For communications professionals in the southern Asian region

SOUTHERN ASIAN WIRELESS COMMUNICATIONS

Q3 2021 Volume 14 Number 3

- Broadband connectivity in the region
- Sensor to satellite: IoT's role in agriculture
- The 5G era is here: now what?

PROVIDING
HIGH QUALITY BROADCAST, TELECOMMUNICATION AND TELEPORT SERVICES

With expanded capacity at MENA hotspot of 25.5°E/26°E, state-of-the-art Teleport, and a wide network connectivity, Es'hailSat supports broadcast and telecommunications services across the Middle East, North Africa and beyond

Es'hailSat سهيل سات

Qatar Satellite Company الشركة القطرية للأقمار الصناعية

Space to deliver your vision

www.eshailsat.qa

SOUTHERN ASIAN WIRELESS COMMUNICATIONS

Q3 2021
Volume 14
Number 3

INTEGRASYS, established in 1990 is a software development and engineering company specialized in satellite network design, deployment, maintenance, and interference mitigation tools for monitoring critical satellite infrastructure in the commercial and defense fields, offering a wide range of signal monitoring products and VSAT Deployment, maintenance, and link budget solutions.

INTEGRASYS mission is to provide the industry with the best quality and fastest technology available within monitoring systems, with the customer service and care; that our customers deserve. Integrasys develops its own products for monitoring and controlling distributed systems and also tailored projects for customers. **INTEGRASYS** developments are high-quality controlled and secure. The satellite industry recognizes Integrasys as the Leader for innovation in Monitoring Systems.

www.integrasys-sa.com

INTEGRASYS
"Building Success from Innovation"

CONTENTS

SUBSCRIPTIONS:
Southern Asian Wireless Communications is a controlled circulation quarterly magazine. Register now for your free subscription at www.kadiumpublishing.com Readers who do not qualify under the terms of control can purchase an annual subscription at the cost of £110. For more information and general enquiries please contact Suzanne Thomas at suzannet@kadiumpublishing.com or call +44 (0) 1932 886 537.

EDITORIAL:
Editor: **Robert Shepherd**
Designer: **Ian Curtis**
Sub editor: **Gerry Moynihan**
Contributors: **Farhad Khan, Richard Jacklin, Martin Jarrold, Chris Hogg, Terry Bleakley, Anuj Sharma, Anil Krishnan, Eugina Jordan and Alastair Williamson**

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

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

Production & circulation: **Suzanne Thomas**
suzannet@kadiumpublishing.com
Tel: +44 (0) 1932 481728

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

ISSN No: 2052-739X

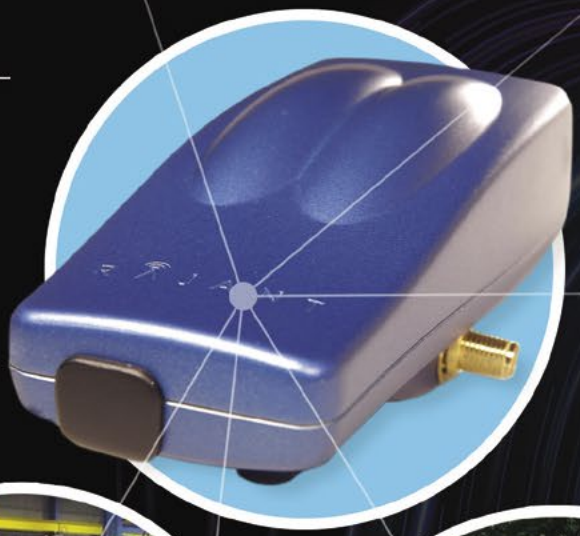
KADIUM

Just like today's industrial leaders, Rajant's network is

Smart. Autonomous. Always moving.

Rajant Kinetic Mesh® is the only wireless network to power the non-stop performance of next-gen applications—from real-time monitoring to robotics and AI.

- Works peer-to-peer to maintain **hundreds of connections simultaneously for 'never break' mobility**
- Intelligently self-optimizes to **change in real-time, ensuring mission-critical reliability**
- The *only* network to enable **machine-to-machine communications required for autonomy**
- Provides **Industrial Wi-Fi for extended Wi-Fi connections** in challenging environments



*IF IT'S **MOVING**, IT'S RAJANT.*

*Industrial Wireless Networks **Unleashed.***

Download our **"Why Carrier-based LTE and Private LTE Just Aren't Enough for IIoT"** white paper at **rajant.com/sawc**

RAJANT

Myanmar towers attacked by resistance fighters

Telecom towers owned by the Myanmar military are being targeted by resistance fighters following the shadow National Unity Government's (NUG) declaration of a nationwide people's defensive war against the military regime.

At least 14 telecom masts belonging to the military-owned Mytel, one of four telecom operators in the country, have been destroyed since the NUG's announcement.

On September 7, the NUG's acting president Duwa Lashila called on citizens across the country to rebel against the rule of the military terrorists led by coup leader senior general Min Aung Hlaing.

He also called on them to "target the military junta and its assets in their respective areas".

According to reports, 11 Mytel masts were simultaneously destroyed by mines by unidentified attackers in Budalin Township, Monywa, Sagaing Region.

Two more Mytel masts were destroyed in Tantse and Pale townships, Sagaing Region.

Another Mytel telecom tower in Pauk Township, Magwe Region was destroyed and set on fire on Tuesday night by civilian resistance fighters.

Multiple other regime targets were also attacked by local people's defence forces (PDFs) in Magwe and Sagaing regions, including the base of Light Infantry Battalion 103 in Taungdwingyi Township, Magwe Region and two transmission towers connected to a military equipment factory in Myothit Township, Magwe Region.

The military seized power in Myanmar early this year

In Sagaing Region, the central police station in Kale Township was attacked with grenades.

TM and Tata Communications partner for IP transit services in ASEAN

Tata Communications has inked a deal with Telekom Malaysia Berhad (TM)

to offer stable, high-speed and reliable connectivity in the ASEAN region and open access to global enterprises.

It is understood the collaboration will enable Tata Communications to optimise TM's presence within the region through terrestrial networks and submarine cables to neighbouring countries.

The submarine cables in the network include the Malaysia-Cambodia-Thailand submarine cable for connectivity to Indochina and, Nusantara Gateway submarine cable for connectivity to Indonesia.

It is also hoped that TM will benefit from Tata Communications' global Tier-1 IP network to serve customers in more than 190 countries and territories, further extending the telco's IP transit coverage and enhancing its regional TMiX offering.

"This is part of our effort to enhance our internet service performance with expanded global reach for service providers in Malaysia and neighbouring countries to meet the growing IP networks requirements," said Amar Huzaimi Md Deris, executive vice president of TM Wholesale. "This collaboration underscores our commitment to our customers for delivering world class network service, brings us one step further to achieve our aspiration as the trusted digital hub in the ASEAN region.

Tata Communications chief sales and marketing officer Sumeet Walia claimed that the service provider ecosystem across the ASEAN region will benefit from the company's move to join forces with TM and, as a result, enable additional access to Tier-1 internet provider transit connectivity.

Bhutan Telecom brings 5G to kingdom via Ericsson

Swedish telecoms gear maker Ericsson said it has secured a 5G network and services rollout deal from Bhutan Telecom.

The deal covers 5G Non-Standalone (NSA) deployment including Ericsson Radio System products and solutions such as Ericsson Spectrum Sharing, Packet Core upgrade, OSS/BSS 5G enhancements, the companies said in an official statement.

Eventually, Ericsson will help the Bhutanese telco to rollout 5G Standalone (SA) in subsequent years, they added.

"We appreciate the government's reliance on telecom infrastructure to boost the country's digital infrastructure," said Karma Jurme, chief executive officer (CEO), Bhutan Telecom. "The introduction of 5G will boost digital services in the country and enable Bhutan to become a 'digital society'."

Singtel promises nationwide standalone indoor and outdoor 5G by 2025

Singtel has committed to nationwide standalone 5G coverage in Singapore by 2025, backing the next generation mobile network as key for both consumers and enterprises on the island.

Currently, two-thirds of the country enjoys 5G coverage, with both non-standalone (NSA), which builds on the existing 4G network and standalone infrastructure, which already covers half the nation.

Ookla, the web testing and network diagnostics company, noted Singtel as the fastest 5G network operator in the country. The operator stated that the 5G network is 10 times faster than 4G, able to reach a 1.2 Gbps download speed.

While there are experiments and trials still underway to confirm more use cases for the 5G network, Yuen Kuan Moon, group chief executive officer of Singtel, said it can "transform business models and deliver enhanced products and services on a scale like never before".

Singtel currently has over 180,000 subscribers using their 5G network, and that number is very likely to rise, especially because, as Minister for Communications and Information Mrs Josephine Teo said, "[5G] can change the way we live and work in profound ways, and become essential for the digital developments of the future."

Meanwhile, Singtel has partnered with Samsung and Zoom to support hybrid working with a Productivity Data Pass plan to offer data-free usage of the proprietary video teleconferencing software.

‘Pakistan to lag behind in smartphone usage and 5G coverage’, says GSMA

Smartphone users in Pakistan are expected to increase 23% by 2025, but the country will still be at the lowest end in terms of phone usage and 5G internet in Asia Pacific.

That is according to the GSMA report “The Mobile Economy Asia Pacific 2021’, which highlights the 5G status in the region.

It found that up to 74% of Pakistanis will use smartphones in the next four years - up from 51%.

South Korea was the first country to roll out 5G in 2018, followed by Australia, Maldives and New Zealand in 2019. Guam, Japan, Laos, Northern Mariana Islands, Philippines, Singapore and Thailand followed with 5G rollout in 2020. Indonesia, Vietnam and Malaysia achieved it in 2021.

In the second wave Brunei, India and Cambodia are set for 5G rollouts next year, while Pakistan, Bangladesh and Samoa are set to welcome 5G in 2023.

The report, which does not include China, added that more than 80% of connections in Asia Pacific will be smartphones by 2025, up from 68% in 2020.

However, among the list of selected 12 key countries featured, Pakistan was close to the tail end, just above neighbour Bangladesh – it has been projected that these two countries will not reach the 80% benchmark.

In terms of smartphone usage, smart-phone users in Bangladesh are likely to be 62% versus 41% in 2020.

It is also expected that by the end of 2025, some 42% of the population in Pakistan will be broadband users compared to 27% in 2020. Approximately 10% of the population will be under telecom coverage.

Moreover, the GSMA has said that Pakistan’s mobile market has significant potential, but current levels of mobile internet adoption, smartphone take-up and usage of digital services lag behind those of other countries in the region.

Certain policy decisions may have hindered Pakistan’s digital development and hampered growth of the online economy.

“This is reflected by decisions in 2021 to initiate mobile-sector tax reforms and introduce right-of-way policies for infrastructure deployments,” the report said, adding that the GSMA will also collaborate with the universal service fund (USF) to reduce the digital divide and usage gap.

The GSMA has lauded the USF, highlighting that it played an important role in expanding network coverage in remote areas of Pakistan including mountainous terrains and sparsely populated areas, by awarding contracts worth around Rs85bn during the last decade.

The report also added that by 2023, the projected economic contribution of the mobile industry in Pakistan could reach US$24bn, accounting for 6.6% of GDP.

The GSMA has said that these efforts will help strengthen Pakistan’s economy and contribute to the realisation of SDG-9.

“Efficient and affordable ICT infrastructure and services allow citizens to participate in the digital economy, with significant impact in the areas of financial inclusion, poverty reduction and improved health,” the report said.

It said that affordable mobile internet allows more people to start realising the benefits of connectivity while also allowing existing users to utilise advanced, data-intensive technologies and innovative use cases.

“Despite this, governments in many countries are increasingly imposing taxes, both general and sector-specific, on consumers, devices and mobile operators,” the report concluded.

Malaysia’s Measat de-orbits MEASAT-3 satellite after anomaly

Malaysian communications satellite operator Measat is retiring and de-orbiting one of its communication and broadcast satellites after an anomaly first detected in June could not be rectified.

The Boeing-made MEASAT-3 Geostationary satellite will be retired and a replacement will be launched in 2022. Services will be moved to other satellites in the region operated by both Measat and other companies, the operator said.

Measat first detected an anomaly June 21 that caused the satellite to drift out of position. The operator later said the problem was resolved and the satellite was back under control on June 24. However, it shortly followed up saying “intermittent service degradation” meant further satellite and signal stabilisation processes were required.

In July the company said that while it had maintained continuous telemetry and command control of the satellite, its transponders had been deactivated to prevent interference with other satellites while it worked with Boeing to investigate the issue. At the time “almost all” customer services on MEASAT-3 had been restored onto backup satellite capacity on other MEASAT satellites [1, 2, 3a, and 3b] and third-party satellites serving the region.

“The incident resulted in a complete outage of service and is still under investigation,” the company said in a statement. “Despite maintaining continuous telemetry and command control of MEASAT-3, further testing and recovery efforts found that the satellite could not re-enter service.”

MEASAT-3, a Boeing 601 satellite, had provided satellite communication services for almost 15 years since its launch in December 2006. MEASAT-3 operated alongside the now-decommissioned Hughes/Boeing-built MEASAT-1 and MEASAT-2 spacecraft in the Malaysia-East Asia Satellite (MEASAT) system.

MEASAT-3a was built by Orbital. Sciences Corporation in 2009.

Indosat Ooredoo launches 5G service in Jakarta

Indonesia’s Indosat Ooredoo launched a commercial 5G network in the capital Jakarta.

The 5G internet service from Indosat is available in the Monas area, Medan Merdeka area, Indosat Oordeoo office and the Karawang industrial area, the telecommunications provider said.

“The new 5G services will provide Indosat Ooredoo’s consumer and business customers with access to enhanced mobile broadband internet that will help to accelerate Jakarta’s economic recovery and supporting the industry 4.0 era,” the firm said in a release. “5G services will empower a wide range of unique use cases that offer the potential to revolutionise the city’s manufacturing industry, public services, healthcare sector and meet the growing demand for digital content and entertainment services over mobile networks.”

Indosat Ooredoo’s President Director and chief executive officer, Ahmad Al-Neama, announced the launch at an event in Jakarta attended by leading dignitaries, including governor of Jakarta, Anies Baswedan.

Al-Neama, said: “We believe 5G technology and its myriad use cases will help to revolutionise the way industries and businesses operate and the way consumers access public services and entertainment. With this launch, Indosat Ooredoo is driving forwards Indonesia’s 5G revolution and moving the nation towards a bright and 5G-enabled future.”

Moreover, Indosat Ooredoo plans to extend the commercial roll-out of 5G services to other major cities in Indonesia, including, Surabaya and Makassar, where there is high consumer demand for data services.

SpaceX to launch Yahsat's Thuraya 4-NGS satellite

Yahsat has selected SpaceX to launch its next-generation Thuraya mobile connectivity satellite in 2023, replacing the existing two Boeing-built Thuraya satellites that provide L-band mobile voice and data services from Europe to Asia Pacific.

A Falcon 9 will launch the Thuraya 4-NGS satellite, being built by Airbus Defence and Space for UAE-based Yahsat, in the second half of 2023.

In an interview during September's Satellite 2021 conference in Maryland, US, Ali Al Hashemi, chief executive of Yahsat, said the company floated a competitive tender process for the satellite, but that SpaceX offered by far the best proposal. "We think SpaceX is the most reliable choice for our mission, to ensure to our shareholders that we will achieve our mission on time," he said. "It's the least risky launcher as we see it."

Yahsat selected Airbus to develop Thuraya 4-NGS a year ago and completed a preliminary design review in June. Al Hashemi said development of the satellite remains on schedule to support a 2023 launch.

The two Boeing-built Thuraya satellites being replaced remain in service but are past their design life.

Al Hashemi said that service won't compete with a new generation of broadband satellite constellations, including SpaceX's own Starlink satellites. "Thuraya is focused on a different segment, which is narrowband mobility and portability," he said. "It is a totally different market. Our competition is more Iridium and Inmarsat."

He added that the new satellite will offer a more flexible payload with higher data rates. Yahsat plans to release more details about those capabilities later. The company projects the satellite generating US$47m a year in revenue over its 15-year life, a significant part of the company's overall backlog of US$2.1bn, 70% of which is for government customers.

The companies did not disclose terms of the launch contract.

Celcom targets 5G launch in Malaysia by year-end

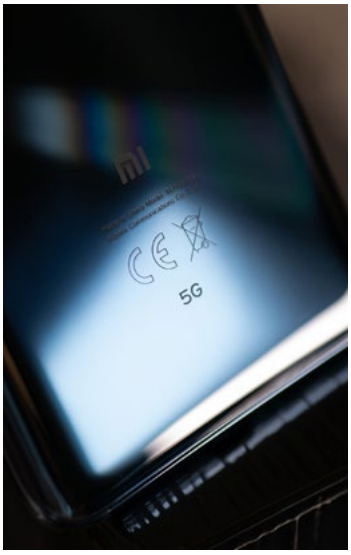
Malaysian mobile telecommunications provider Celcom Axiata Bhd is set to launch its 5G technology services by the end 2021, it said.

The operator added that it is on track with its plans to call time on 3G, starting at the end of this month in phases until completion targeted by December 31, 2021. Celcom said it is also working to increase 4G network coverage at 3,200 sites nationwide.

"We have embarked on the 5G journey for a while and we have done more than 50 use cases throughout the year, such as in Langkawi, Petaling Jaya, Sunway and with other partners," local media reports quoted Celcom chief executive officer (CEO) Mohamad Idham Nawawi. "We have had some discussions with the government's 5G special purpose vehicle (SPV) and yes, we are technically ready and prepared to roll out as soon as the network is available."

Celcom currently has circa 98% of devices on its network already on 4G devices, while less than 3% of its customers are still operating on 3G devices.

Celcom has completed almost 95% of network upgrading works at approximately 9,500 sites, performed network optimisation at more than 3,600 sites. It has also delivered 4G coverage improvements at 3,200 sites nationwide.



Celcom plans to go live with 5G soon

'Criminals target mobile banking in southeast Asia'

Cybercriminals are targeting mobile banking in southeast Asia as the continuing Covid-19 pandemic forces people to pay online, according to global cybersecurity firm Kaspersky's latest mobile threat report.

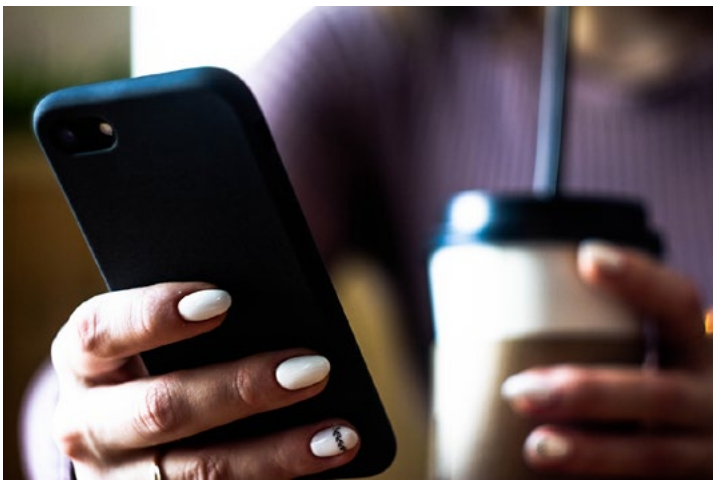
Mobile banking Trojan attacks in the region surged 60% in the second quarter of 2021 versus the same period last year, the report found.

Cybercriminals use mobile banking Trojans to siphon funds directly from the mobile bank accounts of their victims.

These malicious programs look like legitimate financial apps, but when a victim enters their security credentials to access their bank account, cybercriminals gain access to their private information.

In the Philippines alone, Kaspersky detected and blocked 37 mobile banking Trojan attacks among its users in the first half of 2021. This was 6% higher compared to the whole of 2020 with 35 attempts.

Overall, since the beginning of the year, Kaspersky foiled 708 incidents across six countries in southeast Asia. It already accounts for half the number of attacks blocked in 2020, which totalled 1,408.



Vietnam and Indonesia logged the highest number of incidents during the first half of the year. However, the former is only 27th and Indonesia is 31st in the global list of countries affected by the threat.

The five countries with the greatest number of mobile banking Trojan attacks are Russia, Japan, Turkey, Germany and France.

Although the number of mobile banking Trojan attacks in southeast Asia remains low compared to other parts of the world - 367 incidents from April to June 2021 versus 230 detections during the same period last year – the ongoing pandemic gives users little option other than to adopt mobile payment systems.

"We are almost at the second year of the pandemic which has fast-tracked the mobile payment adoption in the region at a breakneck speed," according to Yeo Siang Tiong, Kaspersky general manager for southeast Asia.

"During the beginning of this health crisis, our survey already showed majority of internet users here have shifted finance-related activities online, like shopping (64%) and banking (47%)."

edotco partners with Metfone to expand connectivity across Cambodia

edotco Cambodia has partnered with local player Metfone to deploy new telecommunications sites, further expanding the latter's 2G, 3G, and 4G coverage across all 25 provinces in the country.

Under this partnership, as Metfone's infrastructure partner, edotco will be deploying a total of 500 telecommunications sites.

"We are committed to providing the right shareable infrastructure towards enabling connectivity and partnering the telecommunications ecosystem to meeting the nation's digital agenda," said Phillip Wong, chief regional officer (ASEAN North) of edotco. "Our partnership with Metfone enables us to support their communications and infrastructure-building needs, while at the same time making the telecommunication networks more accessible in Cambodia. More importantly, it is a testament to our commitment to play a pivotal role in being key digital nation building partners in countries which we have a presence".

edotco Cambodia has been operating since 2013. With a portfolio of over 3,960 towers owned and managed in Cambodia, edotco had enabled telecommunications providers to efficiently meet their growing infrastructure requirements.

sepura

Communicate Smarter

Sepura radios deliver outstanding coverage, security and reliability, allowing our customers to run safe and efficient operations.

Visit www.sepura.com to see how our solutions support transport organisations around the world.

Reliance Jio welcomes gov reforms to strengthen sector

Reliance Jio has welcomed the reforms and relief package announced by the Indian government, which are seen as a timely step towards strengthening the country's telecom sector.

These will accelerate realisation of Prime Minister Narendra Modi's Digital India vision and enable India's transformation into the world's leading Digital Society.

The operator said in a press release that the move by Modi's government was major step towards rebuilding and future-proofing the country's telecom sector.

"Jio's mission is to bring the fruits of the Digital Revolution to 1.35 billion Indians," it said in a statement. "Guided by this mission, we have ensured that Indians have the highest quality and the highest quantity data access anywhere in the world, at the most affordable prices. The government's telecom sector reforms will encourage us to bring newer and greater benefits to our customers."

The operator also said it looks forward to working with the government of India and other industry players in reaching all the goals and milestones of the Digital India vision, "so that we can collectively make every sector of the economy productive and enhance the Ease of Living for every Indian".

Mukesh D Ambani, chairman of parent company Reliance Industries, added: "Telecom sector is one of the prime movers of the economy and the key enabler for making India a Digital Society, I welcome the Government of India's announcement of reforms and relief measures that will enable the industry to achieve the goals of Digital India. I thank hon. prime minister for this bold initiative."

Reliance Jio is the largest mobile operator in India and the third largest mobile network operator in the world.

Talking satellite

Martin Jarrold, Vice President International Programme Development, GVF

USOs - key to the digital divide

GVF's most recent geographical focus on Asia came with **SatelliteAsia 2021**, an anchor event of what is now called **AsiaTechX 2021** (formerly known as ConnecTechAsia). GVF provided virtual conference content in the form of a short series of webinars exploring three important current themes, as listed below. This short series was the latest addition to the GVF main webinar programme which has now attracted in excess of 13,000 views, either live or on-demand from our archive which is accessible at https://gvf.org/webinars

If you missed the **SatelliteAsia 2021** streamed content on 14 July you can still use the links below to catch-up on a wealth of analysis and explanation from a broad range of GVF's member organisations, including (in alphabetical order): Arabsat; Comtech EF Data; Eutelsat; Gilat Satellite Networks; Hughes; Inmarsat; Intelsat; Kacific; Marlink; Optus; SES; and, ST Engineering.

- **Bridging the Divide: Enabling Affordable Business & Community Digital Connectivity** (https://gvf.org/webinar/bridging-the-divide-enabling-affordable-business-community-digital-connectivity/)
- **Planes, Trains, Automobiles & Ships: Satcoms-on-the-Move** (https://gvf.org/webinar/planes-trains-automobiles-ships-satcoms-on-the-move/)
- **Preparing for, and Responding to, the Inevitable Disaster: Satellite** (https://gvf.org/webinar/preparing-for-and-responding-to-the-inevitable-disaster-satellite/)

I had the pleasure of moderating the discussion in ***Bridging the Divide: Enabling Affordable Business & Community Digital Connectivity***. Joined by representatives of Gilat Satellite Networks; Kacific Broadband Satellites; Optus; and, SES Networks the dialogue initially reflected that, long characterised only as an issue for low- and middle-income developing nations, the digital divide is today recognised – particularly as a result of the impact of the Covid-19 pandemic – as being of wider concern even for developed nations, which have their remote region connectivity gaps too and, indeed, sometimes their connectivity gaps are not necessarily so remote.

For developing nations the emphasis in bridging the divide must be on both the availability of connectivity and its affordability. Whereas, for developed countries the greater weight of concern relates to availability, less so on affordability.

Satellite has long been correctly seen as means of solving the connectivity problem as it can be deployed anywhere, and its coverage is ubiquitous, but there are many fundamental questions still needing answers as to the nature of the principal barriers to serving those on the wrong side of any digital divide.

Examples of these are:

Q: Is it true that satellite communications still too expensive for businesses, for consumers?

Q: What are the unique requirements of businesses on the other side of the divide, compared to the requirements of individuals?

Q: Is there a role for satellites to provide solutions to businesses and communities on the other side of the divide in urban settings?

Q: What relevant developments in terms of services, products, and costs will we see in the next five years?

Q: Will 5G networks help bridge or widen the divide?

Q: LEO and MEO systems offer lower latencies compared to GEO systems. Is that important when providing connectivity to businesses and communities on the other side of the divide?

Q: Community Wi-Fi can bring affordable connectivity to remote and often relatively poor communities. What other services can similarly address the needs of such communities?

Q: Do universal service funds and the like help bridge the divide?

A review of the panellists responses to this last question featured in Via Satellite's *'Satellite Today'* entitled *Satellite Players Say Government USOs Key to Bridge Digital Divide,* highlighting the importance of satellite operators and network providers working with global governments to bridge the connectivity gaps of remote areas. Satellite connectivity is known to be an attractive option for bringing connectivity to areas that can't access terrestrial networks, yet there are still a number of hurdles to deploy satellite.

https://www.satellitetoday.com/broadband/2021/07/14/satellite-players-say-government-usos-key-to-bridge-digital-divide

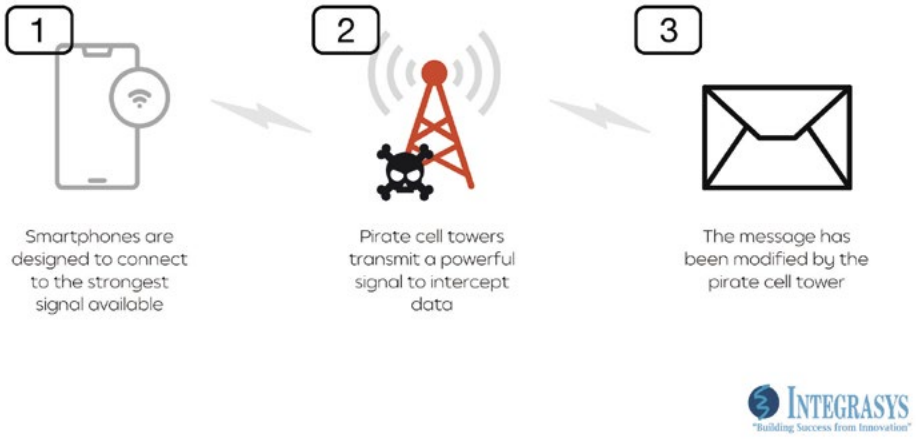
Security on the 5G, 4G and 3G environments, a powerful weapon against fraud:

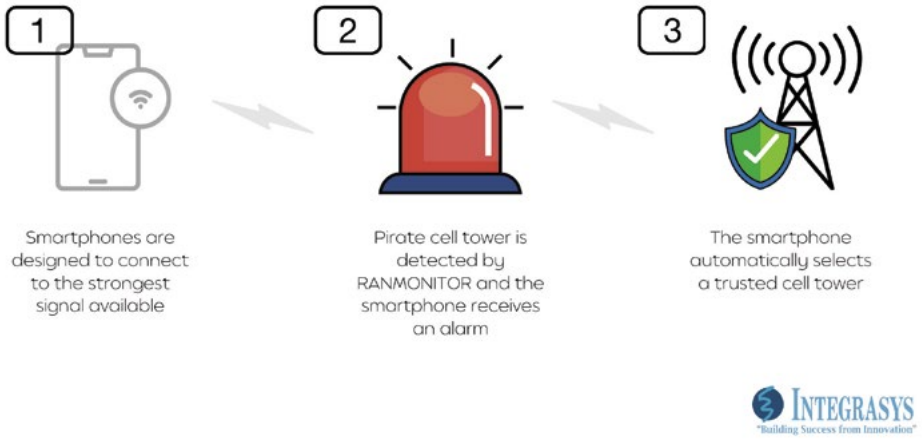
By Alvaro Sanchez

Government and military forces around the globe make use of ubiquitous civil GSM networks are being jeopardized when carrying out special missions, as well as individual citizens with fraudulent cell towers, security infrastructures to prevent missions failures are becoming essential to the military sector, not only in Asia but also around the world.

The most common problem with these types of fraudulent cell towers is that they can intercept and spoof messages and calls, so personnel privacy and mission operations can be compromised. These kinds of events typically occur in frontiers between countries or strategic areas, especially choke points, such as airports, ports, where hacking activities are intense over one of the most accessible devices, soldier's cellphones/ smartphones, which have an important role as they have personal information about soldiers and might have official statements. Moreover, these devices can act as a bridge between the pirates and the ships, where security systems are a weapon able to be hacked.

In Asia, there are countries that are going through a period of instability, where there are conflicts of interest, and pirate cell towers are a potential threat, with the main purpose of confusing troops, and give additional information to the evildoers, which has a fluid data exchange while connecting to its cell towers. Moreover, smartphones are designed to seek and detect the strongest signal, so the problem is that if a fake cell tower with a higher power signal than a legitime tower can be automatically selected by the phone itself, the user will not have any type of visibility of what is happening and how the data exchange is being proceeded. The information that could be obtained is sensitive, and the consequences of being intercepted are dramatic, and the worse about these leaks is that the smartphone user is totally unaware about being spied. The most effective solution to end up with fake towers is detecting them, and knowing where they are and notify soldiers for selecting manually another secure tower, as well as proceeding with the required action. A powerful technology that locates the cell towers and prevents them from connecting to smartphones.





Integrasys has developed a tool named RANMONITOR for fraudulent cell towers detection that has been recently tested satisfactorily in the Spanish Navy. A fraudulent cell installed aboard a military ship was successfully detected by RANMONITOR, identifying the threat and properly differentiating it from the rest of the legitimate cell stations deployed on the close coast. With such capability, and an easy interface, based in deep AI calculation, it is possible to make sure that soldiers' mobile phones do not connect to the pirate station, minimizing attack possibilities. If any cellular phone connects to such an illegitimate station, Integrasys tools can record all of the signaling, calls and messages exchanged for further analysis. One of the most interesting key factors of this exercise is to match end-user needs with software tools providers to understand better government needs firsthand and customize such a solution to each end-user process and operations. ■

INTEGRASYS
"Building Success from Innovation"

Dhiraagu picks Subex for revenue and fraud solutions

Dhiraagu, the first and market leading telecommunications player in the Maldives, is upgrading its systems and consolidating its standalone assurance functions with Subex's revenue assurance and fraud management (iRAFM) solution.

Currently boasting some half a million customers, Dhiraagu was the first operator to launch 5G in the archipelagic state. It is currently positioning itself for the 5G era by replacing existing systems with newer, more advanced software.

This includes a consolidated iRAFM system, which could eliminate process duplication while improving functionalities to cover multiple business lines. It also offers scalability to meet expansion requirements that might occur in the future.

Consolidating the revenue assurance and fraud management system with Subex's AI-powered solutions will allow Dhiraagu to boost automation, ensure faster time-to-market and reduce costs. It will also allow the operator to improve efficiency and boost scalability and flexibility while reducing cost of ownership.

Shankar Roddam, chief operating officer and whole-time director at Subex, explains how Dhiraagu was the first operator to provide 5G in south Asia commercially, while being at the forefront of many digital transformation projects in the region.

"To be successful in their journey, Dhiraagu is currently undertaking a major internal IT transformation, part of which is looking to upgrade to advanced analytical tool," he added. "This makes it very important for them to ensure their processes are built on a foundational layer of digital trust, by deploying a credible solution that can scale to their business needs and future proof their investments."

Reliance, Google delay smartphone launch

Indian conglomerate Reliance Industries has delayed the launch of a low-cost smartphone it is developing with Google to November, due to an industry-wide semiconductor shortage.

Described as the "ultra-affordable" device, the smartphone was due to be rolled out September 10.

The Covid-19 pandemic-led shift to remote working saw an increase in demand for the key component used to make phones and laptops. A number of automakers also suspended production.

"Both companies have begun testing JioPhone Next with a limited set of users for further refinement and are actively working to make it available more widely in for the Diwali festive season," Jio said in an exchange filing.

The annual festive season in India usually lasts 30 days and ends with Diwali, which is 4 November this year.

Jio, known as a "disruptor", entered India's telecom market in 2016 with cut-price data plans and free voice services. It is now the country's biggest player with more than 425 million customers.

Hughes, OneWeb partner in India

Bharti and UK government-backed OneWeb and satellite giant Hughes will provide satellite broadband in rural and remote parts of India, the companies announced.

Under the terms of the deal, Hughes will develop ground infrastructure to connect to OneWeb's satellite network and work together to improve access to backhaul bandwidth in places where such broadband will be made available.

Backhaul connectivity is one of the largest problems faced by telecom operators, as it either requires a lot of spectrum or terrestrial cabling with high bandwidth that is harder to build in rural areas.

OneWeb runs a low-earth orbit satellite constellation, a non-geostationary setup that works as a mesh that blankets the earth to provide internet access covering many parts of the earth at once. Hughes equipment will be used to connect to OneWeb's LEO constellation on earth, the company said.

Bharti and UK government-owned OneWeb will be service-ready in India by May 2022, Sunil Bharti Mittal, Bharti executive chairman told the Economic Times.

While OneWeb has yet to begin operations in India, Hughes is an established player in the region. In Andaman and Nicobar Islands and Lakshadweep, Hughes won a contract in 2019 to expand existing satellite connectivity, which was at that time the only way for the two archipelagos to access the internet. Since then, Andaman and Nicobar has been connected via undersea fibre cables to Chennai, significantly expanding the bandwidth theoretically available to it.

BSNL's 4G rollout: TCS emerges as 'favourite'

Tata Consultancy Services (TCS) has emerged as the favourite to partner state-owned Bharat Sanchar Nigam (BSNL) in the deployment of India's first indigenous 4G network, according to high-ranking officials.

Senior staff told BusinessLine that in a recent meeting chaired by Telecom Secretary Anshu Prakash between the Department of Telecommunications (DoT) and BSNL, it was "unanimously suggested" that TCS could be the strongest candidate in the light of its successful deployment of the network for core testing in Chandigarh.

Rival bidders, including Tech Mahindra, HFCL and L&T, recently informed BSNL that their respective trials with Pertsol would not be feasible because chances of failure are high. They have experienced many glitches during the technical discussions.

Earlier, plans involving Chinese companies like Huawei and ZTE had to be shelved because of security and geopolitical concerns.

TCS' claim is bolstered by developments such as its strategic partnership with Bharti Airtel for implementing even 5G networks solutions in India. Tata Group has developed a 'state-of-the-art' O-RAN based Radio and NSA/SA Core and has integrated a totally indigenous telecom stack, leveraging the group's capabilities and that of its partners.

In January this year, BSNL issued a notice saying that it would test the quality of Indian telecom equipment before letting indigenous manufacturers participate in the 4G tender to be floated by the company.

The plan is to procure equipment for 57,000 sites for 4G services.

Though it had floated a 4G tender worth ₹9,300 crore for procurement of telecom gear in March last year, it was cancelled later due to multiple reasons, including allegation from Indian companies that BSNL did not comply with preferential market access norms and is inclined towards foreign companies.

Telkomsel divests further 4,000 cell towers to Mitratel

Indonesia's Telkomsel closed another tower sale with Dayamitra Telekomunikasi (Mitratel), selling 4,000 units for Rp6.2tln (US$434.8m) and agreeing a deal for a 10-year leaseback.

The agreement increases Mitratel's tower holdings to 28,000 sites across Indonesia, having purchased 6,050 towers from Telkomsel Rp10.3tln (US$950m) last year.

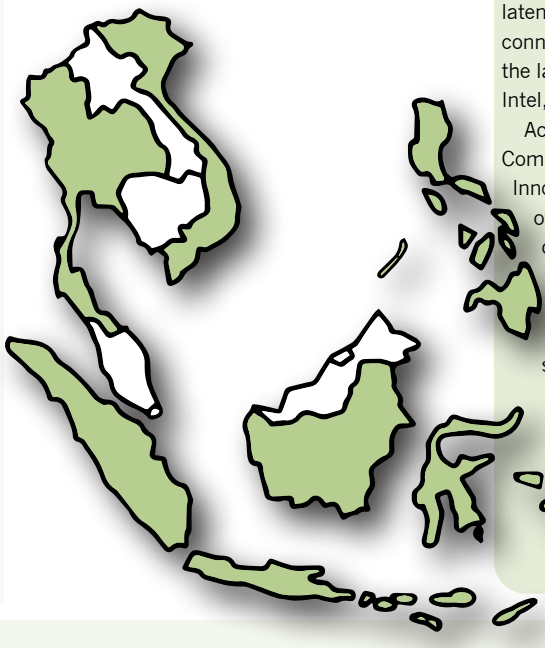
It is 100% owned by Telkom Indonesia, which also holds 65% of Telkomsel – Singaporean telecoms company Singtel holds the remaining 35% stake.

The transaction is part of Telkomsel's strategy to maximize its infrastructure and accelerate its strategy as a customer-centric service provider in the digital ecosystem.

In a statement, Telkom Indonesia director of strategic portfolio Budi Setyawan Wijaya explained the sale is an initiative to reorganise its portfolio for "optimum value creation of both companies".

Telkomsel chief executive Hendri Mulya Syam said: "Telkomsel continues to show its consistency in transforming its company portfolio in digital business through several measurable and targeted strategic steps. The continuation of the corporate action by both companies by transferring ownership of telecommunication towers to Mitratel further shows Telkomsel's seriousness about focusing more on strengthening the existence and the penetration of innovation in deploying digital services."

Mitratel's chief executive, Theodorus Ardi Hartoko added that the move will strengthen Mitratel's position as a business consolidator in the telecommunication tower business in the market. "The transaction also confirms Mitratel as the leading tower provider in Indonesia and will open more opportunities for potential tenants to utilise Mitratel services, especially in the era of 5G in Indonesia, which has big opportunities for the telecommunication tower business," Hartoko said.



Viettel forms two innovation labs

The Viettel Military Industry and Telecoms Group (Viettel) put into operation two innovation labs equipped with the most modern 4.0 technology, based in Hanoi and Ho Chi Minh City.

Company deputy general director Tao Duc Thang said the labs will nurture new technology and community connectivity ideas, towards stepping up digital transformation in Vietnam. They are also a bridge for IT communities both at home and abroad to share expertise and cooperate in the field of 4.0 technology.

With 5G, Internet-of-Things (IoT), cloud, big data and artificial intelligence equipment, the labs also have the most modern network infrastructure, including super-high-speed and super-low latency 5G connectivity, NB-IoT and LTE-M connectivity for IoT equipment. They also have the latest technologies from Qualcomm, Ericsson, Intel, and others.

According to the Global System for Mobile Communications Association, the Viettel Innovation Labs reach the highest standard of an international-standard lab, including connectivity infrastructure, development kit sets and app development environment with servers and platforms.

As open labs, Viettel allows IT firms, scientists and students with good solutions to use all of their equipment there for free.

The launch of Viettel Innovation Labs see the company become the 23rd telecom provider in the world to launch both 5G and IoT network and labs.

Globe Telecom secures major loan deal

Globe Telecom, a major provider of telecommunications services in the Philippines, has secured a loan deal worth ₱13bn ($US261.8m), to finance the company's revised capital expenditures (CAPEX) for 2021.

The loan is made up of a deal with the Metropolitan Bank & Trust Co (₱10bn) and the Bank of the Philippine Islands (₱3bn).

Ayala-led Globe made the announcement via a stock exchange filing.

The operator also recently raised its capital spending program for the year to ₱76bn from ₱70 bn. In the first semester, the company invested ₱43.3bn, 107% higher compared to last year's figure, for the improvement of its network infrastructure and internet connectivity.

The telco aims to make high-speed connectivity accessible for all and usher the Philippines "closer to being a digital nation."

The majority of about 88% of the CAPEX during the period went to data network builds to address and boost customer experience. It is currently upgrading its network from third-generation (3G) to 4G LTE/5G.

Globe also announced that it upgraded 265 sites in Cavite and Laguna to 4G LTE, which is the new standard of mobile data.

The filing further noted that as of July 2021, Globe had expanded its 5G coverage to more than 1,800 cities/municipalities across the country. With work underway to build seven new 5G cell towers in General Santos City and the installation of four more in Zamboanga City, it revealed that its 5G signal now blankets 85% of Cebu City, 77% of Boracay Island, 75% of Bacolod City, and 66% of Iloilo City. Further, the latest generation of mobile services is also available in Davao City (77%) and Cagayan De Oro City (80%) in Mindanao.

Meanwhile, Globe said it is expanding its 5G roaming coverage by partnering with more telecommunications companies abroad, including in Australia via Vodafone and in Greece through Cosmote.

The operator is also taking the next step in its 5G journey as it opens up the network to a wide variety of possible use cases for customers using 5G Standalone (SA) technology. The 5th and latest generation mobile network is known for high-speed applications such as 4k and 8k video streaming, augmented and virtual reality and ultra-fast internet served to deliver immersive content consumption.

MTN 'talking to buyers for Afghan wireless unit'

South Africa's MTN Group has entered talks with potential international buyers for its wireless business in Afghanistan, a bid to accelerate plans to exit the country, according to reports.

Africa's biggest mobile-phone operator, also the market leader in Afghanistan with a 40% share, is in discussions with several parties, said unnamed sources.

MTN said last year that it planned to exit countries in the Middle East over the medium term. The Johannesburg-based company wanted to use its resources to focus on African markets.

The carrier has since abandoned its operation in Syria, citing regulatory demands that made operating there untenable, though said last month it's still evaluating options in Yemen and Afghanistan.

MTN declined to comment on the reports.

Telecom companies operating in Afghanistan, which also includes Etisalat of the United Arab Emirates, have reassured customers and investors they are keeping services running following the collapse of the US-backed government, while trying to secure the safety of their employees in the country.

The Taliban recently formed a new government and said investments from China will be essential to rebuilding an economy ravaged by 20 years of war.

Internet penetration in the country is still low at 22%, while just over a third of the population had mobile-phone connections at the start of the year.

Ooredoo posts mixed results

Indosat Ooredoo reported strong year-on-year growth with a 14% increase in revenue to QAR3.8bn, up from QAR 3.4bn for the same period last year. This resulted in a strong EBITDA growth of 24% to QAR1.9bn and a five percentage point EBITDA margin increase, reflecting improvements in operational efficiencies and top line growth.

The operator's drive to enhance customer experience and offer simple products and pricing, led to a 5% year on year growth in its customer base to 60.3 million.

Furthermore, the Indosat Ooredoo is well ahead in its plans for network roll-out and capacity expansion and has successfully passed operational readiness tests for 5G.

Earlier this year, regulators approved Indosat Ooredoo's sale and leaseback agreement with Edge Point Indonesia for more than 4,200 telecommunications towers. The transaction was valued at US$750m, making it one of the largest deals of its kind in Asia.

in Myanmar, the political instability and unrest significantly impacted revenues as data access was restricted. Subsequently, Ooredoo Myanmar reported a 16% decline in revenue and 9% decrease in EBITDA. However, with the easing of restrictions in May and June, data revenue improved and Ooredoo Myanmar witnessed an increase in its customer base by 400,000 in the second quarter of the year.

The operator continued to focus on cost optimisation as well as improving its carbon footprint by reducing the size of its Sim cards thereby decreasing plastic usage and eliminating the usage of paper by moving away from paper packaging.

STL appoints former Ericsson exec to its Advisory Council

STL, the Mumbai-based integrator of digital networks, has appointed Paolo Colella to its Advisory Council. A former Ericsson executive, Colella will work closely with the STL leadership team and its board of directors to advise the company "on the strategic roadmap for its network services business".

Colella comes with more than 25 years of experience in telecommunications, technology and professional services, having held prominent senior executive positions, including India chief executive (CEO) and head of global systems integration business at Ericsson.

"STL has created a niche as a company that offers technology-led solutions that will be the foundation of gigabit societies across the globe," said Colella. "I am excited to be associated with a company like STL that is extremely innovation-centred and leads the way in enabling digital transformation at the edge."

Speaking on Colella's appointment, KS Rao, CEO, Network Services and Software Business, STL said: "STL has proved its mettle in building scalable, highly responsive and agile networks that have set benchmarks for operational transformation, automation, and efficiency. As we take our experience and expertise to global markets, Paolo will have a crucial role to play. I am confident that STL will benefit from his extensive international experience and vast knowledge and further strengthen its global presence. I welcome him to STL and look forward to his counsel."

Meanwhile, STL announced the launch of Accellus - an end-to-end fibre broadband and 5G wireless solution. It expects global adoption to accelerate at a rate of 250% year-on-year.

Ufone wins unused spectrum in Pakistan

Cellular service provider Ufone won a bid for Pakistan's unused spectrum with US$279m, according to the country's watchdog.

Pakistan Telecom Authority (PTA) began the process to sell it in late 2020.

The spectrum is in the 1800 and 2100 MHz bands typically used by operators for 4G LTE (long-term evolution) networks that offer faster video streaming and internet downloads.

"Total Spectrum won by Ufone is 9 MHz in 1800 MHz band which is 70.3 percent of the total offered spectrum in the said band during the current auction," the PTA said in a statement.

The addition will boost Ufone spectrum holdings from 6 MHz to 15 MHz in 1800 MHz band, enhancing quality and increasing coverage for voice and data services, the regulator added.

It is understood Pakistan has nearly 100 million 3G/4G subscribers and the new spectrum known as Next Generation Mobile Services (NGMS) is viewed as a precursor to any 5G launch.

The Pakistan telecom market is dominated by Jazz, backed by Netherlands-based Veon; Telenor Pakistan, backed by Norway's state-controlled Telenor; Zong, owned by China Mobile; and Ufone, which is controlled by state-owned Pakistan Telecommunication Company.

New telecom secretary of India

The Indian government has named Kalyanaraman Rajaraman as the new secretary in the Department of Telecommunications (DoT), as successor to Anshu Prakash.

Currently, working as an additional secretary in the Department of Economic Affairs (DEA)., Rajaraman is expected to assume his new role post the superannuation of Prakash on September 30, 2021.

The Appointments Committee of the Cabinet conveyed the decision about the appointment to the Department of Personnel and Training (DoPT). Notably, in August 2019, Prakash took over the role as the DoT secretary. He replaced Aruna Sundarajan, an IAS officer of the Kerala cadre 1982 batch. She retired July 31, 2021, after working in the role for two years.

In 2018, Kalyanaraman Rajaraman was appointed as the additional secretary of investments in the Department of Economic Affairs with major responsibilities areas. He will oversee Investment Protection Treaties (NPT) negotiations as well as the National Investment and Infrastructure Fund. Furthermore, he worked towards fostering economic relations across the world, especially G20 and BRICS countries.

His appointment in the DoT as the secretary is seen as a step in the ambition of embattled prime minister Narendra Modi's government. This move was designed to attract foreign direct investment (FDI) post the reform package to de-stress telcos, which was announced recently.

Notably, the telecom sector has been consolidated into a three-year player private market. In this market, the state-owned telcos Bharat Sanchar Nigam Limited (BSNL) and Mahanagar Telephone Nigam Limited (MTNL) also operate.

Meanwhile, Rajiv Bansal, the Air India chairman, has been appointed as the new aviation secretary as part of a major bureaucratic reshuffle. He replaces Pradeep Singh Kharola upon his recent retirement.

Talking critical

Chris Hogg
GCF head of 5G certification

Next generation mission critical services are being defined now – it's time to take part

An analysis by the Global Certification Forum (GCF) has revealed that the rate of adoption of 5G technology in mobile devices is significantly outpacing the rate at which 4G LTE was adopted in its early years. GCF is a non-profit, global, membership driven organisation. With more than 300 members from major operators, MVNOs, all major device and IoT manufacturers and the test industry, working together with key industry partners on certification programmes demanded by the market.

One of 5G's cornerstones will be ultra-reliable low-latency communications, significant for mission critical use cases including semi-autonomous driving, and many more benefits are promised. Much of this improvement, the increases in performance and efficiency, and greater flexibility and variety of offerings, will be built upon the virtualisation of services. Here, hardware and software will be separated and commercial off-the-shelf computer systems will replace dedicated equipment proprietary to specific vendors within the telecom infrastructure.

What effect will this have on the provision of and demand for, mission critical services (MCX)?

These new 5G services will take time to roll out but the established 4G networks already provide many functions that blue light services and other critical users value, such as broadband internet access and high-definition video. Currently, in order to access these functions, operatives must carry additional devices, which are connected to non-mission critical networks. This is clearly not ideal and consequently there is a demand for a mission critical broadband solution. Such a solution would require a hardened radio network (LTE or 5G – both standardised by 3GPP) that, as defined by The Critical Communications Association (TCCA), "is capable of a very high degree of availability, priority, pre-emption, trusted security and extensive coverage".

So, where are we on the path to MCX over LTE?

Working together, GCF and TCCA are on track to launch a certification programme for mission critical devices based on 3GPP wireless protocols during 2022. Ensuring mission critical devices and networks are interoperable is a key part of GCF's vision to enable the high quality, reliable and secure wireless communications demanded by users and industries across the globe, and of TCCA's mission to promote standardized critical communications solutions and the benefits of open and competitive markets in efficiently developing and delivering these solutions. GCF certification, developed in close cooperation with TCCA, is the way to ensure that broadband LTE devices are interoperable with mission critical networks and services. With lives sometimes depending on it, complete trust in this interoperability is crucial.

What are the next steps?

Having completed an extensive gap analysis, GCF's Mission Critical Services workgroup has defined the scope of a first phase of certification. GCF and TCCA are tracking the progress of deployments of mission critical LTE, currently ongoing in the USA, UK and South Korea, and gathering inputs from stakeholders to make sure that when mass scale deployments begin there is a fully proven certification process in place. A number of field trial test cases are being developed with the intention of submitting these to the GSM Association (GSMA)'s Field Trial Devices Group so that they may be included in a test specification. In the US, three National Institute of Standards and Technology (NIST) funded conformance test tool projects are underway, including one with TCCA as a participant, and GCF is monitoring the status of these and the expected availability of commercial MCX test tools.

The next generation of mission critical services, delivered over 3GPP based networks and devices, will be revolutionary and their shape and scope are being defined now. GCF and TCCA are keen to ensure that all parties interested in ensuring the seamless interoperability of devices and networks in this new MCX world have the opportunity to contribute to the discussion and, in doing so, help to fashion a certification programme that benefits all stakeholders.

To learn more or participate in the GCF Critical Communications certification programme, contact gcf@globalcertificationforum.org

Mauritius Metro has deployed a TETRA solution to provide their staff with a proven critical communications solution.

Critical Communications for Rail and Metro Users

Rail and metro operators have a responsibility to move their passengers safely and efficiently. As a vital part of national or international critical national infrastructure, any disruption to operations can have an economic impact felt far beyond the transport organisation itself.

A well deployed critical communications network can best support safe, efficient operations, with the capability to support field users and enable quick responses to emergency situations.

Critical Communications vs. Cellular Comms

Transport organisations' communications needs can be defined as mission critical, meaning they require "always on" communication, designed to cater for coverage when users need it. For this reason a cellular solution is inappropriate, as it does not feature some of the key elements required, such as priority calling, guaranteed coverage and robust devices.

A key difference in capability between critical comms and cellular comms solutions is the focus on group orientated services. A proven TETRA network consists of a trunked network that enables prioritisation and queuing of calls, rather than blocking. Emergency or priority calls can be made instantly to pre-selected groups based on the users' job role, skill set or place of work. This enables efficient, effective resource deployment and improved emergency response.

Communications Security

A critical communications solution will provide a network secured to national security standards, featuring full end-to-end

Sepura radios are trusted by users across Asia to provide security and operational communications solutions.

encryption. Security features are enhanced by the fact that the ecosystem is controlled by user organisations rather than being an unsecured network.

Additional security functionality can be deployed where required – for example the ability to remotely "kill" a radio that is known to be lost or being held by an unauthorised user.

Meeting User Requirements

Critical communications users' top three priorities for their solution, whatever their environment, normally include:

- reliable coverage: always available in all circumstances. In the transport environment, this would mean ensuring coverage in tunnels and underground areas, across maintenance yards and in remote rural areas
- robust design: the radios must be sufficiently robust to keep working in adverse weather or environmental conditions, for example in dusty, salty or dirty locations. The devices must be tough enough to stand repeated cycles of deployment with varied users, withstand heavy kicks, drops and intensive use
- practical usability: audio must be clear and loud, so that information and instructions are heard first time, every time. This includes whilst operating in noisy, dangerous or busy environments

For users, audio accessories are a vital extension of their primary device, supporting their daily operational needs, for example eyes free usage and easy to access functions whilst using gloves or other protective equipment.
Increasingly, organisations are also looking to use their comms network to share mission critical data. Typically this data joins up people, devices and systems, enabling enable better situational awareness between field users and those based in control rooms or other office based locations.

Locating, managing and protecting staff who work indoors can pose a significant challenge; Sepura can maximise safety with features such as man down, lone worker and GPS tracking even whilst underground.

Data can be shared direct from the radio – for example GPS-based location data – or shared from existing systems, typically data from a database shared over existing dispatch systems.

In the rail environment, telemetry data can be shared over the existing network without a need to update the existing infrastructure. Examples of vital operational information that can be shared is locational data, fault monitoring and doors open/doors closed alerts. More complex solutions can enable interaction with signalling systems and connecting to passenger information displays.

Sepura TETRA Solutions

TETRA offers a complete, resilient and secure, service-rich communications solution for rail, proven in metro, rail, airports, sea ports and many other sectors across Asia and the world.

Sepura are a proven supplier of critical communications solution to the transport sector; their devices and applications for critical voice and data over TETRA networks drive efficiency, promote safety and give fast access to critical information when it is most needed.

For more information and to see a demonstration, visit www.sepura.com ■

Reliable and appropriate audio accessories are a key element of a critical communications solution.

Broadband: is southern Asia where it should be?

Broadband penetration in some of the hazardous terrains and remote parts of southern Asia is, for many, understandably low. However, with the technology currently available, should it be higher? Robert Shepherd asks those in the know

You don't have to be a geologist or Sir David Attenborough to know that southern Asia has some of the most inhospitable landscapes on the planet. With a combination of sub-zero temperatures and hot and humid climates, its arguably the most diverse part of the world in that regard.

"For example, the Himalayas, plus over 17,000 islands in Indonesia, tropical forests and vast plains, hardly make it easy to for broadband penetration," says Terry Bleakley, regional vice president, Asia, Intelsat. "These differences in landscape can make it difficult to access certain regions."

While all of the above is undeniably true, this is 2021, remember? Technology allows humankind to achieve pretty much anything – whether it's a doctor in Australia using 5G and the internet of things to operate on a patient in outer Mongolia, or a drone delivering pharmaceuticals from one country to another.

So, why haven't we cracked the broadband and internet conundrum in this part of the world?

Well, it certainly doesn't appear to be for want of trying, according to Richard Jacklin, ViaLite Communications, director of sales, who argues that broadband and internet penetration has never been more important. "Covid-19 has brought in 'lockdown', requiring adults and children to be kept within the homestead," says. "For employees who can perform their work on a broadband connected device then connectivity to the home is essential to continue that work. Similarly for children and students, moving classes on-line also necessitates a broadband connected device. So broadband penetration is critical to enable this and reduce the number without access to the connected technology – the digital divide."

From ViaLite's perspective it is a supplier into

the satcom broadband market, helping satellite operators and CSPs create reliable gateway hubs by connecting satcom dishes to Network Operations Centres via low loss fibre optic. It installs and help operators across all parts of southern Asia. Jacklin says the company has continued to be busy through lockdown period installing systems in southern Asia using remote support methods where necessary.

"Many of the broadband projects were initiated pre-Covid so a key indicator will be the number of projects initiated through Covid and as we hopefully exit and move to post-Covid," adds Jacklin. "Certainly our experience in the reduction in international business travel and movement of large business events like CommunicAsia to on-line, has probably subdued the broadband rollout momentum somewhat."

While it's good to hear that much is being done to connect the unconnected, why does southeast Asia house so many dead zones?

Jacklin argues that, "as a supporter of satellite based broadband connectivity, we would advocate that coverage is already available". He says that systems such as Intelsat's Epicng and SES's GEO and O3b MEO satellite fleet already provide substantial coverage. "It's then a case of adequate access to power and commercial resources, perhaps by local service provider and technology integrators to basically make it happen," he continues. "The satellite connectivity also should be integrated into the ground based fibre infrastructure."

What about fibre? Does it have a key role to play in this space? Not in Jacklin's eyes – and he has plenty of reasons why,

"Fibre roll-out comes with its own challenges; it's expensive to install and requires a reasonable technical capability to produce a low-loss high performing network," he says. "Cable cuts and re-patching is a constant risk; we often experience fibre cable losses to be twice as high in southern Asia than the ideal. But we can work around that and the long term benefits of a local fibre network are significant and present a much better broadband connection speed versus traditional copper."

Farhad Khan, chief commercial officer at Yahsat and chief executive officer at YahClick, explains how in southern Asia, the lack of broadband is linked to the sparse distribution of communities that are in rural areas and the high cost of connection per subscriber. "Unlike in the dense urban and suburban areas, where the delivery of fibre and installation of cell towers have economic benefits for operators, the rural areas rely on USO (Universal Services Obligations) and donor funding or project funding to pay for access technology," he says. "In addition, lack of electricity makes it difficult for operators, as diesel theft is rampant, and natural power technology costs have not reached critical mass economics. The added complication in countries like Afghanistan is that of war and conflict, where, in some areas, civilians are restricted from using the internet by rebel or military forces." Prior to the Taliban regaining control of Afghanistan last month. internet and broadband penetration in Afghanistan is approximately 23-25% penetrated, depending on the source, with access to social media at about 12%. Of course, if you follow the news you'll be aware that is no longer the case. What is true is that neighbouring Pakistan, it is almost 28% of the population, with access to social media at about 20%.

> "The added complication in countries like Afghanistan is that of war and conflict, where, in some areas, civilians are restricted from using the internet by rebel or military forces"

> "South and southeast Asia have made remarkable progress over the past decade in raising income, reducing poverty and integrating into the world economy"

Intelsat is another key player in the region. Terry Bleakley, the company's regional vice president, Asia, argues that "while basic connectivity is recognised as a critical factor in driving sustainable development and economic growth", ensuring broadband access for the over two billion people living across the vast and geographically diverse south and southeast Asian countries can be a challenge.

"The Covid-19 crisis highlighted even more the digital divide across the region as people become even more dependent on connectivity for work but also to access news, health, finance services and education, as well as communicate with friends and family," he says. "However, the past few years have seen an acceleration of the deployment. The south Asia region has experienced significant infrastructure investments in recent years, reducing the coverage gap from 31% in 2015 to 6% in 2019, while southeast Asia embraced the internet during the 2020 pandemic with the region adding 40 million new internet users this year, taking the total to 400 million."

While we now have a clearer picture of the overall state of broadband connectivity – or lack thereof - in southern Asia, there is more than one barrier to improved penetration.


Farhad Khan, Yahsat and YahClick


Terry Bleakley, Intelsat

Khan says that besides the challenges in the roll-out of infrastructure, pricing is a stumbling block. "Whether it's a mobile device, or customer premises equipment (CPE) for fibre/VSAT, the question is often one of affordability," he adds. "If the CPE or device is subsidised, then cost of access is contended with essentials like rent and food, as the disposable income in some of these regions is often on average US$2-3 per day, if not less."

For Bleakley, infrastructure remains the biggest challenge for telecom operators. "Reaching the remote communities, in dire needs of connectivity, is often uneconomical or not feasible," he says. "This creates a very meaningful opportunity for satellite technology, which is the most effective and cost-efficient way of connecting these communities. Satellite is typically the only practical way to provide connectivity to areas underserved or un-served by terrestrial networks, where economics do not make sense. Satellites' ubiquitous coverage means that there are no 'last mile' issues, while the scalable and cost-effective space-based solutions can help countries meet connectivity challenges quickly."

Two parts of the world often compared with each other when it comes to "developing nations" are Asia and Africa. Take away the major economies in the former such as Japan, South Korea, China, India and Singapore and we have (mainly) southern Asia and countries with comparable terrain, climate and poverty levels with Africa.

So, how do these two giant land masses compare in this situation?

"Broadband penetration in western and southern Asia is generally higher than Africa," says Khan. "But as with overall internet rates, there has been an increase in the share of internet users who report use several times a day in many of the African countries."

He points to the fact there is a strong correlation between country wealth (as measured by per-capita gross domestic product on a purchasing power-adjusted basis) and internet access. "Poorer nations, such as those in southern Asia and sub-Saharan Africa, have much lower internet rates compared with richer developing countries in Latin America and the Middle East, as well as rich nations in Europe, North America and east Asia and the Pacific – which is obvious as extreme poverty lacks affordability which hinders investment," Khan continues. "Many of the least economically developed nations in the world are in sub-Saharan Africa, and consequently, only a quarter of the adult population across the nine African nations surveyed has internet access."

Bleakley points to the stats to support his argument. In this case, he explains how according to the GSMA, mobile internet adoption stands at 24% in sub-Saharan Africa, against 33% in South Asia in 2019. "While this is still low compared to other regions of the world, we saw an acceleration in southern Asia with the proportion of the population connected to mobile internet almost doubling between 2014 and 2019," he says. "This can be explained by significant investments made by operators in Asia, accelerating 4G coverage in recent years, helping 4G coverage reach in south Asia 82% in 2018, as opposed to 34% in sub-Saharan Africa."

Bleakley adds that mobile data cost was also limiting the adoption of broadband connectivity with southern Asia having the most affordable mobile broadband, while it remained expensive for some in Sub-Saharan Africa. "However, this is changing and this is now becoming more affordable across all regions, with innovative technological solutions and new business models helping to bring the costs down," says.

Without wanting to enter a political debate, it's difficult to address different attitudes and approaches across a massive region without addressing the elephant in the room. In other words, could some governments do more?

"South and southeast Asia have made remarkable progress over the past decade in raising income, reducing poverty and integrating into the world economy," says Bleakley. "Yet economic disparities remain within and between countries in the region. Governments have recognised the growing importance of enhancing connectivity in the region and the benefits it brings to people. For example, Intelsat has been working, in partnership with Lintasarta, to expand internet and mobile access across Indonesia to support the USO project for the Indonesian government - Badan Aksesibilitas Telekomunikasi dan Informasi (BAKTI)." Bleakley says "this was designed to advance the government's goal of building a more digitally inclusive society", providing easy access to government, education, and health services and support business operations, by connecting 150,000 sites across the country by the end of 2023. "Public-private partnerships and innovative business models can help accelerate the deployment across the whole region," he says.

Anuj Sharma, director sales – India and SEA at Parallel Wireless points to the fact the south Asia, the eight nations comprising Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka and the Maldives, is made up of 1.3 billion people, "yet accounts for only 2% of the Gross Domestic Product (GDP)" and 2.4% of the telephone subscribers across the globe. To put that into context, the population of south Asia alone is that of the whole of Africa.

"Accessibility to broadband communications is low yet has seen steady growth in the last decade and sustained growth is expected in the next few years," says Sharma. "Today all urban areas in south Asia have access to telephone service.

"Certainly our experience in the reduction in international business travel and movement of large business events like CommunicAsia to on-line, has probably subdued the broadband rollout momentum somewhat"

Mobile network operators (MNOs) in this region of the world need to invest in their wireless network infrastructure to meet the growing needs for affordable voice and data traffic and access to applications of the future such as digital health, e-banking, e-learning, Internet of Things (IoT), Industry 4.0, autonomous driving, and more which will propel their economies into the future."

Sharma adds that with Open RAN networks, hardware and software is disaggregated with open, non-proprietary interfaces. "By utilising Open RAN networks operators are enabled to run software-based network functions on standard commercial-off-the-shelf (COTS) servers which are cost effective and easy to deploy," he says.

"By utilising Open RAN networks operators are enabled to run software-based network functions on standard commercial-off-the-shelf (COTS) servers which are cost effective and easy to deploy"

Having heard from those working hard to penetrate the rocky mountains and lush rainforests, it certainly sounds like things are moving in the right direction. But are things moving fast enough and can more be done?

Jacklin says "there's still some way to go" to get to the types of broadband penetration rates needed for a technically advanced and connected economy. "I guess this forms a large part of the business case for new LEO based satellite services," he continues. "LEO constellations are being built on completely different economics compared to the GEO systems; the satellites are mass produced and lightweight, the launch costs have reduced significantly as they launch large batches, and huge effort is being applied to produce lower cost user terminals. These terminals will be ideally suited for roll out across Africa and southeast Asia."

Looking to the future, Jacklin says there's 'one other connectivity technology that is worth watching out for', which he calls "cellular from above'. He concludes: "This market really is an exciting area of telecoms combining capabilities of the 4G / 5G standards interoperating with standard off-the-shelf smartphones, along with new flying platforms including stratospheric planes and LEO satellite. This really could be a game changer for the rural coverage black spots, emergency scenarios and connecting the next billion using a standard smartphone." ■


TCCA
CRITICAL
COMMUNICATIONS
WORLD 2021
WE'RE BACK
DISCOVER NEW COMMS TECHNOLOGY TO
ENHANCE SAFETY, SECURITY AND EFFICIENCY
REGISTER
HERE
3 - 5 NOVEMBER 2021
IFEMA, MADRID, SPAIN
WWW.CRITICAL-COMMUNICATIONS-WORLD.COM/MADRID
@CRITCOMMSSERIES
TCCA CRITICAL COMMUNICATIONS SERIES
PLATINUM SPONSORS:
MOTOROLA SOLUTIONS
LEONARDO
Hytera
GOLD SPONSOR:
ERICSSON

Sensor to satellite sows new IoT seeds for agriculture

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

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

In regions across Africa and SE Asia the challenges are particularly acute, compounded by the impact of the global pandemic and climate change. According to an 'African agriculture and COVID-19 report published by McKinsey, some 650–670 million people in Africa, roughly half of the population, already face food insecurity. Meanwhile, a report entitled 'Food Security in Asia and the Pacific' produced by the Asian Development Bank' says that over half a billion—or about 14% — of Asia's population are undernourished, more than all the undernourished in Africa.

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

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

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

Demand for data

Fundamental to the agricultural innovation revolution is the need for more data points to give agronomists, engineers, designers and farmers a highly granular data picture of the food production cycle. BI

Intelligence predicts that by 2035 there will be over four million data points per day on the average farm - an eight-fold increase on 2020.

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

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

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

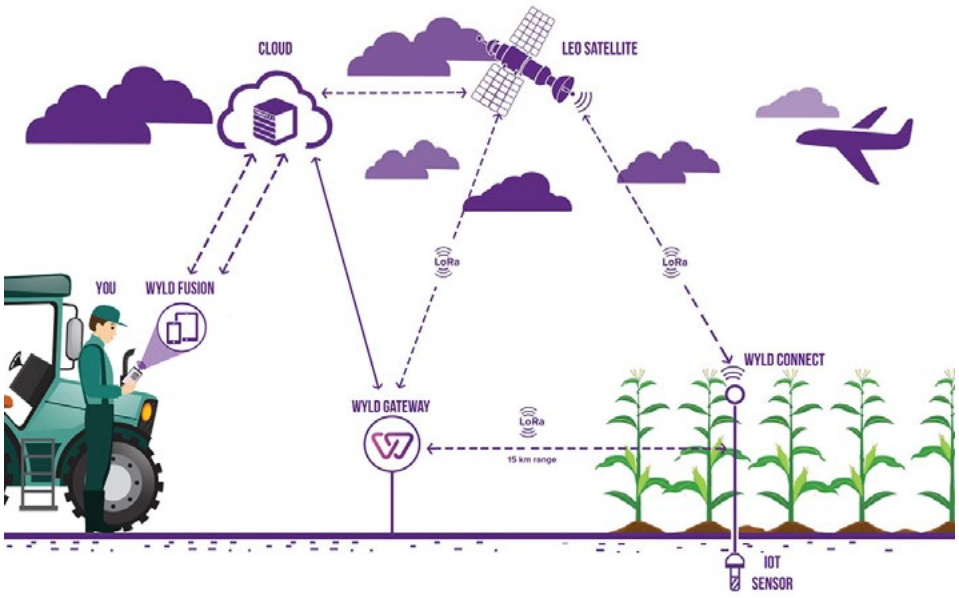
A study conducted by OnFarm in the US found that the use of IoT on the average farm, increased yields by 17.5%, reduced energy costs from $13 to $7 per acre, and cut water use for irrigation by 8%. The US, where IoT is currently most widespread, produces 7,340 kgs of cereal per hectare of farmland, compared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

Connectivity problems

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

IoT devices in agriculture usually have specific communications requirements such as low cost, low power, long range and low data rates, which have driven the development of new connectivity technologies such as Low Power Wide Area Network (LPWAN), non-cellular standards like LoRa and Sigfox along with cellular standards like NB-IoT and LTE-M. Some of these are listed below.

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



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

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

Sensor to satellite

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

This means unserviced connectivity areas will come into range, while access to remote data opens up new applications. For example, a crop requiring a certain soil type, water input and fertiliser may become possible in a given environment if the true information of the ecosystem is understood, both on a macro level and in a highly-localised way. Specific, granular conditions can alter inputs to improve yield and reduce environmental impacts. The opportunity to blend this data with highly local satellite imagery is a potential game changer.

Future harvests

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

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

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

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

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

A tale of three countries

Case studies from Indonesian, Pakistan and Singapore demonstrate how satellite is making a difference

Changing lives in Pakistan

The Karakoram Area Development Organisation (KADO) is a community based not-for-profit, non-governmental organisation, registered in 1996. The NGO looks to improve an array of socio- economic problems with special emphasis on those related to women and disadvantaged members of society. It is based in Aliabad, Hunza region, which is a remote and isolated part of northern Pakistan.

Against this backdrop, KADO introduced a series of projects aimed at training marginalised individuals in Gilgit Baltistan in various information and communication technology (ICT) skills. The itech project was first implemented in 1996 through financial assistance from the EU's TVET Reform Support Programme, and by 2015 the programme had developed to train 300 participants.

Today, KADO's itech project is expanding its reach due to the support of Clicksat and YahClick through the provision of internet connectivity via satellite. As a result, students in the area can attend courses free of cost, which include web design, programming, e-marketing, call-centre training, online stocks, solar energy solutions and forex trading.

- **3,000 beneficiaries** have been trained in various ICT courses, with a special focus on women
- **1,500 placements** have been offered to women
- **Community development** due to the success of KADO's programs. 100 youth will be sent to online earning companies working in cities as "interns" for one month each with stipend to facilitate their travelling

The internet has rewritten the rules of business. Gone are the days when people were required to physically go to work to gratify their financial needs. With this paradigm shift, the opportunities for people with expertise in information technology have never been greater. With thousands of jobs available on the internet, you can now work from home and earn a decent income. For that you just need the skills, a computer and internet connectivity. ■

Bringing connectivity to dispersed island communities

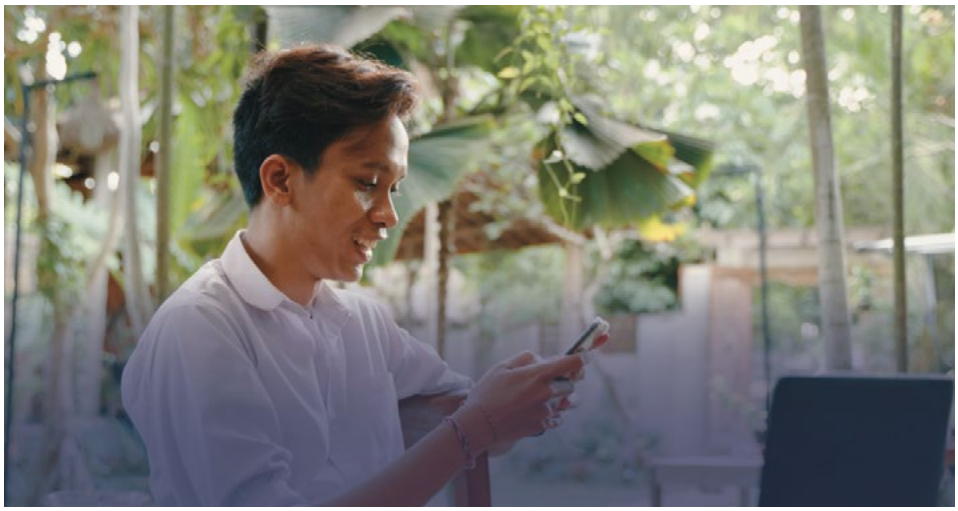
Lintasarta is a data-communication, internet and IT services provider bringing reliable, affordable connectivity to millions of Indonesians. In partnership with the Indonesian government, it's working to deploy and expand broadband and wireless communications throughout the country.

Despite its ambitious goal, Lintasarta knew that deploying a terrestrial network across dispersed islands, and thousands of villages, was logistically and fiscally impossible. And meeting the government's aggressive rollout deadline was equally daunting.

Lintasarta needed a robust solution that could quickly reach Indonesia's island communities while also meeting broadband and wireless backhaul standards and requirements.

Working with Lintasarta and BAKTI – an agency under the Indonesian Ministry of Communications and Information – Intelsat developed a connectivity solution that enabled Internet Fixed Broadband and Mobile Cellular Backhaul over the entirety of Indonesia via Intelsat Epic high-throughput satellites (HTS).

To provide uninterrupted service, Lintasarta took advantage of the reliable performance and resiliency of Intelsat high-throughput satellites in order to meet government requirement. Intelsat led technical training to prepare Lintasarta for faster implementation of remotes and more streamlined network management. Following training, Lintasarta provided a better overall experience for customers nationwide. ■



Results

Connectivity for many isolated communities in Indonesia, while meeting wireless and backhaul standards

Fast, high-quality, consistent broadband for easy access to government, education and health services and enhanced business operations

Self-Access Certification and remote access to RMS helped Lintasarta bring remote implementations into their network faster and easier.

Intelsat Epic platform enabled efficiencies previously unavailable without large, costly user terminals—paving the way for network expansion with resilient, high-performance connectivity

Speedcast delivers expanded connectivity for Singaporean ship firm

Speedcast International, the provider of remote communications, was selected to deliver Ku-band VSAT services for an additional six vessels in the Goodwood Ship Management in Singapore, as well as providing voice services and enterprise applications with the SIGMA Gateway platform.

With the addition of these six vessels Speedcast is now providing Ku-band and Fleet Xpress VSAT services and SIGMA Gateway to a total of 25 Goodwood vessels.

"We are excited to announce this expanded agreement to provide connectivity services for the Goodwood fleet," said Athina Vezyri, executive vice president of maritime for Speedcast. "Goodwood is an existing Speedcast customer that wanted Speedcast's service for an additional six vessels that were previously served by another provider. Speedcast will provide Ku-band VSAT connectivity, as well as Speedcast's SIGMA Gateway connectivity platform and value-added services. SIGMA Gateway will support the customer's requirements today, and the SIGMA Gateway roadmap ensures that the customer's future needs will be met as they demand more applications and services. Goodwood's migration to SIGMA Gateway demonstrates the platform's leadership position in the market."

Capt. A.R. Sabnis, managing director at Goodwood, adds: "Goodwood is looking forward to expanding Speedcast's connectivity solutions onboard on our fleet,". "Connectivity services enhanced with Speedcast's SIGMA Gateway and value-added applications will increase the operational efficiency and ease service management on board. ■

ACCELERATE NATION BUILDING AT INDIA'S LARGEST TECH & INFRA EXPO

29th Convergence India Expo

IOT | EMBEDDED TECH | MOBILE | FINTECH
GAMING | CONSUMER ELECTRONICS

7th Smart Cities INDIA EXPO

SMART ICT | BUILDINGS | CLEANTECH
SMART HEALTH | SOLAR | TRANSPORT | WATER

23-25 MARCH 2022 | PRAGATI MAIDAN, NEW DELHI

2021 STATISTICS

11,000	575	45	230	27	12,786	1,426
SQM area	Participating Brands	Conference Sessions	Speakers	Countries	Visitors	Delegates

TECH PAVILLIONS

- STARTUP PAVILLION
- SMART CITY EXPERIENTIAL ZONE
- SMART HEALTH PAVILLION
- DIGITAL LEARNING PAVILLION
- ELECTRICAL VEHICLE ZONE

Media Partner

SOUTHERN ASIAN WIRELESS COMMUNICATIONS

Organisers

India Trade Promotion Organisation (ITPO)
(A Government of India Enterprise)
Department of Commerce

Exhibitions India Group

Please contact for more information:

Mr. Pramit Kumar | pramitk@eigroup.in
+91 98110 78179 | +91 11 4279 5035

www.convergenceindia.org | www.smartcitiesindia.com

The 5G era: ushering in new models, new capabilities and new challenges, by Anil Krishnan, SVP, market unit at Comviva

With advanced 5G deployments in the pipeline, people have many questions about 5G as a technology, its applications, and different use cases, and how is it going to impact the connected lives once it is rolled out. Well, one thing is for sure that 5G is going to be transformational. It is going to leverage the already present 4G to enable applications that are not practicable right now, especially in the cities and urban areas. Now, this sounds relevant as according to the latest report by the UN, by 2050, two thirds of the world's population will be living in the cities. Thus, it becomes crucial to understand the concept of 5G inside-out.

What is the present status of 5G in terms of global deployments, trials, and subscribers?

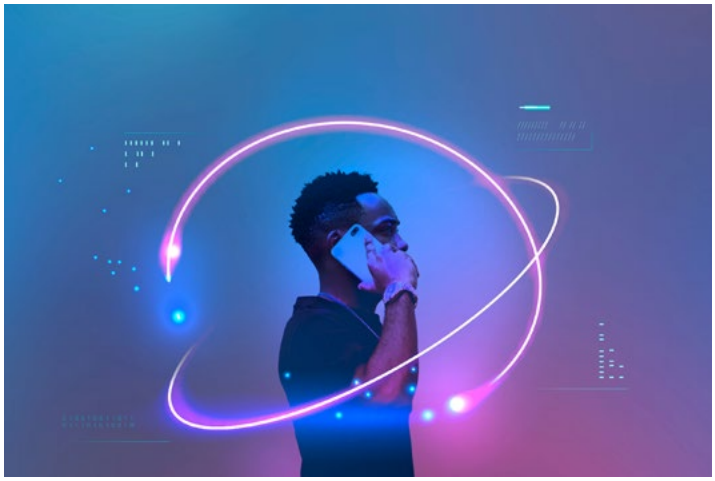
Keeping in mind the latest stats shared by GSMA and Omdia Research, by 2024, 5G is going to have a major chunk of 19.3 per cent of the global market. With countries like the United States of America, China, and South Korea as the major players, 5G is going to be the fastest deployed technology ever. According to global analysts, 5G has the potential to generate around $12.3 trillion sales activity across different industry verticals while supporting around 22 million jobs by the year 2035.

Mobile network operators are expected to rapidly scale up 5G-related investment across Africa, laying the ground for faster deployment rates in the future. While 5G currently accounts for less than 10% of capital expenditure for telcos, increased investment will see it grow to account for more than half of operators' capex by as early as 2024.

What are the key factors fueling the adoption of 5G?

With reports stating that the probability of the global 5G market to grow by 11 per cent between 2019 and 2025, it is intriguing to find out what is fueling the adoption of this technology. Some of the factors that we zeroed down go as follows:

- **Meeting customers' ever-increasing need:** Global consumers want a seamless experience and regular improvements in the network speed to be satisfied with the network performance. Driving networks toward 5G is vital to keep up with this expectation for quality user experience and higher speeds.
- **Better than usual Wi-Fi:** Currently, around 82 per cent of consumers prefer Wi-Fi over mobile broadband. The addition of 5G to the current mobile network will make offload mobile networks obsolete. It would be an 'always-on' mobile approach that would easily handle all the traffic and would make it convenient for users to stay on mobile networks.
- **Devices, services, and apps of the next era:** It is the 5G technology that is going to create the foundation of a smart world and technological innovations, including smart mobility, IoT devices, and apps, smart utility grids, etc.



What does 5G hold for businesses in terms of applications and use cases?

There is no doubting the fact that 5G and the associated applications are going to transform lives. Here are some of the most interesting use cases of 5G:

- **Autonomous Mobility:** Powered by the low latency of 5G, vehicles will be able to reach 10-100 times more quickly as compared to the efficiency on current networks. This will enable vehicles to respond to objects and react accordingly automatically and immediately, thus making the vision of autonomous mobility a reality.
- **Industrial Automation**: A well-established industrial automation set-up requires a complete synchronization between supply chain applications and robotics at work. Currently, these include cables as Wi-Fi is unable to provide mobility, range, and the quality of service required. With 5G, all these cords will be a thing of the past, giving way to smarter factories.
- **Wearable and Mobiles:** Connected IoT devices, including wearables, sensors, and trackers, are going to be a massive target for 5G. With 5G powering these devices, the experience is going to be seamless without any dropped signals or delays in any area.

What are the challenges that 5G players may face while optimal utilisation of 5G?

Deployment of 5G isn't going to be a cakewalk. There are certain challenges that CSPs need to address while ensuring the utilization of 5G.

- **Building denser and complex network:** As compared to 4G, 5G networks are going to be denser and more complex. In other words, it would need more 5G hardware and software, which would eventually increase as the traffic on 5G grows.
- **Keeping costs lower:** The addition of all the hardware and software will directly impact the OpEx or operating expenses. Other than that, these networks require configuration, testing, management, and regular updating that would further escalate the OpEx.
- **Meeting the low-latency needs:** 5G networks needs ultra-low latency to function in the best manner. Not for the telecom operators, this may pose a need for the device market that allows the delay of one millisecond in one-way communication.

What is the growth path of 5G?

Apart from the above-mentioned use cases, 5G is going to transform the way enterprises and organizations used to think about connectivity. The new industry verticals like robotics, aerospace, defense, and automotive are going to use 5G as the backbone to support the various intelligent edge applications and devices. ■

Hytera's solution for the mining industry

The Hytera 4G LTE Intelligent Communications Solution for Mining, the company claims, offers an integrated platform capable of supporting a wide range of audio, video, data and M2M/IoT applications suitable for surface, strip, open-pit and underground mining.

Hytera reckons its solution can help the industry realise the benefits of digitisation. "It provides a highly transportable end-to-end broadband solution including terminals, network, data centre and command and dispatch centre". It is also capable of supporting sophisticated automation, data analytics, and all the voice, video, data and M2M/IoT applications used in the mining industry.

The fully 3GPP-compliant 4G/5G solution provides a complete wireless broadband network including radio access network (RAN), backhaul, LTE core, device and network management. Multiple services can be run simultaneously over the high throughput and resilient 4/5G network, including: Mission Critical Push-to-X (Voice/Data/Video); real-time video streaming; telemetry/SCADA; and M2M/IoT sensor monitoring. Low latency transmission rates (< 100ms) enable precise control of remote automated operations.

The various technologies can all be managed using one unified command and visualized dispatch centre and a remote control centre, which receive and distribute real-time information from and to the field operations. The network infrastructure also supports intelligent data analytics and artificial intelligence applications, Hytera claims. *hytera.com*

A tracking and monitoring service for maritime customers

Thuraya, the mobile satellite services (MSS) subsidiary of the UAE-based Al Yah Satellite Communications Company (Yahsat), has launched its web-based SatTrack maritime tracking and monitoring service in partnership with FrontM, an international developer of software applications. Developed for vessels and fleets serviced by the Thuraya MarineStar Solution (supporting voice, tracking and monitoring), SatTrack, it is claimed, facilitates sustainable fishing practices, improved crew welfare and safety, better fleet visibility and management, plus onboard real time condition monitoring.

The transition to digitisation is changing the maritime sector globally, yet the pace of change is slow, because the overall costs of integrating and maintaining third-party services are still high.

Described as "a low-cost turnkey subscription-based service", Thuraya's SatTrack helps MarineStar users "stay in command and gain vital market advantage", while ensuring compliance with national and international fishing laws and regulations. Subscribers do not have to delve into multiple layers of data for comprehensive insights. The online system displays

the information reported from onboard MarineStar terminals on a user-friendly dashboard. Moreover, it can create and monitor geo-fences, produce detailed maps, customized alerts, weather and position reports at preset intervals based on user requirements. *thuraya.com*

Nokia's all-in-one solution 'for premium 5G mobile indoor coverage'

The Nokia Smart Node is an indoor mobile module solution delivering 4G and 5G indoor mobile coverage for residential and small-medium enterprise use. The compact, 'plug and play' modular design can be deployed readily in any environment to support evolving consumer applications. It is future-proofed to support 4G now and 5G networks when required and both non-stand-alone and stand-alone 5G applications through a software upgrade.

Described by the company as "stylish, durable and smart", Nokia Smart Node is a dedicated indoor mobile solution with apparently "superior coverage and capacity" – and it can be easily scaled from single to multiple units to meet total indoor coverage requirements. Its coverage, latency and reliability delivers ubiquitous 5G connectivity for specific use cases such as immersive entertainment. The 'plug and play' capabilities also make it easy to set up, which keeps installation costs to a minimum. It can be wall, ceiling or desktop mounted.

Nokia Smart Node supports traffic management by reducing core network load and optimising macro resource allocation. It will be available from Q4 2021. *nokia.com*

Sierra Wireless introduces 5G modules

Sierra Wireless has introduced its next generation of 5G mobile broadband embedded modules, the EM92 Series. These new 5G modules feature 3GPP Release 16 standard capabilities and provide secure connectivity worldwide at the highest possible speeds and with low latency for mobile computing, routers, gateways, industrial automation, and new IoT applications.

Adding to the company's existing portfolio of EM Series modules, Sierra says "the new and advanced" 5G EM92 series is based on the latest Qualcomm Snapdragon X65 and X62 5G Modem-RF Systems. With an apparently faster speed, positioning technology for a wide range of indoor and outdoor use case requirements, and enhanced 5G NR Sub-6 carrier aggregation, the EM92 Series of modules enable next generation IoT applications such as live media streaming, video security, extended reality (XR), robotics and private networks.

"Qualcomm Technologies and Sierra Wireless have a long history of collaboration in delivering new, cutting edge wireless technologies, says Gautam Sheoran, senior director, product management, Qualcomm Technologies. "Combined, Qualcomm Technologies' modem-to-antenna solution and the new EM92 Series modules from Sierra Wireless enable customers to make the

most of 5G's capacity, data speeds, wider coverage, and lower latency, enabling the expansion of the mobile ecosystem to new industries such as precision agriculture, smart manufacturing, connected healthcare and smart cities, and transforming the IoT industry by enabling next-generation computing and edge-to-cloud applications." *sierrawireless.com*

CommScope unveils Heliax to speed up FTTA deployments

CommScope's Heliax SkyBlox has been specifically designed to facilitate network operators to speed up their fibre-to-the-antenna (FTTA) deployments on the back of optimal network performance. With the growing prevalence of 5G deployments, service providers are facing the pressure of installing complex antenna-radio connections across crowded 5G-enabled networks.

Weighing one kilogram, this new piece of kit helps to minimise the impact on tower loads, as well as reducing typical total installation time by more than 50%. This includes mounting the box to the tower, configuring the fibre and securing all power cables.

"Mobile connectivity is critical for economic renewal," said Farid Firouzbakht, senior vice president of outdoor wireless networks, CommScope. "Network operators can expedite 5G network rollouts by selecting technology which will help them address challenges and simplify the installation. The new Heliax SkyBlox innovation marks another milestone in faster deployments and reduced carbon footprint."

The Heliax Skyblox is purpose-built to streamline, simplify and support optimal network performance for new

or expanding fibre-to-the-antenna (FTTA) deployments. Made of 100% recyclable materials, CommScope claims the new system will support operators tackling the burden of time-to-market delays - with complex fibre and power architectures, as well as weight limitations on tower deployments, limiting how much load can be added to existing cell sites. *commscope.com*

Directional coupler offering 30 dB coupling over 10 to 50 GHz

Krytar, the designer and producer of of ultra-broadband microwave components and test equipment announces the continued expansion of its line of dual-directional couplers. It brings to market a new model offering 30 dB of coupling over the broadband frequency range of 10 to 50 GHz (X through Q-Bands), in a single, compact and lightweight package.

The new directional coupler, Model 110050030, is designed for systems applications where external levelling, "precise monitoring", signal mixing or swept transmission and reflection measurements are required. It also lends itself, Krytar says, to wireless designs and many test and measurement applications from X through Q-Band including electronic warfare (EW), commercial wireless, 5G communications, SATCOM, radar, signal monitoring and measurement, antenna beam forming, and EMC testing environments.

Krytar further claims the Model 110050030 "offers superior performance ratings" including nominal coupling (with respect to output) of 30 dB, ±2.0 dB, and Frequency Sensitivity of ±2.0 dB. It comes with industry-standard 2.4mm SMA female connectors. *krytar.com*

'The Android device series for professionals'

MiTAC Digital Technology Corporation (MDT) brings to market its new MioWORK A500s series 5" handheld Android™ 10.0 devices for enterprises. The rugged A500s series models replace the A500 series released in 2018 and complement the already available 7" F740s tablets and the larger 10.1" L1000 series tablets.

All devices of the A500s product line are GMS certified for enterprise use, allowing for straightforward implementation of enterprise mobility management solutions. The series contains three models, the standard A500s, the A505s with a Honeywell 1D/2D LED aimer, and an 8 megapixels camera on the back. The A545s model features a Honeywell Laser Aimer instead of the LED aimer, with GPS/AGPS + GLONASS for navigation, and LTE Cat.6 connectivity. There's more:

MioWORK™ A500s handhelds provide businesses the option to integrate a small and light device for frontline staff in warehousing, logistics, hospitality. With IP67 water and dust protection, the devices apparently withstand exposure to the elements by logistic delivery staff and endure up to 1.8m drops with the optional protective caps following

military standards. The integrated NFC / HF RFID readers allow for payment processing by delivery services and restaurant order management. *enterprise.mio.com*

Look out for...

6G network in SK 'might commercialise in 2028'

The South Korean government has unveiled the five-year plan to invest nearly US$193 million deploying the first-ever 6G network by the end of 2028.

Even though 5G is still in its infancy in many parts of the world, the east Asian nation is already targeting 6G technology. Korea will also structure a program to curate the core standards and technologies in the period of five years.

Lim Hye-sook, the country's science and ICT minister, said that since the next generation of mobile networks will be the pillar for digital transformation, South Korea intends to lead the international market in the 6G era based on the field experiences.

To accelerate the development of 6G technologies, multiple collaboration and agreements are being signed in the region.

The Institute for Information communication Technology Planning and Evaluation (IITP), the state body of the Korean Ministry of Science and ICT, has inked an agreement with the US-based agency National Science Foundation (NSF) to carry out joint researches in 6G technologies.

Meanwhile, Korean tech giant LG signed two deals with the US-based firm Keysight Technologies and Korea Advanced Institute of Science and Technology (KAIST) to carry out research on future 6G technologies.

The introduction of 6G is something the tech space had been reluctant to pursue, owing to the slower than hoped roll-out of 5G in certain parts of the world. However, nations like China, the US and those in the European Union have already launched various programs and partnerships to shape the 6G framework.

In February this year, a 6G research program was announced with the presence of several major European vendors. Elsewhere, US operators have already committed to the next G alliance - established with the primary goal of defining 6G technology.

Tower Xchange

Meetup Asia

6 - 10 December 2021 | Virtual Event

Connecting the
Asia passive telecom
infrastructure industry
since 2014

Oman issues tender for first satellite

Omani Space Communication Technologies (SCT) has launched a tender for the design, manufacture and launch of the country's first satellite dedicated to telecommunications.

The Sultanate plans to launch "OmanSat-1" 2024.

"The company's operational plan depends on the launch of an artificial satellite for High Throughput Satellite (HTS) named 'OmanSat-1' and related services, which provide coverage for the entire territory of the Sultanate, its economic waters, and the associated external markets, which is expected to be launched by 2024," read a statement. "SCT, therefore, invites satellite vendors to submit technical and commercial proposals for the provision of the above services in accordance with the terms and conditions set out in the tender documents."

The contract covers both the space-based and ground-control aspects of the programme. Structured into three segments, the first focuses on the space component. It also includes the procurement of the satellite itself, launch services, orbit raising support, in-orbit testing, provision of satellite simulators, insurance support, and technical training services.

Furthermore, the project is expected to provide national and regional coverage, with the primary TT&C (telemetry, tracking, and command centre) located in Oman.

SCT, part of the Oman Investment Authority (OIA), is one of the Omani Telecom and Information Technology Group companies.

Meanwhile, in neighbouring Saudi Arabia, The Red Sea Development Company has partnered with the King Abdulaziz City for Science and Technology to provide high resolution satellite data of key locations at the Red Sea Project. Satellite imagery helps to monitor the project, covering 28,000km^2.

Oman is ready for its first telecoms satellite

Vodafone Greece deal with Grid Telecom

Vodafone Greece and Grid Telecom have signed a 20-year framework agreement for the exchange and mutual concession of their fibre-optic networks.

Under the terms of the deal, both parties can utilise further sections of their core networks to provide their customers with more choices and to support new investment in digital infrastructure.

For Grid Telecom - a 100% subsidiary of the Independent Power Transmission Operator (ADMIE) - this new cooperation is another step toward the optimum use of the broadband infrastructure it is developing via its transmission network.

This year it will be able to offer super high-speed capacity services in major cities through the dense wavelength division multiplexing (DWDM) network it is developing. Its fibre optic network currently runs to 4,000 kilometres and will double in the coming years.

Furthermore, access to Grid Telecom's network will offer Vodafone the chance to speed up its new €600m investment program for the creation of modern digital services and infrastructure across Greece with new-generation networks such as 5G and FTTH and underwater cables in the Aegean and Ionian seas.

Telekom Austria 'may consider Huawei, ZTE for 5G networks'

A1 Telekom Austria, a unit of Mexican business magnate Carlos Slim's América Móvil, is open to considering Chinese vendors such as Huawei and ZTE for upcoming 5G networks in several countries, a senior official said.

The news comes as European governments continue to tighten controls on Chinese companies building 5G networks following diplomatic pressure from the US.

Washington has accused Huawei of facilitating Chinese spying - a claim the company and Beijing deny.

"For us it is very important to have markets where we have Chinese vendors to test the performance of the different networks in real time," A1 Telekom Austria's chief operating officer Alejandro Plater told Reuters.

Not only is Chinese technology cheaper, but it offers features that are better than their European counterpart, making it competitive, he added.

Last year, A1 América Móvil called Huawei an excellent telecoms equipment provider.

Telekom Austria has 25 million customers across Austria, Bulgaria, Croatia, Belarus, Slovenia, Republic of Serbia and the Republic of North Macedonia.

It already uses radio access networks from Chinese vendors in Bulgaria and North Macedonia for 4G networks, as well as equipment from European vendors like Ericsson and Nokia in countries such as Austria.

A Swedish court recently upheld a ban against Huawei selling 5G equipment in the country.

Rock Mobile becomes Jamaica's third player

Jamaica has given approval for a third telecommunications service provider, Rock Mobile, to be granted a licence to operate locally.

Minister of technology, Daryl Vaz, said the government sees competition "as the best way to achieve quality service at affordable prices for the consumer".

In his sectoral presentation to the House of Representatives, Vaz noted that the appointment of the new provider is in keeping with the government's policy objectives to increase broadband access to unserved and underserved areas; promote competition, innovation and diversity in the telecoms industry; and ensure optimum return in the shortest possible time for the spectrum assigned.

He added that Rock Mobile will be required to deploy its network in keeping with the coverage, quality of service and implementation timing in the bid.

This includes the provision of 95% population coverage at a specified minimum download data rate and 95% population coverage of communities classified as unserved or underserved at a specified minimum download data rate.

Rock Mobile, which is entirely Jamaican-owned, is expected to achieve full rollout of the service within two years, with the service launch date to be no more than 12 months after the granting of the licence.

The onset of the Covid-19 pandemic has highlighted the inadequacies in the access to broadband connection island-wide. Jamaicans living in rural areas continue to experience challenges with accessing quality telecoms and internet services.

Ufinet moves into Brazil following acquisition of NB Telecom

Ufinet has agreed to acquire a majority stake in NB Telecom, a Rio de Janeiro-based carrier, for an undisclosed sum.

The move is Ufinet's second acquisition in Brazil following its purchase of São Paulo-based Netell, in 2019.

This NB Telecom deal solidifies the company's footprint into Brazil's second-largest market and one of Latin America's major business hubs.

"We believe this is a very important step both for us and our customers," said Stefano Lorenzi, executive chairman at Ufinet.

Once the deal is completed, contingent on meeting the standard conditions of this type of transaction in Brazil, this agreement will mean the acquisition of a majority stake in NB Telecom and controlling interest by Ufinet. The closing of the transaction is expected to become effective in the coming weeks.

"This acquisition creates a major platform for our customers. We can now offer an international footprint connecting Rio de Janeiro to the Americas at an unprecedented level," said Edgard Sanchez Leal and Pedro Augusto Oliveira Alves, co-founders of NB Telecom. "It has always been a dream to see our firm join efforts with such a globally respected organization as Ufinet."

NB Telecom currently operates a fibre network of more than 500km connecting all major data centres, PoPs and business centres in the city of Rio de Janeiro.

The company states it is set to conclude the transaction in the "coming weeks".

NB Telecom is based in Rio de Janeiro

PPF Group raises O2 Czechia stake and plans de-listing

PPF Telecom Group, a PPF Group vehicle used to consolidate investments in telecommunications, has increased its stake in O2 Czech Republic and wants to take the firm private.

The group said in a press release that it had lifted its stake in the group to 90.01%, from 83.58%, in a reverse accelerated book building. PPF has controlled the O2 Czech Republic since 2014.

"As the more than 90% holder in the share capital of O2 CR, PPF announces its intention to initiate a squeeze-out procedure of the remaining holders in O2 CR through a mandatory tender offer for the shares in the telecommunications operator held by these remaining minority shareholders," PPF said:

Now, with a stake rising above the regulatory 90% level, PPF said it would initiate a squeeze-out procedure of the remaining shareholders in the O2 Czech Republic. It is the country's fourth-largest company with a market cap of US$3.81bn.

PPF has assets of almost €40bn across Eurasia and has grown its telecom business in central and eastern Europe.

The O2 Czech Republic provides voice, internet, and data services to customers ranging from households to SMEs and large corporations. O2's internet is available in 99% of the Czech Republic's inhabited territory, making it the country's largest internet provider by some distance.

Deutsche Telekom switches on O-RAN Town deployment in Germany

Deutsche Telekom (DT) switched on its multi-vendor O-RAN Town network deployment in Neubrandenburg, Germany, the operator said.

It will deliver open RAN based 4G and 5G services across up to 25 sites, with the first ones now deployed and integrated into the live network of Telekom Germany. This includes Europe's first integration of massive MIMO (mMIMO) radio units using O-RAN open fronthaul interfaces to connect to the virtualized RAN software.

"Switching on our O-RAN Town including massive MIMO is a pivotal moment on our journey to drive the development of open RAN as a competitive solution for macro deployment at scale," Claudia Nemat, board member, technology and Innovation, Deutsche Telekom.

DT has pioneered open RAN since it co-founded the xRAN Forum in 2016, which led to the formation of the telco-led O-RAN ALLIANCE in 2018. Open RAN introduces supplier diversity to drive innovation and it is expected to lead to an even more flexible, secure, energy efficient and customer-centric network of the future.

The first live sites at O-RAN Town are built on a multi-vendor open RAN architecture with equipment from vendor partners Dell, Fujitsu, Intel, Mavenir, NEC and Supermicro. Remote radio units (O-RU) are provided by Fujitsu and NEC, including Fujitsu's LTE and 5G NR O-RUs and NEC's 32T32R 5G massive MIMO (mMIMO) radio units (RU) conforming to O-RAN Alliance fronthaul specifications, embedded with advanced beamforming technologies.

Mavenir provides the Cloud-Native baseband software for the 4G and 5G distributed units (O-DU) and central units (O-CU), including for the mMIMO radio units. The virtualised baseband software is running on standard server hardware provided by Dell and Supermicro. Moreover, the entire O-RAN Cloud architecture is built on top of the Intel FlexRAN software architecture.

Deutsche Telekom's offices

DT said it plans to expand O-RAN Town in phases across 2021 and 2022, working with different sets of vendors. These solutions are currently being tested in the lab to ensure interoperability across all components. The vendor-independent SMO is designed and developed to support a flexible integration and operation of these components with higher efficiency and with faster time-to-market.

Telefónica hands Nokia and Ericsson equal use of its Spanish 5G bands

Telefónica awarded a contract for its Spanish 5G radio network to Nordic duo Nokia and Ericsson for the frequency bands 3.5GHz and 700MHz.

The Madrid-headquartered mobile and broadband operator said that Finnish giant Nokia and Sweden's Ericsson would share usage of the frequency bands equally until 2026. However, there will be no changes to each network's geographical distribution.

Spain's Telefónica said the move would allow it to focus on improving its standalone 5G offering.

"It's a long-term contract, which is the most appropriate scenario for Telefonica as it maintains 4G providers in place and gives us stability to roll out and develop 5G," Telefónica's head of operations and network Joaquin Mata said in a statement.

"In 5G, all the providers have demonstrated they're supremely prepared... and we feel very comfortable having the best technological partners."

The 700MHz band will be up for grabs before the 21st July, in a twice-delayed auction in which operators Orange, Telefonica, and Vodafone have all expressed interest.

The contracts include the possibility of the Scandinavian operators expanding current 4G services or migrating to 5G depending on their needs.

Meanwhile, Telefónica is spinning off its fibre business in Colombia and has agreed to sell a majority stake to KKR, shedding US$200 million off its debt pile in the process.

Earlier this year, the operator sold off fibre assets in Brazil and Chile via similar co-investment models.

KT fined for slow internet

South Korea's telecommunications regulator fined telecom giant KT ₩500m for providing internet services that were slower than what users had been promised.

A joint investigation by the Korea Communications Commission and the Ministry of Science and ICT, found that KT erroneously set speeds for 24 of its high-speed internet service users, leading to slower-than-expected speeds.

The operator also frequently did not conduct speed tests when opening new internet services. Where it did, there were numerous cases in which speeds did not meet the minimum limit.

KT was the biggest offender with 24,221 cases, compared with LG Uplus. at 1,401 and SK Telecom and its subsidiary at a combined 155.

Local internet service providers are required to notify users of such matters prior to opening services.

Moreover, the regulator said it would fine KT a combined ₩500m for the violations, while others were ordered to take corrective measures.

The move comes after a South Korean tech YouTuber accused KT earlier this year of providing slow internet service speeds, prompting the government investigation.

Australia's Telstra to sell 49% of tower business for A$2.1bn

Australian telco Telstra said it will sell a 49% stake in its mobile tower business for A$2.1bn and return half the sale proceeds to investors, sending its shares to their highest level in over a year.

A consortium of Australia's sovereign wealth Future Fund and pension funds Commonwealth Superannuation Corp and Sunsuper would buy the stake in InfraCo Towers, Telstra said, in a deal valuing the entire business at A$5.9bn.

The deal would allow Telstra to focus afresh on its retail business after years of costly competition in infrastructure with its ageing poles and wires pitted against the state-owned broadband network, analysts said.

Telstra shares jumped 5% to A$3.78 after the announcement, their highest since February 2020, while the broader market was up 0.6%.

The operator has been looking for a buyer for InfraCo, the largest mobile tower infrastructure provider in Oz, since November last year when it split the business from other operations.

Telstra will retain majority ownership and continue to own the active parts of the network, including the radio access equipment and spectrum assets. It has entered into a 15-year agreement with InfraCo to secure ongoing access to existing and new towers.

Telstra chief executive officer (CEO) Andrew Penn said the details on how 50% of the proceeds would be returned to shareholders would be disclosed at a later date and flagged a potential buyback with the company's annual results in August.

The remaining proceeds would be used for debt reduction and enhancing connectivity in regional Australia, Penn said.

Future Fund CEO Raphael Arndt said the investment would strengthen the fund's exposure to digital infrastructure as Australia increasingly moves towards 5G.

Saudi Arabia gives licences to expand mobile telecom services

Saudi Arabia awarded licences to two new mobile virtual network operators (MVNOs), bringing the total number of mobile telecom companies operating in the kingdom to seven.

The new companies to be given the licences, after winning a competition announced by the Communications and Information Technology Commission (CITC) in February are Integrated Telecom Mobile Company (ITC Mobile) and Future Networks Communications Company.

In 2014, CITC awarded the MVNO licences to Virgin Mobile KSA and Etihad Jawraa.

CITC governor Mohammed Al-Tamimi said that licensing MVNOs comes in line with the plan to stimulate the investment environment for Saudi Arabia's telecom sector.

"At CITC, we aim to enhance the level of competitiveness in the sector, and improve user experience, by facilitating additional service providers," he said in a statement published by Saudi Press Agency.

Al-Tamimi also said telecom service providers are important partners in transforming Saudi Arabia into a digital society, which is a key component of Vision 2030.

Companies awarded MVNO licences can provide users with services, including voice calls, internet, SMS, voicemail, media services and more, without owning any towers or frequencies.

The provision of these services depends on the MVNOs renting or purchasing capacities from service providers with infrastructure and then providing services to subscribers.

Starlink secures 10-year operating permit in Mexico

Starlink, entrepreneur Elon Musk's wireless satellite internet service, finally received authorisation to operate in Mexico for 10 years.

It will run from October 28, 2021, when users in the north American country will be able to start using the service.

Starlink Satellite Systems Mexico lodged its request with the Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) April 2 this year and received its licence May 28. As per the terms of its licence, Starlink must be operational within 180 days.

The 10-year concession is extendable for a further ten years, said the Low Earth Orbit (LEO) satellite broadband provider. Mexico will offer a 1 Gbps browsing speed, which Starlink said is an ideal service to be used in rural areas, where there is little or no telecommunications infrastructure.

The company already offers service plans in the US, for a US$99 monthly fee and with browsing speeds of 1 Gbps.

However, the company guarantees that in the future the quality of its service will improve drastically so that its connection speed will increase up to 1Gb.

According to reports, Musk's satellite internet company could offer global coverage starting in September.

Centro Histórico, Mexico City

Q&A

Koh Cheng Soi
Business Development Manager
Asia Region, Sepura Ltd.

What was your big career break?

The experience gained as a Signals Officer in the Malaysian Army has given me an excellent technical understanding of radio communications and a deep understanding of the user community's requirements and security concerns.

Since moving to the other side of the business by leading on Sepura's sales efforts in the Asia region, I have been able to translate these skills into the commercial world. We have spent a considerable time building our knowledge and experience of the Asian Metro community and have taken this knowledge of mission critical requirements to support users here.

The Indian market in particular is renowned for its extreme competitiveness and the high demands that customers place on their suppliers. We took the time as individuals and as a team to understand the market and local culture to blend into the ecosystem. With the backup of Sepura's extensive support network and my experience of radio solutions, we have been able to deliver a significant amount of business into the region.

This has proven that the business strategy, trust and long-term relationship with our partners and clients was correct and it is a significant part of our business for the team. We shall continue to improve our services to ensure we have happy customers not only for India but across all of Asia.

Who was your hero when you were growing up?

My late Ah Pa (Father). He had a firm and fierce character, yet he was also kind and caring to his family. His life lesson on how to treat others the way we want to be treated ourselves is still deeply engraved in my mind. There was an incident when I was a child when I was given an extra change of 10 cents from buying a piece of roti canai (pratha); he made me walk back to the shop to return the extra 10 cents. He told me to never take what is not mine and to earn everything I make. He has inspired me in many ways that have shaped myself into who I am today, including being disciplined and kind to others, especially the elderly.

What's the strangest thing you've been asked in an interview?

Well... this question for a start!

Someone recently asked me if I will use my military and commercial experience to develop a career in politics in the future. This is increasingly seen by ex-military personnel as a career choice these days, but it was still a real surprise to me.

For now, however I am too busy working on the projects we have in the next two to three years, providing mission critical solutions to public safety, transport and utility users. Achieving success with these projects is most definitely my vision for my future. After that ... who knows!

What would you do with US$1m?

First take care of any family business; pay off my debt and support any education needs my family have. I would keep some back as an emergency fund and contribute a large portion back to charity; something close to my heart such as supporting ex-military personnel, or perhaps disaster relief teams.

I think it is important to remember though that life is short, and you have to live in the moment so... perhaps a nice car too, or tickets to the World Cup or the Olympics – something to give me an amazing experience to always remember.

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

I have always had an interest in catering and hospitality. I grew up in a state that is famous for its wide culinary palette, featuring a mixture of Malay, Thai and Chinese cuisines. I would be fascinated by the challenge of creating a vehicle to introduce these flavours to the rest of the world. This is something that I would love to do with the rest of my family, to take on a team challenge is something meaningful to me and my family and would be a project for us to embrace together.

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

I was once told; if you have the choice between building a business relationship or making a deal, always choose building the relationship. Having a meaningful relationship with your customer, based on knowledge and trust will bring opportunities for long term success and growth, but a deal done to win a short-term business is solely that – a short term success.

Trust is the major ingredient in every business; each industry is a small community; your personality could spread like a wildfire to be the trusted voice delivering solutions to users. In an industry such as ours, where organisations are making long term investments in solutions that will provide mission critical solutions, this relationship is the basis for every piece of success I have achieved.

If money was no object, where would you live?

Malaysia is my home now and would always be my first choice. I am fortunate to have grown up in a multi-racial, multi-cultural country and have enjoyed the benefits of this throughout my life. This comes in many forms – from experiencing different foods and cultural backgrounds, to having the opportunity to build a successful career in a field I am passionate about.

The experience of growing up in a positive environment of tolerance and racial harmony have given me support when building my career.

A dream of our family is to upgrade to a house with enough land for my wife and me to farm our own supply of fruit and vegetables, would be the one change we would look to make.

What's the greatest technological advancement in your lifetime?

The smartphone! It's painful to admit this but we can't live without it, either at work or at home. It has become our one-stop tool for so much; communication, banking, shopping, fitness, navigation, entertainment, home automation, office work and so much more.

It is fascinating to see the new ways that people have to tie in their products with the smartphones – who would have thought five years ago that we could programme our washing machines from the beach, check who was arriving at our front door whilst in the office, or create business ready documents from a seat on the plane. It is a real revolution in the way we connect to people and devices, and in the way we live and work.

They do have to be used with care though – too much use can lead so easily to over-dependence and health issues such as lack of sleep. For me the greatest risk is smartphones replacing human physical interaction and increasing the fear inside us all of missing out – the world is out there to be experienced, and we should all go and see as much of it as we can in real life, not on a small screen! (when allowed to travel again of course....)

Which law would you most like to change?

I would make it a priority to challenge the ease with which people can use online forums to bully and attack other people. It is so easy for anyone to commit cyberbullying when everyone has a smart device at their fingertips. There are cases that lead to mental health issues or even suicide due to this, even high-profile figures who feel they cannot say what they want to say for fear of being attacked in this way. We need to have a law to protect our society from this, and co-operation from the tech giants who own the platforms to moderate and act on aggressive online activity. ■

ASIAN WIRELESS COMMS.COM

Latest wireless communications news, views and technology from Asia

www.asianwirelesscomms.com