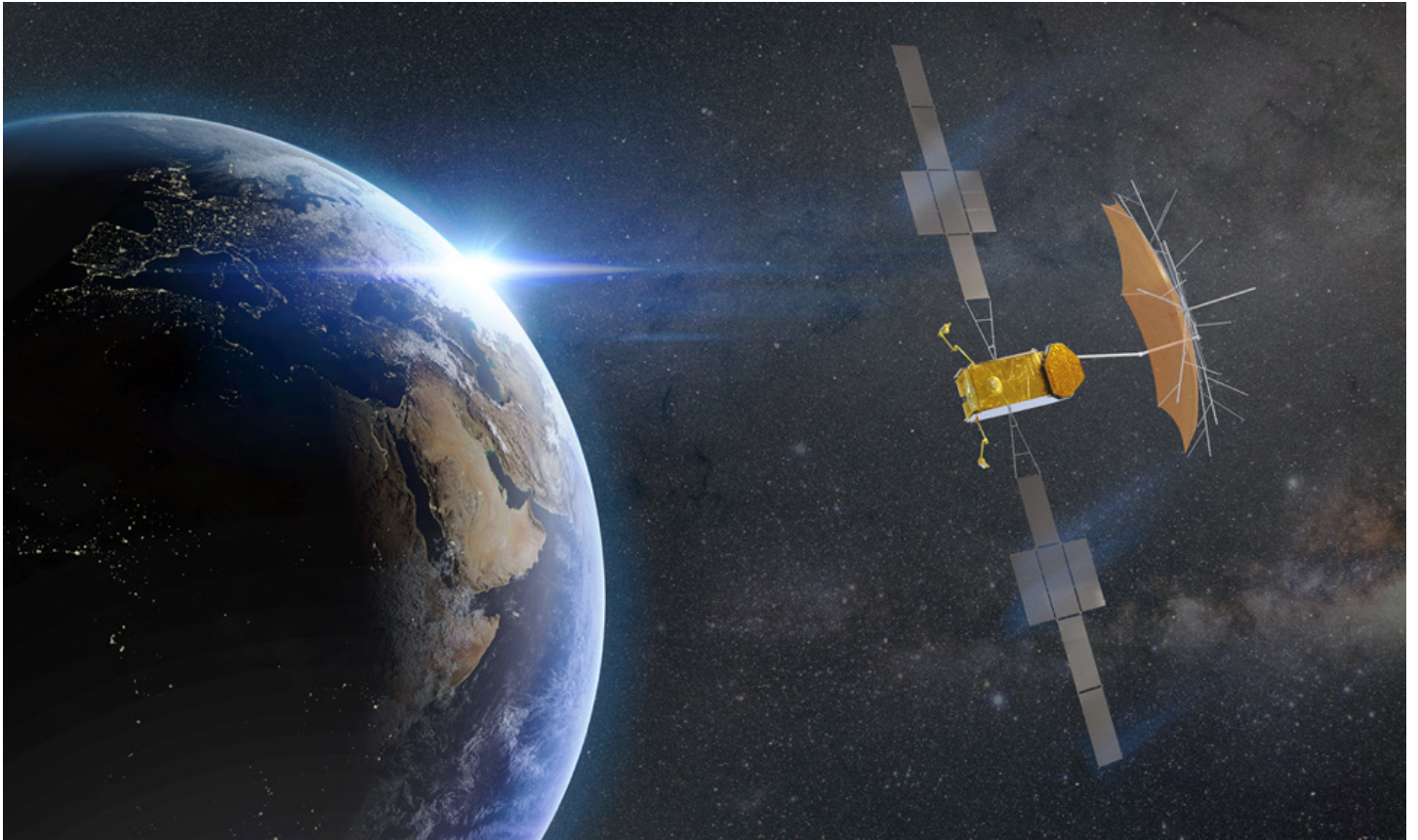
**M**obile Mark is a leading supplier of innovative, high performance antennas to wireless companies across the globe. We've been in the wireless industry for over 30 years and have our roots in the early Cellular trials. Today, we benefit from enhanced design capabilities and expanded production capacity – along with a greater understanding of new and emerging markets such as mining and exploration.

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# Is the 'space race' real? If so, how long will it continue?

In recent years, the night sky has changed faster than at any time in human history. But, are we really at the dawn of a space race and will the trend continue in 2022 and beyond? By Robert Shepherd

**R**eaders of a certain age will remember a very different "Space Race" from their youth. You know, the 20th-century competition between Cold War adversaries the United States and what was then the Soviet Union to achieve superior spaceflight capability? For younger readers, the two superpowers were racing to put the first man in space and on the moon.

Decades later, while Russia is focusing more on limiting NATO's sphere of influence, countless satellites continue to enter the cosmos at an incredible rate. Add to that the fact billionaire entrepreneurs Sir Richard Branson, Jeff Bezos

and Elon Musk have all unveiled space strategies in the past year – be it internet connectivity, space tourism, or just going up there because they can – it has been described by media and those in the



Amit Somani, Yahsat

"We are witnessing a revolution of sorts, involving an increasing number of players – small start-ups, or larger players, either well-established players such as Yahsat or Inmarsat, or new entrants such as Elon Musk and Jeff Bezos"





Hans Geldenhuys,  
Intelsat

**“Africa is one of the world’s most competitive markets, as no fewer than 20 active operators have wide-beam satellite coverage of the region”**

industry as a modern-day space race.

Casimir Berthier Fotso Chatue, CEO and founder, Afrikanet Group and GOSAT eAfrica Telecommunications, a satellite internet services provider, says the industry was considered to be static in terms of technology improvement over the last two decades. However, he says, there has been a huge transformation over the last five years when better results and stability on hardware saw the explosion of several satellite operators investing on new GEO HTS (High Throughput Satellite) to provide ka-band and on LEO satellite to offer more speed and low latency.

“Our business has shifted from providing corporate C-Band or ku-band based on big conventional antenna size above 1.80 or 2.40m to very compact antenna size around 74cm only, with 5 times more capacity throughput, more speed and indeed low cost,” Chatue adds. “We had to change our business model and bid on B2C of our service offer instead of just banking on B2B for corporates.”

Chatue argues that partnerships his company has forged since it started operations in 1999, with the majors ka-band Satellite owner leaders in UK and in the EU, puts it in “a very favourable position” to continue getting the best satellite service type for its community in Africa. “The



Peter Hadinger, Inmarsat

**“Using greater bandwidth, combined with greater power and unlimited beam routing that can match demand second-by-second, even the most congested areas will experience enhanced connectivity”**

broadband speed demand in our African market is growing two times every year and today, with our customer bases around the 12 African countries that we serve, we are excited with what coming next on the LEO/OneWeb and LEO/Starlink Elon Musk that will provide nearly 100 times more speed and this will allow us to get the best without compromising our position as independent broadband service providers,” he says.

To list all the about to be and recently launched satellites – from the last 12 months alone – would require yards of text, but some have secured more press coverage than others.

Musk’s SpaceX-operated Starlink is arguably the most talked satellite service in consumer media, but the one that has been described by industry luminaries as the world’s “most sophisticated commercial communications satellite” is Inmarsat’s I-6 F1.

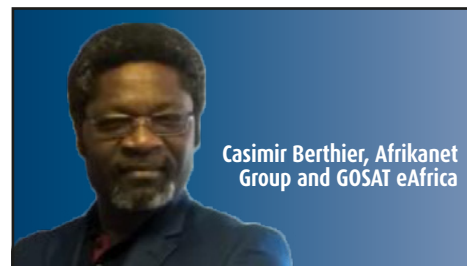
“Inmarsat has provided global coverage for many years and has put our most concentrated capacity in both L- and Ka-bands over Africa,” says Peter Hadinger, chief technology officer, Inmarsat. “I-6 F1 launched in December 2022, will continue this commitment - serving most of Africa and all of south Asia plus the Asia-Pacific region. Inmarsat will publish I-6 F1’s coverage map once it is operational in early 2023. I-6 F2 will be launched in early 2023 and will cover all of Africa - further increasing our capacity there.”

But why is there so much hype surrounding it? “Using greater bandwidth, combined with greater power and unlimited beam routing that can match demand second-by-second, even the most congested areas will experience enhanced connectivity,” he adds.

Not only are more satellites being launched at a higher rate than ever before, but they are becoming more sophisticated. Is that the clearest indication that we are now firmly in a 21st Century space race?

“More than a space race, these launches and the plethora of satellite constellations indicates that the use of space-based assets as infrastructure for the deployment of broadband services is starting to become mainstream,” argues Ali Ahmed Al-Kuwari president and CEO, Es’hailSat. “The erstwhile space race was driven by more of a military and cold war backdrop but this time around, it is commercial competitiveness combined with national pride that is driving this gold rush.”

Sharyn Nerenberg, vice corporate marketing & communications, Hughes, “wouldn’t call it a new space race” as much as an imperative to bring broadband to unserved markets. “These are large, unserved markets that can be well served by satellite because it reaches places where cable and fibre cannot,” she continues. “Research firm ABI predicts the serviceable addressable market for satellite connectivity in Asia and Africa will grow to 169 million and 54.2 million, respectively, by 2026 – much larger an opportunity than in North or South America (29.1 million and 28.2 million, respectively). Africa and Asia have been important markets for Hughes for



Casimir Berthier, Afrikanet  
Group and GOSAT eAfrica

**“We had to change our business model and bid on B2C of our service offer instead of just banking on B2B for corporates.”**

many years, as we supply satellite ground system technology to many operators in these markets (for example, Omantel in Oman, NCTS in Egypt, and DTP in Indonesia). Our India subsidiary is the largest VSAT operator in that market, and the changing regulatory climate there is opening up new opportunities for satellite services.”

Another big player in the satellite universe is Middle East-headquartered Yahsat, which offers multi-mission satellite in Africa and over 150 countries worldwide.

Amit Somani, the company’s chief strategy officer admits “it is a very exciting time for the global space industry,” and that from space travel to earth observation to satellite communications, “we are witnessing a revolution of sorts, involving an increasing number of players – small start-ups, or larger players, either well-established players such as Yahsat or Inmarsat, or new entrants such as Elon Musk and Jeff Bezos”.

That said, Somani, like Nerenberg, says he “would not consider it a race per se, but an opportunity to use space even more than before to provide critical connectivity to nations, businesses, communities and individuals on a global scale”.

He continues: “Thanks to evolutions in technology, space is becoming more affordable, and nations and enterprises are realising the massive potential of space.”

According to the latest ITU data, 2.9 billion people remain offline, 96% of whom live in developing countries. What’s more, the coverage gap is significant in some regions like Africa where 18 % of the rural population is not covered at all, says Hans Geldenhuys, director, sales-Africa, Intelsat.

“It is therefore necessary to accelerate efforts to achieve digital inclusion at all levels and satellite plays an important role in this,” Geldenhuys continues. “Africa is one of the world’s most competitive markets, as no fewer than 20 active operators have wide-beam satellite coverage of the region. Also, the African space industry is continuously growing in capacity and investment and we’re seeing the emergence of new government space programmes. However, there is a growing connectivity need and Inmarsat, Starlink and Intelsat’s Unified Network, the world’s first multi-layer 5G software-defined

network, help respond to it.”

It’s not just the wealthier nations that are behind these satellite launches. Uganda and Kenya have been behind some of the most recent ones. Even Iran harbours ambitions in this space.

So, if it’s not a space race per se, why are so many countries investing in the technology all of a sudden?

Richard Swardh, senior vice president premium enterprise and mobile operators, Comtech Satellite Network Technologies believes the want and the need from governments to use space has always been there. “Whether it is for national security interests, earth observation or internet connectivity, what has changed over the last few years is that the cost of launching a satellite has dropped dramatically and there is a greater selection of satellites at price points that are now within reach for more sovereign nations. This is a trend that will continue and we will see more and more countries launch their own satellites.”

Martin Jarrold, vice president international programme development, GVF says each country is likely to want to enter this new space race to meet their own particular policy objectives and national requirements (in terms of enhanced communications capabilities, access to nationally relevant Earth observation/remote sensing data, etc.), “and there can be a myriad of facets to this”.

Jarrold adds that the number of smaller space-active nations, many more than just 10 years ago when, among African nations for example, Nigeria’s space agency, NASRDA, was the continent’s leading light in satellite remote sensing with the launch of NigeriaSat-2 and NigeriaSat-X. “With payloads of imagers for earth observation applications such as resource management, mapping and agricultural and disaster management, these two satellites were somewhat prescient of today’s even greater need for such orbital assets and have been followed by many other counties in Africa and elsewhere outside of the traditional space nations,” he says.

In addition to the small matter of national prestige and competing with their neighbours, Somani things there are other elements at play.

“Space is back on national agendas worldwide,” he says. “Firstly, from a security perspective, an increasing number of nations are looking to use space to enhance their military capabilities and national


security, bringing sovereignty and autonomy in their critical communications. Secondly, from an economic perspective, they know that sovereign satellite infrastructure is required to provide critical communications and fast track digital development.”

Lastly, he says, countries perceive the launch and operation of national satellites as important in establishing technological credibility internationally and as a means to showcase national accomplishment domestically, while in parallel nurturing local STEM talent that can subsequently lead to other industrial development.




Sharyn Nerenberg,  
Hughes

“This is the most exciting time in the space and satellite industry since the 1960s”



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**"This – the 'Kessler Syndrome' – describes rendering impractical many space activities and the use of satellites in LEO for generations to come"**

"In even the most advanced nations in terms of telecommunications infrastructure, significant gaps remain, so for those countries with less advanced infrastructure access to broadband is still very poor and therefore the digital divide is an unfortunate reality," adds Somani. "Satellite increasingly is able to bridge this as part of a multi-technology national connectivity strategy and eco-system."

For Al-Kuwari, the rationale behind so many launches "is quite like what was the competitive nature of access to geostationary orbital slots", now governed by ITU and allotted to each country based on their needs.

"Every country wants to plant their flag in what is essentially a global common i.e. orbits both LEO & GEO being used for telecommunication and earth observation services," he says. "Each country wants to exert its sovereignty in terms of its ability to utilise space-based services and not be dependent on any other country for critical communications or remote sensing type services. Not every commercial venture succeeds and more so in a difficult environment such as outer space and time will tell how many projects



**"Whether it is for national security interests, earth observation or internet connectivity, what has changed over the last few years is that the cost of launching a satellite has dropped dramatically and there is a greater selection of satellites at price points that are now within reach for more sovereign nations"**



truly make it to orbit in a sustainable manner."

So far, we have, thankfully, managed the area of space near Earth without major incident -- even when military tests suddenly produce thousands of new bits of space junk.

Al-Kuwari points to the fact that there are an increasing number of government and non-government organisations who are highlighting these concerns. "It is imperative that nations of the world take the onus to not clog space, much like there are international treaties and agreements to ensure that the waters of the ocean are not clogged by any one country's ships or fishing requirements," he adds. "Longer term, the sustainable use of space will ensure that investments made today are not at risk because of debris collisions and that the space resources, which are for all mankind, are utilized in a fair and equitable manner."

In any field, walk of life, industry, however, one wishes to describe it, the more entrants not only offer competitions, but also cause market saturation. In other words, there are far too many of them. The term synonymous with satellites in space is "clogging" or too much "space junk".

The average person not familiar with satellites would be forgiven for thinking space has infinite, well, space – but it appears clogging is a genuine concern. After all, the atmosphere near-Earth has finite room for satellites to manoeuvre.

But how much of a concern is it? Or do we need to wait until it's a tangible problem like the amount of plastic in the world's oceans and seas?

Jarrold claims there's an estimated 170 million man-made objects in space. Most is junk orbiting the Earth at altitudes that threaten humanity's essential access to useful space. With the density of objects in LEO high enough to cause collisions between objects, he opines that this could cause a self-sustaining cascade, risking exponential increase in the amount of space debris as each collision generates more debris and leads to yet more collisions. "This – the 'Kessler Syndrome' – describes rendering impractical many space activities and the use of satellites in LEO for generations to come," he adds.



**"The erstwhile space race was driven by more of a military and Cold War backdrop, but this time around, it is commercial competitiveness combined with national pride that is driving this gold rush"**

As things become more of a problem, international government intervention becomes the norm - just look at the unsuccessful COP26. However, the satellite universe doesn't seem to be panicking just yet and instead focused on more satellites floating above.

Somani says the fact the number of active satellites has more than quadrupled in the last decade is indicative that "this is only the beginning (of a more heated and crowded atmospheres) - as LEO constellations materialise and new applications and uses cases are enabled, we could see thousands and thousands of active satellites".

Jarrold envisages that the space race will be exemplified in multiple spheres, for example: "In the commercial sphere (in satellite communications and Earth observation), government sphere (in increasing numbers of national space agencies), the military sphere (in various types of anti-satellite - A-sat - technology), the research and technology sphere (in satellite future technology demonstrator projects, orbit-based industrial product development and manufacturing in pharmaceuticals and other sectors), the space resources management sphere (orbital debris removal and other debris mitigations, mission extension missions and automated satellite repair, orbital tow trucking) and not forgetting in the entertainment sphere (multi-million-dollar-ticket sub-orbital joyrides and space hotels)."

Al-Kuwari concurs but warns that as we are starting to see with some of the early SPACs, "there will be a certain reality check" that will have to apply to ventures that are trying to solve a problem that may not exist in the first place. "If stock markets are any indication of the availability of funding, it is obvious that there is a good amount of investment out there that is looking for high growth ventures, something that space-based companies promise," he says. "However, the ground realities tend to be very different and when it comes to getting market access, clearing local regulations and dealing with technology limitations of non-standard telecom equipment, a lot of ideas need more work than is initially anticipated."

Jarrold also argues that the international policy discussion and regulatory environment will also become more "heated" during the next year. "Nations, international agencies and organisations and commercial entities [will] become

further embroiled in dialogue about not only long-standing issues concerning spectrum access rights and radio frequency interference issues, but also regulation on orbital debris and mitigating the potential of the 'Kessler Syndrome', as well as attempts to prevent A-sat activity," he adds.

Like the others, Nerenberg says she "would not be surprised to hear about new entrants" because "this is the most exciting time in the space and satellite industry since the 1960s".

There is no doubt the satellite industry has, is and will continue to play a critical role in achieving universal connectivity. Geldenhuys says

this is because satellites are uniquely positioned to bring reliable connectivity quickly and cost-effectively to hundreds of Wi-Fi access points and cell sites - no matter how rural or hard-to-reach the location.

"This is why we work closely with governments around the world as we believe that greater public-private cooperation will enable the ability to build a more digitally inclusive society," he adds. "Their perfect understanding of local requirements, combined with our 50+ year expertise, mean that we can deliver connectivity quickly and cost-effectively where it is most needed."

The race has only just begun. ■



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# Sensor to satellite sows new IoT seeds for agriculture

Alastair Williamson, CEO at Wyld Networks looks at why agriculture is turning to the IoT for help and the role of satellite comms

According to a recent UN report on the State of Food Security and Nutrition in the World, between 720 and 811 million people in the world went hungry in 2020. Using a different indicator that tracks year-round access to adequate food, the UN says that nearly 2.37 billion people – or 30% of the global population lacked access to adequate food in 2020 – a rise of 320 million in just one year.

In regions across Africa and SE Asia the challenges are particularly acute, compounded by the impact of the global pandemic and climate change. According to an 'African agriculture and Covid-19 report published by McKinsey, some 650–670 million people in Africa, roughly half of the population, already face food insecurity. Meanwhile, a report entitled 'Food Security in

Asia and the Pacific' produced by the Asian Development Bank' says that over half a billion—or about 14% — of Asia's population are undernourished, more than all the

undernourished in Africa.

While many nations already face a food crisis, the problems are only going to get worse. The United Nations projects that the world's population will reach 9.7 billion by 2050, requiring global agricultural production to rise by 69% from 2010 levels to meet this population demand along with the increase in calories per capita intake.

To generate increases in yield without a major increase in land resource is going to require major changes in the face of climate change; forcing agricultural producers to battle against water shortages, increasing temperatures and more freak weather incidents. Meeting these targets will require a commitment and investment from Governments along with a quantum leap

in harnessing the power of technology and take up in farming.

This transformation is already underway and at its heart is a growing, super-efficient agritech ecosystem with a dynamic, wirelessly connected Internet of Things (IoT). Over the last few years, IoT has emerged as one of the most important technologies of this century to create communications between people, process and things and deliver rich, insightful and actionable data. And agriculture is one of the fastest growing markets. According to the 'Worldwide IoT in Agriculture Market Size 2023' report from Statista, it is expected that the global agricultural IoT market will reach almost 30 billion US dollars by 2023.

### Demand for data

Fundamental to the agricultural innovation revolution is the

need for more data points to give agronomists, engineers, designers and farmers a highly granular data picture of the food production cycle. BI Intelligence predicts that by 2035 there will be over four million data points per day on the average farm - an eight-fold increase on 2020.

Key data sources include soil moisture sensing, weather stations, crop and storage monitoring, livestock and asset tracking, following the complete field to fork journey. For example, the moisture level of soil at different locations and depths across a farm helps to calculate the best times for sowing and harvesting, while detecting temperature changes in a greenhouse makes it possible to adjust ventilation and irrigation accordingly.

So much of agricultural success depends on being able to accurately measure and translate environmental conditions into intelligent insights and acting upon them – presenting truly enormous possibilities for agricultural IoT. Sensors measuring the location of livestock, weather or soil conditions are relatively cheap and straightforward to deploy yet deliver unparalleled visibility and benefits across the biggest farms and ranches.

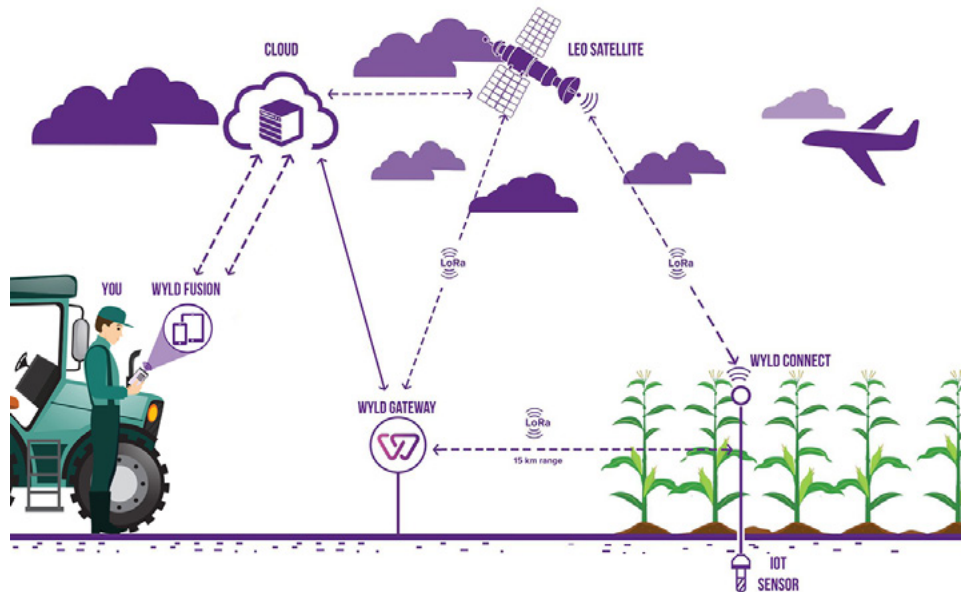
Farmers can monitor field conditions from anywhere, with data flowing seamlessly from sensors to the cloud and on to a laptop or cell phone app. This increases operational efficiency, lowers costs, reduces waste and improves the quantity and quality of yield. For example, it is estimated IoT could save up to 50 billion gallons of water annually, as sensors help farmers to optimise water usage.

A study conducted by OnFarm in the US found that the use of IoT on the average farm, increased yields by 17.5%, reduced energy costs from \$13 to \$7 per acre, and cut water use for irrigation by 8%. The US, where IoT is currently most widespread, produces 7,340 kgs of cereal per hectare of farmland, compared to the global average of 3,851 kgs of cereal per hectare.

## Connectivity problems

Designing, producing and deploying sensors and devices needs to go hand in hand with connectivity improvements. The full benefits of the IoT will never be achieved while some 3.5 billion people still do not have access to or cannot afford the internet, while mobile cellular networks only cover 20% of the earth's surface and low-cost access only covers about 1%.

IoT devices in agriculture usually have specific communications requirements such as low cost, low power, long range and low data rates, which have driven the development of new connectivity technologies such as Low Power Wide Area Network



(LPWAN), non-cellular standards like LoRa and Sigfox along with cellular standards like NB-IoT and LTE-M. Some of these are listed below.

LPWAN makes it possible to communicate at significantly longer ranges and at a much lower power consumption than cellular or Wi-Fi options. Also, as LPWAN networks can be created anywhere, they offer farmers the opportunity to have connectivity of sensors even when there is no cellular coverage.

LPWAN and especially LoRaWAN radio technology is low power – think 2 x AA batteries lasting years sending small packets of data on an hourly or daily basis to a cloud-based application and to applications that can be used on a desktop, tablet or mobile. In contrast to Wi-Fi, LoRaWAN can operate at distance, as the lower power signals operate at much longer wavelengths. This means data can travel 10-15km without reaching much resistance. For billions of the sensors that will come online over the 2020s data packets will be small – temperature, humidity, ammonia readings etc. – and for these, LoRaWAN is a game changing solution.

## Sensor to satellite

But even with all these benefits, LoRaWAN is limited by scale. On farms in Africa and SE Asia, 10-15kms is nothing. That's why an emerging technology in agritech is sensor-to-satellite connectivity. Using LoRa, it is possible to send data from a farm directly to a Low Earth Orbit satellite without the need to maintain a terrestrial LoRa network. Effectively, the terrestrial gateway is replaced by a gateway in space, freeing up sensors to be placed literally anywhere on the globe, however remote.

This means unserved connectivity areas will come into range, while access to remote data opens up new applications. For example, a crop requiring a certain soil type, water input and fertiliser may become possible in a given environment if the true information of the ecosystem is understood, both on a macro level and in a highly-localised way. Specific, granular conditions can alter inputs to

improve yield and reduce environmental impacts. The opportunity to blend this data with highly local satellite imagery is a potential game changer.

## Future harvests







There is a massive potential for IoT innovation in global agriculture, connecting wireless sensors, from the corn and wheat heartlands of the USA, to sub-Saharan cassava production to livestock farms of South East Asia and farming in any urban global area. East-West Seeds Philippines is one organisation working with Wyld Networks to capture critical data from vegetable farming across South East Asia in order to improve sustainable seed production for farm and research environments.

In addition to helping to meet the growing demand for food, the sensor-to-satellite revolution will also support struggling economies. Agriculture is also one of Africa's most important economic sectors, making up 23 percent of the continent's GDP. In sub-Saharan Africa, it provides work for nearly 60 percent of the economically active population, while Africa's exports of food and agricultural products are worth between \$35 billion and \$40 billion a year.

According to McKinsey, IoT in Agriculture could add \$500bn to global GDP by 2030, a critical productivity improvement of 7 to 9 percent for the industry if connectivity issues can be resolved.

With sensor-to-satellite, the cost for access to the internet for IoT devices using this technology is expected to be only a few dollars per node per year. With sensors able to run off low voltage batteries or small solar cells, this will enable IoT technology to reach everyone.

So, this revolution in satellite IoT technology will overcome the two key barriers to universal access – global coverage and affordability – and as such can truly be termed as technology to democratise the IoT and help to deliver against the ever demanding environmental and agricultural targets lying ahead. ■

	Long-range – up to 10-15km line of sight, Low-power (10 yr battery life) license free device level, private/community network. 490, 868, 915MHz
	Wireless M-bus (meter bus) for Smart metering applications as defined in EN 13757-4
	Bluetooth low energy for IoT applications. aka Bluetooth LE, BLE or Bluetooth SMART running on 2.4GHz
	Narrow band IoT or LTE-M cellular licensed band esp 800MHz Long-range, low-power, reliant on local cellular operators available
	Ultra Narrow band Sigfox owned network at 868, 915MHz Long-range, low-power licensed network
	Wyld Networks - sensor-to-satellite LoRa - low-power connectivity anywhere





# The rebalancing of the internet

How submarine cable systems point the way to economic growth, by Geoff Bennett, director, solutions and technology, Infinera

It's estimated that submarine communication cables facilitate over U\$10tn in global trade per day. For rapidly growing regions of the world like Africa to have full access to this flow of digital commerce, they need to have reliable, high-capacity subsea cable connections. This is even more important as the epicenter of internet traffic shifts away from the U.S. and toward a far more equitable balance of traffic around the globe.

In response to this need, in recent years we have seen new, high-performance cables providing higher capacity and lower latency for connections between Europe, the Middle East, and Asia, as well as new direct cables between Europe and South America.

## The longest Submarine cable in the world today

The Asia-Africa-Europe-1 (AAE-1) cable is a great example. A 25,000-km cable system that connects Southeast Asia to Europe via Egypt, it is the largest submarine cable to be constructed in almost 15 years. AAE-1 is a modern cable design, optimized for the latest generation of high-performance coherent subsea transponders. These are the active transmitter/receiver devices that are plugged into either end of the cable, and which inject high-data-rate optical signals at over 100 Gb/s per wavelength, with an initial design capacity of 40 Tb/s for the cable.

Note that, while a submarine cable has an engineering design

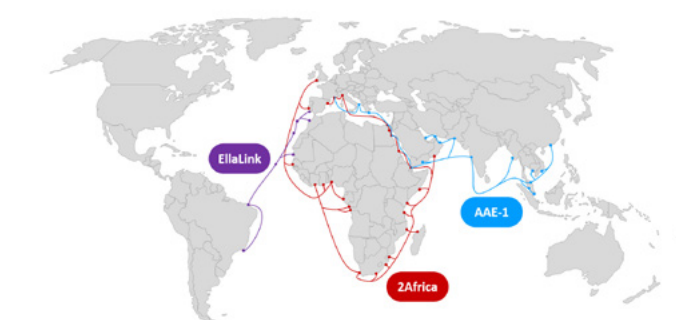
life of about 25 years, transponder evolution occurs in roughly four-year cycles, so new transponders can be deployed on existing cables to give them a mid-life boost in capacity. For example, over the past 20 years, the capacity of trans-Pacific subsea cables has increased by a factor of 357 times. But over that period, only 12 cables were laid. Most of that capacity growth has been achieved by submarine transponder evolution.

## Lighting Up Africa

Another example is the rise of Africa in terms of internet presence and capacity. Today, the pattern of investment across the continent is highly skewed, with the majority of investment focused in South Africa. A report by the African Data Centres Association predicts that Africa needs to build 700 gigawatt-scale data center facilities across the rest of the continent to meet growing demands and to bring the rest of the continent in line with the capacity and density of South Africa.

We also see cable systems like Equiano coming into service this year down the West Coast of Africa, and the PEACE cable providing similar connectivity up the East Coast and branching towards Pakistan and up through the Mediterranean Sea to the European gateway location of Marseille.

Within Africa we see extensive use of mobile infrastructure, which was originally positioned as a way to leapfrog legacy copper telephone



lines and provide inexpensive mobile connectivity quickly and easily. The GSM Association estimates that the mobile network industry in Africa contributes \$184 billion USD into the GDP of sub-Saharan nations. But that mobile connectivity must be fed by fiberoptic links into local data centers and to long-haul and submarine networks, and this enhanced connectivity will play its part in helping to connect the 800 million people in the region who are on the wrong side of the digital divide and do not yet have reliable access to the economic, healthcare, and educational advantages of internet connectivity.

Possibly before 2Africa enters service, expect to see the launch in 2023 by Telecom Egypt of Hybrid African Ring Path (HARP), which, as the name suggests, is to form the shape of a harp around

the African continent. HARP will link current and planned Telecom Egypt projects, enveloping Africa in subsea connectivity.

While soaring demand for bandwidth is a global phenomenon, it has been growing fastest on links to Africa. TeleGeography reports a compound annual growth rate of 54% for the region between 2016 and 2020, and the announced new cable systems feeding the continent will quadruple the previous capacity levels.

Submarine cable systems are vital to the digital economy worldwide. In the past, so much of this activity was centered on the U.S. but now Asian, African, and South American routes are increasing in capacity, with an explosion of local data centers and an increasing diversity of landing points.

The future is bright for these growing economies to grasp the opportunity to recover in the post-Covid world. ■





# Libya sees return to telecom sector investment



Sébastien de Rosbo,  
research manager, BuddeComm

During the last few years Libya has struggled to rebuild its economy and infrastructure following disruption caused by the civil war and the subsequent political unrest. Much of the telecom infrastructure was destroyed or stolen following the 2011 disturbances, including about a quarter of the country's mobile tower sites. For many years reconstruction efforts were stymied by political and military disturbances which affected much of the country. During the decade during which there were two opposing administrations, based in Tripoli and Tobruk, there was no consensus as to how to rebuild infrastructure on a national scale despite numerous attempts to reach a political solution. Some change is anticipated following the formation of a UN-brokered Government of National Unity in March 2021, though this was an interim measure pending the anticipated presidential and legislative elections set for early 2022.

Despite the political deadlock, there has been

some progress made in rebuilding telecom infrastructure. The MNOs have cooperated to extend the reach of LTE services in the south of the country. This has been facilitated by the newly achieved political stability, since the various warring factions had previously targeted telecom towers.

The mobile market is supported by some of the lowest tariffs on the continent. Opportunities remain in the broadband sector where market penetration is still relatively low. To stimulate take-up of services, the regulator in mid-2020 imposed a 50% reduction in internet subscription charges. As for mobile broadband, LTE services have only a limited reach and thus the development of this sector has been slow. A limited 5G service was made available in November 2019.

BuddeComm notes that the outbreak of the Coronavirus continues to have a significant impact on production and supply chains globally. During the coming year the telecoms sector to

various degrees is likely to experience a downturn in mobile device production, while it may also be difficult for network operators to manage workflows when maintaining and upgrading existing infrastructure. Overall progress towards 5G may be postponed or slowed down in some countries.

On the consumer side, spending on telecoms services and devices is under pressure from the financial effect of large-scale job losses and the consequent restriction on disposable incomes. However, the crucial nature of telecom services, both for general communication as well as a tool for home-working, will offset such pressures. In many markets the net effect should be a steady though reduced increase in subscriber growth.

Although it is challenging to predict and interpret the long-term impacts of the crisis as it develops, these have been acknowledged in the industry forecasts contained in this report.

The report also covers the responses of



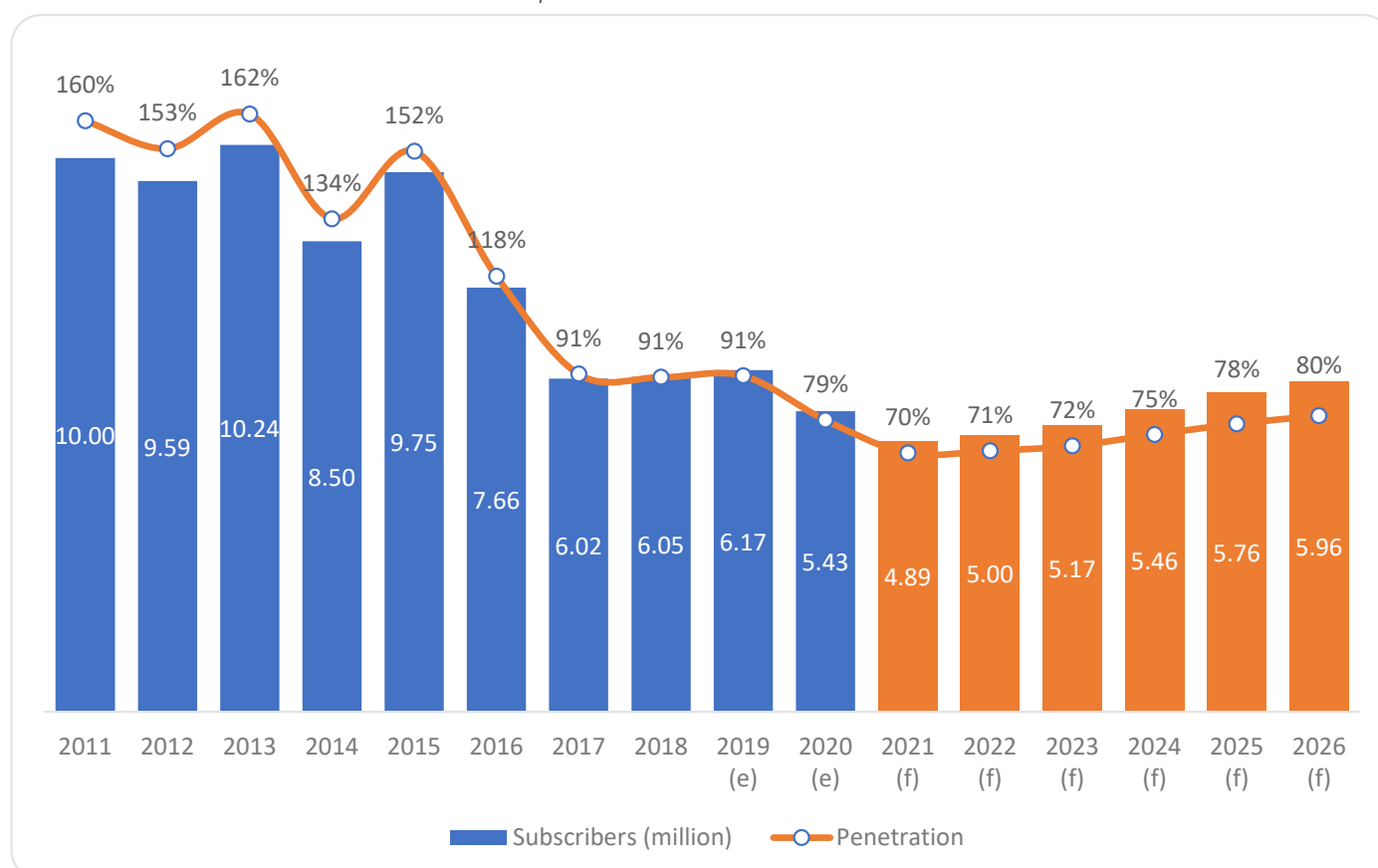
## FEATURE: COUNTRY BY COUNTRY

Table 2 – Growth in the number of mobile subscribers and penetration – 2011 – 2026

Year	Subscribers (million)	Penetration
2011	10.000	160.1%
2012	9.587	152.5%
2013	10.235	161.9%
2014	8.497	133.6%
2015	9.747	151.9%
2016	7.660	118.0%
2017	6.020	91.5%
2018	6.050	90.6%
2019 (e)	6.170	91.0%
2020 (e)	5.430	79.0%
2021 (e)	4.887	70.1%
2022 (f)	4.999	70.7%
2023 (f)	5.169	72.0%
2024 (f)	5.458	75.1%
2025 (f)	5.759	78.0%
2026 (f)	5.960	80.2%

Source: BuddeComm based on ITU data

Chart 10 – Growth in the number of mobile subscribers and penetration – 2011 – 2026



Source: BuddeComm based on ITU data [www.budde.com.au](http://www.budde.com.au)

the telecom operators as well as government agencies and regulators as they react to the crisis to ensure that citizens can continue to make optimum use of telecom services. This can be reflected in subsidy schemes and the promotion of tele-health and tele-education, among other solutions.

### Key developments:

- Hatif Libya contracts Infinera to provide an optical transport network to unserved areas of the country;
- Silphium submarine cable linking Derna with Greece is again brought on stream;
- LPTIC contracts Ericsson to maintain and develop the country's telecom networks and infrastructure;
- Government orders 50% reduction in internet subscription fees;
- Al-Madar extends LTE service to Benghazi and Misurata;
- LTT launches LTE-based fixed broadband network;
- LPTIC signs \$80 million contract with Arabsat to provide satellite broadband services;
- Italy-Libya cable upgraded to support 100Gb/s technology;
- Report update includes Telecom Maturity Index charts and analyses, assessment of the global impact of Covid-19 on the telecoms sector, recent market developments.

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## Mining tools 'High-end routers' HERE

HERE Technologies, the location data and technology platform has partnered with Swedish gear-maker Ericsson to provide the global mining industry with custom mapping capabilities.

The mining industry is in rapid modernisation phase, with smart mining operations projected to increase threefold until 2025. A key driver of this transformation is the access to private cellular networks, enabling safer, more productive, and more sustainable mining operations, through reliable and low latency connectivity. Ericsson's high-performance 5G private networks are purpose-built for mining operations. A business can deploy an on-premise cellular network for its exclusive use. For mining this includes facilities in very remote areas and underground tunnels, both of which are not typically within public cellular range.

The combination of Ericsson connectivity and HERE location services, the companies say, "deliver true smart mining capabilities, from mapping private terrain, to pinpointing and navigating assets in real-time". By using location data to build continuously updated private maps on the Here location platform, mining companies can create a canvas to improve operational efficiency and safety. The living map can then be used to search or track, and deploy routing powered by HERE, as well as custom-built applications and services.

"We are partnering with HERE because of the breadth of their location services – ranging from mapping to routing, positioning and asset tracking," says Thomas Norén, head of dedicated network and vice-president at Ericsson. "Combining our advanced private network solutions with HERE services will give mining firms a head start on their digitalisation journey."

Gino Ferru, general manager EMEA and senior vice-president at HERE Technologies, adds: "We look forward to increasing the productivity and safety of the mining industry by bringing location services to Ericsson's customers. With our private mapping capabilities, we enable mining companies to unleash the power of their location data in many important use cases." [here.com](https://here.com)

German network-infrastructure and security supplier LANCOM Systems is expanding its range of routers. The new high-speed business routers LANCOM 1926VAG-5G and LANCOM 1900EF-5G for the first time combine 5G mobile communications with state-of-the-art SD-WAN. They alternatively operate on a G.fast or fibre-optic gigabit connection, or with a cable modem. The 5G module guarantees maximum availability for both routers. The routers are optionally managed highly automatically by means of software-defined networking (SDN). They are ideal for installations with high bandwidth requirements at medium-sized companies, public institutions, or branch infrastructures.

With high speeds and low latency times, the new 5G standard supports a wide range of applications. The new high-end routers from LANCOM optionally use their 5G module as a backup in the event of failure of their wired access, or even as a high-performance stand-alone primary connection. They also offer improved bandwidths through load balancing on the network. They are ideal for temporary Internet connections, such as for seasonal pop-up stores, or for high-performance mobile access at construction sites. Extensive company premises in large-scale industrial scenarios are ideal for campus networking, i.e.



closed cellular networks with their own 5G infrastructure. This "private 5G" guarantees exclusive access with maximum capacity, availability, and data security for business-critical data traffic.

The 5G module used in the new LANCOM routers also supports LTE in case a 5G network is not (yet) available on location. The prevalent 5G and LTE frequencies are supported, including the new 5G frequencies in the 3.5-GHz range and dynamic spectrum-sharing with 4G. This guarantees high-performance and stable connectivity for uninterrupted business operations both in today's non-stand-alone 5G cellular networks and future stand-alone 5G networks.

According to the vendor, the LANCOM 1926VAG-5G is the first 5G router on the market with two integrated VDSL Super Vectoring modems for an overall 2 x 300 Mbps. Alternatively, it operates using one of the two modems at up to 1,000 Mbps on G.fast, or on fibre-optic connections by means of an SFP port. It also operates with

any external DSL or cable modem via WAN Ethernet.

On the LAN side, four Gigabit switch ports provide a comprehensive range of connectivity options for network devices. Two ISDN and four analogue interfaces ensure that existing telephony components seamlessly integrate into all-IP scenarios.

Apparently, the LANCOM 1900EF-5G dispenses with physical telephony interfaces and, with its Gigabit Ethernet WAN ports, connects directly to high-speed fibre-optic networks and external modems.

For this model, too, LANCOM offers a number of optional SFP modules: The new LANCOM SFP-GPON-1 module enables direct fibre-optic connection to a GPON (Gigabit Passive Optical Network). The LANCOM SFP-AON-1 module supports the connection to an AON (Active Optical Network). Both modules save you the need for a separate provider modem, including of course the necessary cabling and power supply. [lancom-systems.com](https://lancom-systems.com)

## 'Breakthrough next-gen VSAT platform'

Comtech Telecommunications unveils Comtech Elevate, which it describes as "a breakthrough next generation" very small aperture terminal (VSAT) technology solution. The company also reckons it's designed to meet the evolving communications demands of a broad range of markets.

Comtech Elevate "is a smart software-defined VSAT solution bringing together the best of Comtech's Heights Dynamic Network Access (H-DNA) and its UHP MF-TDMA waveform flexibility and efficiency". It features a new D-RAM ("Dynamic Return Access Modes") protocol with seamless switching between H-DNA and

MF-TDMA waveforms using the same pool of bandwidth and data throughput in both Forward and Return channels. The Comtech Elevate solution, Comtech says, is designed to enable private or shared VSAT networks of any size and topology, "has unlimited potential" for future development and can be deployed for every application imaginable. The solution's features also include the ability to scale from very small networks to very large networks, such as supporting more than 500,000 remote sites, as well as compact remote VSAT handling up to 200,000 packets per second. In addition, Comtech says this product has "an advanced and highly

efficient Network Management System that can support a rich variety of Operations Support System (OSS) and Business Support System (BSS) interfaces.

"Our new Comtech Elevate VSAT platform delivers unprecedented network flexibility and scalability to support a broad range of applications and markets, from broadcast and government to mobility and enterprise, using a single intelligent system," says Michael Porcelain, chief executive officer and president, Comtech. "Elevate is the next step in Comtech's long-term plan to exploit the growing business opportunities in the satellite ground station market. [comtech.com](https://comtech.com)

# Software-defined Wi-Fi 6E AP triples Wi-Fi capacity, adds 6 GHz support

Cambium Networks introduces its new XE series Wi-Fi 6E software-defined access points with intelligent migration assistant in all three Wi-Fi bands (6, 5 and 2.4 GHz). The company says its software-defined radios (SDRs) enable cost-efficient migration to the newly available 6 GHz band, with its multi-radio architecture scaling to support high device density deployments.

"The expansion of Wi-Fi into 6 GHz opens up a lot of capacity we can take advantage of across our campus wireless network. It will help in particular in dense areas like lecture halls and libraries," adds Donna Hayden, chief information officer at Alcorn State University. "Cambium Networks' new Wi-Fi 6E access points are a great



fit for campus environments and enable us to strategically move to 6 GHz over time."

Cambium Networks says its Wi-Fi 6E solutions enable network operators to not just add support for 6 GHz to their networks, but to optimize how and when it is used. Service providers and enterprises such as education, hospitality,

healthcare, public venues, and more will benefit from the new clean spectrum, enabling more streaming video, voice and data experiences that expand and improve their customer service.

The access points were developed with Qualcomm's Networking Pro integrated Wi-Fi 6E platform. [cambiumnetworks.com](http://cambiumnetworks.com)

## Optimised for IoT applications anywhere in the world

RM510Q-GL is a sub-6GHz and mmWave M.2 5G IoT module measuring 52.0mm x 30.0mm x 2.3mm, which, Quectel reckons meets the 3GPP Release 15 specification and is optimised for IoT/eMBB applications anywhere in the world. It supports both standalone (SA) and non-standalone (NSA) modes and also supports LTE category 22 connectivity. The RM510Q-GL

is compatible with Quectel's LTE-A category 6 module EM06, category 12 module EM12, and category 20 module EM20, enabling customers to migrate from LTE-A to 5G.

The module optionally features integrated GNSS (GPS/GLONASS/BeiDou/Galileo) "for rapid and precise positioning", while integrated eSIM optionally allows remote account provision without needing to

open the device.

The RM510Q-GL supports nearly all major carriers worldwide and is ideal for globally deployed mobile devices including industrial routers, industrial PDAs, rugged tablet PCs and digital signage. [quectel.com](http://quectel.com)



## New tool suite enabling dense deployments and satellite connectivity for LoRa

Semtech Corporation brings to market a software upgrade for LoRa integrated circuits (IC) and gateways that significantly increases network capacity, robustness to interference and enables a low power and reliable direct data links from sensors to satellites. The software enhancement, the company says, can be leveraged by second generation LoRa ICs to enable the LoRaWAN standard new data rate, Long Range Frequency Hopping Spread Spectrum (LR-FHSS), recently ratified by the LoRa Alliance.

"As the smart cities trend continues to proliferate globally, the new capability is a step for Semtech's LoRa platform toward massive Internet of Things (IoT) deployments in densely populated areas," says Marc Pégulu, vice president of IoT product marketing for Semtech's wireless and sensing products group. "In addition, the enablement of direct IoT to satellite services revolutionizes the industry with affordable ubiquitous connectivity for remote areas, ultimately creating a smarter and more secure planet."

The new suite of tools will be specifically enabled on Semtech's LoRa transceivers: SX1261, SX1262, LoRa Edge™ platform and the V2.1 gateway reference design. For LoRaWAN networks where V2.1 gateways are deployed, operators can enable the new capability with a simple gateway firmware upgrade. In addition to expanded capacity, LoRaWAN networks will be more robust in harsh radio conditions (deep indoor) and in some regions will offer the possibility to increase terrestrial coverage. [semtech.com](http://semtech.com)

### Look out for...

#### Tracking inside moving car via 5G IoT nanosatellite

5G satellite operator OQ Technology successfully completed the in-orbit commissioning (IOC) of its Tiger-2 nanosatellite and is ready to begin customer demonstrations.

The company said it is already in talks with several potential customers interested in using the company's satellite-based 5G IoT services and will start commercial services for "latency-tolerant" low-power devices beginning this year.

"Completing the IOC phase and the successful tests with our terminals in remote locations was a crucial step to start generating revenue via the satellite and progress the constellation with more satellites to be launched in early 2022," said Omar Qaise, founder and CEO, OQ Technology. "In addition to potential customers, we are also negotiating with cellular chip partners to scale up the satellite access capability to existing cellular IoT chips globally. Our next step is starting service demonstrations with our potential customers and their use cases."

OQ also tested and calibrated its working terminals in different fixed and mobile environments in the desert and for indoor usage. During tests, OQ sent the terminal's GPS location to the satellite from inside a fast-moving car without having a direct line of sight to the sky. Even when buried in the desert sand, the terminal was still sending signals to the satellite, making it ideal for many agricultural applications. While the high level of signal to noise ratio surpassed OQ's high expectations.

"Being able to track our terminals even indoors and covered by soil adds further possible services that we can offer to our customers," Qaise added. "It opens the door for many potential use cases other satellite operators cannot provide. Over the next few years, OQ Technology is planning to launch a constellation of 72 satellites, providing 5G IoT and machine to machine (M2M) communication."



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# Airlines cancel flights to US due to AT&T and Verizon's 5G rollout



Emirates, Air India, ANA and Japan Airlines are just some of the airlines that cancelled some flights to the US due to recent rollout of C-band 5G over concerns it could potentially interfere with some instruments, particularly on Boeing 777 aircraft.

The move comes as cell carriers, federal agencies, airlines, and airplane manufacturers struggle to reach an agreement on policies regarding how the rollout should be handled. The situation has continued to evolve as AT&T and Verizon switch on their C-band, but the situation has worsened.

ANA said it received specific guidance from Boeing, adding that "Boeing has announced flight

restrictions on all airlines operating the Boeing 777 aircraft." Japan Airlines also initially said Boeing told it that "5G signals for US mobile phones, which will begin operating in the US on January 19, 2022, may interfere with the radio wave altimeter installed on the Boeing 777.

However, the airline later changed its guidance, saying it "received confirmation from the FAA (Federal Aviation Administration) that there is no longer a problem with the operation of the Boeing 777 and we will resume service to the US mainland with Boeing 777 from January 20".

ANA has updated its advisory with similar language, saying that it was



returning to "the normal schedule based on FAA notification that there is no safety issue with the operation of Boeing 777 aircraft to the U.S. airports that we serve".

However, Emirates and Air India had not changed their guidance and the FAA had not publicly released an updated statement before Northern African Wireless Communications went to press.

# Argentina takes agricultural IoT into space



Argentina is the latest country to join the market for satellite-supported internet of things (IoT) services in agriculture by launching its first pico-satellite.

Created by Innova Space, it was launched from the SpaceX platform at Cape Canaveral in the US late last week.

The General San Martín pico-satellite (named after the 18th-century military commander) will enable agricultural companies in provinces or areas without internet access to apply IoT technology to optimise production.

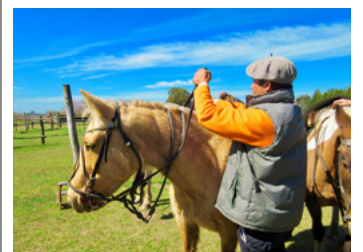
It is understood the project is being funded by the Mar del Plata Neutron start-up accelerator run by Grupo Núcleo, a partner of the Argentine Chamber of Electronic, Electromechanical and Lighting Industries (CADIEEL).

The pico-satellite project was designed to be exportable and can contribute to the process of substituting imports of equipment and services, according to a government-supplied press release.

The term picosat is usually applied to artificial satellites with a wet mass between 0.1 and 1 kg. In this case the PocketQube satellites weigh around 1kg and measure approximately 50cm x 50cm x 150cm.

Productive development minister Matías Kulfas said the Latin American country is making a strong commitment to the development of the satellite sector. The ministry has allocated approximately US\$480,538 to the pico-satellite project.

The launch is expected to be the starting point for a constellation of 100 pico-satellites to be sent into space over the next three years.



# Albania's antitrust body clears sale of 80% of Albtelecom to Hungary's 4iG



Albania's competition authority approved the sale of 80.27% interest in Albtelecom held by Cetel Telecom to Hungarian IT service management company 4iG.

The competition authority has endorsed the agreement for concentration in Albania's telecommunications market, it said in a statement.

4iG said last month it signed a final agreement to buy the majority

stake in Albtelecom and expects the transaction to close in January.

Calik Holding, Cetel's parent company, will acquire a 3.2% stake in 4iG as an institutional investor. The value of the transaction was not disclosed.

After the transaction, Albania will continue to own a minority stake in Albtelecom through the ministry of finance and economy, which holds a stake of 13.78%, and the Albanian

Post, which owns 2.47%, 4iG noted at the time. The remaining 3.48% stake is distributed among individuals.

Established in 1912, Albtelecom is the largest provider of landline telecommunications services and the third largest mobile operator in Albania. Albtelecom generated revenues of €57.9m (US\$65.6m) and earnings before interest, taxes, depreciation, and amortisation (EBITDA) of €17.4m in 2020.

# Chile-Australia cable project gets new partner



The proposed subsea internet cable designed to connect Chile and Australia moved a step closer to becoming a reality after the Chilean government brought a Singaporean cable company H2 to the project.

It has been reported that Chilean government infrastructure fund Fondo de Infraestructura has said that the 14,810 km cable would run between Valparaiso in Chile and Sydney, Australia, where it would connect with other cable systems to Asia.

The cable would include several

branches to allow for the possible connection of other countries and territories, such as Juan Fernandez – also known as Robinson Crusoe Island – and Isla de Pascua (Easter Island), as well as New Zealand.

It is estimated that the cable will cost hundreds of millions of dollars to build, but it could also potentially enable the first ultrafast broadband connection to Antarctica, which currently relies on satellite communications.

Fondo de Infraestructura has also said that Desarrollo Pais, a company majority-owned by the

Chilean government, and H2 would jointly promote the Humboldt Cable and make the investment based on market response.

H2 is chaired by Remi Galasso, who is also the chief executive of New Zealand-founded cable company Hawaiki. The latter is a 15,000 km telecommunication cable connecting 356 million consumers in Australia, New Zealand, American Samoa, Hawaii and continental United States. In addition to its work on Humboldt, H2 is planning the first direct subsea cable between Sydney and Hong Kong.



# Fibre optic cable set for Arctic Ocean

 Finnish company Cinia and Alaska's Far North Digital have partnered in a joint effort to build a fibre optic cable system, which will link Europe and Asia through the Arctic.

Reports in Iceland say it is hoped that the work will be completed in 2025, with "the land of fire and ice" expected to be connected to this system.

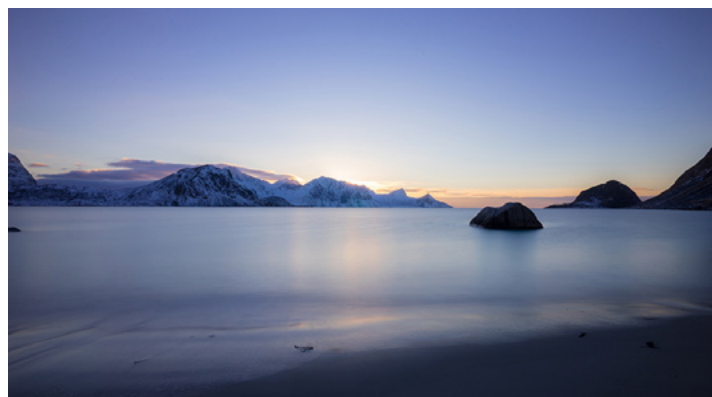
Cinia is a networks, cybersecurity and software solutions provider, while Far North Digital is focused on telecommunications infrastructure development.

The planned cable system is

intended to speed and improve the security of telecommunications between nations. If it goes ahead, it will run from Japan, via the Northwest Passage, to Europe with landings in Alaska and the Canadian Arctic.

The cable will then run along Baffin Island, past Greenland toward Iceland, and from there to Northern Norway, via land to Finland, and then to Ireland.

The 14,000 km cable system will greatly reduce the optical distance between Asia and Europe, thus minimising signal latency, according to reports. The project is estimated to cost approximately (US\$1.15bn).



Apart from Iceland, the various connections planned along the route, include remote places in Alaska,

Canada and Greenland. The ambition is to provide remote areas with good internet connection.

## Chinese telco exits Canada

 Chinese telecommunications firm CMLink has ceased its operations in Canada, after parent company, state-owned China Mobile, refused to comply with a Canadian government directive to divest its stake in the subsidiary.

China Mobile has been on a US government investment blacklist since June 2021 due to its ties to Chinese military and surveillance sectors. President Joe Biden's executive order means Americans and US institutions are banned from investing in the company.


This has led to concerns in neighbouring Canada that the Chinese government could leverage the company to undertake espionage.

A suit filed by China Mobile requesting a stay on the divestment order was rejected by the Canadian Federal Court. This led to the operator shutting down CMLink entirely rather than divest.

This move by the Canadian government is part of a broader ongoing push in the US and Canada to decouple from China's economy in key security and technology-related sectors. Expect this push to continue, as it is broadly supported by most US and Canadian political stakeholders.

China Mobile had a presence in Canada for coming up to six years.

## IHS expands further into Brazil with US\$315m towers agreement

 IHS Holding is further expanding its presence in Brazil with a US\$315m deal to buy São Paulo Cinco Locação de Torres (SP5), a unit of Grupo TorreSur (GTS).

The deal will add 2,115 masts to its Brazilian network of about 7,000 along with secondary fibre network.

"The acquisition of GTS' SP5 portfolio will be our fifth transaction since we entered the region two years ago and is a testament to our continued commitment to serving the connectivity demands of Latin America," said Sam Darwish, IHS Towers chairman and chief executive officer (CEO). In the SP5 portfolio there are 2,115 sites strategically located across Brazil, increasing the

attractiveness of IHS' portfolio to our customers whether in Brazil or across our Latam operations."

Jimmy Eisenstein, GTS chairman and CEO, added: "The sale of our SP5 portfolio represents the culmination of our strategy to create an important infrastructure business focusing on historically under-served regions of Brazil. Since our acquisition, our team has driven strong organic revenue growth, proving the critical role of SP5 to the market and resulting in an excellent return for our investors."


IHS's October 2021 initial public offering raised about US\$378m to fund growth, though the stock has since slumped 45% to almost halve the company's value to US\$3.8bn



at the time of going to press. The group, which has a mostly African telecom-tower portfolio, acquired South African towers from MTN Group in November in the region of US\$410m. IHS went public last year with a New York share sale.

The deal is subject to regulatory approvals and is expected to close in Q1 2022.

## Orange Belgium acquires 75% stake in telco Voo

 Orange Belgium acquired an almost 75% stake in Voo SA, a telecom and cable operator in Wallonia and the Brussels region.

The transaction gives the entire company an enterprise value of US\$2bn, at a price that is 9.5 times Voo's earnings before interest, taxes, depreciation, amortization and synergies, according to a statement.

"This acquisition reinforces

Orange's leadership in convergence in Europe",

Mari-Noëlle Jégo-Laveissière, executive vice president for Orange Europe operations said in the statement. Orange said this year that it was actively looking at M&A options across Europe.

Voo, owned by regional telecom firm Nethys SA, runs the cable network in the Walloon region and part of the Brussels

region. It offers fixed and mobile telephony, broadband internet and television services.

Nethys will retain a minority stake, with the closing of the deal is expected in 2022, subject to approval from the European Commission.

A previous attempt to sell Voo to Providence Equity Partners was blocked by a commercial court in Liege in April last year, according to a reports in European media.

# Intelsat and partners bring emergency connectivity to Tonga



Intelsat, the integrated satellite and terrestrial network operator, in cooperation with Telstra and Spark deployed emergency communications services to support humanitarian aid to Tonga and the archipelago for Digicel Tonga and Tonga Communications Corporation.

The undersea volcano, Hunga-Tonga-Hunga-Ha'apai, erupted Jan 15, 40 miles north of Tonga's capital, Nuku'alofa. The volcanic explosion and subsequent tsunami knocked out the undersea internet cables, disconnecting the region of 100,000 as residents sought higher ground with the onslaught of rising water and dangerously high waves.

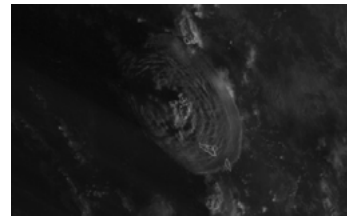
Intelsat is providing space-based broadband connectivity on Horizons

3e and Intelsat 18, while partners, Telstra and Spark, are providing the ground infrastructure, including VSAT hubs at their teleports, uplink, internet access and remote kits.

The services provided are now fully provisioned expanding broadband and voice services.

Additionally, Intelsat is providing services in conjunction with Optus to the New Zealand Defence Force, who will provide humanitarian support in Tonga.

"Communications infrastructure is essential to assisting the residents, coordinating medical staff and providing supplies, clean food and water and basic human needs," said Intelsat CEO Stephen Spengler. "Our hearts go out to the residents of Tonga and all impacted



Credit: National Environmental Satellite Data and Information Service (NOAA)

by this devastation, and we're working with our partners to play a role in supporting the community in their time of need."

In 2019, Tonga lost internet access for nearly two weeks when a fiber-optic cable was severed. Intelsat restore the island's restoration connectivity by providing satellite capacity on Horizons 3e and Intelsat18 at that time.

# Russian telco market consolidation



ER-Telecom, the Russian telecommunication holding and cable company, has partnered with the state-owned corporation Rostec to acquire a 75% stake minus one share in the company Akado Holding, running the regional operator Akado Telecom.

The minority stake will be held by the company AVK Investments.

Akado is the largest independent telco in Moscow, serving corporate, private and government clients on its own fibre infrastructure, in addition to offering digital TV film services, data transmission, building corporate networks, information protection, video surveillance, website hosting, plus storage and data processing at its own data centre.

The partners plan to create a platform for the development of numerous digital technologies, including 5G, IoT and smart city systems.

"This is an alliance of strong players, in which the competencies of our companies have synergies," said Sergey Chemezov, chief executive officer, Rostec. "This set-up opens new opportunities for the creation and implementation of domestic technological solutions in various fields."

ER-Telecom could receive 300,000 new customers as well as the existing orders from the operator, because of the deal. A notification has already been sent to the Federal Antimonopoly Service (FAS), Russia's regulatory body, but it has not yet been received.

Last year, ER-Telecom acquired 100% of the united group of companies Avantel for an undisclosed fee. The transaction will allow ER Telecom to significantly strengthen its position in the Moscow, Siberian and Far East markets.



Akado is the largest independent telco in Moscow

# Telefónica reaches redundancy deal with unions



Telefónica has reached an agreement with labour unions to cut around 15% of its domestic work force via voluntary redundancies in a plan estimated to cost it €1.5bn this year.

The Spanish operator's plan to cut around 2,700 jobs in an increasingly competitive market early this year will yield annual savings of more than €230m from 2023, it said in a filing to the stock market regulator.

"The impact on cash flow generation will be positive in 2022 as will the booking of savings, since the employees will leave during the first quarter of 2022," the company added.

Telefónica said the programme is open to all those born in 1967 or earlier and with at least 15 years of employment at the company. However, it will limit the percentage of departures from some areas.

Initially, the company intended

to spare business units dedicated to cybersecurity, marketing and artificial intelligence, though unions opposed. The company intended at first to offer a package to about 1,800 workers.

Telefónica is Europe's third-largest telco and employs 18,500 people in Spain. The redundancies follow similar moves by rivals Vodafone and Orange in recent months.

Globally, Telefónica employs nearly 114,000.

# Wind Tre upgrades fibre backbone to 600G with Nokia



Italian telco Wind Tre has entrusted Finnish tech giant Nokia to deploy a new fibre backbone in Italy.

The fibre-optic backbone network will support 600G wavelengths and will feature redundant nodes in a wave router configuration, a mesh structure and GMPLS-based restoration.

Wind Tre said the upgrade will enable it to quickly re-route traffic as needed to enable the high reliability its business customers will require.

Nokia will supply optical transport capabilities for the upgrade that leverage the company's PSE-V super-coherent (PSE-Vs) chipset.

"Nokia's solution based on industry-leading coherent technology will help us provide next-generation broadband services to both consumer and business customers in the most efficient way," said Benoit Hanssen, chief technology officer at Wind Tre. "It will also enable us to grow our subscriber base and provide best-

in-class experience to Wind Tre existing customers."

Sergio Solivera Vela, vice president, Mediterranean region, at Nokia added: "We have a longstanding and successful relationship with Wind Tre and are very happy to expand this by deploying its new optical backbone. Our latest coherent technology solutions will provide Wind Tre with massive capacity that grows as subscriber demand increases, without sacrificing reliability."



## Saudi-led air strikes on telecom building in Yemen knocks out internet

 Saudi-led air strikes that targeted a telecom building in the contested city of Hudaida has caused Yemen to lose connection to the internet nationwide.

The disruption affected TeleYemen, the state-owned monopoly that controls internet access in the country, advocacy group NetBlocks said.

Yemen was “in the midst of a nation-scale internet blackout following air strike on (a) telecom building,” it added.

The San Diego-based Center for Applied Internet Data Analysis and San Francisco-based internet firm CloudFlare also noted a nationwide outage affecting Yemen beginning

around the same time.

The Houthi's Al Masirah satellite news channel said the strike on the TeleYemen building had killed and wounded people.

It released chaotic footage of people digging through rubble for a body as gunshots could be heard. Aid workers assisted bloodied survivors.

The Saudi-led coalition battling the Houthi rebels acknowledged carrying out “accurate air strikes to destroy the capabilities of the militia” around Hudaida's port.

The undersea FALCON cable carries internet into Yemen through the Hodeida port along the Red Sea for TeleYemen. It has another landing in Yemen's far eastern port of



Ghaydah as well, but most Yemenis live to the west along the Red Sea.

## Montenegro grants 5G frequency licences to trio

 Montenegro's telecom watchdog EKIP has approved bids placed by Mtel, Crnogorski Telekom and Telenor Montenegro in a public auction for allocation of national frequency licenses for 5G mobile networks.

Mtel won frequencies in the 900 MHz, 1.8 GHz, 2 GHz and 2.6 GHz spectra, while Crnogorski Telekom and Telenor Montenegro secured frequencies in the 2.6 GHz spectrum at the auction held December 27.

The licences will be valid until September 1, 2031, according to EKIP

Montenegro's recently adopted a roadmap to encourage the introduction of 5G mobile networks by the end of 2022. A national strategy is expected to be adopted next year, defining further activities for the support of the rollout of 5G networks in Montenegro, the government said back then.


Measures and policy reforms envisaged by the roadmap relate to harmonisation of national legislation for electronic communications with the EU rules, implementation of 5G networks on the entire territory of Montenegro and pilot testing projects and removing administrative obstacles, among others.

Meanwhile, EKIP said the number of mobile phone subscribers in Montenegro rose 3.7% year-on-year to 1,120,074 at the end of December.

The mobile penetration rate in Montenegro went down to 180.65% in December from 185.53% at the end of November, when the number of subscribers was 1,150,310.



## Mexico's GigNet wins Mera fibre deal

 Mexican telecommunications service provider GigNet has been commissioned to install a private high-speed internet and Wi-Fi network for private multinational firm, Mera Corporation.

The latter focuses on concessions of food and beverages with a critical mass within non-traditional travel hubs, such as airports and cruise ports.

Under the terms of the deal, GigNet will connect Mera's corporate Cancun offices to the company's 18 airport terminal locations.

“Mera Corporation actively seeks operations in the industry of food and

beverages where we can add value and increase income,” said Rafael Aguirre, president of Mera. “We are operators, concept developers, franchise partners, strategic allies, and restaurant owners.”

“High-speed data access and efficient communication is a requirement to keep at the forefront of our business. GigNet is a perfect fit to connect our Headquarters operations because they understand what it means for our business to have reliable high-speed Internet,” Rafael added.

Mark Carney, president, GigNet Mexico, said: “We will be supplying

our GigNet enterprise solutions, enabling simultaneous use of cloud and streaming applications that will not only enhance Mera's already superior customer service but will also improve communication, automation, and the decision-making process for the group's corporate management team.”



## Korean government working on 6G networks

 The Korean Ministry of Science and ICT announced it is working on 6G network development strategies together with local carriers and tech firms SK Telecom, KT, LG Uplus, Samsung Electronics and LG Electronics.

According to a report in Business Korea, the government and the tech giants aim to carry out cooperation activities for the development and innovation of 5G backbone and future 6G

networks, the internet of things and satellite communication.

Samsung recently announced it will collaborate with Korea University to establish a department dedicated to the research and development of next-generation technologies such as 6G. Starting in 2023, a limited number of students will be able to study in Korea University's next-gen tech department.

“In keeping with the changes in the communications market where hardware and software technologies

converge, we have decided to establish Korea University and the next generation communications department to develop convergent talents specialised in the telecommunications sector,” Samsung said.

The South Korean government previously said it aims to launch a pilot project for not-yet-standardized 6G mobile services in 2026. It is confident 6G services could be commercially available in the country as early as 2028.

## Q&amp;A

**David Lotfi**  
**CEO**  
**Evina**



### What was your big career break?

In 2015, the rise of Bitcoin was all everyone was talking about. What was less apparent at first was the upsurge in cybercrime that came with Bitcoin. Before the dawn of this new digital currency, cybercriminals couldn't easily obtain money from the crimes they committed. They had few places where to safely launder the stolen money and oftentimes their crimes could easily be traced back to their bank accounts. Via Bitcoin, cybercriminals were able to create a real business model and profession out of cyber fraud. The digital ecosystem wasn't dealing with individual fraudsters anymore, but with organized groups of professional hackers. To confront this new reality, the good guys had to act fast and create solid cybersecurity teams that knew how to deal with this malignant generation of hackers. Bitcoin was at the same time a blessing, for the growth opportunities it offered, and a curse for the horde of fraudsters lured by the prospect of easy profits.

At the time I was providing my expertise in mobile payment to market players, and I knew that I wanted to be part of the new cybersecurity scene and join the fight against fraudsters. My wish was that these new growth opportunities created thanks to the Internet could benefit everyone and not be hindered by fraud. This is how I entered the world of cybersecurity and why I became a cybersecurity expert.

### Who was your hero when you were growing up?

I loved the manga Berserk, whose main character and hero is Guts, a human. He constantly has to fight off hordes of demons who are growingly vicious. A bit like fraudsters themselves, might I say. Guts lives in a world where there aren't enough rules that protect citizens and where the strong prey on the weak. He refuses to accept

this kind of world and the destiny that is given to him, which is why he does everything in his power to grow as strong as he can so that he can protect what matters most to him and change his destiny. I admire his tenaciousness and his strength of character to fight for what he believes in.

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

That every crisis is an opportunity in disguise. I've found this to always be true. In particular, when a company is affected by fraud it's not all bad news. It's an opportunity for the affected company to grow technologically and change the way it operates, and therefore gain a competitive advantage over its competitors.

### If money was no object, where would you live?

Mars! I love everything that has to do with space and technology. The conquest of space is a daring challenge for humanity. I'm a firm believer that human ingenuity can overcome all the greatest problems and challenges humankind will face, including this one. This belief is what drives me every day. Mars makes me dream big and the fact that humans will have to do the impossible to one day live on Mars is mind-blowing.

Yet our quest for Mars is also a reminder that the planet Earth on which we currently live is fragile and unique and for as long as possible, it is our duty to protect it. Just as it is my duty to protect the vulnerable mobile ecosystem from fraud.

### What would you do with US\$1m?

I would use the money to create a fund for mobile fraud awareness. The first step to fight fraud is to educate: educate users and companies on how to recognize and overcome fraudulent attacks. I believe that today there aren't enough organizations that tend to this matter, while fraud is everywhere and it's merciless.

In fact, companies often underestimate the impact fraud can have on a business, due to a lack of time, budget and/or information, which explains the growing cybersecurity debt. This debt is shared with all companies that have not addressed the security question and results in increasingly high fraud rates, complaint rates and churn rates. These are the figures that will pop out to the companies at first sight, yet the damage is much deeper for it affects the overall revenue and brand image of the company. It's important to be proactive in fighting against fraud. The big players are those that need to educate themselves and apply the best practices against fraud so as to set an example. By implementing the right anti-fraud solution they will secure their traffic flows and consequently secure the users. Even if users are very careful about when they download and where they click, there will always be fraudsters who are capable of deceiving them because they are professional cybercriminals. That's exactly why it is the responsibility of other professionals, be it payment operators, merchants or aggregators, to protect their users. And for that to take place, the first step is to understand what fraud is and how it works.

### Which law would you change?

In this same realm, I would instate a global legislative system to fight cybercrime. This would mean stronger international coordination and harmonized regulations between countries to be sure that fraudsters don't slip through the cracks.

This is extremely important as I mentioned before, we are now dealing with organized criminals that are betting on mobile payment and are investing in hackers to do the dirty work. Cybercriminals worldwide have a lot of tricks up their sleeves and they have the resources to make their wishes come true. This is why we need the best cybersecurity solutions along with foolproof laws that fight mobile fraud.

### What advice would you give to someone who wants to enter this industry?

That entering the cybersecurity industry is a great choice. We need more ambitious people to tackle all that there is to do to make cyberspace healthy and prosperous for all the market players involved. It's also crucial to remind them that cybersecurity is key to the prosperity of the internet, which means that each and every of their action towards fighting fraud will have an impact on all online players. So stay motivated and determined through all the challenges that are bound to come your way by keeping the main goal in mind: to make things shift for telcos and mobile payments. Step-by-step we'll be able to change things together.

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

Without a doubt, I'd be a Judo teacher. I'm a black belt and I highly encourage my children to practice Judo. This art has taught me a lot about how to face life and has contributed to making me who I am today.

When you teach kids how to properly defend themselves, they naturally become more confident when encountering life's challenges and generally become happier human beings. It's exactly like giving players the right tools to fight fraud. They want to grow and need the right tools to do so confidently so that they can develop a strong business and concentrate on increasing their revenue, instead of constantly trying to fend off fraudsters with the wrong weapons.

### What do you want to do when you retire?

I would like to provide my years of experience and knowledge in this industry to the new generation of ambitious entrepreneurs that want to create a better and safer world. Human ingenuity will be our savior in all future challenges we'll encounter. We just need to inspire the new generation to stay focused and motivated to continuously find new solutions. ■



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