

For communications professionals in the southern Asian region

# **SOUTHERN ASIAN WIRELESS COMMUNICATIONS**

Q3 2020

Volume 13 Number 3

- Critical communications: being prepared for the worst
- Looking at how developing nations should approach 5G
- Improved Wi-Fi for guests in India, Maldives and Singapore

An aerial night view of a city skyline, likely Singapore, featuring a complex network of highways and a prominent airport terminal. A network of white lines and dots is overlaid on the bottom right corner, symbolizing wireless communication. The word 'VIAVI' is written in large, white, stylized letters at the bottom left.

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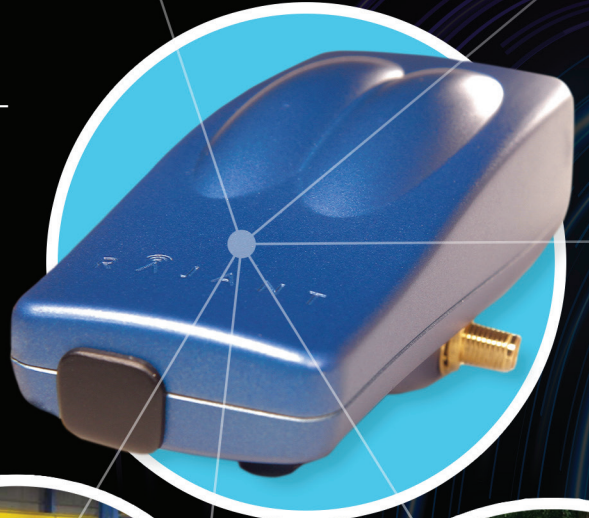
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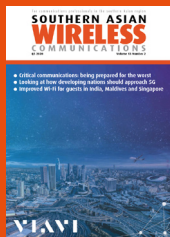


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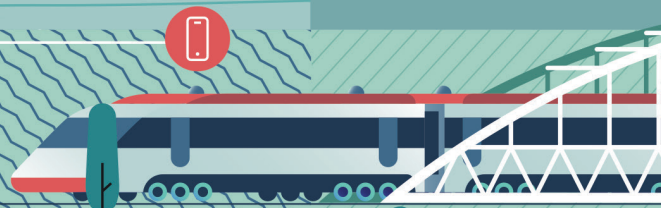
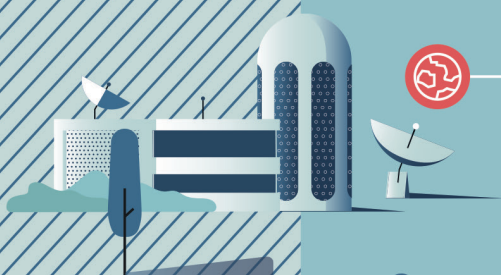
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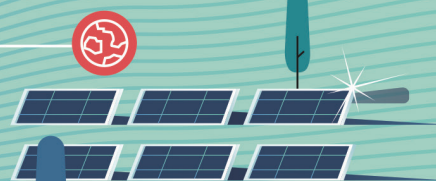
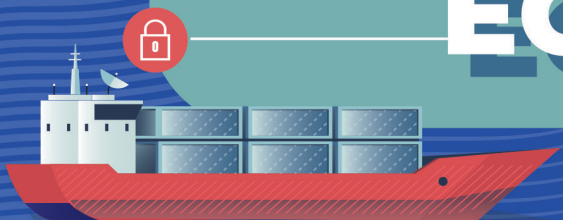




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# SATELLITES FOR DIGITAL ECONOMY



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# Bangladesh welcomes first solar-wind tower

Integrated telecom infrastructure services firm edotco Bangladesh has built a hybrid solar-wind tower in Hatiya, a remote cyclone-prone island located to the north of the Bay of Bengal, where no commercial power connection is available.

The 75-metre tower consists of an in-built green hybrid energy solution with a capacity to produce 42 kilowatts per day from 12-kilowatt solar panels and six kilowatt per day from four kilowatt wind turbines mounted on the tower to ensure round-the-clock power supply, keeping the telecom system operating throughout the year.

This renewable energy solution helps decrease operating expenses by reducing diesel consumption and maintenance costs, as well as reduce carbon emissions by up to 80%, the company said in a statement.

"As a socially responsible company, edotco implements initiatives in communities across the nation irrespective of their location or economic condition," said Ricky Steyn, country managing director of edotco Bangladesh. "Solutions like these allow us to bring connectivity to underprivileged



**The 75-metre tower consists of an in-built green hybrid energy solution with a capacity to produce 42 kilowatts per day from 12-kilowatt solar panels and six kilowatt per day from four kilowatt wind turbines mounted on the tower**

communities who desperately need it for social empowerment. Aware of the community's needs, we aim to deliver solutions that are sustainable and can help improve the quality of livelihoods."

This renewable energy solution is the first of its kind in Bangladesh, specially built to address connectivity needs in areas where the national electricity grid is unavailable,

according to the statement.

The initiative is a part of edotco's continuous efforts to ensure seamless connectivity throughout the nation by using alternative energy solutions to power telecom towers through the deployment of innovative, sustainable and energy-efficient solutions. In Bangladesh, edotco currently owns and operates over 10,000 telecom towers.

## Liquid Group offers QR payments in Cambodia

Liquid Group, the Singaporean mobile payment services firm, has partnered with Cambodian mobile banking business Wing Limited Specialised Bank, to enable cross-border QR payments for inbound transactions into Cambodia.

Under the terms of the deal, both companies will support cross-border merchant- and consumer-presented QR code payment transactions. This will enable Wing's merchant partners across the kingdom of Cambodia to accept QR payment apps of Liquid and its partners. Furthermore, the deal expands the international merchant pool of Liquid and its partners.

"We are excited and really looking forward for this collaboration with Liquid Group, a leading QR payment services group," said Manu Rajan, CEO of Wing. "This collaboration reflects our strategic approach in providing convenient access to mobile financial services that are safe, secure and instant to every customer through our robust ecosystem and partners across the region. Wing has always made efforts to provide more for our customers."

Liquid Group will also partner with Wing to deliver additional innovative value-added services to their customers through its integrated cross-border payment and marketing platform for partners.

"Following the establishment of our integrated regional payment network – XNAP in 2019, we are excited to head into our second year of opening up new corridors across the region to facilitate cross-border QR payments across Singapore, Hong Kong, Indonesia, the Philippines, Taiwan, Thailand and now Cambodia," added Jeremy Tan, founder and CEO of Liquid. "We are delighted to partner with Wing, Cambodia's leading mobile payments player, allowing us to support financial inclusion for the underbanked and unbanked communities in Cambodia, in tandem with our goal of advancing cashless societies across the region."

## Thailand's DES Ministry rolls out free Wi-Fi services for urban communities

Thailand's Digital Economy and Society (DES) Ministry plans to roll out free Wi-Fi across urban communities, starting with 10 communities and beginning in October.

CAT Telecom will also be responsible for arranging the services and will initially target five communities in the capital Bangkok, plus five other provinces. Furthermore, the free Wi-Fi scheme will provide a broadband internet speed of 300Mbps.

The initiative is aimed at enabling people in dense communities to use Wi-Fi for their daily life, because of the post-covid-19 pandemic period.

DES minister Buddhpongse Punnkanta said the ministry wants to give people free WiFi to allow them to cope with difficulties doing business

and in daily life in the digital era.

CAT and the DES Ministry looked at 20 communities for the project, settling on 10 for the first batch, he said.

"The project does not require much money to install routers, related equipment and platforms linked with CAT's backbone infrastructure," added Punnkanta.

The National Digital Economy and Society Committee (NDESC) also launched the "smart sign-on" August 31. Where people can carry out a one-time registration of the government's existing free WiFi services through a web portal or [www.th-wifi.net](http://www.th-wifi.net).

In the past, people were required to register repeatedly for access to different WiFi service providers participating in the free public WiFi scheme. After

being registered, users will receive their usernames and passwords.

NDESC secretary-general Vunnaporn Devahastin said the approach helps people gain access to free Wi-Fi broadband internet services.

Users can type "@TH Wi-Fi by ... (internet provider)" and use the same username and password to log in.

The campaign is a cooperation between CAT; Advanced Info Service; True Corporation; the Office of the National Broadcasting and Telecommunications Commission.

Bangkok-headquartered CAT Telecom runs not only Thailand's international telecommunications infrastructure, but the country's international gateways, satellite and submarine cable networks connections.



## 3 Indonesia partners with Nokia

Operator 3 Indonesia and Finnish gear-maker Nokia are working together to optimise and expand the former's LTE network coverage and capacity to meet customer demand via what is referred to as a new Zero Drive Test solution.

The operator is the first Nokia customer in the Asia Pacific and Japan region to adopt this solution, which is 100% automated.

It is powered by Nokia's AVA Cognitive Services which, Nokia said, allows mobile operators to transform their network, service and business operations through the application of AI and automation, helping them to predict and resolve network issues and improve the customer experience.

It also offers enhanced network measurement and assessment which, according to Nokia, is superior to conventional drive tests on the road, plus a much broader and more comprehensive view than conventional drive tests, which only provide a snapshot of network performance along the drive test route.

# Telekom Malaysia's Q2 earnings sky-rocket

Telekom Malaysia Bhd (TM) saw its net profit surge 140.63% year-on-year to RM274.75m in the second quarter (Q2) to June 30, 2020.

Group revenue, however, dropped to RM2.59bn from RM2.77bn this time last year due to its new internet service Streamyx's price adjustments and restricted economic activities during the Movement Control Order (MCO).

TM said the higher earnings were due to lower operating and net finance cost as it contended with the impact of the MCO to curb the spread of the Covid-19 pandemic.

This was reflective of the impact from the Streamyx price adjustments from September last year as well as lower volume and restricted economic activities during the MCO.

For the six-month period, TM's net profit rose to RM427.27 million from RM422.46 million a year earlier, although revenue was down at RM5.15 billion versus RM5.55 billion.

Newly-appointed chief executive officer Imri Mokhtar said TM had seen positive growth in its unifi subscribers as more Malaysians



**TM said the higher earnings were due to lower operating and net finance cost as it contended with the impact of the MCO to curb the spread of the Covid-19 pandemic**

worked from home during the MCO.

Its unifi customer base had grown 4% to 1.55 million as of Q2, with total fixed broadband customer base rising to 2.23 million, Imri said at a press conference on its Q2 results.

TM has continued its convergence penetration leadership with fixed broadband growth at 53% for households.

"Our unifi subscribers recorded positive growth from more Malaysians working from home while TM Wholesale continues to see higher international and domestic revenue," Imri said. "In the meantime, we remain well positioned to lead in the Industrial Revolution 4.0 (IR4.0) towards enabling a more digital Malaysia."

## Google AI expands flood alerts in India and Bangladesh

Google said it is expanding its AI-powered flood forecasting to the whole of India and Bangladesh in nine new local languages, with the aim to provide greater details on timing and water depths in its alerts.

The Silicon Valley giant also added its new forecasting model will allow it to double the lead time

of many of its alerts. This will give more time for governments and citizens in both India and Bangladesh to prepare for floods.

Google has been working with governments for a number of years to develop systems that predict when and where flooding will occur and keep people safe and

informed. In this case, Google says it has been expanding its forecasting models and services in partnership with the Indian Central Water Commission and the Bangladesh Water Development Board.

The extension allows Google to help better protect more than 200 million people across more than

250,000 square kilometres — more than 20 times its coverage last year. "To date, we've sent out around 30 million notifications to people in flood-affected areas," the company said.

Google currently covers more than 40 million people in Bangladesh and is working to extend this to the whole country.

## Thai giant urges factories to adopt 5G for robots and AI

Thailand's biggest mobile operator has ringfenced up to US\$1.4bn to build new 5G infrastructure in the country's crucial Eastern Economic Corridor, a signature government initiative expected to massively diversify and drive the kingdom's economy in the years ahead.

Advanced Info Service (AIS) believes that through the corridor

it can bring the next-generation mobile standard to manufacturers, giving them a tool they can use to introduce cutting-edge robotics, artificial intelligence and internet-connected devices to their factories.

"We are focusing on the industrial estates in the EEC area," AIS president Hui Weng Cheong said. "As we want to play a key role in

[helping Thai industries forge ahead] by optimizing 5G technology."

AIS has inked deals with major industrial estate developers in the corridor to provide 5G infrastructure, which the firm said will help attract manufacturers once the coronavirus pandemic peters out. Developers Amata Corp., WHA and Saha Phatana Inter-Holding, who have hundreds of manufacturing

tenants, have signed deals with AIS.

Jareeporn Jarukornsakul, chairman and CEO of WHA, said her company joined hands with AIS so it could meet industrial clients' demands for super-sonic telecom speeds. "Thailand must move forward with high technology and digital infrastructure," Jareeporn said. "That's why 5G networks are a solution that we need to tap into."





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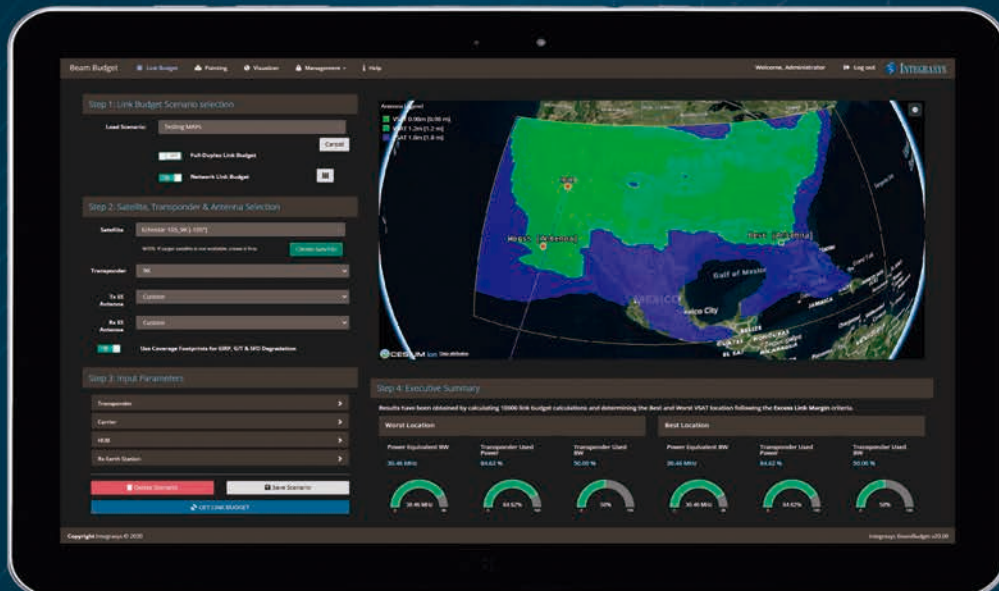


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# Laos welcomes 5G network

Lao Telecommunications (Lao Telecom) has officially launched its 5G network, in what has been described as the first of its kind in the country.

The system is to implement the party's guidelines and the state's policy as well as the strategic work of the telecoms ministry to modernise services and enable the integration of the region with the international framework, especially

the Digital Economy Era 4.0.

In the current era, the use of telecoms tools and services has become an important factor in the lives of many people, especially in Laos, Lao Telecom said.

Prior to this, the operator launched the first test of its 5G system in October to prepare for the official launch of the service.

For the event, a number of demon-

strations were prepared by the team to show the potential of modern 5G and the speed of data transmission.

For the initial 5G service area, Lao Telecom will first provide services in some areas of Vientiane, such as in community areas of the city centre like Sihom village, the night street market along the Mekong River, Sailom village and the National University of Laos (Dongdok Campus).

The second phase will then be extended to major provinces around the country.

Lao Telecom, a joint venture between the government (51%) and Singapore-based Sherington Investments (49%), began operating 4.5G services in Vientiane, at the beginning of 2017 and then expanded services to the provinces and covered many areas of Laos.

## Singtel's 5G network up and running

Singtel has launched its 5G non-standalone (NSA) network along with a three-month trial for its consumer and enterprise customers, while offering a free trial to 20,000 select early adopters.

The 5G NSA network can deliver more than 1Gbps of speed and uses the 3.5GHz frequency of Singtel's newly expanded spectrum holdings along with its existing 2100MHz spectrum, the company said.

Along with its launch, the operator is offering a free three-month trial along with an additional 10GB of local data to 20,000 early adopters. These include the 10,000 existing Singtel Combo and XO customers with compatible 5G handsets who will be progressively provisioned with 5G.

The next 10,000 eligible customers who buy a 5G phone will also get to trial Singtel 5G for free. Beyond the first 20,000 customers, others can also enjoy the trial for S\$10 per month.

Right now, compatible 5G handsets on Singtel's 5G network are Huawei P40 Pro, Huawei P40 Pro+, Samsung S20 Ultra 5G and VIVO X50 Pro.

"With COVID-19 driving everyone online and dramatically increasing our reliance on digital services to work, learn and play, 5G is set to be a huge enabler in our lives in this new normal," said Yuen Kuan Moon, CEO, consumer Singapore, Singtel.

The company is the largest mobile network operator in Singapore with approximately 4.1 million subscribers. Through its subsidiaries, Singtel has a combined mobile subscriber base of circa 640 million customers.

## NEC joins MIST cable project

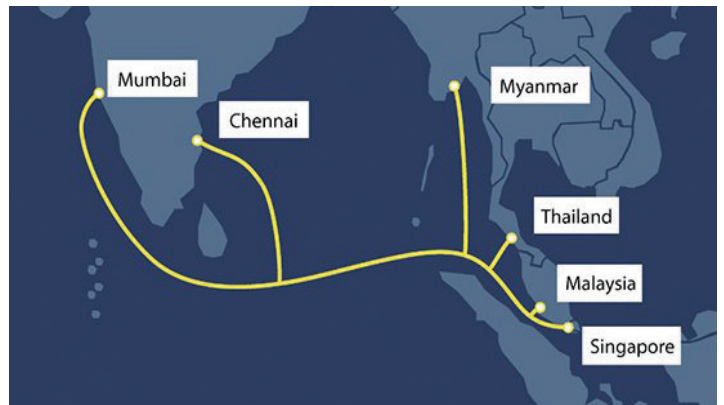
The MIST cable, a project announced late last year and which will link multiple Asian countries, has added two more stopping points, with NEC joining as a construction partner.

The 8,100km optical submarine cable, originally announced by Orient Link (OLL) and shareholder NTT, will offer a design capacity of more than 216 terabits per second (Tbps) and will now connect Singapore, Malaysia, Myanmar, Thailand and India.

It is expected to be complete in the third quarter of 2022 - a slight delay from the original completion date of June 2022. In India, MIST will land at Mumbai and Chennai.

When it was originally announced late last year by NTT the plan was to land in Myanmar, India, and Singapore. MIST is an acronym made from "Myanmar, India, Singapore Transit".

The updated plan adds Malaysia and Thailand and is the likely cause of the delayed schedule. According to NEC, MIST will enhance and contribute to the expansion of communications networks from Asia, improving network



**The 8,100km optical submarine cable, originally announced by OLL and shareholder NTT, will offer a design capacity of more than 216Tbps and will now connect Singapore, Malaysia, Myanmar, Thailand and India**

redundancy and delivering highly reliable communications. It will also expand onward connectivity options in the Bay of Bengal with its landing at Myanmar and Chennai.

"Globally, India and south-east Asia are among the world's fastest-growing economies," said Yoshio Sato, CEO of OLL. "I am very pleased to announce the launch of MIST, providing a truly

connected India to our clients around the world, delivering high-quality, low-latency networks to the people in India as the nation charges forward with its digital transformation roadmap. "OLL has selected NEC as a supply partner whose extensive experience in expeditiously implementing submarine cable systems will play a key role in our project's success."

## UN calls to restore internet in Rakhine

The United Nations (UN) has called on Myanmar's government to restore full internet service in Rakhine state and enable access to accurate information about the risks of Covid-19.

The government first imposed an internet blackout in nine townships in Rakhine and Chin states in June 2019 and it was temporarily lifted in some areas in September 2019. It re-imposed the restrictions February 3rd and were removed in Maungdaw township May 2, leaving eight town-

ships still under restrictions.

"Access to timely and accurate information about the risks of Covid-19 as well as preventive measures is essential to ensuring people's safety," said Ola Almgren, UN resident and humanitarian coordinator in Myanmar. "Nowadays, the general population actively seek this information on mobile internet, therefore access to functional internet that allows applications to run on mobile phones is essential and full internet service must be restored

in areas currently not having such service. The recent surge in Covid-19 cases in Rakhine complicates the provision of ongoing humanitarian assistance and protection services to more than 670,000 vulnerable people by the UN and its partners."

Myanmar's government allows only 2G data networks while 3G and 4G services remain blocked. The 2G speed is slower and does not allow video calls or access to web pages with photos and videos.



# TM introduces AI contactless temperature screening service

Telekom Malaysia (TM), via its research and development (TM R&D) arm, has partnered with mobile operator Dhiragu to expand the delivery of its AI-based contactless temperature screening service called Early Warning, Alert & Response ('EWAR') to Maldives.

TM R&D introduced two main products under its EWAR offering, namely EWAR Crowds and EWAR Compact in April. The former is designed to conduct a rapid body temperature screening of 10-15 individuals per second simultaneously at high traffic areas. The service can be deployed in locations with mass traffic flow such as offices, shopping complexes, transportation hubs, universities, schools, tourist attractions, airports, immigration centres, and hospitals. EWAR Compact is more suitable for one-on-one

contactless thermal screening. It eliminates the need for hand-held temperature taking devices.

Both EWAR products also come with cloud-based software and real-time monitoring app. If any visitor entering the premises records a higher temperature, an alert will be triggered and a notification will be sent to the mobile device of the designated person in charge. The system also allows storing of individual temperature reports over a cloud system where it can be accessed remotely for tracking or analysis.

Telekom Malaysia added that its EWAR service has been deployed at more than 150 sites across several industry verticals to provide screening of all employees and visitors. The sites include the quarantine and treatment centre



**Both EWAR products also come with a monitoring app. If any visitor entering the premises records a higher temperature, an alert will be triggered and a notification will be sent to a mobile device**

for COVID-19 cases at Malaysia Agro Exposition Park (MAEPS) in Serdang, large and mid-size office lobbies, 12 schools, numerous

hotels, Kuala Lumpur City Hall (DBKL) payment counters, various sales galleries, Gamuda Land construction sites, just to name a few.

## Singapore providers choose Nokia, Ericsson over Huawei for 5G network

Singapore's leading telecom providers selected Nordic firms Ericsson and Nokia to develop the city-state's main 5G network, joining a growing list of countries that have limited Huawei's role in building the next-generation wireless network.

Singapore Telecommunications, which is the country's largest telecom, chose to use equipment from Sweden's Ericsson after a "rigorous tender process," while the StarHub-M1 joint venture picked Finland's Nokia after Singapore gave the final green-light to telecoms for the city-state's 5G rollout. Huawei, meanwhile, will work with Australia's TPG Telecom, which is set to build a smaller network in Singapore.

The announcement comes after several countries including the UK and Canada reduced or eliminated Huawei's role in developing 5G networks amid pressure from the US to exclude the Chinese player on national security grounds.

However, Singapore's minister for communications and information S.



**The announcement comes after several countries including the UK and Canada reduced or eliminated Huawei's role in developing 5G networks**

Iswaran emphasised that Singapore Telecommunications didn't "exclude any vendor," in an interview with Bloomberg. "You have a diversity of vendors involved in different aspects of the world 5G system."

The US has long alleged that Huawei maintains a tight relationship with the Chinese government and that equipment from the company could be used to spy on other countries and companies. Huawei has repeatedly denied this.

Singapore is expected to roll out

its 5G service early next year, with plans to cover the entire city-state by 2025 at the latest. 5G, the next generation of wireless networks that has been rolling out across the world, is live in a number of major US cities, as well as parts of China, South Korea and the UK, among other countries. The new technology will make downloads and uploads ultrafast, but it is also poised to power everything from self-driving cars to advanced augmented reality experiences.

## Huawei and UnionPay team up

Huawei Mobile Services has joined forces with China-based financial services business, UnionPay, to launch its new mobile payment service – Huawei Pay, in Thailand.

The tool provides a contactless and cashless payment service for Huawei device users, with Industrial and Commercial Bank of China (Thai) the first bank to support the payment service. In addition, the payment solution is one of the key services under the company's Wallet app that supports near field communication (NFC) payments in retail stores.

The company's Wallet app comes pre-installed in the newly-launched Huawei P40 series. For the existing smartphone models, the app can be downloaded from the company's official app marketplace. In Thailand, the local merchandises support Huawei Pay including Boots, Emporium, Jaymart, Major Cineplex, Mr. D.I.Y, Sushi Hiro, Swarovski, Tesco Lotus, The Face Shop and others.



# Cambodia: Ministry of Post urges telecoms to implement the law

The Ministry of Post and Telecommunications (MPT) has reminded Cambodia's telecom operators to implement the law on telecommunications, according to the country's watchdog.

According to its announcement, Telecommunication Regulator of Cambodia (TRC) noted that some telecom operators have yet to

comply with the laws such as regulations and terms of the relevant licenses, the operation of telecommunication networks and services.

The Ministry is urging telecom operators to self-declare and pay licence fee (allocated revenue) of 2% as contribution to the global service obligation fund, 1% for capacity building and research and

development fund and other related revenue to the MPT on time.

It has also immediately ordered an end to illegal competition among the industry and the provision of telecommunication services without quality or integrity by creating a variety of promotion packages that confuse users.

"All promotions or disconnection

of the network of any telecommunications operator must be approved in advance by TRC," the statement read.

The MPT has urged operators to stop distributing SIM cards without proper documents that would strengthen the national security.

It also warned that any telecom operator who did not follow this instruction would face legal action.

## Ooredoo Maldives partners with telemedicine platform

Ooredoo Maldives has partnered with Sri Lanka's leading telemedicine platform 'oDoc', which connects patients with doctors for virtual consultations.

The aim is to connect people to "high quality health care that is universally accessible and affordable to all", said Ooredoo Maldives

managing director and chief executive officer (CEO) Najib Khan.

Customers can access the service and be billed directly by Ooredoo via its carrier billing service, eliminating the need for credit or debit cards and is available to both its post-paid and pre-paid users.

"Access to digital platforms such as oDoc has become necessary during these unprecedented times," added Khan. "Our customers can now reach out to their doctors in Sri Lanka for follow ups at their convenience, without having to travel and at an affordable price."

Users can utilise the oDoc virtual clinic to seek medical consultations from over 450 Sri Lankan doctors including general practitioners, paediatricians, psychiatrists, dermatologists, gynaecologists and more, with a waiting time of under three minutes.

Furthermore, Ooredoo revealed that Maldivian doctors will be added to the platform over time.

All doctors on oDoc are fully qualified, registered and have at least five years of post-internship experience. They are also authorised to issue prescriptions to a patient's phone after a thorough video consultation.

Research by the American Medical Association (AMA) found that nearly 75% of regular doctor visits can be handled through audio video consultations.

"With the advancements in technology, fast moving, digitally enabled and always connected lifestyle, telemedicine has gained acceptance and popularity across the globe", said Ooredoo, adding that over 200,000 Sri Lankans currently trust oDoc for their healthcare.



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## Singtel shows 5G services at pop-up retail store

Singtel recently showcased 5G services at "Unboxed", its 24/7 unmanned pop-up retail store, giving consumers and retailers a first-hand taste of the next-generation technology.

The service gives customers access to faster services from Unboxed's connected self-serve kiosks that allow SIM card replacements, prepaid card purchases, device collection and more while enhancing the store's security system, the press release said.


Singtel also said that it demonstrated speeds of more than 1Gbps at Unboxed using its 5G network. For example, a two-hour HDR movie can be downloaded on a 5G connection in just 40 seconds, the operator said.

Furthermore, 5G can power IoT and artificial intelligence, enabling real-time intelligent connectivity and analytics in-store. This allows communication between Unboxed's roving smart robot ambassador Stanley and 5G virtual assistant Stella at the kiosks.

Stanley is also integrated with the store's security system to detect customers who are running a temperature as well as ensure customers adhere to safe distancing measures.

As a next-generation retail concept, this contactless service model shows how 5G can help retailers better adapt and reach their customers in a post-Covid new normal, Singtel said.

## Bangladesh: net restored

 Bangladesh has restored mobile networks and internet services in Rohingya refugee camps to ensure better services amid the coronavirus pandemic. The government imposed a ban in early September 2019 on the use of mobile phone SIM cards by Rohingya refugees and authorities confiscated hundreds of SIMs from Rohingya camps following the decision. It also ordered the country's telecommunications regulatory body to shut down internet services in the camps, citing security grounds.

## Tower in Sarawak vandalised

 Broadband coverage in the Bengoh Resettlement Scheme (BRS) area in the Puncak Borneo Parliament in Sarawak, Malaysia, took a hit when a telecommunications tower was damaged again and its equipment stolen. Local MP Willie Mongin said this was the ninth time the tower had been damaged ahead of planned dialogue with the residents at BRS September 3. "We will involve the police and villagers in BRS in the dialogue to work together to find a solution," he told reporters.

## Philippines: telcos threat

 The Philippines' leading telecom companies found themselves on the defensive again after president Rodrigo Duterte threatened to close them and seize their assets if they do not improve their services. Telecom duopoly of PLDT and Globe Telecom are firmly in Duterte's sights as part of an attack on the country's business elites PLDT's principal shareholders include Japan's NTT Group and Hong Kong-listed First Pacific, while Globe is a joint venture between Philippine conglomerate Ayala Corp. and Singapore Telecommunications.



### Talking satellite

#### Serving underserved communities

"The Digital Divide remains despite years of debate about solutions to bridge it." This was the opening statement of the pre-event description for the latest in the GVF Webinar Series, organised in association with the Satellite Evolution Group (<https://www.satellite-evolution.com>), and held on the Zoom platform every two weeks. The 'Serving Underserved Communities' (<https://gvf.org/webinar/serving-underserved-communities>) webinar took place on 27 August and featured panellists representing Kacific Broadband Satellites, Gilat Satellite Networks, ViaSat, and SES. If you missed the discussion you can still access the recording by clicking on the above link.

This webinar addressed the fundamental question of 'How exactly is satellite now fulfilling the urgent need to bridge the digital divide?' Satellite solutions can be deployed anywhere. Satellite coverage is ubiquitous. Satellite's capacity continues to expand with more high throughput satellite systems being launched to geostationary orbit (HTS GEO), with deployment of enhanced additions to existing medium Earth orbit (MEO) infrastructure, and ongoing expansion of the new low Earth orbit (LEO) constellations. The webinar dialogue focused on such questions as:

- Is the biggest barrier to serving the underserved connectivity or affordability?
- Will there be a role for satellites in connecting underserved communities in five years? Ten years?
- Is community Wi-Fi the best way to bring the internet to remote communities in low-income countries?
- Are universal service funds a significant source of support to bring satellite delivered internet services?
- What advantages do GEO have over NGSO systems in bringing services to underserved communities? Conversely, what advantages do NGSO systems have over GEO systems?
- What is the role of satellite in emergency response and business continuity?

These questions from the webinar moderator were augmented with additional questions raised by the audience in real-time over the Zoom platform's Q&A function. Those

Martin Jarrold, chief of international programme development, GVF



audience questions which remained unanswered at the conclusion of the webinar are answered in writing and feature on the GVF's website webinar pages along with the webinar video recording. The geographic origin of the audience questions reflected the global appeal of the webinar, and of the series as a whole. Participants from some 69 countries featured during the discussion on the digital divide.

'Serving Underserved Communities' was the eighth webinar in the GVF Series. The video recordings of all seven previous webinar discussions are also available via the GVF website (<https://gvf.org/webinars/>), covering:

- The Satellite Industry's Response to the COVID-19 Pandemic
- WRC-23: Spectrum Dialogues in a Post-pandemic World
- Space Segment Disruptive Evolution: GEO, MEO & LEO – Does a Global Crisis Make a Difference?
- The Satellite Integral Factor II: Will Working from Home Render the Cloud a Different Animal?
- 5G & Satellite: Driving Forward the 'Network of Networks'
- Ground Segment: Transformational Antennas/End of the Parabolic Paradigm?
- Ground Segment: Transformational Antennas II – Will terminals realise the promised LEO Connectivity Revolution?

The Webinar Series is the product of GVF's strategy of taking its digital presence into new areas, responding to the period of lockdown, social distancing and working from home brought about by the COVID-19 global pandemic. The Series is scheduled to continue for the remainder of 2020, with a schedule of

discussion themes which will include:

- GEO/MEO/LEO – Satellite in the Finance Markets
- Global Transitions: Digital Economy, Digital Infrastructure, Connected Communities, Digital Planet
- A Regional Perspective on C-Band – The Next Battleground?
- The Regional Satellite Operators' Voice
- Humanitarian Assistance & Disaster Response: The Evolving Role of Satellites in Disaster Response

In my previous column for this publication I focused on the subject of humanitarian assistance & disaster response, referencing that the global pandemic has, of course, led to a widespread cancellation of actual events and a general shift to digital/virtual events, including Pacific Endeavor 2020 and Satcom Endeavor 2020. Since this last column another actual event, a major one for the Middle East, northern Africa and south Asia regions, has also been affected by COVID-19. The CABSAT 2020 exhibition, already previously postponed from its usual March calendar slot to October, has now again been postponed. GVF continues to examine the practicalities for adapting the example of the virtualised Pacific Endeavor 2020/Satcom Endeavor 2020 model to CABSAT, thereby providing the GVF SATEXPO Summit @ CABSAT as an online event.

When confirmed, the further definition of the programme for the GVF SATEXPO Summit @ CABSAT will be announced through a GVF press release and will be posted at <https://gvf.org/>.



## Maldivian firm Dhiraagu upgrades Biz Fibre Broadband packages

Maldivian giant Dhiraagu announced a “major revamp” on its Biz Fibre Broadband packages, now offering business customers “more data, and fastest broadband speed for the same price”.

The firm is also offering a one-year free virtual room service (VRS) for customers who are on Biz Fibre Basic 10M package and above. This service provides audio and video conferencing with local dialling service.

“With the newly upgraded packages, we hope to offer greater value to our small and medium business customers”, Dhiraagu said in a statement. “Our existing business customers will not have to spend anything extra to enjoy an additional 40% to 100% of extra data and experience better speeds than ever before. The extra data and speeds allocated

will depend on their packages.”

Dhiraagu also revealed that the VRS will be available from September 1, while the Biz Fibre Broadband package updates will be fully implemented by the first week of the month.

“As we all are adapting to a new normal, digital technology is playing a vital role in how we conduct businesses,” said Musthag Ahmed Didi, director business solutions at Dhiraagu.

“We hope that this revamp together with the valued added services we are offering will enhance the digital journey and increase the digital capabilities of our business customers”

Dhiraagu described the revamp as part of its “continued commitment as the digital enabler for small, medium and large enterprises in the Maldives to help connect and optimise its operations for the digital age”.

## GIC buys Reliance's Indian towers for US\$3.4bn

GIC, the Singaporean sovereign wealth fund, along with its affiliates and a group of investors, including Canada's Brookfield Infrastructure Partners, have bought an Indian telecom tower company from a unit of Reliance Industries for US\$3.4bn (S\$4.6bn).

The deal was signed in December 2019 and had been awaiting regulatory approval.

Since then, Mukesh Ambani-controlled Reliance has been selling stakes in its digital unit to blue-chip companies, raising billions of dollars in the process, in a bid to cut debt.

The completion of the deal also marks a foray into the fast-growing telecom market in India, which, in recent years, has been upended by the launch of Jio, Reliance's telecom arm, whose cut-

price pack- it into the telecom carrier

“The portfolio income and long-term value given India's attractive growth outlook as 4G and smartphone penetration is still very low,” said Ang Eng Seng, GIC's chief investment officer for infrastructure. “While we remain cautious in this period of high uncertainty, we continue to seek good, long-term opportunities in India.”

The investment by the group is for around 135,000 communication towers used by Reliance's telecoms venture Jio Infocomm, GIC said in a statement.

ages have turned country's biggest by subscribers.

offers resilient term value given data demand smartphone

## Vodafone gets Idea to rebrand

Vodafone Idea, one of India's largest telecom operators, has rebranded as ‘Vi’ as it targets a “fresh start” three years after billionaire Kumar Mangalam Birla's Idea Cellular merged in the country.

A subsidiary of British telecom Vodafone Group's India business and once the largest telecom operator in the country with over 400 million subscribers, Vodafone Idea has lost more than 100 million subscribers in recent years to new comer Jio Platforms in recent years.

“As the integration of two businesses is now complete, it's time for a fresh start,” said Vodafone Group CEO Nick Read at a virtual conference. “That's why we believe that now is the perfect time to launch Vi, one company which provides the strength of Vodafone India and Idea.”

India's richest man Mukesh Ambani's telecom venture has become the largest telecom operator with nearly 400 million subscribers with its cut-rate mobile data tariffs. Jio Platforms has also attracted over US\$20bn in investment from high-profile firms including Facebook and Google in recent months.

“India is the second largest telecom market and the largest data consumer, globally,” said Birla, chairman of Aditya Birla Group and Vodafone Idea, who was also at the conference. “With 1.2 billion Indians accessing voice and data services at the world's lowest tariffs across 500,000 villages, the ubiquitous wireless network in India is unmatched for its reach and impact in people's lives.

With our new brand — Vi, we stand committed to partner with government to accelerate India's progression towards a digital economy, enabling millions of citizens to connect to the digital revolution and build a better tomorrow.”

Vodafone Idea — now Vi, has yet to turn a profit since it joined forces. The company said it will continue to invest in 4G wireless technology, which now reaches more than one billion people in India, double the coverage at the time of merger announcement.

## Bangladesh adds three million mobile subscribers in July

Bangladesh ended July with 164.2 million mobile phone subscribers, up from 161.2 million in June, according to the latest data from the Bangladesh Telecommunication Regulatory Commission (BTRC).

Grameenphone saw its customer base increase to 76.08 million from 74.53 million in the previous month, while Robi Axiata ended July with 49.10 million, up from 47.97 million the previous month.

Banglalink had 34.41 million mobile customers, up from 34.03 million, while Teletalk ended July with 4.68 million mobile customers, down from 4.75 million mobile customers in the previous month.

The report also shows that there were 106.41 million internet subscribers at end-July, up from 103.47 million in June.



**Vodafone Idea has lost more than 100 million subscribers to newcomer Jio Platforms**

## 'Thai telecom market value to fall 2.3%' due to pandemic pressure

Thailand's telecom market value is expected to fall 2.3% to THB605bn billion this year, pressured by the coronavirus pandemic and the economic slowdown, according to the country's regulator.

However, the National Broadcasting and Telecommunications Commission (NBTC) said it thinks the market can recover by this time next year.

"The pandemic will push down Thailand's telecom market, which includes telecom equipment and services, by 2.3% to THB605bn this year, from THB619bn in 2019," said NBTC deputy secretary-general Suthisak Tantayothin. "This is not worse than other sectors, as telecom remains crucial infrastructure for digital transformation, playing a part in moving the country forward."

The telecom equipment segment is expected to see a 4.8% year-on-year drop in value to THB250bn in 2020. In addition, the telecom service market is estimated to face a drop of 0.4% to THB355bn.

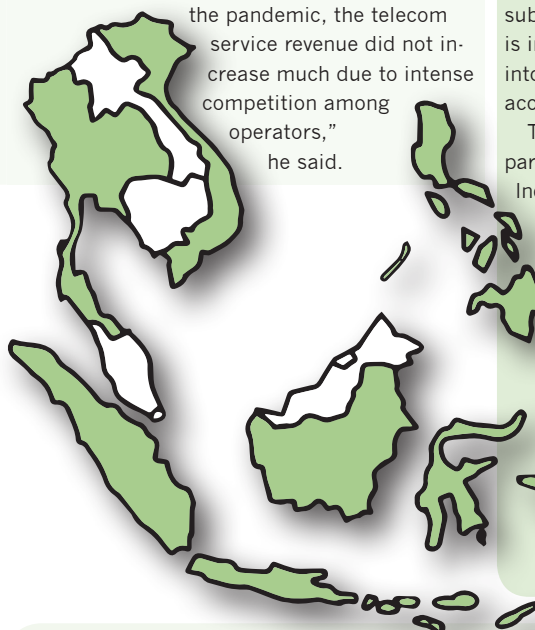
Although the 5G roll-out began in the first half

of 2020, the pandemic-induced lockdown caused the delay of network equipment installation, Tantayothin said, adding that telecom operators remain cautious about 5G network investment.

Commercial 5G services are expected to progress in October when the 5G network covers 60-70% of Bangkok and major cities, along with the Eastern Economic Corridor areas, he added.

"This also helps other business sectors better provide online services," Tantayothin continued and added that in the region, Thailand is among the top two countries in terms of 5G network.

"Even though the data traffic in the fixed telecom network surged 400-500% during the pandemic, the telecom service revenue did not increase much due to intense competition among operators," he said.



## Vietnam privatisation strategy delayed

The Vietnamese government has pushed back its end-2020 deadline for privatising several state-owned firms as a result of the Covid-19 pandemic.

According to business publication DealStreetAsia, Vietnam was aiming to sell stakes in 128 state-owned companies between 2017 and end-2020, but has thus far divested holdings in only 37 of these.

In a report, the government noted that the pandemic was partially responsible for holding up its plans, as Covid-19 has "impacted all socio-economic aspects, market demand and the stock market".

The government has planned for years to partially or fully privatise Vietnam Posts and Telecommunications Group (VNPT) and MobiFone Telecommunications Corporation. It has extensively restructured both telecoms firms in a bid to boost their efficiency and therefore competitiveness, although it has not audited either in preparation for a possible initial public offering (IPO).

Meanwhile, the local unit of Samsung has rejected speculation that it was planning to transfer device factories from Vietnam to India despite plans by its parent firm to strengthen its presence and investment in India.

According to reports, the South Korean firm was planning to take advantage of the Indian government's incentive scheme by manufacturing \$40 billion worth of smartphones in the country.

## Telkom Indonesia in advanced talks for tech firm stake



Indonesian mobile operator Telkomsel, a subsidiary of state-owned Telkom Indonesia, is in advanced talks to inject significant capital into local tech and ride-hailing firm Gojek, according to local media reports.

The former is seeking to conclude what its parent company had sought to do earlier. Telkom Indonesia was set to invest in Gojek in 2018 but the deal fell through after failing to secure the backing of top ministerial figures at the time.

Telkom is understood to have planned to invest circa US\$400m in Gojek in 2018. The value of the current deal is expected to be a similar figure.

It is understood that Telkomsel's investment in Gojek will be made directly from the company's balance sheet.

The Jakarta-headquartered company is Indonesia's largest telecom operator with 172 million customers as of 2018.

## Philippines government gives out certificates to tower firms

The Philippines government has begun issuing provisional certificates to tower companies, in a bid to accelerate tower construction and connectivity in the country.

In a statement, the Department of Information and Communications Technology (DICT) said it issued the certificates to 23 tower companies (initially 24, two players merged), allowing them to "own, construct, manage, and operate one or more Passive Telecommunications Towers Infrastructures".

"Due to the ongoing health crisis and in compliance with President Rodrigo Roa Duterte's directive, provisional certificates of registrations were granted to ITCs (Independent Tower Companies) that already have existing MOUs/MOAs with DICT", said DICT secretary Gregorio B. Honasan II. "This should provide them with ample time to complete all the requirements for

full ITC registration and permitting within the time period. Likewise, this should also provide enough time for ITCs to start their roll-out".

The 23 companies given permission to deploy in the country are: Aboitiz Infracapital; ACODA Towers; Alt-Global-Solutions; Transcend Towers Infrastructure; China Construction First Group and Wangan Construction and Development Corporation; China Construction Yangtze River; China Energy Equipment Corporation; CREI Management Services; Desarrollos Terrestres; EEI Corporation; Frontier Tower Associates Philippines; IHS Holding; Inforient; ISOC EDOTCO Towers; ISON Tower; J.S Cruz Construction and Development; MGS Construction; Phil-Tower Consortium; RT Telecom; Shinheung Telecom; Tamoin Industrial Services Corporation; Tiger Infrastructure; UA Withya Public Company.



## Nepal Telecom sees profit fall

Nepal Telecom saw its net profit fall by 12.3% to Rs8.55bn in the last fiscal year, largely due to a decline in voice, international and roaming calls, the areas where it makes most of its money.

The operator said more people are using communication apps to make phone calls instead of the traditional phone system.

A series of events prompted by Covid-19—mass return of foreign migrant workers, government directives to give a 30% discount on mobile data and internet, and halt in tourism—combined to drag down profits in the last fiscal year that ended mid-July.

The company's interim fourth quarter financial

report shows that Covid-19 shaved Rs1.2bn off its earnings. Fierce competition in the market and external factors like over-the-top (OTT) applications that allow people to make phone calls using the internet hit income, the company said.

Dilli Ram Adhikari, managing director of Nepal Telecom, added that a reduction in economic activity due to the lockdown that lasted nearly four months slashed the company's revenues.

"Following the lockdown, demand for major revenue earning services like voice call, international call and roaming service shrank with people being confined to their homes," he said. These three services account for 60-70%

of the company's revenues.

Elsewhere, Nepal Telecom's gross income reached Rs41.49bn in the review period, down from Rs43.83bn in the previous fiscal year 2018-19. The company earned Rs34.57bn by selling these services in the last fiscal year, against Rs36.86bn in the previous fiscal.

Nepal Telecom's profit has been dropping since 2018-19 when its net profit took a 44.19% dive, mainly due to increased use of smartphones that led to massive use of apps like Viber, WhatsApp, Messenger and IMO, among others, to make phone calls, reducing incoming calls from foreign countries, including domestic voice calls.

## SLT becomes 'first' to enable dynamic QR bill payment facility

Sri Lanka Telecom (SLT) has taken bill payments to the next level by becoming the "first" to introduce a cash-less facility through the addition of QR codes on all its bills.

Ensuring a safe and hassle-free process from start to end in the experience with SLT has been an objective of the country's national operator throughout. The dynamic QR code system now makes even the final transaction convenient and effective.

As such, payments for all SLT bills can be made through any Lanka QR certified payment app. Scanning the QR code on the SLT bill from the designated banking apps "will lead the customer to the bill payment transaction effortlessly".

The facility for central bill collection of this process is provided by Bank of Ceylon (BoC), a partnership that merges two giants from their respective fields to bring out the most effective and safe bill payment facility.

SLT chief executive officer (CEO) Kiththi Perera and BoC general manager, Sugath Gunasekara signed the deal.

"We are proud to partner with SLT to introduce the first ever dynamic QR for bill payments in Sri Lanka with a revolutionary payment experience," said Gunasekara. "Now customers can enjoy the freedom of making bill payments anywhere at any time with a single click using BOC SmartPay or with any other Lanka QR certified payment app. The recent pandemic situation has created positive reinforcement on customer perception towards digital banking and driving this momentum through digital innovations would be the 'new normal' post Covid-19"

## Pakistan proposes tax relief

Pakistan's Ministry of Information Technology and Telecommunication has proposed a number of tax relief measures, such as abolishing the current 12.5% advance tax and cutting the federal excise duty on telecom services from 17% to 16%.

In addition to these measures, it has also been proposed to withdraw the Rs 250 issuance tax on sale of new SIM cards. The Pakistani government may also accept the recent decision of the Lahore High Court in favour of Ufone and Zong, instead of challenging it. However, this mean that the government would follow the court's verdict for all mobile operators and not just the two involved in the case.

The ministry has also suggested introducing a simplified advance tax mechanism, exemption from all withholding and collection provision under ITO,

2001. While this will not result in any tax break for the industry, similar exemptions have already been afforded in the banking and oil industries.

Telecom companies have also been informed about their contributions and any corporate-social-responsibility projects they may have taken on in view of the Covid-19 pandemic. The ministry admitted that the telecom sector has not been provided as much relief during the course of the pandemic compared to the other sector of economy.

However, the ministry maintained that consideration of these proposals will contribute to the expansion and improvement of telecom services in Pakistan. It is also being hoped that these changes will open avenues for further investment and employment in the sector, especially while the Covid-19 pandemic is still going on.

## Sterlite and Airtel partner for optical fibre network

Sterlite Technologies (STL) has teamed up with Bharti Airtel to build an optical fibre network for the telco across 10 telecom circles.

It will enable Airtel to deliver enhanced customer experience through scalability, reduced latency, and improved bandwidth, the company said in a statement.

"STL...today announced a partnership with Bharti Airtel to build a modern optical fibre network for Airtel across 10 telecom circles," the statement said. The densely fiberised future-ready network will also form the foundation for many next-generation of services such as 5G, Fibre to The Home (FTTH), Internet of Things (IoT) and enterprise networks, it added.

STL has been a long-term partner to Airtel in the optical connectivity space. Commenting on the partnership, Bharti Airtel chief technology officer Randeep Sekhon said: "This 5G-ready and high capacity network will enable us to provide

faster delivery of new services, while delivering an enhanced user experience".

KS Rao, CEO - network services and software, STL said the need for dense fiberisation will continue to grow on the back of investments in 5G, FTTH, data centres, and next-gen digital networks. "We are excited about this stronger and renewed strategic partnership with Airtel," Rao said.

Meanwhile, Sterlite will hire about 300-400 professionals this fiscal for growth areas of 5G and wireless ecosystem and to support its plans to take services business global, Group CEO Anand Agarwal has said.

The company have also stated that they will hire professionals with requisite experience as well as freshers for these growth areas. Part of the hiring is also in view of the company's plans to take its services business global, in markets of the Middle East and Europe, according to Agarwal's recent comments .



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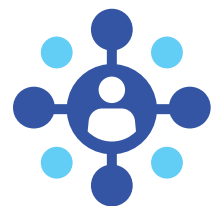
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## C-Com's new Drive-Way antenna

The iNetVu Ka-75V Drive-Away Antenna is a 75 cm auto-acquire satellite antenna system, which can be mounted on the roof of a vehicle for broadband internet access over any configured satellite, according to C-Com Satellite Systems. It reckons the system works seamlessly with the iNetVu 7024C Controller, providing fast satellite acquisition within minutes, anytime anywhere. The company also says that "if you operate in Ka-band, the Ka-75V system is easily configured to provide instant access to satellite communications for any application that requires reliable and/or remote connectivity in a rugged environment". C-Com also says that this next generation mobile Ka terminal delivers affordable broadband internet services (high-speed access, video and voice

over IP, file transfer, e-mail or web browsing). It is suited for industries such as oil & gas exploration, Military Communications, Disaster Management, SNG, Emergency Communications backup, cellular backhaul and many others.



## Peplink's Puma antennas

Peplink has garnered attention for its variety of antennas, certified for use with its LTE router series.

The new line, known as "Puma", is targeted at mobile users. First up is the Puma-401, an omnidirectional antenna, with four integrated cellular antennas that support all sub-6GHz 5G frequencies for 4x4 MIMO reception, along with GPS.

This particular model looks very similar to the older ANT-107 offering from Peplink, which has now been discontinued. However, there is a key technical difference - the latter did not have support for 600 MHz LTE Band 71. With four cellular channels in its arsenal, the Puma 401 is described as a "powerhouse, capable of providing high bandwidth and



solid reliability even under heavy usage". Equipped with high gain LNA, the GPS receiver, Peplink says, also has improved location tracking.

Next up is the Puma-221 5-in-1, with two cellular channels, two Wi-Fi channels and a high gain LNA GPS. It is described as a versatile all-in-one cellular antenna solution. There

is also 2x2 MIMO and dual-band Wi-Fi for high bandwidth and solid reliability, according to Peplink.

Last, but by no means least, the Puma-020. This model is a low-cost, dual-band Wi-Fi antenna built for mobile applications, coming with 2x2 MIMO that provides a high bandwidth for users.

## Huawei's AirEngine 8760-X1-PRO 'redefining the Wi-Fi industry benchmark'

AirEngine 8760-X1-PRO — Huawei's flagship Wi-Fi 6 (802.11ax) indoor Access Point (AP) — comes with 16 Smart Antennas and is equipped to handle high-density and bandwidth-hungry scenarios, the company says.

Derived from innovations made in 5G technologies and apparently "unique to Huawei", the 16 built-in, dual-band smart antennas achieve a device rate of up to 10.75 Gbit/s, "delivering a fibre-like wireless experience". Smart anten-

nas also effectively improve signal gain, with signals following users to achieve complete coverage with zero blind spots.

Equipped with software-defined radios (SDRs) by default and with the ability to flexibly switch between three modes — dual-radio, triple-ra-

dio, and dual-radio + one scanning radio — AirEngine 8760-X1-PRO is

designed for challenging high-density environments where interference is heavy. Such strengths make the AP a good fit for enterprise office, government and higher education use, plus primary and secondary education.



## Intellian launches latest addition to GX antennas

Intellian says it is "proud to launch the latest addition to its next generation GX range of antennas".

The firm claims the GX60NX is designed specifically and now type approved for

use with Inmarsat's Global Xpress Ka-band VSAT network. This 65cm terminal, the smallest in the range, completes Intellian's GX portfolio and brings the benefits of its market leading NX antennas to all vessels using Inmarsat's Fleet Xpress service for reliable, fast connectivity at sea.

It is also thanks to its compact size and light weight, the GX60NX is ideally suited to smaller commercial vessels, where space is at a premium "but the benefits offered by the latest technology are still required".

The new form factor supports customers across all markets, including leisure and fishing.

The Below Deck Terminal (BDT), single cable antenna connection and AptusNX control software are identical to those used for the larger GX100NX, which is already approved. This allows ship management companies and ship owners to benefit from the ability to work with a standard platform across diverse fleets.

"We are delighted that the GX60NX has been type approved and is ready for use for our channel partners with Fleet Xpress," says Ronald Spithout, president, Inmarsat Maritime. "This reinforces our close and innovative partnership with Intellian. We now have more than 9,000 vessels using the service and

we are seeing an increase in demand for digital and crew services, which is why we are launching a further seven satellites in the next three years."

Intellian's NX antennas come with pre-slung lifting straps in compact shipping crates, have no shipping brackets requiring removal and are terminated externally using a single coaxial cable to carry power, Tx and Rx signals, avoiding the need for the installer to remove the dome. Intellian reckons its AptusNX software "makes commissioning straightforward" via a built-in wizard and facilitates both remote and local diagnostics with health reports for the antenna systems and sensors.



# Radwin delivers new MultiSector PtMP base station

Radwin brings to market its new MultiSector PtMP dual-carrier base station series. It delivers 1.5Gbps throughput and supports up to 4 sectors per base station with integrated or external antennas to achieve 360° coverage. It reckons the solution enables service providers and network operators to increase network capacity and coverage while reducing site complexity and TCO. What's more, Radwin's new series supposedly reduces the amount of glue components and cable wiring per site to a minimum. The self-contained base station incorporates dual radios, a built-in GPS antenna, and Layer-2 Switch. MultiSector also enables self-backhaul, eliminating the need for an additional PtP radio.

Radwin offers two base station solutions. The MultiSector Integrated is a base station that includes 180° (dual 90°) sector MIMO antennas and connectors to attach an additional 180° RADWIN antenna unit, or other third party antennas to cover a full 360°. Each of the radio carrier resources are split between two antennas in the time domain, avoiding signal power loss when using an RF splitter. This solution was designed for MicroPoP coverage supporting short-range connectivity of up to 2-3km including small or isolated rural villages, industrial parks on the outskirts of town, video surveillance, and remote automation for digital oil & gas fields.

The other solution

is the MultiSector Connectorized, a self-contained base station, connecting up to 4 external MIMO antennas to enable ultra-high flexibility in antenna selection per deployment scenario. Radwin reckons the base station is ideal for the deployment of multiple sites and sectors, each site addressing different coverage requirements (i.e. sector width and distance), such as long-range rural connectivity, video surveillance applications, and more. After being successfully deployed on a project only basis,

Radwin MultiSector Connectorized is now available for purchase through its global channel partners.



## Viavi releases Auto-Test for XG radios

Viavi Solutions has released Auto-Test for L3Harris Technologies XG-25M, XG-25P and XG-15P two-way radios on the Viavi 3920B radio test platform



and 8800SX digital radio test set.

The vendor's radio test products support all L3Harris public safety radios, along with some of the industry's most comprehensive automated test solutions for the L3Harris XL-200P, XL-185P, TP9400, TP9300, TP9100, XG-75P, XG-75Pe, XG-25P, XG-15P, P7300, P5500, TM9400, TM9300, TM9100, XG-75M, XG-25M, M7300, and M5300 radio families.

"The Viavi and L3Harris relationship spans over a decade to provide the land mobile radio industry with high-quality, easy-to-use lab, bench and field test equipment for network infrastructure and subscriber radios," says Edward Latimer, director of product Management, radio test, Viavi. "This new capability further highlights the commitment by L3Harris and VIAVI to provide solutions for the public safety community."

## ZTE's new 5G energy saving solution

ZTE Corporation introduces a 5G energy saving solution, PowerPilot, in a bid to "help operators realise higher energy efficiency, lower carbon footprint and achieve more sustainable growth".

Taking advantage of the energy efficiency differences of various types of services, ZTE reckons PowerPilot can deliver services to the most energy-efficient networks in real time, by intelligently evaluating service requirements.

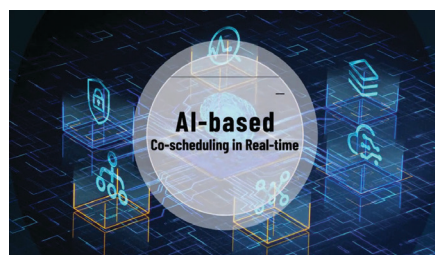
What's more, PowerPilot can, apparently, save up to twice as

much energy as the existing energy saving solutions, thereby greatly reducing the opex for operators.

In addition to employing existing multi-layer energy saving technologies, which introduce AI

and big data to save network O&M labour, ZTE claims PowerPilot has coordinated multiple frequency bands and radio access technologies, to further reduce the energy consumption.

By virtue of more than 500 green patents, in-house chipsets, new-generation high-efficiency power amplifiers and cutting-edge product designs, ZTE says it can continuously facilitate the development of energy saving in 5G networks.



### Look out for...

## Finland get first standalone 5G connection, powered by Ericsson and Elisa

Ericsson and Elisa have established the first end-to-end 5G standalone connection in Finland, a milestone that will mean more advanced 5G use cases for both consumer and corporate customers worldwide.

Standalone 5G connections can allow the use of applications requiring ultra-low latency, including virtual and augmented reality, connected vehicles and smart factories.

Elisa CTO Kalle Lehtinen said the company began testing 5G technology years before it was launched in 2019 and is now taking steps to be ready for the future of 5G together with Ericsson. Even through this is a pilot, it represents a big step in the direction of a more reliable, faster and more efficient 5G network to benefit customers in the coming years, Lehtinen noted.

A standalone 5G device, using super-fast response time, is able to connect to a standalone 5G network up to six times faster as compared to a device operating in a non-standalone mode. Users can enjoy a far better experience and look to provide many new opportunities for innovations at an industry level.

Elisa's fully commercial 5G launch took place in Finland in June 2019. After the Finnish government decided to allocate frequency bands for 5G, Elisa is paving the way for 5G roll out and use in Europe, through the 5G portfolio of Ericsson.

Ericsson's head of northern and central Europe, Jenny Lindqvist, added that Ericsson and Elisa have been united in their dedication towards a sustainable and connected future. The companies have together provided superior connectivity to all 2.8 million of their customers and are now seeking innovations with leading 5G portfolio, she noted.

Lindqvist also said that 5G's low latency benefits would be multiplied with the use of 5G standalone connectivity and working with Elisa the company can unlock more solutions for transforming the industry as well as society.





# Keeping connected in the toughest environments

Southern Asia has its challenges when it comes to disasters, be they natural or man-made. Robert Shepherd takes a look at the critical comms networks in place ready to help out when things take a turn for the worse

According to the United Nations' Global Humanitarian Overview 2019 report, Asia-Pacific nations experience more natural disasters than any other region in the world. Between 2014 and 2017, nations in this area were affected by 55 earthquakes, 217 storms and cyclones, plus 236 cases of severe flooding, impacting 650 million people and causing the deaths of 33,000 people. Then, if you consider the various war zones/armed conflicts, terrorism and unforgiving, often treacherous terrain synonymous with the world's largest continent, it's a part of the world that needs a solid critical comms backbone more than most.

Given the region could be hit by something anywhere, at any time, likely with little or no warning, its paramount that the emergency services and local communities are able to maintain connectivity to save lives. So, just how prepared is the critical communications set-up in relation to each country and indeed southern Asia as a whole?

Mladen Vratonjic, chair of TCCA, a membership organisation which represents all standard mobile critical communications technologies and complementary applications, says every business, organisation and government should have a business continuity plan to protect operations should they be affected by an unplanned event. The event could be a natural disaster such as an earthquake or flood, or unnatural such as a terrorist or cyberattack.

"It is often said that there are three 'Rs' of the greatest importance for any critical telecommunications network: resilience, reliability and recovery," he says. "These are achieved through some more 'Rs' - redundancy and robustness. There is no overall standard classification for a mission or business critical network - however mission critical networks are those essential for some mission accomplishment (mostly public safety), and business critical networks serve businesses that cannot operate without reliable communications. To meet those requirements, there are technology standards that have been designed specifically with resilience at their core - these include TETRA, P25, Tetrapol and DMR - all well-established narrowband systems leveraged for both mission and business critical networks around the world.

Cambridge-based Sepura supplies TETRA technology to emergency services around the world and a firm official explains the benefits of radio over other methods of communication during a critical situation. "Radio works on an independent infrastructure, so not susceptible to call overload, system failure, etc," says a company spokesman. "It is a robust system, designed to withstand extreme weather. It can also be supported by temporary network infrastructure to support if needed, particularly in remote areas that are often the epicentre of a natural disaster. Critical comms radios are robust and will keep working in hot, wet or dirty environments, and can suffer rough treatment much more than other communication systems. They also use encrypted voice comms to ensure comms are kept confidential." He adds that data

applications can be developed to work over the system to integrate with back office systems. TETRA radio systems also enable co-operation between agencies using that platform - "often police, fire, ambulance, rescue and other emergency response organisations".

Traditionally and unsurprisingly, the largest users have been public safety organisation - police, fire, ambulance, rescue organisations. After all, they need it more than any other group, business or sector.

The Sepura spokesman says the specific requirement for a critical communications platform are where there is a risk to critical national infrastructure, a risk to life, or a risk to business operations. "Where these conditions/risks exist, there is a need for a communications system with greater functionality that can be provided by standard cellular phones or low level radios," he adds.

As much of the developing world transitions from analogue to digital radios, it is important to understand that digital networks require more precise alignment than analogue networks to achieve optimum performance.

Motorola Solutions is another key player on this space, kitting out much of the continent.

Steve Crutchfield, regional vice president - Asia Pacific, says investment in mission critical communications is proving to support economic growth throughout the Asia Pacific region. "Thailand's mission critical network provides a good example of that where the system is designed to support the country's continued growth and expansion with the flexibility to add large numbers of users over time," he says. "Any country experiencing significant growth in infrastructure, innovation, education and skills requires an advanced communications system. Additionally, the construction and modernisation of these networks support job creation through their construction."

It's a no-brainer that the emergency services is a key beneficiary from critical comms, but which other sectors benefit most from critical comms and why?

"In Asia Pacific, the minerals and energy sector in Australia and Malaysia's oil and gas sectors are big users of our mission critical systems to reach new levels of safety and productivity," adds Crutchfield. "Additionally, the rail sector are very big users of TETRA systems in Asia and we have supported the construction of more than 200 rail projects." He adds that public safety, transportation and logistics, mining, oil and gas, natural resources and retail sectors are seeing the biggest growth.

Barry Hack, solutions engineer at Viavi Solutions, argues that poor alignment causes degraded digital modulation accuracy in the transmitter, which impacts the receiver's ability to recover the digital data, leading to poor coverage and range.

"For example, a 20% calibration error can affect range to the same extent as a 75% reduction in power," he says. "A quick back-to-back radio check will not show this problem. An understanding of digital radio operation and alignment, proper setting of filter parameters and an accurate FM



"Terrestrial communications can never be a total solution, illustrated, to use just a single example, by the critical role of satellite for backhaul ever since the earliest days of 2G mobile network deployment"

deviation meter will significantly improve the performance of digital radios. This is important as most digital FSK based systems, such as DMR, P25 and NXDN, use CW and FM modulation for tuning of the radio transmitter."

Hack says FM deviation meters are peak reading. Any other signals or noise will add to the measurement. "AF and IF filters impact the measurements, too narrow they attenuate the wanted signal, too wide and they add noise to the measurement," he continues. "Using DMR as an example, a low tone (eg 100 Hz) is measured and the corresponding high tone (eg 3 kHz to 6 kHz) is set to exactly match the level of the low tone. FM deviation meters must have no change in accuracy from one frequency to the next. In other words, there should be no 'tilt'. This is a critical parameter, for example 0.05 dB flatness is specified by one major OEM."

Crutchfield explains how Thailand provides a strong example of where Motorola provides a mission-critical TETRA network to support both commercial and government organisations with instant and secure voice communication via an advanced, nationwide system.

"We provide the system through CAT Telecom, an operator of Thailand's telecommunications infrastructure," he says. "The system provides Thailand's government agencies, emergency services and other critical enterprises with access to the mission-critical radio communications network."

The shared operator system, Crutchfield adds, is highly-scalable and based on the modern TETRA standard, "providing reliable, flexible and secure communications access to more than 200,000 users", including government departments, oil and gas companies, transportation operators and other critical organisations.

"It also provides next-generation capabilities including location services to pinpoint radio users and other resources in the field, providing improved response to large scale events," he continues. "The system also utilises Motorola Solutions' broadband enabled push-to-talk platform, enabling seamless communication between



# sepura

Going further in critical communications



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**Infrastructure such as masts, towers, ducting/pipelines are all variously vulnerable when disaster takes the form of cyclone, earthquake, flood, military action, and typhoon, and networks' traffic capacity limits are compromised when the connectivity needs of displaced persons/refugees/victims of the effects of pandemic combine with those of 'first responders'**

radio users and other workers using smartphones, tablets, desktop computers and other devices."

Due to Asia's size, richness of different cultures, landscapes, climates and contrast of wealth, are some nations more advanced in this space compared to others?

"There are many different needs and considerations for critical communications throughout Asia," adds Crutchfield. "Among them are disaster management and recovery which is particularly important in countries including Indonesia, Thailand and the Philippines which face significant risks from natural disasters including major floods. The Asia Pacific region is the most exposed region to natural disasters in the world with rising economic losses from these events forecast to exceed USD\$160bn by 2030. Critical communications is also extremely important in South East Asia where vigilance against terrorism is always essential, especially in southeast Asia, which is identified as a potential hotspot."

Meanwhile, in countries including Malaysia and Singapore, Crutchfield says Motorola Solutions sees strong demand for both mission critical communications as well as advanced video security, command centre software and Computer Aided Dispatch systems. "We

have long term partnerships with government agencies in both countries and are seeing a variety of requirements for both fixed and mobile video solutions including body-worn video, in these two nations," he says.

Another company that has played and continues to play an integral part in the critical communications space is US industrial wireless mesh networks specialist, Rajant. According to Michael Van Rassen, its president, military & government markets says military, defence and other mission-critical agencies continually grapple with the complexities of establishing and maintaining internet connectivity in remote and often hostile environments. "In particular regions, such as those in Africa and south Asia, where pre-existing communication infrastructure may be lacking, the challenge is exacerbated," he says. "As this capability is extremely critical for situational awareness, tactical strategies, convoy communications, and more, these teams must be supported by a ruggedised networking solution that is tailored to their needs, seamless to set up, and proven to perform in challenging environments."

Nevertheless, the Sepura spokesman says there are landscapes/terrains/regions where

critical comms are more difficult to deploy than others, regardless of economic circumstances. "Every system deployment is unique," he adds. "Systems have been installed across nations (and indeed allowing interoperability across national borders), on offshore oil rigs, in underground mines, on super-fast train systems, in ski resorts and in locations where buildings are designed to protect from natural disasters. Part of the process of designing a system is to understand where potential problem areas may exist and to mitigate any potential issues with them."

So, if the network is safe and it can be deployed in pretty much any situation, is there a question mark surrounding the technology itself? Do the handsets/radios need to be updated regularly and just how much of an investment is that? The Sepura spokesman says "it really depends" on how and where the radios are used. "On a less busy site the radios might rarely be upgraded, whereas police users might look to set up a radio much more frequently, based on operations taking place at that time," he says. New innovations are always being brought in to support users in these cases – for example over the air programming, enabling radios to be updated whilst connected to a secure, approved Wi-Fi network,



reducing the time radios are out of use.”

We’ve managed to get this far without mentioning 5G. Prior to the introduction of Covid-19 and possibly Brexit, you’d be hard-pressed to find a topic more often talked about than the next generation technology. Of course, the UK has taken one step forward and two steps back with the way the government has handled the Huawei row. However, it’s still slated to be with us in the not too distant future and once it is, Ken Gold, director of test, monitoring and analytics at Exfo, which develops test, monitoring and analytics solutions for operators says the new technology brings the promises of more resilience. “5G network slicing would be used to ensure the performance of mission critical services,” he says. “Virtualised 5G core and edge networks will accelerate the implementation of required changes. Remote orchestration of new virtual resources as well as changes in traffic routing and moving critical services to the edge will improve service availability and reduce the need for truck rolls—keeping personnel out of the danger zone. Continuous monitoring and orchestration of the services and network will ensure critical services are maintained and the customer’s essential communications needs are met.”

The good news is we definitely have, or will have, technologies able to handle the very worst situations, but in the words of James Trevelyan, SVP global sales – enterprise at communications solutions provider Speedcast says disasters of any kind are impossible to predict, making short-term communications that connect emergency services throughout every stage of the response efforts critical. “High-speed, uninterrupted connectivity that enables voice, video, data and IoT solutions can be the difference between the success or failure of a disaster situation,” he says. “With rapid response times necessary, communication networks that are quick and easy-to-deploy are imperative.

For many critical communications, satellite remains the method of choice – particularly in areas where the internet access and cell towers have been knocked out as a result of a disaster. Trevelyan adds that as satellite communications become faster, more reliable, cheaper and are



**Mladen Vratonjic,**  
chair,  
TCCA

**“It is often said that there are three ‘Rs’ of the greatest importance for any critical telecommunications network: resilience, reliability and recovery”**

**“In particular regions, such as those in Africa and south Asia, where pre-existing communication infrastructure may be lacking, the challenge is exacerbated”**

able to offer lower latency, disaster recovery operations and critical communications will become more streamlined and tactical than ever before. After all, teams that are better prepared, better equipped and that can work well together in challenging circumstances have a better chance of saving lives than those that are not.

“Low Earth Orbit (LEO) and High Throughput Satellite (HTS) offer first responders a way to establish short-term, easy-to-deploy communications anywhere at any time. “Due to the speed in which emergency services need to react and take control of the situation, solutions that can be brought online within five to 10 minutes and allow them to gain coverage immediately are vital,” he continues. “When a disaster strikes, the first action of the emergency services is to create a local hub to re-establish critical communications and ensure they can stay connected through the entire recovery process. Once the disaster response team has established an on-site base, resilient trucks – similar to those used in broadcast – will be driven to the disaster area to create an emergency services network. A quick-deploy antenna mounted to the roof of the truck will be used to provide a satellite link to connect to the nearest cell tower to provide phone services and internet services so responders can better communicate at the scene.”

Let’s, for a moment, imagine the worst has happened. There’s a warzone or disaster-struck area: what are the best options?

For Martin Jarrold, VP international programme development at GVF, the global trade association for the satellite industry, says the developing world has long looked to a range of varied communications solutions to support their connectivity agendas for the facilitation of socio-economic growth, in attempting to meet the sustainable development goals of the global development agenda, to attract inward investment, to enable the creation of knowledge based economies, and other strategic objectives. “Such solutions are also mission-critical for governments, and their partnering organisations, working in humanitarian assistance and disaster response (HADR) environments,” adds Jarrold. “Just as governments and regulatory authorities search for ideal solutions to the challenge of connecting people in remote and under-served regions, NGOs and United Nations agencies need reliable communications to be available to support supply logistics and coordinate ‘first responder’ relief efforts anywhere and at any time.”

Jarrold is complementary about terrestrial communications networks – cellular/mobile

**Michael Van Rassen,**  
president,  
military &  
government markets,  
Rajant



networks, microwave networks, fibre – in that they play a very visible and vital role in both day-to-day connectivity and in circumstances of disaster response and humanitarian relief. However, he warns that infrastructure such as masts, towers, ducting/pipelines are all variously vulnerable when disaster takes the form of cyclone, earthquake, flood, military action, and typhoon, and networks’ traffic capacity limits are compromised when the connectivity needs of displaced persons/refugees/victims of the effects of pandemic combine with those of ‘first responders’.

“Terrestrial communications can never be a total solution, illustrated, to use just a single example, by the critical role of satellite for backhaul ever since the earliest days of 2G mobile network deployment,” he continues.

“The role of satellite communications in economy and society is broad, goes very deep, and is ever increasing. This role is not necessarily as obvious as it is for terrestrial, and yet satellite serves both every day needs and not-so-every day critical situations: from consumer to corporate/enterprise broadband data, from government closed user groups to multinational networks, from multicast VSAT services to distance learning, rural telecommunications, e-Health/telemedicine, and news distribution; and aeronautical, land mobile and, maritime services.”

Of course, a great deal of the necessary infrastructure behind these applications and services is in Earth orbit – hundreds of geostationary (GEO) satellites above the equator, thousands (soon tens of thousands, according to Jarrold) of medium-Earth (MEO) and low-Earth (LEO) orbiting satellites encircling the globe – and so, he says, this ‘space segment’ is not obvious to most. “A GEO can provide coverage over an entire continent. GEO high-throughput satellites (HTS) provide ever-increasing broadband capacity, with early HTS satellites having 45 gigabits per second (Gbps) of capacity, while more recently launched satellites offer roughly 130-145 Gbps and upcoming satellites around 1 terabit per second (Tbps),” Jarrold adds.

The ‘Ground Segment’ is a little more obviously visible – particularly the big satellite antennas at teleports/hubs – though even then the everyday very small aperture satellite terminal (VSAT) does not dominate the skyline like a cellular/mobile mast or microwave tower.

Although preparedness for any given situation is invaluable, one never knows how things will pan out in the worst possible situation. Luckily, the best people and their technology are ready to act. ■

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# One size does not fit all

Jiashun Tu, chief scientist of NFV and SDN at ZTE takes a look at how developing countries should approach 5G

**T**here is a global race to implement 5G as quickly as possible and reap the benefits that it will bring to consumers and businesses alike. We hear a lot about progress being made in China and Europe, the latest partnerships, spectrum auctions and what successful trials have been completed. In all this noise, it can often feel like many areas of the world are left aside. In Africa and Asia there is also progress being made in 5G. However, their

socio-economic contexts and lack of mobile infrastructure means that there are other complex considerations that affect their 5G strategies.

## Paths to 5G

Firstly, it is important to understand the approaches that can be taken to realising 5G. The first is Non-standalone 5G (NSA). NSA is all about providing higher data bandwidth and



**Jiashun Tu,**  
chief scientist,  
NFV/SDN,  
ZTE

reliable connectivity. NSA networks use existing 4G infrastructure, allowing dual connectivity with 4G and 5G simultaneously. Traffic is carried over both spectrums and then aggregated at device level. This consumer-first approach allows service providers to use existing resources to establish 5G. Once the 5G coverage has been established, the operator can then implement standalone 5G.

The second – and less common – path is to jump straight to Standalone (SA) 5G. The rapid digitisation of industry has opened huge opportunities for a host of new 5G use cases and – by extension – revenue streams. 5G SA is needed to make the most of this transformative new technology, especially in industry where network slicing and virtualization will be a game-changer.

While these two approaches to 5G are not mutually exclusive, which one you prioritise is an important decision. Moving first to 5G NSA is the path of least resistance. However, it is not nearly so simple. Which of these two routes to take is a balanced and considered process, taking into account many different technical, regional and socio-economic issues. For developing countries especially, in areas such as Asia and Africa, these considerations are more complex than other countries.

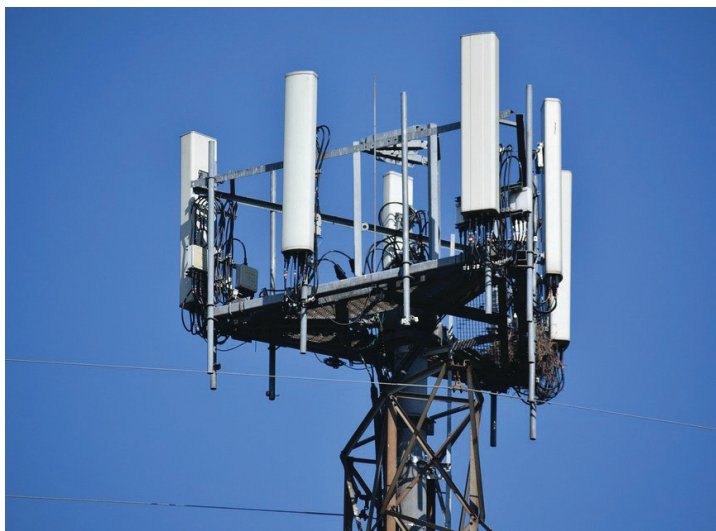
## Connectivity in developing countries

According to the GSMA's 2019 Mobile Internet Connectivity Index (MCI), mobile internet adoption in Sub-Saharan Africa stands at 24%, while the region also accounts for 40% of the global population not covered by a mobile broadband network. In south Asia, only 33% of the population are connected to mobile internet.

Despite these regions being two of the most left behind in terms of mobile connectivity, there has been some progress. In 2014 only 18% of the population of South Asia was connected to mobile internet. The dramatic rise of connectivity to its present figures has been driven by significant investment from operators to expand 4G coverage. Additionally, with some of the most affordable mobile broadband, the region has done well to make mobile internet accessible to large swathes of the population. The same is not true of sub-Saharan Africa. Here, the progress since 2014 is not so impressive – it has been driven mostly by upgrading 2G sites to 3G and 4G. However, mobile internet remains above the 2% of monthly income threshold for more than 75% of countries in the region.

While looking at the situation from a regional perspective, we can see that different trajectories of mobile internet penetration have implications for the state of national infrastructures as well as consumer readiness. These trends are important to acknowledge, as they illustrate why it can be more challenging for developing countries to decide on strategy. In order to look at this in more detail, we must examine specific examples of how individual countries are approaching 5G.

Whilst the regional outlook for Sub-Saharan Africa shows that it is one of the least con-



**The dramatic rise of connectivity to its present figures has been driven by significant investment from operators to expand 4G coverage. Additionally, with some of the most affordable mobile broadband, the region has done well to make mobile internet accessible to large swathes of the population**

nected regions in the world, there are dramatic differences between individual countries which effect their choice between NSA or SA 5G. South Africa has a well-established network infrastructure compared with many of its neighbours. It is in the top five highest performers for the region as a whole. In terms of network coverage, the proportion of the population covered by 4G scores 90 out of 100 on the MCI while 100% of the population have 3G coverage.

Compare this with Uganda, another country with 5G ambitions. Only 81% of people have access to 3G and it scores only 17 on the MCI when it comes to 4G. This lays bare the differences in the maturity of each country's network infrastructure and has significant implications on their approaches to 5G.

As we have already established, if the infrastructure exists to take an NSA approach, this seems like the most logical avenue. This is certainly the case in South Africa where MTN and ZTE have already jointly demonstrated multiple 5G use cases based on MTN's existing 4G network. The applications supported include gigabit mobile connection, virtual reality, ultra-HD broadcasting and more.

In Uganda there is the possibility of a different approach. The network infrastructure in Uganda is not quite as mature or extensive as that in South Africa, and the expense of building out the 4G network to then make the move to 5G, potentially makes less economic sense. Because of this, operators in Uganda could opt for SA 5G as an alternative approach to NSA. Although there is no correct path to take to achieve SA 5G, different contexts can sway decisions one way or the other."

The GSMA has held up Indonesia as a shining example of how a country can improve its mobile internet connectivity – being one of the top 10 most improved countries since 2014. This emerging digital giant has an estimated internet penetration rate of 69% by 2025, mostly due to infrastructure growth and affordability of data plans. Despite this improvement in infrastructure and mobile internet usage, many of the indications suggest Indonesia will jump straight to SA 5G. It is not just Indonesia in this region who are exploring the possibility of bypassing NSA 5G. Other countries like Singa-

pore and Thailand are doing the same.

To understand why this is the case we need to simply look at the broader socio-economic makeup of the countries. Indonesia, like many countries in the region has an established industrial makeup. Industry, including manufacturing, construction and mining account for 40% of the country's total GDP. It is widely known that in vertical industries such as these is where 5G has the highest capacity to transform the market, with use cases are abundant; smart factories, IoT, intelligent supply chain and more. The same is true of other countries in the region such as Thailand where industry accounts for 35% of GDP.

Additionally, the GSMA found that the greatest barriers to mobile internet penetration in South Asia are a lack of digital skills and a lack of relevance of mobile internet in people's everyday lives. This exposes a lack of consumer readiness not just for 5G but for mobile internet more broadly. It is predicted that in most parts of Asia, 4G will account for 70% of connections until 2025.

It is therefore not surprising that we are seeing an emphasis on the move straight to SA. This is by far the more industry-driven approach and it illustrates an acknowledgement that it is in the enterprise that 5G will make the greatest financial impact. In Thailand, operators are already moving to 2.6G and 2.5G spectrum in the belief that SA networks will be used widely in industrial scenarios and will generate new revenues.

## Which path to choose

For every country, deciding which strategy to choose must take into account myriad factors. What is the current state of your network infrastructure? Where will 5G make the greatest impact on your economy and the everyday lives of your population? Is the cost of taking one approach prohibitive? There is no single answer to these questions, and countries in regions such as Africa and South Asia often have more to consider than others. However, if these questions are approached with the right degree of care an attention, there is no reason why developing countries cannot make 5G work for them and their people. ■





# Mango guests get suite Wi-Fi upgrade

Holidaymakers, honeymooners and other guests are now free to surf the net with speed, thanks to the completion of Wi-Fi upgrades in India, Maldives and Singapore

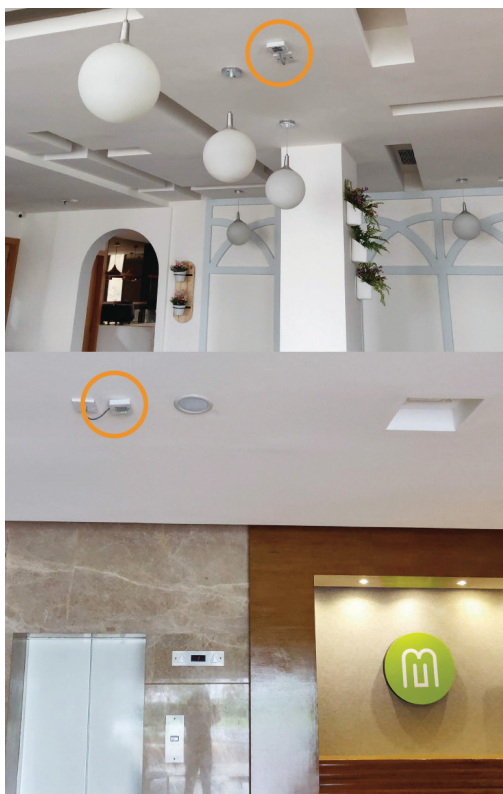
ntelliStay Hotels Pvt Ltd. (IHPL) in association with Sterling F&B and Hospitality (SFBH) expanded their hotel portfolio by launching the upper mid-scale hotel brand Mango Suites SELECT in Navi Mumbai, India. "Mango Suites SELECT is an 'upper mid-scale' 'long stay' brand of IHPL. The launch of this property marks a significant milestone since it's the first Mango Suites SELECT. Here, the guests can expect the luxury and comfort of a 4-star hotel while also offering a fresh new option for long stays," said Prashanth Aroor, CEO, IHPL.

To guarantee customers with a remarkable stay, reliable Wi-Fi network must be in place to keep the guest experience at top-notch level. Besides, the property boasts extensive conference and business facilities with a catering kitchen for large events. There is no escaping the fact that in a modern hotel, Wi-Fi is an underlying technology that is critical to effectively deliver hotel management services, let alone conferences and events.

Following a detailed review of several vendors' Wi-Fi solutions, the hotel selected IgniteNet's solution, supported by IgniteNet's local distributor Upscale Tech Solutions. The solution includes thirty- eight Spark AC Wave2 MiniTM PoE deployed at the hotel's corridor to provide network coverage to 96 rooms and one Spark AC Wave2TM setup for outdoor Wi-Fi connectivity.

SparkTM AC Wave2 Mini PoE supports 802.3af PoE for powering it with PoE switches and has two gigabit ethernet ports for utilising the full capacity and is still leading in terms of performance, value and size in the enterprise market. The SparkTM AC Wave2 Mini PoE contains 2 independent, concurrent operation radios – one 802.11ac (5GHz) radio and one 802.11n (2.4GHz) radio – capable of delivering blisteringly fast wireless speeds. The sleek design and small form factor of the SparkTM AC Wave2 Mini PoE allows it to be placed inconspicuously in the hotel.

Spark AC Wave2TM is powered by a next-generation quad-core CPU, which allows super-high performance when serving a high number



**Spark AC Wave2TM is powered by a next-generation quad-core CPU, which allows super-high performance when serving a high number of users. Dual radio design with two spatial streams per radio enabled lightning-fast speeds up to 1.3 Gbps total capacity**

of users. Dual radio design with two spatial streams per radio enabled lightning-fast speeds up to 1.3 Gbps total capacity.

On top of that, with IgniteNet Cloud Controller, the solution has not only helped the hotel deliver sustainable and stable coverage throughout the property but also made it easy and hassle-free for network management. IgniteNet Cloud Controller provides scalable and easy provisioning and management mechanism and as a result, the construction of the hotel network management was up and running quickly and intelligently.

"When we set out to revamp the property we had taken over, we needed a team which could deliver the complete IT solution at lightning speed," says - Sanjeev Sabherwal, director of Sterling F&B. "IgniteNet and Upscale provided us with building blocks and network which is fast, nimble and flexible to make adjustments as our customer demands evolve. We look forward to replicating this experience in our forthcoming projects too."

Keeping guests happy and returning with quality Wi-Fi service was Mango Suites SELECT's primary objective and IgniteNet's solution helped accomplish that feat. ■

## Hot zones in Maldives

The island nation of the Maldives is one of the most popular countries for a vacation and a favourite for honeymooners.

While Wi-Fi or hotspot services are

becoming more popular and prevailing at tourist attractions and crowded locations all over the world, Dhiraagu, one of the leading telecommunications companies in Maldives decided to launch a project to deploy a

number of hot zones for the tourist areas and popular locations around the islands, including beaches, parks, piers and ferry routes.

To conduct such a large-scale project, having reliable network infrastructure is the most critical. That's the key reason Dhiraagu consulted Altai for the project deployment. Having many successful stories in deploying city-wide WiFi and equipped with the patented smart antenna technology, Altai Super WiFi is a sophisticated WiFi products provider. In response to Dhiraagu's appeal, Altai offered Super WiFi solution, which can support a much larger area of outdoor WiFi coverage than any of its competitors.

In the deployment, Altai has installed ~30+ devices at different locations in Maldives' islands. Which is a much smaller number than any other Wi-Fi service provider can provide. After the deployment was completed, tourists to Maldives are allowed to enjoy high quality Wi-Fi network to stay connected to the world while being



**Altai was required to propose a solution for multiple locations in different islands of Maldives. For most of the outdoor attractions such as parks and beaches, Altai adopted its outdoor base station, A8n, with access point, A3-Ei. On the other hand, Altai's indoor AP A3 series has been used for indoor areas**



embraced by the beautiful views of Maldives.

Altai was required to propose a solution for multiple locations in different islands of Maldives. For most of the outdoor attractions such as parks and beaches, Altai adopted its outdoor base station, A8n, with access point, A3-Ei. On the other hand, Altai's indoor AP A3 series has been used for indoor areas.

Altai was also required to deploy a stable network for the tourists taking ferry routes between islands. For such cases, Altai's flagship base station, A8-Ein was deployed at each ferry pier and C1xn with 8dBi Omni 2.4GHz antenna

were installed on every ferry as CPE to connect to the A8-Ein. A total of 30+ Altai APs have been installed in the whole project.

Altai's solution allows the tourists to Maldives to enjoy stable and robust WiFi network when they are visiting any of those outdoor attractions that has been deployed with Altai's equipment. These attractions including parks, beaches and even ferry trips. Tourists can now stay connected with the world while being surrounded by Maldives' beautiful nature. Dhiraagu is highly satisfied by the deployment result and excellent performance of Altai's equipment. ■



**Altai's solution allows the tourists to Maldives to enjoy stable and robust WiFi network when they are visiting any of those outdoor attractions that has been deployed with Altai's equipment**

### Sentosa embraces new technology for the tourists

The resort island of Sentosa in Singapore has embraced technology as an important tool for enhancing guest experiences amid an increasingly competitive tourism landscape. One such initiative is the implementation of an extensive Wi-Fi network on the island to provide guests with better connectivity and greater convenience.

In a world where connectivity on the go has become so pervasive and changed the way travellers plan, book and enjoy their leisure, Sentosa Development Corporation (SDC), which manages the island, has introduced free Wi-Fi services on Sentosa via Wireless@SG. The Wireless@SG programme is an initiative of the Infocomm Development Authority of

Singapore (IDA) that seeks to provide free, easy and secure connectivity to Wi-Fi services in the public space, in collaboration with venue owners and service providers.

SDC has progressively rolled out the free Wi-Fi services at key nodes across Sentosa over the past few years, with the intention of expanding the coverage so that guests can maximise their fun while continuing to stay in touch. Today, there are more than 200 hotspots across Sentosa. Guests who are connected to the Wireless@SG network can tap on the free Wi-Fi to enjoy easier access to information on Sentosa's exciting variety of offerings and directions for getting around the island. They can also share photos of their island adventures on social media and stay connected while

moving between attractions or basking in the sun on the beach, without having to worry about incurring excessive data roaming charges.

SDC has also embarked on a Green Wi-Fi pilot project with IDA and several industry partners to test outdoor Wi-Fi deployment on Sentosa by using wireless backhaul technology, coupled with solar panels, to power and enable Wi-Fi services in a more cost effective and environmentally sustainable manner. To allow guests a more seamless connection to the free Wi-Fi network, SDC will also be integrating Wireless@SG with its MySentosa mobile app. Guests who have downloaded the app for updates on the island's activities and promotions will be able to connect easily to Wireless@SG for free Wi-Fi access.

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## TIM offering 'unlimited data via FWA prepay plan

 Telecom Italia (TIM) has developed the conditions of the prepay offer for Fixed Wireless Access (FWA) customers it launched in early September.

The 'TIM FWA Ricaricabile' plan now comes with "unlimited data" every month, up from the 200GB a month initially offered, at download speeds of up to 30Mbps and upload speeds of 3 Mbps. However, TIM said the data offered is subject to reasonable use conditions and should not exceed 930GB every 30 days.

In addition, the service includes a self-installing indoor FWA modem and uses TIM's fibre-optic network up to the nearest base station, with a final stretch on the company's LTE or LTE-A network. Subscribers will have to pay an initial €99 for the modem and first 90 days of service, up from the 30 initially offered, followed by bundles costing €27.90 a month or €78.90 for 3 months or €240.90 for a year.

## 'Aerkomm needs a telecom licence first'

 Aerkomm, the US provider of in-flight solutions, must register as a telecom service provider if it wants to provide a low-Earth-orbit satellite service in Taiwan, said the Asian territory's National Communications Commission (NCC).

The Nevada-based firm was also told it must comply with national laws on applying for a frequency spectrum and managing foreign investors.

Aerkomm, which recently announced that it had chosen Taiwan as a research and development and service base in the Asia-Pacific region,

filed an application to offer a low-Earth-orbit satellite service in Taiwan — which some call a "6G service."


The service would transmit data faster than 5G service and greatly facilitate communication for residents of remote areas and frequent air travellers, the company said, adding that the travellers would not need international roaming services when overseas.

While confirming that the commission had received Aerkomm's application, NCC vice chairman Wong Po-tung said that the firm should first register as a telecom

service provider, as required by the Telecommunication Management Act, which took effect on July 1 this year.

"So far, its business plan is vague, and we are not sure if it needs to secure a landing right for its service here," Wong said. "But if it does, we need to review several factors, including the percentage of its shares owned by foreign investors and whether the frequency spectrum that the company intends to use to build its service network is being used by others or might cause interference on surrounding networks."

## UFO turns out to be internet balloon

 An unidentified flying object (UFO) parachuted into dense Congo jungle to the confusion of local authorities, until a subsidiary of Google parent company Alphabet identified the device as an internet balloon.

Images shared on social media showed people inspecting a large silver-coloured contraption fitted

with solar panels and wires, which had landed in the tropical forest of Bas-Uele province in the northern Democratic Republic of Congo (DRC), trailing a large deflated balloon.

Locals told security after the object fell to earth around 1pm local time on Monday 24 August, Bas-Uele Governor Valentin Senga told Reuters after vis-

iting the site around 10 km (6 miles) south of the provincial capital Buta.

"I'm not able to say exactly what kind of device I observed," he said. "What intrigues us is that neither the intelligence services nor the local aviation authorities claim to have any information on the overflight of Congolese air space by this aircraft."

## Israel greenlights fibre-optics network rollout

 The Israeli government has approved a plan by the country's telecom regulator to speed up deployment of a long-delayed nationwide fibre optics network.

In July, a government committee recommended to communications minister Yoaz Hendel a plan that would allow for a fibre network in much of Israel in the next few years. At the time, he said he would seek approval of the plan, which will boost surfing speeds to 1,000 megabits (1 gigabit) per second.

"After a decade in which Israel has been stuck behind the rest of the world, the cork has popped," Hendel posted on Twitter and Facebook.

He added that in places with advanced communications networks, the jobs market grows by 3% and the economy by 1%.

The rollout of a fibre network had been held up due to a battle between Bezeq - Israel's main telecom group

— and the ministry, which demanded Bezeq deploy in all of Israel. Bezeq argued it was not financially viable to do so in some rural areas.

However, the regulator has eased its demand to deploy everywhere. Bezeq's smaller rivals, Cellcom and Partner Communications, have begun to establish their own fibre networks.

A fund would be created from revenues from Bezeq and its rivals to finance fibre deployment in areas where Bezeq will not deploy. Smaller firms could bid for the business.

Hendel said the fund would invest initially along the country's borders at the same time as more lucrative areas such as city centres.

Bezeq has said it has invested tens of millions of shekels in the past two years to upgrade its network to double internet surfing speeds, while also investing in a fibre network that it said can reach 1.5 million households.



**A fund would be created from revenues from Bezeq and its rivals to finance fibre deployment in areas where Bezeq will not deploy**

# TPG Telecom signs network deal with NAB



Australian ISP TPG Telecom has signed a deal with the National Australia Bank (NAB) that will see it provide fixed and mobile network services for the institution.

Under the terms of the deal, TPG will deliver fixed network services across NAB's corporate offices, business banking centres, and branches using both on-net and NBN networks, while Vodafone will provide mobile connectivity to the majority of the NAB workforce.

Vodafone will deliver the solution to more than 80% of NAB's mobile fleet across corporate offices and branches in metro and major regional areas. The bank said Vodafone, alongside Google, will also provide those who opt for a company phone with the Pixel 4a.

NAB executive of enterprise technology Steve Day said the deal was an "important step" in the bank's "insourcing journey", which is centred

on increasing control and flexibility.

"We're extremely pleased we'll be able to bring our services together with one company," he added.

Using the announcement as an opportunity to discuss the benefits of the TPG-VHA merger, TPG

Telecom chief operating officer Craig Levy said the Vodafone mobile network and the TPG fibre network, augmented by the NBN, would "deliver NAB's requirements and provide reliable and cost-effective connectivity".



**Vodafone will deliver the solution to more than 80% of NAB's mobile fleet across corporate offices and branches in metro and major regional areas**

# Durban residents fight against 5G towers being built on their property



Community leaders in Berea, a ridge above the city of Durban, have rallied against a proposed government law that would allow network service providers to build 5G towers and other electronic communication devices on any private and public land.

The draft proposal, which was gazetted by Stella Ndabeni-Abaramhams, minister of communications

and digital technologies, is part of the government's expansion into the 5G network.

Heather Roos, chairperson of Umbilo Community Policing Forum, said the policy would represent an infringement on people's rights. "This is taking away people's rights to privacy on their property," she said. "This is so unfair. What about health risks as this has

been a huge issue in the past with cell towers etc. It seems that as citizens in South Africa, we do not have any rights anymore."

The World Health Organisation (WHO), which established the International Electromagnetic Fields (EMF) Project in 1996 looking at potential health risks from cell phone towers, found no health risks associated with 5G.

# TDC launches 5G in Denmark



Danish operator TDC NET launched its commercial 5G network in large parts of Denmark on September 7, with population coverage starting at 80%, rising to 90% by the end of 2020, the company said.

It began deploying 5G infrastructure in Zealand in October 2019 and now has 2,650 mast positions throughout Denmark.

"I am happy and proud that we have so quickly fulfilled our ambitions to open up for 5G coverage at a wide national level and provide access to particularly fast speeds in the centre of Copenhagen, Odense, Aarhus and Elsinore," said TDC NET's CEO Andreas Pfisterer. "The opening is important at a time when we more than ever need a

strong infrastructure to handle the consumption of mobile data growing by up to 40% per year. The upcoming opening means that the largest service provider on the network, Nuuday, will soon be able to offer their customers access to the network of the future."

Later this year, customers of TDC subsidiary Relatel are also expected to gain access to the 5G network.

# Madagascar tops Africa's net speeds



Madagascar has the fastest internet in Africa, according to new research, with its improved average speed of 32.07Mbps placing it 33rd globally and ahead of developed countries like the UK and Australia.

The improvement is due to the underwater Eastern Africa Submarine Cable System that supplies the island's urban centres with fibre broadband speeds, according to Cable.co.uk.

Madagascar also had Africa's fastest internet in 2018, when it took the title from east African nation, Kenya.

Fellow Indian Island nation the Seychelles, with a population of 98,347 people at mid-year, according to UN data, came third with an internet speed of 26.76Mbps. As one of the most sought after tourists' destinations in Africa, the country has invested massively in internet connectivity.

Most resorts, hotels, and guesthouses in Seychelles have free WiFi. Internet cafés are also available on the three main islands of Mahé, Praslin, and La Digue to give internet access to locals.

Surprisingly, after improving from third to second in 2019, South Africa fell down the ranks to fifth in 2020 after services in other African countries were developed. It has an average download speed of 23.17Mbps - and the time it takes to download a typical 5GB high-definition movie is one hour and 21 minutes.

Nearby Mauritius has made significant improvements over the past year, doubling the average broadband speeds available in the country.

In 2018, the country responsible for Africa's current ninth-fastest internet speeds was only ranked 139th globally with speeds of 2.39Mbps.

Mauritius is now much improved in the world ranking thanks to infrastructure improvements providing increased speeds of around 19.24Mbps.

Cape Verde in second place, along with Ghana, Gabon, Liberia, Togo and Senegal made up the top 10.

Countries like Uganda, Rwanda, Namibia, Tunisia, Morocco and Kenya, all of which appeared in the 2019 ranking, were knocked off in the 2020 ranking.



## Cellular looting in SA by 'WASPS'



Investigations have uncovered widespread theft of airtime by unscrupulous wireless application service providers (WASPs), enabled by network operators like Vodacom, MTN and Cell C in South Africa.

According to My Broadband, these WASPs sign cell phone users up to subscription services without their permission, and siphon off small amounts of airtime each day from each person.

They fraudulently subscribe South Africans to content subscription services without their knowledge or consent. Furthermore, through these fraudulent subscriptions, they steal millions in airtime from mobile subscribers every day.

Although the exact scale of this fraud has never officially been reported, conservative estimates by industry players suggest it amounts to billions of rands.

Mobile operators can block WASP billing by default, but despite a decade of fraud and billions in airtime stolen, they refuse to implement this solution.

The problem goes even deeper. In some of the cases where airtime was stolen, the mobile operators themselves acted as the WASP.

## MasMovil launches 5G services trial in Spain



Telecom group MasMovil has launched a trial of next-generation 5G Internet services in 15 Spanish cities, following rivals Telefónica and Orange.

Operators are activating networks that can offer super-fast download speeds and eventually connect billions of devices to help run homes, offices, factories and cities.

MasMovil said in a statement it will offer the new services to clients of its low-cost Yoigo brand partly using its

own network of 5G antennas. It will be achieved partly through its access to French peer Orange's infrastructure.

Initially, Masmovil will offer 5G connectivity in Alicante, Alcobendas, Almería, Ávila, Barcelona, Hospitalet de Llobregat, Huesca, Jaén, Madrid, Málaga, Melilla, Orense, Salamanca, Sevilla and Valencia.

"We are very happy to allow our Yoigo customers to test the technology 5G at no additional cost," said the company's CEO Meinrad

Spenger. "In addition, we put at our customers' disposal the most competitive offer of 5G terminals so that they can enjoy this service."

In a future phase, Masmovil said it will launch its own 5G SA network with 80 megahertz of spectrum in the 3.4-3.8 GHz band.

The company has grown by acquisitions to compete in the highly competitive Spanish market and is currently the target of a takeover bid by three US buyout funds.

## Vodacom to enhance telecom services



Vodacom Tanzania has introduced 'build your own bundle service' that gives customers the freedom and convenience to create their bundle mix at own cost and preference.

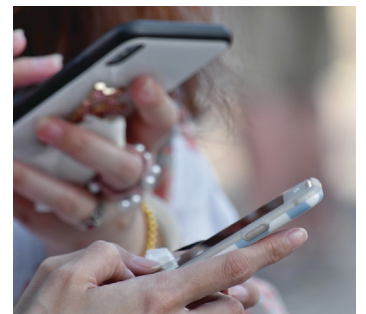
The company's director for consumer business unit, Linda Riwa said the firm is once again bringing cost efficient innovative product into the market to enhance usage of communication services and contribute to economic growth.

"Realising that customer needs are different yet all customers want more value for what they pay for, we decided to create this service giving

them the freedom to get exactly what they want and at a cost, they are willing to pay," she said.

The company provides a wide range of communication services to consumers and enterprises namely voice, data and messaging, video, cloud and hosting, mobile solutions and financial services to over 14.1 million customers.

The use of mobile money services, in particular M-Pesa has provided both individuals and businesses with an effective and reliable method to save and invest money, as well as access to a range of other financial services, including digital payments.



**The company provides a wide range of communication services to consumers and enterprises namely voice, data and messaging, video, cloud and hosting, mobile solutions and financial services**

## TNM launches the first KaiOS-enabled phone in Malawi



Integrated mobile network and ICT services provider TNM has partnered with KaiOS Technologies to launch "the most affordable" 4G KaiOS-enabled smart feature phone in Malawi.

Priced at MK 24,999, the TNM Smart 4G will come with a value of MK28,000 worth of bonuses comprising 500 MBs, 150 SMSs and free Caller Tune every month for six months. This offer, apparently, makes it the most affordable 4G device in the history of mobile internet in Malawi.

The phone will offer customers access to essential and popular apps such as WhatsApp, Google Assistant, Google Maps, YouTube, Facebook, and many other applica-

tions unique to KaiOS.

TNM chief executive officer (CEO) Michiel Buitelaar said this device has been designed to suit the communication needs of first-time users and people in rural areas.

"These devices will help people to entertain and educate themselves or have broadband internet," he added.

The CEO said the 4G phone would help disseminate timely and accurate information on Covid-19 at a time when cases are escalating and the United Nations has warned of disastrous effects on the least developed countries, which include Malawi.

To address low digital literacy issues, Buitelaar said the KaiOS phone comes with an easy-to-use

interface, an in-house app called Life which features training and lessons related to digital literacy and other educational content. It also provides access to Google Assistant that allows first-time internet users to use voice to easily navigate and connect with the digital world.

Sebastien Codeville, CEO of KaiOS Technologies, added: "As the first company to make KaiOS smart feature phones available in Malawi, the launch cements TNM's reputation as a pioneer in offering new services that help improve the lives of the country's people and increase economic prosperity. We will work with TNM to ensure that our devices carry content that is relevant and


useful to the people of Malawi".

New Information Minister Gospel Kazako commended TNM for its unflinching efforts towards Malawi's economic development through investments in mobile internet technology and ICT.

"TNM takes a long view," he said. "They have invested significantly in a 4G mobile internet network that has transformed the TNM network into one of the most reliable Internet service providers in Malawi."

KaiOS Technologies was founded in 2016 and launched in 2017, with a focus on feature phones. Its flagship product, KaiOS, sees more than 135 million devices shipped in over 150 countries.

# HAPSMobile and Rwanda's Ministry of ICT and Innovation sign MoU

 Rwanda's Ministry of ICT and Innovation and HAPSMobile, a subsidiary of SoftBank Corp., have signed a memorandum of understanding which both parties will conduct a joint research project (JRP) that studies the use of high altitude platform stations (HAPS) to provide mobile internet connectivity in Rwanda.

As part of the JRP, the parties plan to conduct demonstration flights using HAPSMobile's solar powered unmanned aircraft system (UAS) in Rwanda to provide 4G/5G Internet connectivity. The results of the JRP will be used to guide discussions between HAPSMobile and MINICT on potential commercial services in Rwanda and other African countries.

"Our mission at HAPSMobile is to bridge the digital divide and revolutionize mobile networks by leveraging HAPS," said Junichi Miyakawa, representative director & CTO of SoftBank Corp., and also president and chief executive officer of HAPSMobile. "So, we are very pleased and encouraged that we can work with the Rwandan government, a leading technological power in Africa, to study how our HAPS solution can be used to reach remote communities and enable better access to information. We look forward to working with the Ministry of ICT and



**As part of the JRP, the parties plan to conduct demonstration flights using HAPSMobile's solar powered unmanned aircraft system (UAS) in Rwanda to provide 4G/5G Internet connectivity**

Innovation on this research project so we can study potential commercial applications in Rwanda, and beyond."

Paula Ingabire, minister of ICT and innovation of the Republic of Rwanda, added: "We enthusiastically welcome HAPSMobile, a SoftBank Corp. subsidiary, to do business in Rwanda. This joint R&D

project is well aligned with our government's vision of becoming a Proof of Concept Nation and we commit to supporting it towards fruition. This project will contribute to Rwanda's utmost goal to bridge the digital divide and increase digital inclusion, not only in Rwanda but also across our region."

## Paratus invests in satellite tech for enhanced internet access

 Paratus South Africa, part of pan-African telecom service provider, Paratus Africa, is investing in the country's satellite market to offer quality connections to the region and the rest of Africa.

Satellite technology provides internet service providers (ISPs) and businesses flexible, universal, reliable and cost-effective technology to address a wide range of communication needs.

Over the past year, Paratus South

Africa has invested in hub acquisitions to improve the quality of their connection and service offering to ISPs who lease VSAT capacity or multinational organisations that require reliable, secure and end-to-end control. VSAT forms an integral part of the communications solution as it enables both internet service providers and businesses to enjoy an easily accessible, secure and cost-effective connection anywhere in South Africa and Africa.

"To amplify our support for growth in Africa, we have upgraded our DVB-S2 hub to the DVB-S2x hub, allowing us to sustain exceptional performance and improve end-user expectations," said Paratus South Africa MD, Kallie Carlsen.

The firm has also invested in additional capacity to expand communications needs in Africa via powerful satellite – the AMOS-17, through a partnership with Spacecom.


## TPG boosts 5G rollout

 Australian operator TPG Telecom said it will accelerate its 5G rollout over the next 12 months, with over 85% of the population in the country's six largest cities expected to be served by the end of next year. The company said in its full-year results that more than 1,200 sites 5G sites had now entered the planning phase. TPG Telecom said the six cities where 5G will be initially available are Sydney, Melbourne, Brisbane, Adelaide, Perth and Canberra.

## Azerbaijan and Nokia sign deal

 Nokia has expanded the 4G footprint of the Azerbaijan-based mobile operator Azercell Telecom with the installation of its AirScale 4G base stations at more than 1,400 sites across the country. The Finnish gear-maker said its AirScale Radio Access solutions will provide the operator with high-speed mobile connectivity to cater for increased demand as well as providing a clear migration path in the future. Nokia is the sole supplier in this deal and will replace the former 4G provider.

## Cook Islands agreement

 Avaroa Cable and Vodafone Cook Islands have signed a multi-year partnership for use of the Manatua Cable. The deal will see Vodafone place connectivity at the heart of their ambitious plans to transform connectivity in the South Pacific. The companies announced that Aitutaki would be the first to benefit with services already transferred to the cable. This announcement coincides with Avaroa Cable Ltd becoming the first company to be awarded a telecommunications operating license under the new Cook Islands Competition and Regulatory Authority Act 2019.



## Q&A

### Jon Lederman vice president of AI Rajant



#### What was your big career break?

I'm a very independent person and prefer charting my own path, so founding and launching two start-ups - SonicCloud and Spinor - was a break for me. The experience you gain starting a company is immeasurable, and it is impossible to achieve in a classroom or working at a large company. Being an entrepreneur pays back incalculable dividends in leadership, creativity, self-actualization, dealing with success and failure, ethics, and working with people.

#### Who did you most admire growing up?

Being a musician, I admired John Lennon for his brilliance as a songwriter, lyricist and artist as well as his sense of humour and wordplay - probably above all his honesty and acerbic wit. When I was a kid listening to his songs, I thought all the lyrics had special meaning. It was only later that I realized much of it was just wordplay. But, it's your personal interpretation that matters.

I also admired visionary entrepreneurs, such as Steve Jobs and technical gurus like Steve Wozniak. The computer industry has long since saturated, and there are few places where truly interesting things are happening. If you look hard, they exist.

Also, I admired world-class scientists, like Richard Feynman, for his brilliance as a physicist and person and zany sense of humor.

#### If you had to work in a different industry, which one would it be?

Most likely, I'd have been a physics professor. By nature, I love learning, and the physical world is endlessly fascinating. Much of life can be rather boring and mundane, but science is an endless source of intellectual gems. Physics is like storytelling. You start with a hypothesis or ansatz and then develop a story in the language of nature - mathematics - to flesh out the story. Then you test your story through experiment. If it coincides

with experiment, it's right. Otherwise, no matter how elegant, it is dead wrong and you have to abandon it.

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

Feynman said, "Study hard what interests you the most in the most undisciplined, irreverent and original manner possible." I try to follow that advice, and I think to achieve progress, that is an absolute requirement. As far as we know, we have one life, and we have our duty to work hard to make it meaningful. Too many people I know chase money as an end in and of itself and face a daily existential crisis. If you're going to do something, it better be great or don't bother.

Also, when working on a project or company, surround yourself with A+ players. There is a massive gap between good and great. Working with the latter type will determine what you can achieve. It's not just a matter of raw talent. Equally important is drive and out of the box thinking. As an entrepreneur, you have to be in it for one reason - to build something great. If you're lucky, you have an opportunity to do something that can make some impact on the world to change things for the better. That's the best you can hope for.

#### Who do you most admire?

I admire qualities in people rather than people themselves. Generally, I admire people who are brilliant and creative and make some positive change in the world through those attributes. But, I think most importantly, I admire people with the courage and perseverance to achieve their goals in the face of adversity. It could be an entrepreneur, scientist, artist, or social engineer or anyone else really.

The environmental crisis facing this planet is, in my opinion, at the top of the list as it threatens not only the richness of the natural world that we often sadly take for granted but fundamentally human existence.

Elon Musk is a person who is an entrepreneur for the right reasons, and the beautiful technology his companies are building truly has a chance to enact social and environmental reform. I admire

him primarily because he risked his entire fortune from PayPal on his vision. Who would do that? Almost nobody. He's driven by creating impact, not his bottom line.

#### What law would you most like to change?

There are many. The uneasy tension between the democratic ideal and our form of capitalism underlies much of the dystopian culture we live in. The extreme form of wealth disparity that has arisen in the last 30 years is highly problematic but, most importantly, deleterious to culture and our democratic idea. We have to ask ourselves what kind of world we want to live in. Small business is an integral part of the diversity in American culture,

Maybe New Zealand.

I still love Cambridge, Massachusetts, because it is one of the last bastions of bohemian intellectualism - and the best street music in the world. Any place with great book stores and great music. So, maybe in Cambridge.

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

I'd invest it all in the startups I am working on. Other than that, the main things I spend money on are education, music, and books. Those things pay the best returns in life. Perhaps, I'd set aside some for a '63 ES 335. And, for sure, I'd donate a portion to help animals.

#### What's been the best technological innovation in your lifetime?

There are so many - and so many that have not lived up to their promise because they've been applied for nefarious purposes. I'd say GPS is one that doesn't get the recognition it deserves. To me, GPS is on par with the printing

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**"Being a musician, I admired John Lennon for his brilliance as a songwriter, lyricist and artist as well as his sense of humour and wordplay - probably above all his honesty and acerbic wit"**

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and right now, it is being ravaged. There is a need for legislation to protect our representative form of government from unraveling.

Laws protecting animals and the environment should be paramount.

Also, the tax system is completely broken. We need more laws guaranteeing the ability of anyone to achieve a higher education regardless of means. That's a win-win for individuals and society as a whole.

Finally, the patent system was broken by the America Invents Act eroding protections for small companies and individuals. That legislation should be overturned.

#### If you could live anywhere in the world, where would it be?

I love swimming and being near the water, so anywhere close to the ocean that is simultaneously close to cultural meccas is ideal.

press for it offered humanity the ability to navigate anywhere on this planet for the first time. In that sense, it led humanity out of the darkness in the same way the printing press did. Plus, it's the only invention that I'm aware of that relies on both Einstein's theories of Special and General Relativity as an essential component of its operation.

#### What will you do when you retire?

Honestly, retirement seems boring to me, and I would never be interested in conventional notions of retirement. You are lucky if you love what you do. For me, that means working on interesting and hard problems in creative ways. I feel fortunate that I get to learn new things every day. I'll always be doing that, so retirement is not an option. Plus, golf just doesn't do it for me. ■

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