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KADIUM

Dialog Axiata claims world's first commercial virtual base station controller deployment

Dialog Axiata has claimed the deployment of the world's first commercial virtual base station controller (vBSC) with Ericsson.

The vBSC is a virtualised version of the traditional base station controller. It runs as software on virtualised hardware rather than as a physical piece of equipment, thus allowing for more flexibility and scalability in managing and controlling the networks.

The world's first commercial implementation of this technology is described as a significant leap forward in telecommunications infrastructure, offering new opportunities for network modernisation of any generation of

technology and seamless migration to virtualised network functions.

The vBSC – which is compatible with all generations of mobile technology – is designed to harness the capabilities of Ericsson's network function virtualisation infrastructure (NFVI) platform to deliver the same essential functions as its hardware-based counterpart.

As the first customer to deploy the vBSC, Dialog is leveraging virtualisation to enhance operational efficiency and reducing dependency on proprietary hardware. Ericsson says the modernisation initiative will replace BSCs while significantly reducing the total cost of ownership (TCO) that virtualisation can provide.

The deployment of vBSC also offers significant operational savings in terms of power and space compared to its native hardware counterpart, presenting an opportunity for operators to embrace virtualisation as a means to extend the life cycle of critical communications, enhance operational efficiency, and realise substantial operational savings.

"Ericsson's virtual Base Station Controller deployment is set to transform the telecommunications industry by providing a cost-effective, efficient solution to modernise networks and significantly reduce operating expenses," said David Hägerbro, Head of Ericsson Malaysia, Sri Lanka and Bangladesh.

Vietnam outlines plan for 99% 5G coverage

Vietnam's new digital infrastructure strategy is expected to expand the coverage of its 5G mobile network, further reaching 99% of the country's population by 2030.

Deputy Prime Minister Nguyen Hoa Binh recently signed a decision to approve the country's Digital Infrastructure Strategy which aims to significantly enhance digital connectivity for all citizens and industries.

Based on the project, the coverage of 5G mobile network is expected to reach all cities, provinces, high-tech zones, research and development centres, industrial parks, stations, ports and international airports by 2025 and 99% of the population by 2030.

The country aims to operate at least two new international undersea fibre optic cables, form AI Data Centres, and develop new data centres that meet international green standards by 2025 whilst putting into operation six new such cables and building Hyperscale Data Centres and Digital Hubs by 2030.

Each citizen is also expected to have one Internet of Things (IoT) connection by 2025, and the figure is expected to increase to four connections in the next five years. The adoption of digital signatures amongst the Vietnamese adult population is targeted to rise from over 50% to over 70% between 2025-2030.

To realise the set goals, the country will enhance investment in telecommunications and internet infrastructure, including fibre optics cables and new-generation WiFi, and domestic and international transmission systems, ensuring backup demand and diverse, secure and sustainable connections.

Orex Sai to deploy 4G Open RAN test network for large commercial facility in Cambodia

Orex Sai – the Open RAN joint venture between NTT DoCoMo and NEC – says it has been selected by Cambodia's Ministry of Internal Affairs and Communications for a project to deploy a 4G Open RAN test network.

The JV will deploy its 4G Open RAN solutions at a large commercial facility in Cambodia as a demo to verify the technology's ability to provide stable voice and data communications. The network will also be used to test AI-powered solutions developed for commercial facilities by NTT Data Malaysia to trial potential use cases for 4G in such environments and demonstrate the ability of Open

RAN to support them.

Orex Sai was established by DoCoMo and NEC in April 2024 to integrate Open RAN hardware and software from partners into tailored Orex Packages for telcos. Under the Orex Packages framework, Orex provides a full-stack service that includes planning, construction, system verification, maintenance and operation. If the demo goes well, the company will introduce its Orex Packages to the Cambodian market.

While the chief pitch for Open RAN has typically been to provide telcos with an alternative to vendor lock-in and potentially lower costs, Orex is also pitching its Open RAN solutions as a security measure for

digital infrastructure and a way to mitigate supply chain risks.

"Supply chain risks due to changes in the international situation and concerns about ensuring security in cyberspace have become apparent. Concerns have also been raised about the security of digital infrastructure in terms of security, openness, and transparency," said Orex in a statement.

Orex said that because Open RAN enables various vendors to supply base station hardware and software, this "will make it possible to reduce supply chain risks, build a flexible and highly scalable wireless access network, and optimize prices by activating the base station market."

Viettel adopts optical transport for 5G and DCI

Viettel will use Nokia's optical transport solution to cost-effectively address growing demand for 5G and data centre interconnect (DCI), consumer data consumption, and cross-border connectivity.

Nokia's solution is based on its sixth-generation super-coherent Photonic Service Engines (PSE-6s) and 1830 Photonic Service Switch (PSS). According to Nokia, the deployment follows the successful trial of Nokia's PSE-6s with Viettel, which set an optics transmission speed record of 1.2Tbps per wavelength in a real-world environment.

The deployment, to be completed in 2025, will be used to connect Viettel's data centres in key metropolitan areas such as Ha Noi, Ho Chi Minh City, and Da Nang, enabling the service provider to increase capacity while enhancing energy efficiency. The new optical solution will allow Viettel to scale easily while ensuring superior network performance.

In this project, Nokia's solution supports 3 x 800GE or 6 x 400GE services on a single line card and will enable Viettel to scale total network capacity to 38.4Tbps over C-band. Nokia says its solution will also help Viettel reduce network power consumption by up to 60%.

"Service providers are grappling with ever-increasing data traffic, making it crucial to have scalable optical networks. Our PSE-6s will allow Viettel to not only cost-effectively address the growing data demand but also enhance network reliability and energy efficiency," said Vito Di Maria, Head of Optical Networks at Nokia Asia Pacific.

U Mobile launches Open API portal

U Mobile has launched an Open API portal based on the GSMA Open Gateway Initiative, the first operator in Malaysia to do so.

U Mobile – which signed an MoU to join the GSMA Open Gateway Initiative at this year's Mobile World Congress – said that the portal will provide developers, partners, and businesses access to its suite of APIs, enabling them to integrate and co-create services and solutions with the telco seamlessly.

The portal provides an intuitive interface to streamline the development process, a safe and secured isolated environment for testing and experimenting with APIs, and dedicated support and community for co-creation, collaboration, and knowledge sharing.

The suite of open APIs will enable ease of integration of messaging, voice, data, and network services. Most Open Gateway-related launches elsewhere in the world have focused on APIs that help combat fraud.

"As Malaysia's future second 5G network provider, we are also looking forward to collaborating with more partners to bring innovative 5G and 5G-Advanced solutions to enterprises in this AI-driven digital economy," said U Mobile's chief information officer Neil Tomkinson.

In other news, U Mobile has recently defended its qualifications to run Malaysia's second 5G network after enduring a week of criticism from rivals, industry analysts and politicians who expressed bafflement at the government's decision to give U Mobile the nod.

CelcomDigi signs healthcare MoU

CelcomDigi has signed a Memorandum of Understanding (MoU) with AmBank and AmBank Islamic to deliver affordable digital healthcare solutions to medical providers over the next three years.

Under the MoU, CelcomDigi and AmBank aim to provide healthcare institutions with AI-powered digital tools and services designed to improve patient care and healthcare delivery. CelcomDigi will provide the connectivity for the solutions, while AmBank's role includes financial services, including specialised medical financing, loans, insurance, and payment solutions, to make the solutions more affordable for healthcare providers.

Solutions to be offered include smart medical assistance solutions such as a smart health kiosk that monitors and records vital health metrics and a platform to connect users with healthcare professionals.

Additionally, Medi-Scan, a software-based biometric health scan technology that uses AI and computer vision to assess various health indicators from a person's face, voice, and body movements, will be included. This solution also enables remote health assessments, as well as continuous monitoring of patients.

"The integration of telecommunications and digital infrastructure is essential for expanding access to quality medical services, particularly in underserved areas," said Jamie Ling, group CEO of AmBank Group.

CelcomDigi and AmBank also plan to offer 'Holomedicine,' a medical education training tool that leverages mixed reality and AI.

CelcomDigi CEO Idham Nawawi said the partnership aligns with the Malaysian Communications and Multimedia Commission's

(MCMC) initiative to elevate Malaysia's healthcare system to a global standard, and establish the foundation for a more connected, inclusive, and secure healthcare ecosystem that supports predictive, preventive, and precision treatments, enhancing diagnostics, tailoring care to individual needs, and improving clinical outcomes.

"By integrating our connectivity technology with digital healthcare solutions, we are making medical services more accessible to Malaysians, ensuring that more people have the opportunity to receive the quality care they deserve," said Nawawi.

India's operators continue to oppose incoming Starlink and Kuiper constellations

Reuters has reported that Reliance Jio has sent a letter to India's telecoms regulator, asking it to review the potential reach of telecoms satellite constellations like SpaceX's Starlink and Amazon's Kuiper before awarding spectrum.

Reliance Jio believes that the immense reach of the satellite companies will put them in direct

competition with wireless operators, hence they should be subject to similar regulations – including attaining spectrum at auction rather than via direct allocation.

Allocating satellite spectrum directly is the norm around the world, but Reliance Jio and Bharti Airtel had argued that the spectrum should be auctioned like traditional wireless spectrum because Starlink would be in direct competition with the mobile operators.

Reliance Jio notes that it currently carries 15 billion gigabytes of data a month in India using spectrum for which it paid roughly $23 billion over various auctions. Starlink, by contrast, would have capacity to carry 18 billion gigabytes of data per month, for which it would have paid considerably less. This would create an unlevel playing field, making the telecoms sector less competitive.

Reliance Jio and Bharti Airtel

have been making this argument in various forms for many months, warning that the introduction of Starlink could lead to aggressive price wars in an already challenging operating environment. Last month, however, Indian communications minister Jyotiraditya Scindia confirmed that the government currently has no plans to auction satellite spectrum.

The official decision was likely to be made before the end of the year.

India's telecommunications companies are not alone in their opposition to Starlink. The Kutniti Foundation – an Indian think tank whose stated goal is to help India 'develop an arsenal in the fields of Intelligence, Economic Warfare, Psychological Warfare & Soft Power' – recently released a report calling Starlink a 'a wolf in sheep's clothing,' given the company's strong ties to the US intelligence services and the country's military.

Tuas Port to see 5G-Advanced connectivity

Singtel and Ericsson have partnered to bring 5G-Advanced connectivity to Tuas Port, Singapore.

This partnership will support PSA Singapore's plans to create the world's largest fully automated port by the 2040s to meet the increasing demand for global transshipment. The existing automated vehicles at the port will be upgraded to 5G to improve real-time shipment tracking and streamline crane operations for smoother cargo transportation between ships and the berth.

Singtel will provide a network slice from its 5G network to offer dedicated resources such as high speeds, high bandwidth, and low latency for mission-critical applications. They will also create secure private networks tailored to the port's security needs to prevent data breaches and unauthorized access. The implementation of 5G will enable PSA to handle 65 million twenty-foot equivalent units (TEUs) annually once Tuas Port is fully operational, nearly double the current capacity.

5G is transforming the seaport sector by improving efficiency and eliminating human error. PSA will explore 5G applications like predictive maintenance using drones and extended reality (XR) to enhance efficiency and reduce downtime over the next three years.
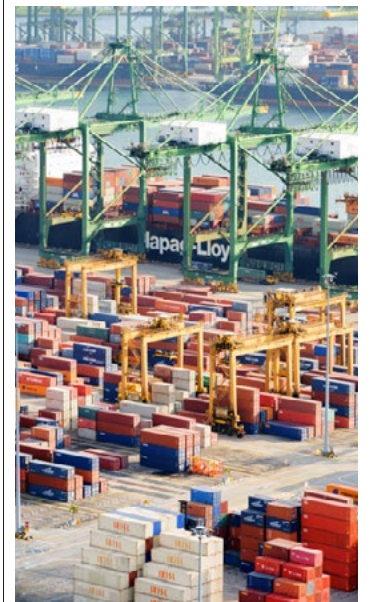
Airtel Business and Kia join forces on connected cars

Bharti Airtel's B2B arm Airtel Business is partnering with automaker Kia India to provide IoT connectivity solutions for its next-gen connected-car platform, Kia Connect 2.0.

Under the partnership, Kia will use Airtel Business' IoT Hub solution that offers customised IoT solutions across 5G, 4G, NB-IoT, 2G and satellite networks. The IoT Hub also features advanced analytics and real-time insights from data collected from connected devices.

The Kia Connect 2.0 platform is designed to provide Kia vehicles with connected features like vehicle management, AI voice command, remote control, safety, security and navigation.

Hardeep Singh Brar, senior VP and head of sales and marketing at Kia India, said that Kia will be launching over-the-air (OTA) diagnostics as part of its transition to the 2.0 platform, unlocking the possibilities of software-defined vehicles where IoT technology becomes fundamental to our offerings.

Airtel Business' IoT platform supports a range of features for connected vehicles, from connectivity, telematics and infotainment to eSIMs, real-time remote monitoring, OTA firmware updates and safety features such as SOS emergency calling and real-time connectivity in cases of accident or emergency.

Philippines government urged by MNOs to subsidise 50GB of data for rural communities

A group of mobile network operators in the Philippines has urged the government to subsidise up to 50GB of monthly data to families in rural communities.

The proposal was presented by the Connectivity Plan Task Force (CPTF) to Philippine President Ferdinand Marcos Jr. in an attempt to boost the usage of base stations in remote areas.

Local firm Globe Telecom president and CEO Ernest Cu, representing the CPTF, raised this to President Marcos during their discussions on plans to construct new mobile towers in 'geographically isolated and disadvantaged areas' (GIDAs) where internet connectivity has not yet reached.

According to Cu, a key challenge of deploying towers in rural areas is that they're generally not profitable unless they're used enough by customers — which means that it is necessary to maximise the use of existing towers before setting up new ones.

Under the proposal, rural households would be provided with SIM cards that have an automatic allocation of 50GB of data per month for a year. The CPTF said that this would be sufficient to meet the internet needs of a typical household with five members.

In addition to data subsidies, the CPTF also urged the government to reduce operational costs for telecom operators by lowering or eliminating spectrum user fees which have averaged $96 million annually from 2018-2022. This would help operators expand their services to underserved areas.

Zong 4G logs 7 billion recharge transactions per month for digital channels

China Mobile Pakistan (CMPak), which operates under the Zong 4G brand, is now logging 7 billion recharge transactions per month via its digital channels, which now account for 40% of prepaid recharges.

Zong 4G first launched its digital customer channels in 2017 as a way for its subscribers to top up their prepaid accounts without having to physically go to retail shops or merchants. Digital options currently include banking apps, fintech apps and websites.

Wasi Ansari, Zong 4G's director of sales and distribution, said the 7 billion recharges milestone was a testament to the growth of Zong's digital strategy: "over the past seven years, the Alternate Channel has grown exponentially, now holding a 40% volume share in total recharge volume and delivering a YTD growth of 29.81% this year."

Zong is Pakistan's second largest mobile network with 49 million subscribers, behind Veon-owned Jazz, which had 71.4 million subscribers as of May 2024.

In July, Zong 4G said it had deployed over 400 new 4G sites across Pakistan in the first half of this year whilst also completing an extensive network modernisation project to address capacity challenges. Zong also recently expanded its service coverage to Pakistan's northern region of Gilgit Baltistan, with 59 4G sites being rolled out in over 15 cities. As of August 2024, services were already accessible to residents in Gilgit, Astore, Skardu, and Hunza.

AIS and ZTE test D3-ELAA for 6G networks

In collaboration with AIS, ZTE Corporation has successfully completed the trial of the Dynamic Distributed and Deterministic Extremely Large Antenna Array (D3-ELAA).

D3-ELAA introduces the 6G concept of cell-free into 5G commercial networks, enhancing cells collaboration with a user-centric approach to dramatically reduce user experience degradation at cell edges and enabling users to acquire a uniform experience. The trial results demonstrated that D3-ELAA can improve the user experience at the cell edge by more than seven times and ensure consistent and stable user experience during mobility.

This breakthrough marks a key milestone for AIS in transitioning from a cell-centric to a user-centric service paradigm, paving the way for further exploration of 6G technologies.

To better meet the diverse needs of its users, AIS requires more stable and consistent service performance, presenting new challenges for the 5G network. The network must not only unlock its full potential and reinforce resilience and stability, but also transition from a traditional service assurance model based on service types to a more refined, user-centric approach.

AIS, in partnership with ZTE, conducted an innovative trial of D3-ELAA technology at Suranaree University of Technology in Thailand. D3-ELAA dynamically forms an extremely large antenna array with distributed base stations, delivering user-centric, deterministic service assurance. The trial results were impressive: overall, user experience during mobility improved by approximately 2.3 times, while performance at the cell edge increased by more than seven times. This ensures a smooth, high-bandwidth user experience for applications such as cloud gaming and high-definition video streaming, without lag or interruptions during movement. Additionally, D3-ELAA can be rapidly deployed on existing 5G infrastructure without the need for terminal upgrades or replacements, enabling current network users to quickly benefit from the enhanced services provided by this technology upgrade.

South Asia's smartphone shipments expand 39.5% year-on-year, but slowdown expected

Smartphone shipments in South Asia have experienced a 39.5% year-on-year (YoY) growth in Q2 2024 with 2.9 million units — continuing a strong double-digit increase from Q1, according to the latest IDC report.

Bangladesh shipped 2 million units during the quarter with 20.1% YoY growth. This was attributed to the festive season of Eid which provided an opportunity for brands to introduce offers and discounts to consumers.

In Nepal, smartphone shipment continued to grow for three consecutive quarters with 548,000 units shipped and 77.8% YoY growth, as brands launched affordable and 'high spec' smartphones during Nepali New Year and Buddha Jayanti.

Sri Lanka's market shipped 365,000 units with 218% YoY growth, showing a triple-digit growth trend for five consecutive quarters. The report noted that the quarter had been a celebration time for Sinhalese New Year, Vesak Poya, and Poson, in which new brands and new models were launched.

"Nepal and Sri Lanka are expected to continue the growth momentum in 3Q24, with the onset of the Diwali festive period in Nepal and expansion of Chinese brands in Sri Lanka through channel partnerships," said IDC Senior Market Analayst Anjney Bhardwaj.

However, Bhardwaj added that the political unrest and floods are likely to result in a sharp drop in the Bangladesh market in the third quarter of 2024.

The average selling price of smartphones in the region also continued to increase, growing by 19.2% YoY and reaching $152 in quarter two of 2024. The low-end segment ($100<$200) accounted for 50% of the market, followed by the ultra-low-end (<$100) segment with a 34% share and the mid-range ($200<$400) segment with a 13% share.

Malaysia lacks trust in Artificial Intelligence

Malaysians are generally optimistic about the potential of AI to improve mobile services, but they don't quite trust it yet, as concerns about security, privacy and control over personal data remain high, according to a new study released by Telenor Asia.

The study found that in terms of excitement over emerging technologies, AI tops the list for 49% of Malaysians, followed by IoT (48%) and robotics (35%), although that enthusiasm is more common among high-income male Gen-Xers. Women appear more sceptical, being 22% more likely than men to say their mobile is already very efficient without AI integration, and 13% more likely to say they don't think AI will make much difference in their daily mobile use.

However, 3 in 4 respondents already use AI tools in their daily lives for things like problem-solving, research and creativity/idea generation. Around 55% of Malaysians said they are excited about the possibilities and efficiency that AI can bring to their daily lives and are positive about AI's impact on society.

Some 50% of respondents said they trust educational content generated by AI, but for categories like financial advice, medical advice, chatbots and threat detection, people are less likely to trust AI-generated content. That mistrust is partly rooted in concerns over the amount of data harvested for AI and the potential impact on data privacy. 97% of respondents said that they use at least one privacy measure for their mobile devices, while 66% actually read privacy notices. However, nearly 4 in 10 respondents said they continue to worry about how companies use their personal data online, with 2 in 3 feeling that they lack control over their personal data.

Meanwhile, many respondents are already aware of the potential security risks of AI as bad actors use AI tools to create more sophisticated cyber-attacks. The study lists financial scams, identity theft, data breaches and deepfakes as top security concerns for Malaysians.

On the other hand, 50% of respondents also said they believe AI smart devices can provide enhanced security and stronger data privacy controls, while 55% think AI can make their mobile device more efficient.

The worries over misuse of personal data and spread of misinformation are very real, which is why trust will be key to acceptance of AI in mobile use cases going forward. 66% of respondents believe the government is ultimately responsible for ensuring online safety, while 59% said that institutions such as banks and telecom companies also bear some responsibility. Meanwhile, 47% said that responsibility falls on themselves.

"To maximise the benefits of digital technologies, people need to have trust in the digital world," said Håkon Bruaset Kjøl, SVP head of investment management and Deputy CEO of Telenor Asia. "Institutions and individuals have a shared responsibility when it comes to building this trust and equipping people with knowledge and tools to better protect themselves online."

Qvantel expands BSS in Bangladesh

Qvantel has announced a significant expansion in Asia by opening a new development and support centre in Bangladesh in partnership with Banglalink.

This collaboration allows Qvantel to provide local managed services, operations, and support to their long-standing customer, Banglalink. With a large team of BSS professionals now located in Bangladesh, Qvantel will closely collaborate with Banglalink to drive their ongoing growth and success.

"Banglalink is expanding rapidly, and to provide the best digital services and customer experience, it's crucial that we collaborate closely with our partners. We are excited about Qvantel's significant presence in Bangladesh, as it aligns perfectly with our vision to lead change with top industry partners. We believe Qvantel's BSS expertise will enhance our digital offerings, improve customer service, and help us maintain a competitive edge in the market," said Huseyin Turker, Chief Technology and Information Officer at Banglalink.

"At Qvantel, we are thrilled to support Banglalink's digital operator strategy. It's important for us to move beyond the typical vendor-client relationship and become true business partners who achieve mutual success," said Halim Ates, Vice President at Qvantel. "By taking a partnership approach and offering local operations and support, Qvantel enables success, and we look forward to a long and prosperous partnership with Banglalink."
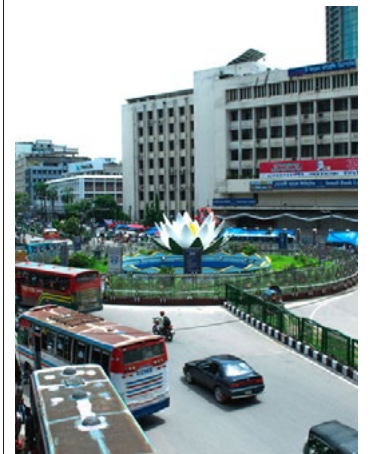
GTC secures funding for Cambodian tower expansion

Global Tower Corporation Pty Ltd (GTC) has secured US$19.97 million in financing from EXIM Bank Malaysia to support the expansion of essential telecommunications infrastructure across Cambodia.

This funding will enable the construction of over 400 new telecommunication towers, significantly enhancing connectivity and network coverage in urban, rural and underserved areas throughout Cambodia.

GTC is a 75%-owned subsidiary of RTB Group, a Malaysian market leader that specialises in utility infrastructure solutions, focusing on power and energy, telecommunications, and water and sewage sectors.

"This partnership with EXIM Bank Malaysia reinforces GTC's commitment to improving Cambodia's telecommunication infrastructure to bridge the connectivity gap, particularly in rural areas," said Amirul Baharom, Chairman of GTC.

"We are proud to support GTC in this vital telecommunications project. By financing this initiative, we not only contribute to Cambodia's infrastructure development but also strengthen the ties between Malaysian businesses and ASEAN economies," said Nurbayu Kasim Chang, Acting President and CEO of EXIM Bank Malaysia.

Talking critical

Stuart Will,
TCCA TETRA Industry Group

The role of LMR in hybrid networks within critical operations

As industries grapple with increasingly complex critical operations in challenging environments, the demand for reliable, secure, and efficient communication systems is intensifying. While the spotlight increasingly falls on technologies renowned for high-speed capabilities, such as broadband, Land Mobile Radio (LMR) continues to play a vital role. Instead of viewing these technologies as competing forces, hybrid network solutions that combine LMR with broadband offer an advanced, cost-effective, and resilient option for ensuring seamless communications in the most demanding situations.

Hybrid networks are emerging as a preferred approach for organisations looking to protect workers within critical operations. By blending the strengths of different network types—specifically, LMR with LTE/5G—they provide flexibility, redundancy, and cost-efficiency that neither technology can achieve alone.

Hybrid networks enable organisations to leverage both private and public infrastructures, creating scalable solutions that can adapt to fluctuating operational demands. This is particularly relevant for environments like rail networks or mining sites, where bandwidth requirements can vary depending on user numbers, data volume or task complexity.

By utilising both networks, operators can efficiently meet fluctuating bandwidth demands without compromising performance or communication quality. The ability to scale operations seamlessly also positions hybrid networks as a future-proof solution, adaptable to growing operational needs.

Reliability is non-negotiable in critical communications, where system failures can have severe consequences. Hybrid networks excel in this area by integrating multiple network types, allowing traffic to be dynamically routed between LMR and broadband systems in real-time. This ensures continuous operation even in the event of network outages or infrastructure failures.

In environments where communications infrastructure is often spread across difficult terrains, maintaining uninterrupted communication is paramount. A hybrid network can automatically manage failovers without human intervention, ensuring that essential operations remain online. LMR provides the foundation of reliability with its robust, dedicated channels, while LTE/5G supplements it with additional bandwidth for data-heavy applications. The result is an operational safety net that reduces the risk of communication failures during emergencies or high-demand situations.

One of the most compelling reasons for adopting a hybrid network approach is its cost-effectiveness. Fully redundant broadband systems in challenging environments can be prohibitively expensive, requiring significant investments in infrastructure, ongoing maintenance, and support. However, hybrid networks balance this by utilising standard internet connections alongside private, dedicated networks like LMR, reducing the need for entirely redundant systems.

Organisations can deploy LMR to handle critical voice communications, ensuring secure and reliable operations, while reserving LTE/5G for high-speed data transmission where necessary. This reduces capital expenditure while maintaining a comprehensive communication solution. Particularly in industries like transportation or energy, where operational budgets are tightly managed, hybrid networks offer a way to deliver world-class communication capabilities without the cost burden of building extensive broadband-only infrastructure.

Hybrid networks also optimise performance by deploying network gateways closer to the action, whether it's a wind farm or a sprawling mining site. This minimises routing paths, enhancing data transfer speeds and reducing latency—critical factors for real-time decision-making. At the same time, hybrid networks maintain robust security controls, leveraging both LMR's established strength in secure communication and the encrypted capabilities of LTE/5G, making hybrid networks particularly suited to operations where both efficiency and protection of sensitive data are critical.

With the integration of next-generation technologies like 5G, hybrid networks are uniquely positioned to support advanced applications that are becoming essential in modern critical operations. These include real-time data analysis, video streaming, augmented reality (AR), and enhanced situational awareness—applications that require not just speed but also consistency and resilience in data transfer.

For example, in an offshore wind farm, LTE/5G could be used to support real-time video feeds from drones inspecting turbines, while LMR facilitates direct voice communication between the drone operator and maintenance crews. By using a hybrid network, the operation can simultaneously manage both advanced, data-intensive applications and critical voice communications without interruption, significantly boosting operational efficiency and safety.

Amid all the hype surrounding LTE/5G, it's important not to overlook the enduring value of LMR in critical communications. LMR has long been the backbone of voice communications in industries that rely on reliable, instant communication in isolated or hazardous environments. Its dedicated spectrum ensures that LMR channels are never congested, providing uninterrupted service even in the most challenging conditions.

Additionally, LMR systems are designed with built-in redundancy and resilience, ensuring that they remain operational during power outages, natural disasters, or network failures. In contrast, LTE/5G networks may be vulnerable to congestion, latency, or complete outages in high-demand scenarios. For operations where every second counts, such as a mine site facing a potential hazard, LMR's reliability remains irreplaceable.

Rather than viewing LMR and broadband as opposing technologies, organisations are increasingly recognising the value of hybrid network solutions. By integrating the best aspects of both, hybrid systems deliver unparalleled agility, reliability, and cost-efficiency.

For industries like transportation, energy, and mining, which operate in challenging environments with little room for error, hybrid networks offer a robust, future-proof communication infrastructure. They provide the flexibility to scale operations without significant additional costs, the resilience to withstand outages and infrastructure failures, and the performance needed to support both traditional voice communications and cutting-edge applications.

As we move forward, hybrid networks will continue to be the communication backbone for critical operations, ensuring organisations can operate with confidence in even the most demanding environments. Hybrid solutions offer the perfect balance of reliability, security, and cost-effectiveness, making them indispensable to the future of critical communications.

Stuart Will's work for TCCA is sponsored by DAMM Cellular Systems.

CCI fines Meta Rs 213.14 crore for abusing position

Meta, the parent company of Facebook, WhatsApp and Instagram, has been fined Rs 213.14 crore by the Competition Commission of India (CCI) for abusing its dominant position in the messaging market.

CCI said that Meta collected user data and shared it with other Meta companies - which is against the competition law. The order has directed Meta and WhatsApp to implement behavioural remedies with a defined timeline. The companies have also been served a cease-and-desist order.

In 2021, WhatsApp alerted its users that from 8 February, users were required to accept the terms which said that their data would be shared with the Meta companies. This was made mandatory by WhatsApp and Meta.

"Given the network effects and lack of effective alternatives, the 2021 update forces users to comply, undermining their autonomy, and constitutes an abuse of Meta's dominant position," said CCI in a statement.

CCI also noted that the sharing of data between the Meta companies creates an entry barrier for rivals in the display advertisement market. A remedial measure suggested by CCI is that Meta should stop sharing the data between its companies for advertising purposes for the next five years.
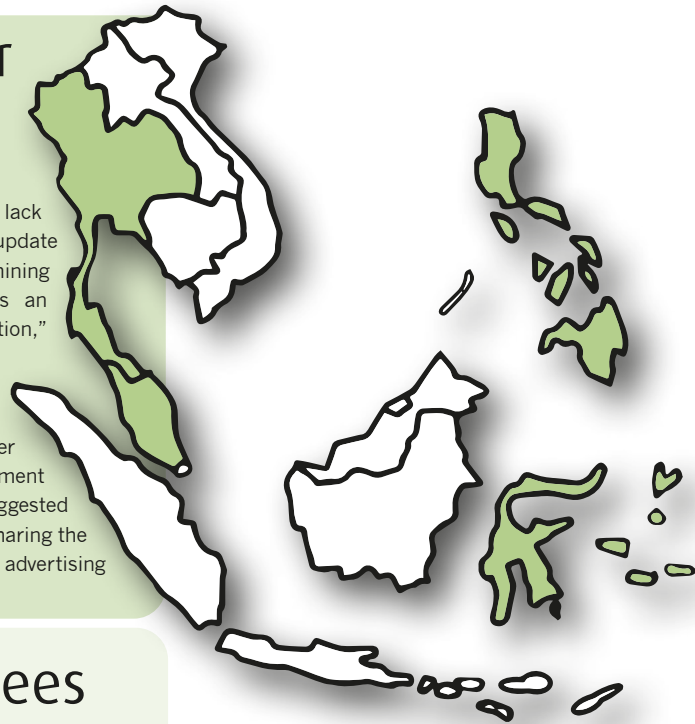
COAI questions existing licence fees

The Cellular Operators Association of India (COAI), which includes Reliance Jio, Bharti Airtel and Vodafone Idea, has questioned the continuation of licence fees in their present form.

Operators currently pay an 8% licence fee to the government, which includes a 5% universal service obligation (USO) levy. The COAI has suggested that the licence fee paid by them to the government should be reduced to 0.5% to 1% of the gross revenues.

COAI states that the payments made on the basis of the AGR (adjusted gross revenue) by telecom service providers to the government, need to be reconsidered under the changed regime and circumstances, as has evolved in the sector. It points out that it may have been appropriate to have a license fee when licences were bundled with the spectrum - but spectrum was delinked from the licence in 2012 and is currently assigned using a transparent and open auction procedure.

Service providers pay a substantial amount for the right to use spectrum. At the same time, however, payments are also charged based on the AGR on service providers, which, says the COAI "is a double whammy for them, given the huge investments made towards procuring the spectrum."

"The licence fee, at best, should cover the cost of administration of the licence only, which is to the order of 0.5% to 1% of the gross revenues, instead of the 8% paid currently," said COAI director general SP Kochhar.

As well as AGR-related payments, the operators also pay CSR, GST and corporate tax. The industry feels that abolition or reduction of the licence fee-related payments would allow the operators to put revenues back into networks for upgrades and expansion and would further enable faster digital inclusion, especially in remote areas.

PLDT secures social loan facility

PLDT has secured a PHP2 billion social loan facility from HSBC Philippines to finance its fibre infrastructure rollouts to underserved and unserved communities.

Social loans are financing solutions where the proceeds are invested in ways that generate 'positive social outcomes,' which can include things like increasing access to affordable basic infrastructure and essential services.

PLDT said that the social loan will support further expansion of its fibre network infrastructure to reach fourth to sixth class municipalities in the Philippines, including so-called geographically isolated and disadvantaged areas (GIDAs) where internet connectivity has not yet reached.

The Philippine Statistics Authority has designated 729 municipalities as fourth to sixth class as of June 2024, which means their average annual income is less than PHP35 million. PLDT's fibre network currently covers 59% of those municipalities. However, of the over 7,000 GIDAs in the country, PLDT has rolled out fibre to just 767. PLDT said it has outlined plans to extend fibre services to more municipalities in the coming years, prioritizing areas most in need of connectivity.

"By expanding our presence in GIDAs and low-income municipalities, we are helping to foster inclusive growth and development in some of the most remote parts of the country," said PLDT's chief sustainability officer Melissa Vergel de Dios.

"This project will help support the improvement of access to the internet for Filipinos in these underserved areas so that they can actively participate and compete in the digital economy," said HSBC Philippines head of wholesale banking Mimi Concha.

Grameenphone jumps on board AI/automation bandwagon with Ericsson

Grameenphone has signed a Memorandum of Understanding (MoU) with Ericsson to collaborate and drive innovation in Artificial Intelligence (AI) and automation.

The collaboration aims to enhance network efficiency, customer experience, and telecom growth through technology trials, workshops, and pilot projects. The partnership will also involve external collaborations with industry players, regulators, and government bodies to support sustainable innovation in Bangladesh's telecom sector.

The MoU strengthens the long-standing partnership between Grameenphone and Ericsson, which dates back to 1998, and aligns with Bangladesh's broader digital transformation objectives.

"Our award-winning AI and Automation solutions will allow Grameenphone to respond even better to the evolving needs of its customers and meet the increasingly complex demands on the network," said David Hagerbro, Head of Ericsson Malaysia, Sri Lanka and Bangladesh.
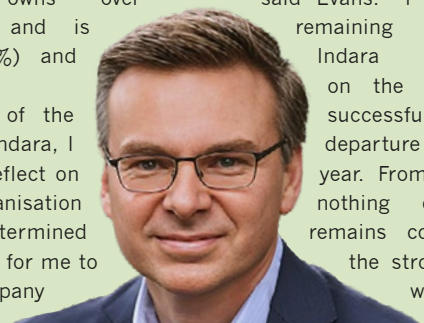
Ericsson's expertise and technology will help Grameenphone deliver an even better customer experience by evolving the network to maintain its position in the market as the leading telecommunications service provider in Bangladesh.

Indara in need of new CEO

Cameron Evans, who has been CEO at Indara since November 2021, has resigned.

Indara currently owns over 4,750 macro towers and is owned by Singtel (30%) and AustralianSuper (70%).

"With the completion of the establishment phase of Indara, I have taken the time to reflect on the leadership of the organisation going forward. I have determined that now is the right time for me to resign and allow the company to pursue growth under new leadership," said Evans. "I will be remaining with Indara focused on the business and a successful transition until my departure on 31 December this year. From a customer perspective, nothing changes, the business remains committed to maintaining the strong strategic partnerships we have formed."

Malaysia and Kenya partner for digital transformation

Kenya and Malaysia plan to sign a memorandum of understanding (MoU) to drive digital transformation in the East African country and across the continent.

"Both countries look forward to signing an MoU to accelerate digital transformation in Kenya and across Africa," said Kenya's principal secretary for information and communications technology and the digital economy, John Tanui. "The Malaysia business mission is a significant step towards bilateral trade, fostering collaboration and exploring new digital export opportunities between Malaysia and Kenya."

A partnership has been agreed that will allow Kenyan enterprises to have access to Malaysia's digital expertise while Malaysian firms tap into Kenya's rapidly growing tech industry.

OMS to acquire more subsea cable-laying ships

Malaysian subsea digital infrastructure company OMS Group has signed a contract with Royal IHC for the construction of a series of cable-laying vessels.

The new vessels will help OMS meet the surge in telecoms demand and ramp up global connectivity. The first vessel is expected to be delivered in the first quarter of 2027.

In 2023, OMS Group announced that it had set aside US$300 million for investments to expand its submarine cable systems and terrestrial infrastructure.

Indosat Ooredoo Hutchison and GoTo develop open source LLM ecosystem

Indosat Ooredoo Hutchison and GoTo have announced the development of Sahabat-AI, an open-source Large Language Model (LLM) ecosystem specifically designed for Bahasa Indonesia and its local languages.

The partnership marks a significant initiative aimed at advancing Indonesia's digital sovereignty and preserving its linguistic heritage.

Sahabat-AI represents a collective effort to promote leadership in AI development on a national level. This project is part of the broader Golden Indonesia 2045 vision, which aims to strengthen national leadership in technology and infrastructure. The LLM ecosystem facilitates creating AI-based applications and services in Bahasa Indonesia and other local languages, filling a void left by global language models.

"Indonesia, as a large nation with aspirations to achieve Golden Indonesia by 2045, possesses a crucial asset that must be managed very well—its human resources, which will reach the peak of a demographic bonus in the 2030s," said Vice President of Indonesia, Gibran Rakabuming Raka. "The capability of superior human resources will be a key determinant of a nation's progress. Especially in this era of rapid technological disruption, one of which includes artificial intelligence (AI). The government remains committed to enhancing the readiness of human resources and creating an ecosystem that empowers the younger generation to innovate, modify, and develop technology, including AI-based advancements, across economic, social, cultural, and linguistic domains."

Sahabat-AI leverages NVIDIA AI technology, incorporating NVIDIA NeMo to enhance general language understanding. The project aims to address Indonesia's unique needs by combining international expertise with local innovation. Indosat Ooredoo Hutchison, in collaboration with NVIDIA, is supporting continuous development via the GPU Merdeka sovereign AI cloud service.

"Sahabat-AI is not just a technological achievement, it embodies Indonesia's vision for a future where digital sovereignty and inclusivity go hand in hand. By creating an AI model that speaks our language and reflects our culture, we empower every Indonesian to harness advanced technology's potential. This initiative is a crucial step towards democratizing AI as a tool for growth, innovation, and empowerment across our diverse society," said Vikram Sinha, President Director and CEO of Indosat Ooredoo Hutchison.

The project underlines the importance of access for various sectors, allowing interaction with AI in native languages, promoting digital literacy, and fostering growth.

"Our vision for Sahabat-AI is to put the power of AI into the hands of everyone in Indonesia. By operating in Bahasa Indonesia, Sahabat-AI addresses critical context and cultural reference gaps left by the global large language models," said Patrick Walujo, CEO of GoTo. "It will help our businesses to communicate in new ways with customers, it will help our government ministries develop tools to engage with citizens more comprehensively and it will drive meaningful change for millions of people across the country. However, the only way to realize this vision is with the support of others. This is why we are inviting stakeholders from all sectors to join the development of this important open-source LLM ecosystem as we aim to drive the country forward together."

"Sahabat-AI launches Indonesia's AI journey and showcases how LLMs can be tailored to serve unique linguistic and cultural needs. Indonesia's culture of 'gotong royong,' or mutual collaboration, demonstrates how industry, researchers and the public sector can come together to help every nation use AI to advance development," said Jensen Huang, founder and CEO of NVIDIA.

Dixon Electro and Nokia join forces for 5G FWA

Dixon Electro Appliances Private Limited has entered into an agreement with Nokia Solutions and Networks OY (Nokia) for the development and manufacturing of fixed broadband devices in India.

"Demand for fixed broadband services in India has surged in recent years, driven by the rapid adoption of Fiber to the Home (FTTH) and 5G Fixed Wireless Access (FWA) technologies. Dixon Electro and Nokia have announced the commencement of manufacturing of Fixed Broadband Devices in India," said Dixon in an exchange filing.

The collaboration between Dixon Electro and Nokia will produce GPON, 5G FWA, and Mesh Wi-Fi devices capable of delivering up to one gigabit per second per home. Dixon Electro has established a dedicated manufacturing facility in Noida with a production capacity of up to 10 million devices annually, supporting the growing demand for broadband connectivity and creating approximately 3,000 new jobs. With this initiative, Nokia now adds 5G Fixed Wireless Access (FWA) and Wi-Fi beacons to provide a complete in-home broadband toolkit for Indian operators.
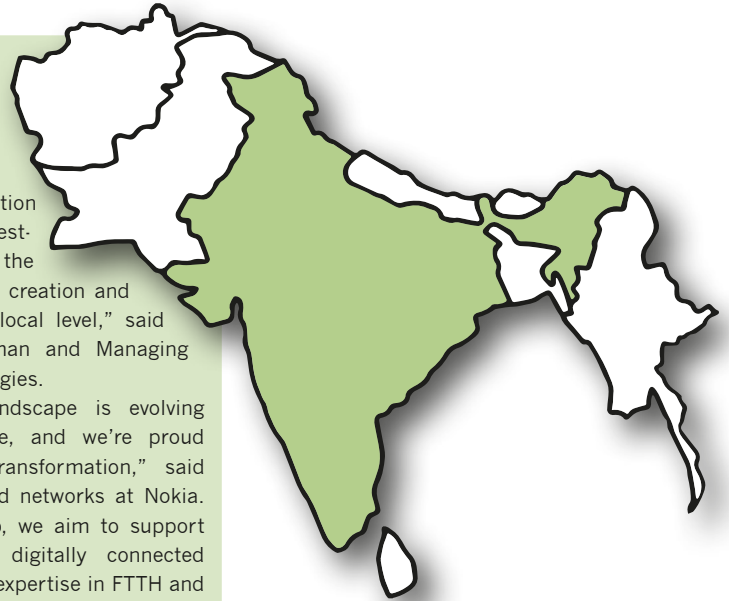
"As we begin local production of these advanced broadband devices, Dixon reaffirms its commitment to expanding India's electronics ecosystem. This collaboration empowers us to bring best-in-class devices to the market while boosting job creation and economic growth at the local level," said Atul B Lall, Vice Chairman and Managing Director of Dixon Technologies.

"India's broadband landscape is evolving at an extraordinary pace, and we're proud to contribute to this transformation," said Sandy Motley, VP of Fixed networks at Nokia. "Through this partnership, we aim to support India's transition to a digitally connected future, leveraging Nokia's expertise in FTTH and FWA technologies."

"Nokia sees huge opportunity with 4G and 5G in high growth and high data consumption market like India. By manufacturing locally, we're not only aligning with the Make in India initiative but also fostering an environment where innovation, job creation, and community empowerment thrives," said Tarun Chhabra, Nokia India Country Head.

Nokia's R&D Center in Chennai will oversee the design and development of the devices, while Dixon Electro will handle the manufacturing. Nokia currently supports over 50% of India's FTTH infrastructure, while Dixon operates 23 facilities nationwide and serves over 100 clients.

Equinix to invest US$500 million in Thailand's DC market

Equinix will invest around US$500 million in phases over the next ten years to cash in on Thailand's busy data centre scene, starting with two new IBX data centres in Bangkok.

The US$500 million figure includes Equinix's recent purchase of land in the Bangna area of Bangkok for US$34 million. The site, which covers over 18,700 square meters, is located next to the main transport route connecting the airport and the city centre, giving it access to the existing Bangkok interconnection ecosystem. Equinix plans to build two International Business Exchange (IBX) data centres on the Bangna campus that it says will provide more than 3,375 cabinets at full build out.

The investment is the latest step in Equinix's Asia-Pacific expansion strategy, following its recent entry into the Philippines in July via a deal to buy three data centres from Total Information Management (TIM). Equinix also kicked off expansion projects in Hong Kong, Malaysia and India earlier this year.

Narit Therdsteerasukdi, secretary general of Thailand Board of Investment, said that Thailand's proximity to Cambodia, Laos, Myanmar and Vietnam, along with its Cloud First-Policy, has spurred an "unprecedented" surge in demand for greater digital interconnectivity that will fuel long-term growth of digital infrastructure for the region.

"The next decade will see accelerated shifts in supply chains and migration to the cloud, with manufacturing and digital economic production diversifying across Thailand and the rapidly growing CLMV sub-region," said Therdsteerasukdi. "Thailand has emerged as a prime investment destination in this supply chain transformation, attracting substantial investments in prominent industrial clusters, particularly in cloud services, electronics and electric vehicle sectors."

"Thailand stands at the forefront of digital growth in Southeast Asia, with immense untapped potential as it becomes a key player in the region's digital economy," added Cyrus Adaggra, VP of corporate development for Asia-Pacific at Equinix. "Equinix's entry in Bangkok is yet another milestone advancing our overarching strategy to enhance interconnection across Thailand and Southeast Asia."

Trans-Pacific Malaysia-US (MYUS) Cable System landing party named

Hexa Capital Consultancy has chosen Globe Telecom to serve as the landing party in the Philippines for its trans-Pacific Malaysia-US (MYUS) Cable System.

The MYUS cable will run over 19,000km from Sedili, Malaysia to Guam, and from there to Florence, Oregon, with landing points also planned for Batam, Jakarta and Balikpapan in Indonesia, and Davao City in the Philippines. The MYUS cable is designed as a 16-fibre-pair system, each with a minimum capacity of 15Tbps, for a total initial capacity of 240Tbps.

Under the deal, Globe will build the Davao City landing station.

The MYUS cable will provide needed extra international capacity to support Malaysia's growing data centre footprint that includes major hyperscalers like Google, Microsoft Azure and Amazon Web Services. Azhari also said the MYUS route avoids disputed waters in Southeast Asia to ensure its operational sustainability.

Malaysia currently connects to almost 20 international subsea cable systems, but only the Asia-America Gateway (AAG) club cable connects to the US. The MYUS cable would be the first private subsea cable to serve that route. It also provides a more direct route, as the AAG detours through Hong Kong before heading out to the US coast.

Hexa says the cable project will cost an estimated US$720 million. The company expects to secure financing for the cable by the middle of next year, which would enable the system to be ready for service by mid-2028.

Kudosity launches RCS beta services in APAC

Kudosity has announced its early adoption of Rich Communication Services (RCS) and has launched beta testing for the service within the Asia Pacific region.

Kudosity is encouraging businesses to register for beta testing to gain early access to this messaging platform, which promises enhanced customer engagement capabilities. RCS is poised to surpass traditional SMS by offering enriched and interactive communication experiences. The platform supports multimedia, provides read receipts, and ensures seamless interoperability across Android and iOS devices, which allows businesses to connect with their customers in more creative and personalised manners. With commitments from Apple and Google to integrate RCS, it is anticipated to become the next global messaging standard, unifying exchanges across different devices.

"As a company dedicated to transformational development, Kudosity is thrilled to be at the forefront of the rich messaging revolution. We believe that RCS will redefine business messaging by delivering richer, more interactive customer engagements. This early adoption will let our clients experience the future of communication before anyone else," said Alex Macpherson, Chief Executive Officer of Kudosity.

Kudosity's move to adopt RCS suggests a regional shift towards more advanced communication tools, reflecting a strategic focus on significant markets in the APAC region. The region's strong technological infrastructure supports this transition to rich messaging.

Talking satellite

Joakim Espeland, CEO, Quadsat

Addressing avoidable RF interference

Radio frequency interference (RFI) mitigation is a crucial part of the day-to-day management of satellite operations. Most operators have good processes in place to deal with interference when it happens, and the tools and techniques for doing this have naturally become more sophisticated over time. Yet still, the majority of interference cases that operators have to deal with are caused by human error and equipment failure, so could be avoided in the first place.

The industry is facing many unknowns as a result of recent innovations and a more complex and growing operating environment that may result in new causes of interference. Given this, it's crucial that the industry implements proactive measures and best practices that prevent those 'known' causes of avoidable interference.

Understanding RF interference

Interference is a longstanding problem with big implications. When an interference incident occurs, it doesn't only affect the satellite network generating the interference. A single anomaly can have a ripple effect and impact the operation of other satellites and networks. And when interference occurs, it can cause service disruptions, preventing the transmission of critical data and communications. When this happens, satellite operators can face financial implications and can lose customers.

Interference can be caused by several different things including natural phenomena and intentional jamming. However, the most common cause is generally considered to be poor and incorrect installations as well as equipment error. If equipment is installed incorrectly, mispointing can occur along with issues relating to frequency, power and polarization, all of which can cause signal degradation and RF interference.

That said, instances of interference today have greatly reduced from the number of occurrences that were experienced in the past. Better tools are available for identifying sources of interference and operators have grown accustomed to working together to resolve interference problems. Mitigation techniques have also matured over time to the point where the primary industry focus is on prevention as opposed to only acting in response to an incident.

The unknowns

However, the way that space is being used is changing and there are several factors that have the potential to increase the risk of interference.

Operators are leveraging LEO, MEO and GEO orbits as well as integrating orbits in multi-orbit networks. Huge numbers of satellites are being deployed in mega constellations and this is causing the RF spectrum to be more congested. Additionally, LEO constellations are dynamic, and ground systems are complex: with more moving parts, there is greater opportunity for errors and interference.

Currently, there is also a lack of standardisation around operating performance for new style non-parabolic antennas. And within LEO, there is the potential that multi constellations may use the same bandwidth which could lead to intermittent interference which would likely be difficult to detect and resolve.

There is also the operational impact of 5G to consider. To be effective, a 5G network requires a high number of 5G cells, and there is a potential risk that these may cause spectrum overload, again resulting in interference.

It's not yet clear exactly what impact each of these factors will have in terms of increasing the risk of interference, which is why it's all the more important that all preventable and 'known' causes of interference are mitigated.

Preventing avoidable interference: the knowns

While the industry has become much better at understanding and preventing interference, there are still cases of engineers installing terminals incorrectly, as well as equipment failing. So, what can the industry do to ensure that all of these avoidable cases of interferences are avoided? This comes largely down

to ensuring that best practices are adopted, which includes properly training personnel and carrying out regular and ongoing testing and maintenance of RF equipment.

It's accepted now that field engineers and network operations personnel need to be qualified to install and maintain RF equipment, so that they can ensure that antennas are pointed correctly, polarization is correctly set, the signal is transmitted at the correct power, modem signals are correct, and cabling and connectors are all fitted correctly. But what about those instances when engineers are trained and certified but still make a mistake? We're only human after all, and sometimes mistakes do happen. This is one reason why testing is so important. If an error does occur, provided regular and

> "When an interference incident occurs, it doesn't only affect the satellite network generating the interference. A single anomaly can have a ripple effect and impact the operation of other satellites and networks."

ongoing testing is carried out, any issues will hopefully be detected before they cause a major problem.

What about interference that comes from equipment failing or degrading over time? Equipment failure can be largely avoided if all equipment is subject to a regular testing program. Any anomalies will then be picked up before they become an issue. This way, maintenance can be carried out or replaced as required with minimal disruption to service and no interference generated by degradation or failure. Continuous and rigorous testing is really the only way to ensure that equipment is working as it should be at all times.

Room for improvement

There's an awful lot going on in the satellite industry at the moment, much of which may increase the risk of interference as new technology and ways of operating are rolled out. It's critical that we get even better at what we're already doing to prevent known causes of interference from happening, so that the industry can focus it's time and energy on ensuring that new causes of interference are managed and mitigated as much as possible.

vHive

Missing Data, Lost Revenue:
The Hidden Cost of Africa's Towers
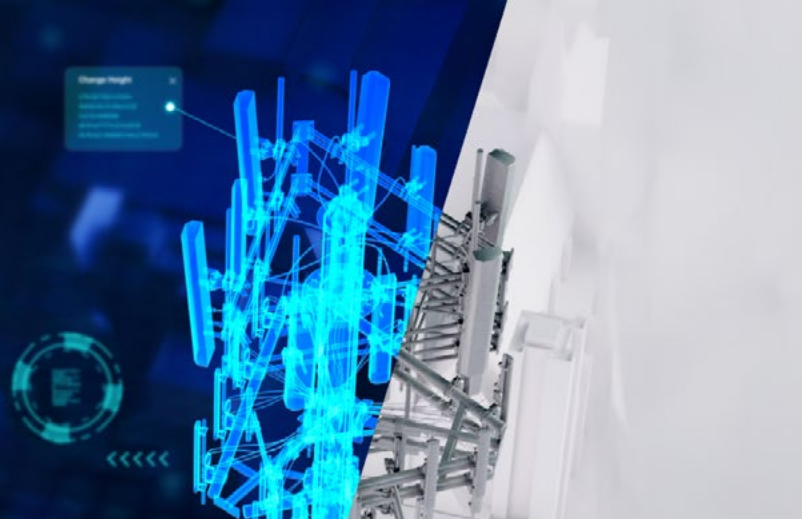
Let's agree on one thing: doing business blind is never a good idea. The more valuable data tower companies have, the better business they can do—that's just the nature of doing business.

For TowerCos in Africa, scaling often means adding new towers to the portfolio. But there's another way to grow: maximizing revenue from your existing infrastructure. Both approaches are good, but one challenge remains universal—if you don't know what's on your towers, you can't make the most of them.

What's on your towers?

It sounds simple, but too often, TowerCos just don't know. Not on the towers they own and not on the ones they're looking to buy. And that's where we come in.

In a major project with a leading TowerCo in the region, we uncovered some surprising insights. For example, 43% of their sites had empty mounts, offering immediate leasing opportunities, while 7% of their towers were overloaded, requiring urgent investment. 13 towers listed in records didn't exist in the field, and several towers were misclassified, creating inefficiencies. Without accurate data, these challenges might never have come to light.

These findings played a pivotal role during an M&A deal, where precise tower data allowed our client to validate asset records, accurately assess valuations, and negotiate from a position of strength. Having clarity on their portfolio gave them the financial and operational insights they needed to make confident decisions and secure a successful transaction.

Driving immediate value for TowerCos

With an automated solution, TowerCos gain full visibility into their infrastructure, driving real, measurable benefits:

- **Gain precise inventory insights** to reconcile discrepancies and ensure accurate billing.
- **Unlock revenue opportunities** by identifying available space for leasing.
- **Eliminate unnecessary site visits** with a reliable, automated survey process.
- **Streamline operational costs** with precise data that optimizes resource allocation.
- **Cut colocation approval timelines** from months to weeks, helping close deals faster.
- **Ensure accurate valuations during M&A deals** by validating asset records and reconciling inventory.

For example, accurate inventory analytics give TowerCos a clear picture of what's on their towers, eliminating discrepancies and creating opportunities for growth.

It enables them to market available space confidently, cutting approval timelines from months to weeks for colocation processes. It also ensures smooth M&A deals, where precise tower data determines true valuation. This isn't just about solving problems—it's about equipping TowerCos with the tools to maximize their portfolio's value and streamline operations.

Enabling smarter decisions

At the core of vHive's solution is a commitment to enabling all stakeholders—TowerCos and MNOs alike—to achieve their goals. For TowerCos, it's about maximizing the value of every tower. For MNOs, it's about gaining full control and visibility over network infrastructure performance. By providing autonomous data capture, advanced AI analytics, and advanced simulation tools, we give TowerCos a single source of truth for managing their infrastructure. The result? Hidden revenue becomes visible, planning and approvals are faster, and operations run leaner.

This isn't just about technology—it's about making better, faster decisions and empowering the entire ecosystem to grow sustainably.

Scaling smarter

You want to scale as a TowerCo? Focus on automation. Streamline your surveys, reduce site visits, and ensure your records reflect reality.

You want to scale in Africa? Lean operations are critical. Automation enables TowerCos to overcome the region's unique challenges—high OPEX, rugged terrain, and the constant risk of vandalism—while making their towers work harder, smarter, and better for their business.

Digitizing your tower portfolio means faster surveys, fewer site visits, and no more discrepancies between records and reality. It means streamlining operations, cutting costs, and finding hidden revenue. And it's not just about scaling—it's about doing so while keeping operations lean and getting the most out of every asset.

Because in the end, **it's not just the way forward—it's the way to win**.

Visit our website to learn more about how we can maximize your towers: www.vhive.ai ∎

vHive's Inventory Analytics

Sharon Imber, CMO at vHive

How public Wi-Fi is evolving to improve user engagement in venues

Tiago Rodrigues, CEO, Wireless Broadband Alliance

In today's world, wherever consumers are, they 'just' want to get connected to networks quickly and easily. We are spoilt with the diversity of networks that we can join across mobile networks and public Wi-Fi, but as we've all experienced, getting connected quickly can be challenging, in particular to Public-Guest Wi-Fi. Venues of course want to engage with their public visitors, but whether it is the Asian Games, a team sporting event, shopping centre, or K-pop concert at one of the 80,000+ capacity stadiums South Asia has to offer, it can be a challenging experience for venue and visitors alike to create a user experience that works securely for all.

Connecting visitors to a public space, venue or event, is a key part of an event or brand experience. For the visitor it is fundamental - they want to be connected quickly and efficiently while knowing that their connection is secure and not open to having their identity compromised or data, such as payment card details, stolen. In the past, this has not been easy, because public Wi-Fi is characterized by a larger number of transitory individual users connecting to the same hotspot – how do you make it easy and secure when you don't know your users until they want to connect?

For brands, venues and network owners, secure public Wi-Fi is an integral part of the brand experience, allowing them to share information, or special features to enhance an experience, as well as fulfil regulatory requirements they may have. It also provides valuable analytics and engagement tools that are essential for building and enhancing the customer relationship. But achieving this requires them to know who is connecting.

In the majority of cases today, venues can engage with their guests during the signup process via a captive portal – but these solutions do not address the visitors desire to 'just connect' and can be complex to run. First you need to know which SSID to connect with and then go through a Captive Portal, normally taking several minutes to complete. Traffic may be free, sponsored or charged for, with throttled speeds or user data collected to sell to other parties. This poor experience often leads to users choosing to rely on a cellular network, if available, losing the venue a valuable opportunity to engage and improve their venue experience. These challenges and recent issues surrounding the implementation of MAC randomization by the major device operating systems, such as iOS, Android and Windows are headaches that are easily addressed with the introduction of OpenRoaming. It ensures an automatic connection with security and privacy for Wi-Fi in public space and venue visitors, while still enabling the same engagement and analytics options available today to network operators and venues.

The OpenRoaming alternative

OpenRoaming is an industry standard which creates the framework to connect billions of users and things to millions of Wi-Fi networks globally. It is an open connectivity framework for all organizations in the wireless ecosystem to power new opportunities in the 5G era.

Unlike captive portals, once a device has been successfully onboarded to an OpenRoaming compliant network, the connection is fully secure and future connections will be automatic, while still retaining the ability for venues and network owners to engage with visitors, via notification pop-ups to the device. Those visitors also retain their privacy and the ability to instantly connect to any future OpenRoaming network they come into contact with.

With user engagement high on the list of priorities for venue owners, network operators and users alike, developing a strong business case for public Wi-Fi, including how to improve user engagement with the use of OpenRoaming technology over legacy captive portal Wi-Fi is critical. The improved user engagement offered through these technologies can bring about significant business benefits including:

- **Cost reduction & cost control:** Implementing efficient onboarding processes and standardized interfaces can help reduce the costs associated with managing and maintaining Wi-Fi networks, especially for venues with high user traffic.
- **Increased revenue opportunities:** By offering seamless and engaging user experiences, venues can attract more users, leading to potential revenue streams through advertising, pay-as-you-go models, or partnerships with third parties and roaming services
- **Regulatory compliance:** Understanding and implementing best practices for user engagement can help industry players comply with regulatory requirements related to user privacy, data protection, and network security.
- **Competitive advantage:** Industry players that excel in user engagement and provide a seamless Wi-Fi experience

can gain a competitive edge in the market, attracting more customers and partners. Once a user is registered and has a profile installed on their device, the venue owner of the Wi-Fi network can identify the customer and send them personalized messages aligned with their CRM, for example 'welcome messages' containing personalized promotions based on their user preferences and past history at that venue.

- **Wi-Fi roaming:** Facilitated by the WBA's OpenRoaming Federation, Wi-Fi roaming offers venues a valuable revenue stream and enhanced user experience. It simplifies Wi-Fi connectivity for users, ensuring secure network access and increasing customer satisfaction. Roaming can also be a form of user exchange, allowing seamless connectivity across partnerships, enriching and simplifying the user experience. GDPR guidelines are implemented in OpenRoaming, ensuring customer data privacy and security, which is crucial for maintaining trust and compliance.
- **Customer care:** with OpenRoaming the connection to Wi-Fi is fully automatic, requiring no user intervention, making it very simple. This reduces the number of enquiries to a venue's customer care support lines to gain information such as the SSID network name, correct password, connection instructions or other support.

A great visitor experience

By understanding and addressing the requirements of both venues and their visitors, businesses can enhance the overall user experience, reduce costs, and unlock new revenue opportunities. ∎

The trials and tribulations of connecting Asia - meaningfully

The delivery of universal meaningful connectivity is a no brainer in today's digital landscape. But how can this be achieved in Asia's most challenging terrains?

A key talking point for 2024, meaningful connectivity and how to define it has come under increased scrutiny throughout the communications sector.

"The connectivity needs to be affordable; the speeds must be sufficient, and the individual must be able to benefit from regular internet access with the correct data plan to fit their requirements. If they can't access the internet as and when needed, they cannot benefit from it," says Nimrod Kapon, CEO at OASIS Networks. "Furthermore, meaningful connectivity means that access to connectivity is equal for all, no matter what the location."

Gaurav Kharod, Regional Vice President APAC, Intelsat, holds a similar view: "for us, meaningful connectivity means a level of connectivity that allows end-users to have a safe, satisfying, enriching and productive online experience at an affordable cost, servicing a broad range of services regardless of the user location."

"Meaningful connectivity is about the 'right' level of network access at an affordable price which can cater to both commercial and inclusion/SDG priorities," adds Seshan Krishnamurti, Vice President - Sales, CovalenseDigital.

Transforming Asia

Access to meaningful connectivity is intrinsic to consumers, government and businesses alike across South and Southeast Asia.

"Roughly half of the population in Southern Asia and 3 out of 10 people in Southeast Asia remain unconnected to the internet and are at risk of exclusion from the digital economy, with limited access to essential services such as public service, healthcare, education, and financial services online. Connectivity is an indispensable driver of economic growth, social development, and improved governance in the digital world," highlights Kharod.

Indeed, Ritesh Kumar Singh, Director & Chief Commercial Officer of Indosat Ooredoo Hutchison reports that, for Indonesia, mobile connectivity is driving digital transformation, significantly enhancing productivity levels across government and business sectors and improving the overall standard of living.

According to the World Economic Forum, the digital transformation of South and Southeast

Asia is opening a range of opportunities for its citizens: "many Asian countries are even in the lead globally in certain sectors of digitalisation. For example, the Philippines and Malaysia have become the top two countries in e-commerce retail growth, increasing by 25% and 23% per year, respectively," says Andrew Schafer, CEO at PowerX Technology Ltd. "Mobile banking apps have seen over twice the average global uptake in the region. There has also been significant growth in apps for urban transportation, food delivery, and gig economy jobs. Additionally, telemedicine apps have expanded healthcare access by allowing remote consultations and appointments, particularly in rural areas."

"Asian businesses are growing and with the demographic dividend combined with the innovative urge to solve problems/take advantage of opportunities, both corporations and entrepreneurs as well as micro/cottage/home-based businesses will become dependent on meaningful connectivity," adds Krishnamurti. "Meanwhile, governments will have to deal with various scenarios – social inclusion, more effective service delivery, emergency services, disaster management, refugee management, etc. - and this creates great demand for meaningful connectivity."

For governments and businesses alike, the socio-economic shift has been profound, reshaping the way they operate.

"Governments can deliver education and healthcare more efficiently, improve transparency and accountability, and facilitate communication and collaboration with citizens," says Schafer. "Rich connectivity allows businesses to streamline operations through digital technologies. They can target new markets, access global supply chains, enact e-commerce platforms and digital payment systems, and implement sophisticated online customer engagement."

"Without meaningful connectivity, governments and businesses literally can't function as everything relies upon broadband networks today," adds Kapon.

Converging technologies

There is no technological magic bullet that will immediately deliver meaningful connectivity to every person in Asia, warns Schafer. Instead, the expansion of digital services into new regions will come from efficient enterprises delivering a mixture of technologies dependant on geography, population density, infrastructure availability, and cost-effectiveness.

For those in urban areas, fibre promises the fastest and most reliable service, with high-speed, low latency broadband capable of delivering gigabit-speed internet. However, the infrastructure is costly and slow to rollout – and impractical for many of Asia's island nations.

"Fixed wireless access (FWA) is a great alternative since a good number of experiences in consumer and small business use cases require nomadic, rather than mobile access; it is also a more cost-effective alternative to fibre where various aspects such as right of way, civil works, security issues may constrain fibre deployments," asserts Krishnamurti. "From time to deploy as well as cost considerations, FWA is probably the single biggest growth path in many parts of the world."

Schafer agrees that FWA has gained popularity in recent years, notably in Indonesia, the Philippines, and Malaysia, who are expected to see significant FWA adoption due to their low fixed broadband penetration rates (below 50%) and their challenging, archipelago terrain.

"Using a network of antennas and radio signals to deliver high-speed connectivity at a lower cost, FWA is quicker to install compared to wired networks but has technical constraints including line-of-sight limitations, frequency overlap with other networks, and impacts from harsh weather," says Schafer.

For truly inaccessible rural areas that need coverage, connectivity can increasingly be provided via satellite. Despite the larger latencies and higher costs compared with terrestrial options, "there are specific scenarios where Direct-to-Device via satellite will be the best option - these are usually for remote/rural/maritime communities," reports Krishnamurti.

Schafer says that, for most users in Southeast and Southern Asia, cellular networks are the go-to gateway for access to each other and the wider world, delivering high-speed internet, voice, data, and multimedia more affordably than fixed broadband. Moreover, with an estimated 1.3 million cell towers across the region, expected to grow with a 6.1% CAGR up to 2032, cellular networks are continuously expanding and evolving to meet increasing demand for data, coverage, and capacity.

"All connectivity technologies play a vital role, yet we believe cellular connectivity will be the primary way most people engage with digital services," concurs Kharod. "As such, it's positioned at the forefront of delivering an optimal consumer experience. Supporting this cellular connectivity is a robust backbone — a blend of technologies that provide backhaul for mobile networks. Satellite technology will be essential in achieving universal broadband connectivity, helping extend coverage to underserved and remote areas that other technologies may not reach."

"We believe that all technologies — whether satellite, FWA, cellular, or fibre — play a vital role in enhancing connectivity across Indonesia," agrees Singh.

Kapon asserts that the ideal connectivity scenario will be when these different technologies can work together seamlessly, directing the user to the best, most cost-effective access technology available, before handing off to the next, with no noticeable switching between each by the user.

"We are heading towards a new, converged era in connectivity where every technology will work together," says Kapon. "It is still early days, but developments are being made in multi-orbit satellite technology and the move towards a cloud-enabled environment that will interweave with the telco world, bringing terrestrial and satellite connectivity together."

Smarter asset utilisation

With the digital divide remaining and access to meaningful connectivity still heavily limited, "perhaps the single greatest change which will permit service providers to accelerate meaningful connectivity is that of infrastructure sharing," says Krishnamurti. "To date they have focused on competing on assets and coverage, leading to duplicated and sub-optimal footprint. By creating a workable infrastructure sharing model, they can stretch their capital to provide much better coverage at a lower investment. This derisks their businesses and makes them more attractive from an investment point of view too."

Schafer believes that the most significant contributions to delivering meaningful connectivity come from investment in infrastructure, improving quality of service and making digital connectivity affordable.

"Investment is essential for expanding coverage and improving the quality and reliability of connectivity across the region, with Southeast Asia's data consumption and computing growth alone necessitating an investment of approximately \$40-\$60 billion in infrastructure, including towers, fibre, and data centres, over the next five years," explains Schafer.

With this in mind, Indosat invested approximately \$800 million in capital expenditures last year, with around 60% allocated to strengthening the network in rural Indonesia: "we plan to invest a similar amount this year," shares Singh. "Analyst research forecasts that there will be an additional 23 million new internet users in Indonesia over the next four years. As a mobile service provider, we are committed to playing a significant role in making this vision a reality."

The expansion of network footprints with new towers can also have an additional impact on remote communities with no grid access: "given that there are over 150 million people without electricity in the region, power systems installed for a cell tower can be provisioned to support a level of local community power access," says Schafer. "This can have an even greater impact on the communities they serve through the creation of mini-grids, particularly in countries like Myanmar where only 50% of households have access to electricity."

The key to delivering meaningful connectivity across the globe is to make assets work smarter, not harder. It's important to think of connectivity in the same terms as the path leading from the past to the present – i.e., network out instead of customer in, explains Krishnamurti.

"Change the terminology to first

Seshan Krishnamurti

mile instead of last mile, this changes the lens. 5G investments have proved financially wobbly in terms of uptake and returns and part of the reason is exactly the problem of thinking network out," says Krishnamurti. "The other one is the poor approach to creating ecosystems; by being platform orchestrators where the connectivity is the spinal cord of the economy, they will do far better to achieve meaningful connectivity than simply offering bigger and faster pipes."

"In the endless battle for cheaper prices, network operators might lose their customers by overlooking the holistic needs of the customers – even if the customers themselves are not always aware of them," points out Kapon. "Optimisation and efficiency are very important, and they can be achieved by enhancing a long-term relationship with the customers, while providing them a unique flavour of support, such as local boots on the ground."

"A common pitfall we see is where well-intentioned network expansion does not fully deliver on the potential, resulting in higher energy and maintenance costs than expected, together with under-utilised assets and sub-optimal renewable yields," explains Schafer. "The inadvertent consequences are increased operating and maintenance costs that subsequently end up being passed on to consumers, pricing services out of reach for low-income populations and exacerbating the digital divide."

The spirit of 'Gotong Royong'

Delivering meaningful connectivity, affordably, to every citizen in Southern and Southeastern Asia will be a hefty task – and not one that can be solved by any one group.

"In the future, I envision every person in Indonesia being meaningfully connected, and Indosat is committed to playing a significant role in making this a reality," shares Singh. "However, we recognise that we cannot achieve this goal alone; it will require collaboration with partners and other telecommunications operators in the spirit of 'Gotong Royong' or mutual cooperation."

While significant improvements could be achieved within the next decade, full coverage may take longer, possibly even decades. It will require a concerted effort from governments, the private sector, and the international community to achieve.

"Whilst factors such as policy and regulatory frameworks, international

cooperation, digital inclusion initiatives and public-private partnerships all play their part in improving connectivity in this region, the heart of the issue is the roll-out and subsequent management of infrastructure," says Schafer. "The speed with which MNOs and TowerCos can extend the reach of their networks depends on the delicate balance between their revenues from new and existing customers and the cost of running and maintaining their networks. Building new towers and in-filling for 5G requires considerable CapEx, and so the more efficiently and cost-effectively they can operate their networks, the more they can direct financial resources into the

expansion of their infrastructure."

Meaningful connectivity goes beyond providing the biggest bandwidth for the smallest price tag, concludes Kapon: "it means, providing the customers the assurance and confidence that they are not alone. That they can trust on their provider to optimise the link for them the best they can and will strive to provide them a good support – not only remotely, but also on the ground. In this world, which is getting more virtual from day to day, this human touch, the constant presence and the capability to build a long term, human relationship, is becoming more and more meaningful." ∎

Breaching the defences

Amidst rising threats to the world's telecommunications networks, how can the operators prepare? And what should they be aware of?

The cyber-threat to telecommunications infrastructure in South and Southeast Asia is significant and growing. As the region continues to embrace digital transformation, the volume of data, services, and applications relying on telecom networks is expanding rapidly. This has made telecom infrastructure a prime target for cybercriminals, state-sponsored actors, and other malicious entities.

5G – opportunity or threat?

As per the June 2024 Ericsson Mobility Report, 5G subscriptions are expected to reach 560 million in Southeast Asia and Oceania by 2029, with notable growth forecast for Malaysia, Singapore and Thailand. Meanwhile, due to intensive 5G network deployments in India, 5G subscriptions had reached around 119 million by the end of 2023 and are expected to hit 840 million by the end of 2029, accounting for 65% of mobile subscriptions in the region.

Good news for the digital economy, but the global rise of 5G is also expected to have a significant negative impact in the form of increased cyber-attacks.

"It is predicted that within the next five years, 5G will more than double and represent over 60% of mobile subscriptions worldwide. In Asia alone, its coverage will reach 80% of the population,"

observes Philippe Alcoy, security technologist at NETSCOUT. "What's more, the number of observed DDoS attacks in APAC was up by 20% in the second half of 2023, per NETSCOUT's 2H23 DDoS Threat Intelligence Report. This will only increase with 5G becoming the dominant way to access the internet."

Transnational criminal groups in Southeast Asia are incorporating new tools like AI and deepfake technology to expand their cyber fraud capabilities, according to the United Nations Office on Drugs and Crime. The agency warned that organised criminal groups have relocated operations as needed and adapted to technological advances, while the 'crime-as-a-service' ecosystem has become well-established.

"This has meant that criminals no longer have to handle their own money laundering, code malware or steal sensitive personal information to profile potential victims or obtain initial access for their attacks themselves — instead, these key components can be purchased in underground markets and forums, and often at very accessible prices," said the U.N. in a statement.

"The increasing sophistication of attacks, including Distributed Denial of Service (DDoS), data breaches, and exploitation of unprotected APIs, poses a serious risk to the integrity, availability, and confidentiality of telecom networks," says Ameya Talwalkar, CEO at Cequence Security. "Additionally,

geopolitical tensions in the region, coupled with the rise of advanced persistent threats (APTs), have made critical telecom infrastructure even more vulnerable to targeted attacks. Given the sheer scale and importance of telecom infrastructure in driving both economic growth and digital connectivity, the threat landscape is only becoming more complex. Telecom operators must remain alert, continuously updating their defenses to stay ahead of evolving cyber threats."

Connected devices raise the heat

The explosion of Internet of Things (IoT) and the increasing number of connected devices that come with it are significantly raising the attack surface for telecommunications networks. These devices, many of which are deployed without sufficient security measures, can serve as entry points for cyberattacks if not properly secured.

"IoT devices often operate on weak or outdated firmware and can be difficult to monitor and manage, making them attractive targets for malicious actors. Once compromised, these devices can be used in a variety of ways, from launching DDoS attacks to gaining unauthorised access to sensitive network infrastructure," explains Talwalkar. "For telecom operators, this means that ensuring robust security for both the devices on the network and the network infrastructure itself is essential."

"Since the dawn of IoT in 2009 and Industrial IoT (IIoT) in 2010, two things have been clear. First is that IIoT offers a tremendous boon to businesses by increasing operational efficiency and reducing costs, with a measurable positive impact on the bottom line," says Puneet Shetty, VP of Product Management and Field Engineering for Celona. "That brings us to the second point: IoT increases the security threat surface. Each device connected to the network is a potential point of vulnerability that can become a target for attack. Palo Alto Networks estimates that IoT devices account for more than 30% of all network-connected enterprise endpoints."

With a predicted attack surface of over 125 billion IoT devices by 2030, these threats may well become one of the main challenges for mobile network operators in the years to come.

"This will make cybersecurity protection a critical aspect of 5G networks' daily operation," explains Philippe Alcoy, security technologist at NETSCOUT. "Mobile networks are inherently more difficult and expensive to monitor than their wireline equivalents. Moreover, mobile infrastructure is inherently more complex and fragile than its fixed counterpart. The proliferation of vulnerable consumer IoTs and other compromised internet-facing infrastructure connected over mobile networks has driven a significant increase in botnet populations."

Defending the network

To protect critical telecom infrastructure, operators must implement a proactive and comprehensive risk management strategy featuring continuously assessing vulnerabilities, understanding potential threats, and prioritising risk mitigation efforts based on the potential impact on operations.

"Security threats are best managed locally where they occur rather than on the wider communications network. This is why enterprise security companies like Cisco and Palo Alto Networks have built the concept of zero trust into their products," asserts Shetty.

Zero trust assumes every device is suspect and must be authenticated onto the network through various network access control mechanisms, further bolstered by firewalls, along with security posture assessment and policies that identify and mitigate threats.

"As enterprises adopt new wireless technology to further support their IIoT digital transformation initiatives, there is a new effort underway to expand zero trust security principles to the Operational Technology (OT) network in addition to the IT network," adds Shetty.

Talwalkar believes that regular risk assessments should be conducted to identify weaknesses in the network, and that organisations need to evaluate third-party vendor risks, as these can often serve as vectors for attacks.

"Companies should invest in real-time monitoring solutions to detect suspicious behaviour and respond promptly to any potential threats," says Talwalkar. "A multi-layered defense strategy, incorporating tools like intrusion detection systems (IDS), firewalls, API security

Singtel breached in 'test run'

Earlier in November 2024 it was reported that Singtel had been breached by Chinese state-sponsored hackers – later named as Volt Typhoon - over the summer as part of a broader campaign against telecommunications companies and other critical infrastructure operators around the world.

In a joint statement on 5 November, the Cyber Security Agency of Singapore (CSA) and Infocomm Media Development Authority (IMDA) said that they understood from Singtel that no service was affected, and no data loss was reported from the incident. In this case, early detection and mitigation measures were in place.

Singtel reportedly uncovered the breach of its network after detecting suspicious data traffic in a core back-end router and finding what it believed was sophisticated, and possibly state-sponsored, malware on it. The malware was in 'listening' mode and didn't appear to have been activated for espionage or any other purpose, reinforcing a suspicion that the attack was either a test run of a new hacking capability or that its purpose was to create a strategic access point for future attacks.

solutions, and encryption, should be implemented to ensure full protection. Furthermore, developing a robust incident response plan ensures that when an attack does occur, it can be managed quickly and efficiently, minimising both downtime and financial impact."

The single most important preventative measure an MNO can enact though, says Talwalkar, is strong network segmentation. By segmenting networks based on different security needs and access levels, operators can reduce the impact of a breach in one part of the network on the rest of the infrastructure.

"End-to-end and comprehensive visibility, backed by threat intelligence, coupled with an adaptive mitigation strategy, is necessary to effectively protect against threats and avoid wasting expensive network capacity on low-level DDoS activity. Service performance and availability risk comes from the potential congestion of key elements of the mobile network infrastructure, either through traffic volume or state-exhaustion," adds Alcoy. "Due to the use of GTP tunnelling for all user traffic, to fully understand user-plane activity and identify threats, traffic must be monitored and correlated with control plane information to enable proper attribution and traceback. Dynamic mapping of mobile IP addresses to identities is essential to extracting actionable insights in real-time about both underlying traffic patterns and potential threats."

Taking responsibility

Critical national infrastructure is the set of facilities, systems, sites, information, people, networks and processes necessary for a country, upon which daily life depends, and whose service integrity, if compromised, could result in significant loss of life or leave devastating economic, social or national security impacts, says Alcoy. In the last 12 months, some countries have begun to classify telecommunications networks as critical national infrastructure – with severe penalties in place for those who vandalise or hack it.

Talwalkar believes that governments and regulators in South and Southeast Asia should enforce stricter cybersecurity regulations and frameworks that require telecom operators to implement robust security practices, including mandating comprehensive cyber hygiene

standards such as multi-factor authentication, secure communication protocols, and regular security audits.

"Governments should engage with the operators in order to draft and introduce new regulations and codes of practice to improve the security and resilience of national critical infrastructure, which includes public telecoms networks and services," agrees Alcoy.

"Governments can also play a role in fostering collaboration between private sector players, law enforcement, and intelligence agencies to better share threat intelligence and best practices. Additionally, regulators can help establish clearer incident response protocols to ensure that, in the event of an attack, telecom operators have the legal and operational support needed to contain and mitigate the damage," adds Talwalkar. "Incentivising investment in cybersecurity research and development for telecoms could also help the industry stay ahead of emerging threats."

But when it comes to protecting telecommunications infrastructure and networks, who is ultimately responsible?

"The answer is both difficult and clear: everyone is responsible," opines Shetty. "From the worker accessing the network on their phone where they might click on a phishing link, to the enterprise IT and OT teams who need to ensure they have end-to-end zero trust security solutions and procedures in place, to the network operators who need to apply similar zero trust solutions and procedures at the macro network layer – all have a vital role to play."

Talwalkar believes that telecom operators are ultimately responsible for securing their networks and ensuring they are resilient to cyberattacks: "however, governments and regulatory bodies must set clear guidelines and enforce compliance to ensure that operators meet minimum security standards. Vendors providing technologies to telecom operators also play a crucial role in delivering secure products and solutions that can be integrated into the telecom networks. Additionally, employees within telecom organisations must be trained in cybersecurity best practices to reduce the risk of insider threats or human error."

Thus, "protecting infrastructure is a collective responsibility that requires cooperation and coordination across all levels of the public and private sectors," affirms Talwalkar. ∎

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How standards-driven satellite innovation can accelerate Asia's digital economy

Glenn Katz, Chief Commercial Officer, Telesat

The Asia Pacific region embodies a rich and diverse mix of peoples, cultures, geographies – and economic development. While we often associate Asia with digital sophistication, there have long been big differences between advanced countries like Japan, South Korea, Singapore and Taiwan, and rural and developing areas such as are found throughout many parts of Southeast Asia. The United Nations Conference on Trade and Development (UNCTAD) Asia-Pacific Trade and Investment Report 2023-2024 noted that while the Asia region saw a global-leading 9% growth rate in digitally deliverable exports from 2015 to 2022, only six economies made up 85% of that amount with the least developed countries representing less than 1% combined.

Economic growth depends on connectivity

That situation is changing. The World Economic Forum (WEF) noted that Southeast Asia has a promising outlook for long-term market growth, with the digital economy representing as much as $600 billion in gross merchandise value by 2030. But reaching that potential requires a big increase digital market participation, with WEF acknowledging that the gap between the demand and supply of digital products and services outside of Asian metro areas is growing. Basic internet access is simply not enough for people to meaningfully participate in the digital economy, risking a widening divide.

Lack of internet in the home impacts education and work prospects. A report from the Association of Southeast Asian Nations (ASEAN) noted that only 53% of children in rural areas have a home internet connection versus 72% of those in urban environments. Access is lower in less developed Southeast Asian countries where far fewer homes have broadband internet. And while 66% of individuals in the Asia Pacific region use the internet, the high cost of accessing digital networks limits use in these less developed regions.

Telecommunications providers are working to overcome these barriers as quickly as possible. Research and Markets projects that fixed broadband penetration (27.4 subscribers per 100 inhabitants) will reach an estimated 21.6% of the region's population this year, growing to 23.6% in 2029. And fixed internet users will expand from 3.3 billion in 2024 to 3.9 billion in 2029.

Practically speaking, realising that positive forecast cannot be achieved solely by installing more fibre-based terrestrial networks. Given the challenging and vast Southeast Asian terrain that encompasses mountains, dense forest, grasslands, farmland and even many remote islands, efforts at terrestrial connectivity pose prohibitive logistical and cost challenges.

Fibre can also be at unexpected risk. For instance, in March 2024, underwater cables in the Red Sea belonging to four major telecom networks were cut, resulting in significant disruptions to communications and the internet. While the cuts occurred far away from Southern Asia, the 25,000km Asia-Africa-Europe cable system connecting Southeast Asia to Europe via Egypt was damaged. In June 2024, more cables were cut, although the land-based incident was much faster to restore than was the underwater issue. The disruption to the internet, combined with a required temporary alteration to trade routes, imposed increased operational costs and delays in the delivery of goods and services, resulting in an economic slowdown with a several month recovery time.

Satellite technology changes the game

Fortunately, advanced satellite communication (SATCOM) is emerging as a viable and affordable alternative option. Previously, SATCOM was approached as a last resort for reaching remote populations; it was considered too complex and slow to implement – and requiring too much satellite technology-specific expertise to successfully pull off. But this impression is rapidly shifting. Analysys Mason (formerly NSR) forecast for nearly 9,000 satellites to be manufactured and launched in the Asia region, generating cumulative revenue of US$139.2 billion over the next 10 years (23% of the overall market). And ABI Research projected that satellite communications subscriptions in Southeast Asia will hit more than 1.8 million by 2028, driven by governmental policy measures and collaborative efforts with service providers and satellite operators.

The introduction of low Earth orbit (LEO) satellite networks, fueled by ubiquitous, high-throughput, low-latency connectivity, and coupled with disruptive pricing, are entirely changing the space-based connectivity equation. New LEO constellations from Starlink, Kuiper, Telesat Lightspeed, OneWeb and Kepler each have purpose-built designs to serve either narrowband IoT services, consumer broadband, or enterprise broadband connectivity. A key advantage of LEO technology lies in its ability to provide 'virtual fibre' backhaul connectivity to extend the reach of non-terrestrial networks (NTNs) to remote or underserved areas where it is difficult or cost-prohibitive to deploy fibre.

The low latency connectivity of LEO networks means telecommunications service providers will be able to provide SD-WAN and IP services, cloud connectivity, and advanced applications beyond

the footprint of their core terrestrial networks. This however will depend on the frictionless integration of satellite connectivity. And that requires interoperability.

The need for a standards-based approach

Previously, interoperability was not possible due to satellite networks' proprietary characteristics. The deployment process was manual and labor-intensive, required in-house satellite expertise, and could extend over weeks or even months. This situation has changed significantly as several satellite operators and ground system providers adopt what are known as MEF standards.

MEF (formerly Metro Ethernet Forum) is a non-profit industry forum of technology providers seeking to develop standards, certifications and application programming interfaces (APIs) in empowering enterprise digital transformations. The Forum promotes the MEF Standards for Layer 2 Carrier Ethernet, which support interoperability among network operators (including satellite-based), service providers, vendors and customers.

Leveraging MEF standards unlocks the potential of terrestrial and NTN service orchestration. NTNs need to be fully API-driven and require standards-based automation between ecosystem players at both business and operational levels. MEF has developed standards-based Lifecycle Service Orchestration (LSO) business and operational process APIs that uniquely provide the high fidelity, plug-and-play interoperability, and extensibility required by service providers to 'invest once' and efficiently scale implementations with many partners and services. In this way, Telecom service providers will now deliver standard connectivity using Carrier Ethernet services over satellite in the same way that they deliver all their other enterprise services.

Beyond just MEF, there is increasing support for adopting standards-based approaches to build next-generation SATCOM capabilities while containing costs. Industry and government leaders must commit to partnering on standards that will more effectively and efficiently pave the way for satellite innovation.

One important partnership is already underway: in July 2023, the Global Satellite Operators Association (GSOA) announced that satellite and mobile industry professionals have been working for years to bring satellite into mobile standards, resulting in the 3rd Generation Partnership Project (3GPP). 3GPP will support the use of non-terrestrial networks (NTN) in these standards, to enable full interoperability between satellite and terrestrial – including mobility procedures across both network components. This will allow mass-market smartphones and IoT devices to connect seamlessly with satellite networks when out of range of terrestrial connectivity.

Several telecom operators have already signed agreements with satellite constellation operators to support direct-to-device service. There is a wide range of capabilities utilising both terrestrial and mobile satellite spectrum enabled through these partnerships. For example, AST Space Mobile has partnered with AT&T and Verizon to provide voice and data services; Starlink D2D is working with T-Mobile on direct to device SMS and messaging; Apple is partnering with GlobalStar on emergency and iMessaging; Lynk has preliminary partnerships with 40 mobile network operators.

The project will especially benefit rural, unserved and underserved areas in an effort to dramatically increase online access. In the near future, 3GPP is expected to improve uplink and downlink connectivity between satellites and mobile devices, while enhancing mobility between non-terrestrial and terrestrial networks through smoother, quicker handovers.

Reaching the edge

MEF standards-based satellite networks are also needed to support effective edge computing – where devices like laptops, tablets, smart phones, wearables and internet of things (IoT) sensors process data at the 'edge' of the network. As more devices are used in industries that comprise a large part of the Asian economy, more edge-processed data will need to be transferred either to other edge devices or to another location such as a centralised or headquarters facility.

Agriculture is a prime example. Low cost, sensor-based IoT devices are poised to increase agricultural production, with millions of devices across enormous tracts of land generating volumes of data on water usage, nutrition density and other environmental factors affecting crop growth. As more farms will benefit from implementing autonomous IoT, applications like on-the-ground video surveillance and tracking the status of new autonomous farm vehicles in motion will greatly expand high data rate satellite broadband implementations.

With manufacturing the largest contributor to Southeast Asian gross domestic product (GDP), this sector represents another massive edge computing requirement. Big Data, enormous data sets that when properly analysed reveal critical trend and pattern insights, will play an increasing role in better measuring, standardising and optimising manufacturing production processes. Analysis of Big Data from connected edge devices will enable efficiency and cost improvements in areas like inventory management, equipment maintenance status and even product quality.

Supply chain connectivity is also critical both to manufacturing and to international merchandise trade, another huge component of ASEAN GDP. The World Bank noted that the 24/7 trade propelling the Asian economy is dependent not only on transport systems (which are also heavily digitised), but on telecommunications, financial markets and information-processing. Consequently, regions without adequate connectivity infrastructure will be at a distinct competitive disadvantage in the global marketplace.

An over-riding factor to all of these and more industry sectors is climate. In April, the World Meteorological Organization reported that Asia remained the world's most disaster-affected region in 2023, heating up faster than the global average and suffering increased casualties and economic losses. Not only do growing climate-related disasters disrupt the industries upon which the Asian economy relies, they pose greater societal risks to public health and well-being. It is now essential for data related to climate, weather, water and other environmental factors to be continually collected from urban and remote areas, analysed and used for modeling future projections and impacts.

Even with all of these compelling needs, getting adequate internet coverage to rural and remote locations is challenging and expensive; costly fibre-based solutions to link the entire region will simply not be an option. Fortunately, the growth of advanced LEO satellite constellations now offers the capability to enable a space-based mesh network to support modern, cloud services with guaranteed resiliency. Such networks will deliver carrier ethernet-level performance at the lowest latency and highest speed that large-scale edge computing environments require. And that level of connectivity can support collaborative edge operations anywhere across the Asian continent.

Rising to a dynamic and promising future

There is great opportunity for tech industry companies and other enterprises to realise the dramatic growth potential that exists throughout the entire, diverse Asian economy. To take the next critical steps of a digital transformation, SATCOM providers are more than ready to collaborate with government and telecommunications partners throughout Asia to develop and implement standards-based approaches. With this, all corners of the Asian continent will emerge as an increasingly connected source of innovation – and inspiration. ■

Vejthani Hospital goes smart with Huawei's intelligent technologies

The relatively new Vejthani Hospital, established in 1994, is one of the leading private international hospitals in Thailand today. Serving over 300,000 patients a year from over 150 countries, with more than 200 inpatient beds, the hospital is accredited by Joint Commission International (JCI), a US-based organization that certifies health care quality and patient safety of top-tier hospitals across the globe.

Using innovative medical technologies, the hospital's internationally trained specialists offer world-class health care standards to give patients the most comfortable medical experience.

Comprehensive Wi-Fi

Vejthani Hospital's previous network needed to be improved to ensure comprehensive Wi-Fi coverage and high speed in all areas. The primary objective was to improve user experience and support state-of-the art technologies such as 5G, Artificial Intelligence (AI), Internet of Things (IoT) and robotics.
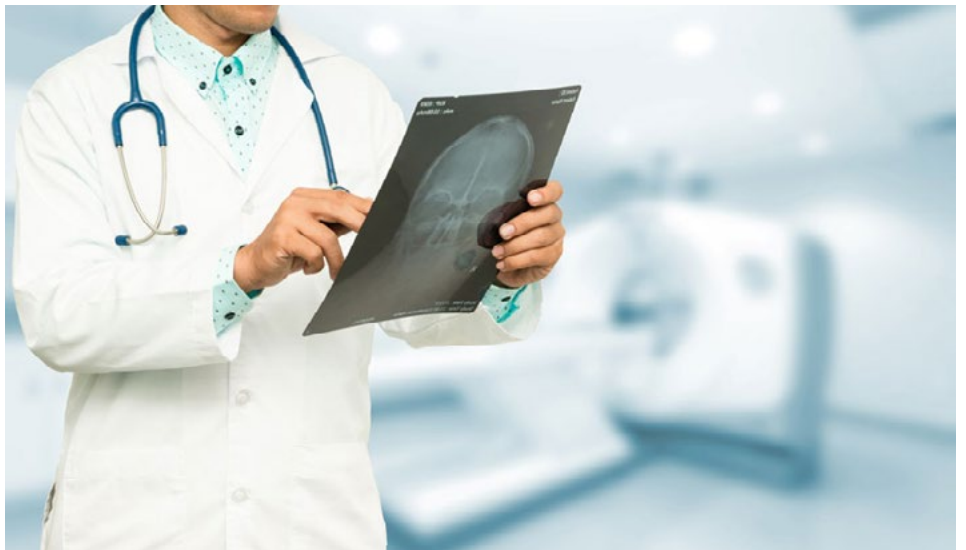
After studying customer requirements, Huawei proposed a software-defined network (SDN) architecture, based on a three-phase roadmap to build intelligent connectivity, and help transform Vejthani into a smart hospital.

Phase one consisted of the installation of Wi-Fi 6 in a pilot building, with an initial set of 65 Access Points (APs) to enable super-high-speed internet access for doctors, medical staff, and patients in the hospital's open areas. This solution enables the medical staff to access Cloud services, while supporting the hospital's wireless intranet system, including LIS (Laboratory Information System), PACS (Picture Archiving and Communication System) and HIS (Hospital Information System). It was designed to support the addition of new applications in the future.

Next, Phase 2 saw more hospital buildings integrated into the new Wi-Fi 6 network, facilitating the full use of the new software. To do so, Huawei increased the network size by replacing the core switch with a bigger one (25/40/100 GE High-Density port) and adding another 351 Access Points (APs).

In Phase 3, the system was further enhanced by adding intelligent technologies such as 5G, and AI plus Analytics.

Overall, Huawei provided 416 new Wi-Fi 6 Access Points (APs) with multi-GE links allowing up to 5.76 Gbps speed; two Multi-GE Core Switches for 5G speed, for maximum reliability and high bandwidth; one data centre with two redundant 10G Server Switches; and three units of iMaster Network Cloud Engine (NCE) – Huawei's next-generation driving network management and control system for campus networks, with autonomous monitoring and error detection, as well as proactive prevention and maintenance to facilitate the work of IT officers and ensure system continuity.

An intelligent network

Following the full rollout of all three phases, Vejthani Hospital benefited from lower operating costs and higher system efficiency and reliability. With the upgrade, bottleneck issues were reduced, and the facility gained a centralized network management and control system with iMaster NCE, with the possibility to extend the core switches to up to 100 GE.

"This signifies a model for improving Thailand's public health sector in the future, and it contributes to Siriraj's transition to being a smart hospital, in line with Huawei's goal to 'Grow in Thailand, Contribute to Thailand'," said CEO of Huawei Thailand, Abel Deng.

Notably, Vejthani Hospital is now equipped with an intelligent network, reducing the need for maintenance and equipment change. Looking ahead, the network system can expand and integrate 5G and AI and support innovative medical applications such as real time applications (smart ambulance, telemedicine) or robotics as initially planned. Indeed, Vejthani Hospital's medical staff now benefit from high-speed internet and Cloud access while patients enjoy a better internet experience.

"Thailand understands the importance of technology, and today is an important first step in the utilization of digital technologies and 5G in the medical field," said Thai Prime Minister Prayut Chan-o-cha. "We are thankful for the long-lasting friendship and collaboration between Thailand and China. We admire Siriraj Hospital and Mahidol University and would like to thank Huawei, NBTC, and all other partners. We hope the project will act as a blueprint for all smart hospitals in Thailand going forward." ∎

Advantech supports Vietnam's first smart hospital in Ho Chi Minh

Thai Hoa International Hospital, established in 2008, is a general hospital serving the public of Ho Chi Minh City. The facility faced ongoing systematic challenges and needed to resolve medical resource shortages and improve medical service quality.

Although the hospital was already fitted with modern equipment and was staffed by a strong team of highly qualified doctors who used HIS and LIS systems in their daily work, the hospital faced challenges with their old patient management software.

Pham Viet Thai, an investor of Thai Hoa Hospital, pointed out that the hospital's software had limited features and was unable to merge data, which impacted patient satisfaction and staff workflows. Additionally, without a picture archiving and communication system (PACS), the hospital had to spend a significant amount of money on paper and film for test results, ultrasounds, and X-ray films.

Creating a sustainable hospital

Thai Hoa Hospital embarked on a mission to enhance the patient experience while creating an operating model that would be sustainable in the future.

During the construction of a new 100-bed hospital in Ninh Thuan province, investor Pham Viet Thai was introduced to Advantech's smart hospital solutions, which include access control systems (ACS), computerized medical nursing carts (AMiS), integrated intelligent operating room systems (AVAS), telehealth solutions (iTeleMed & AMiS), pharmacy management systems, and high-end smart inpatient solutions (iWard).

Impressed by the technology's potential to expedite the digital transformation of the hospital, Pham Viet Thai opted to collaborate with Advantech Vietnam, propelling Thai Hoa Hospital toward its smart development goals with the creation of the country's first smart hospital.

During the project, Advantech's wide range of smart hospital solutions were implemented.

Nguyen Bang Phuong, Deputy Director of Thai Hoa Hospital, highlighted the significant impact of the AVAS solution on surgical precision and safety achieved by providing doctors with direct access to patients' medical history, ultrasound records, and test result data prior to surgery. The system offers real-time data transmission with 4K resolution and zero latency, enabling Thai Hoa Hospital to collaborate with outside doctors on surgeries, contributing to the advancement of healthcare throughout Ninh Thuan Province.

Additionally, the iTeleMed Solution with AMiS Telehealth cart - a remote medical system that enables doctors and nurses to transmit patient data, including vital signs and medical images, via Advantech's telehealth suitcase - allows doctors from anywhere to receive data, thus streamlining the consultation process.

Thai Hoa Hospital has also implemented iWard Patient Information Terminals (iWard PITs) on its boarding beds, contributing to enhanced patient engagement and healthcare outcomes. Nguyen Bang Phuong reported that these terminals display patient data directly on the screen during visits, eliminating the need for doctors to carry paper records. Medical staff can also access patient information remotely through the iWard solutions on the AMiS Nursing cart, thus helping facilitate patient diagnosis.

Transforming healthcare

Advantech's Intelligent Healthcare Solutions have transformed onsite operations at Thai Hoa Hospital with innovative systems and data-driven processes that have improved overall operations. Doctors and nurses can now provide more effective treatment and care using smart technologies.

According to Nguyen Thi My Dieu, a nurse at Thai Hoa Hospital, these digital solutions have helped significantly, especially in reducing medical errors, making patient information clearer, and providing remote access to support patients from any location.

The implementation of the intelligent system has also brought significant benefits to patients, particularly through the automatic receipt and transmission of electronic medical records. This streamlined process has facilitated smoother collaboration with third parties, including insurance companies. Furthermore, it positions Thai Hoa Hospital for future expansion and development.

In line with this, the hospital is actively planning the deployment of Phase 2 of the intelligent hospital solutions, which will further enhance its capabilities. This ensures the hospital's continued growth, development, and the provision of more advanced and intelligent healthcare services.

"Advantech is a great choice; they have enthusiastic and professional staff. We are now an outstanding hospital thanks to their intelligent solutions," said Pham Viet Thai, Investor in Thai Hoa Hospital. ■

Corero CORE offers cloud-based infrastructure protection

Corero Network Security has launched a new cloud-based availability protection platform, CORE, designed to seamlessly enhance a company's existing security infrastructure. It delivers advanced defence, leveraging existing infrastructure, offering flexibility and cost-efficiency to keep an organization secure and agile.

Corero CORE leverages comprehensive data lake(s) by gathering feeds from multiple sources across a network and generating AI/ML-assisted insights, turning isolated security events into actionable intelligence. This enables smarter coordination across a customer's network, making their ecosystem more resilient against threats to service availability.

Vendor-agnostic and highly adaptive, Corero CORE effortlessly integrates with third-party tools and existing infrastructure. In its initial release, CORE delivers real-time rich traffic analytics, threat intelligence, application layer protection, and anti-bot DDoS defense, ensuring services are available and secure.

"We are incredibly excited to bring this cutting-edge platform to market, expanding our capabilities and helping customers optimize their security investments," said Carl Herberger, Chief Executive Officer at Corero Network Security.

Designed as a SaaS platform for ultimate flexibility, Corero CORE bridges visibility and protection gaps without adding complexity. It optimizes security investments and offers peace of mind with a subscription-based model that reduces vendor lock-in. Ideal for businesses seeking enhanced availability and traffic visibility, Corero CORE allows organizations to stay ahead of threats and maximize their network's potential — all without additional hardware.

Smallest and lowest power SiP for cellular IoT

Nordic Semiconductor has announced the general availability of its nRF9151, a system-in-package (SiP) it claims offers 'the smallest and lowest power' solution for cellular Internet of Things (IoT) projects — which can be used as a dedicated modem or an application microcontroller.

The nRF9151 SiP, measuring just 12×11mm, features a single Arm Cortex-M33 core running at up to 64MHz, 256kB of static RAM (SRAM), and 1MB of flash memory, plus Arm's TrustZone and CryptoCell security technologies — allowing it to act as a primary application processor in a variety of projects, or to run as a communications processor next to a more powerful microcontroller or microprocessor.

The nRF9151 is around 20% smaller than the nRF9161 and adds support for Power Class 5 20dBm on top of Power Class 3 23dBm, as well as along with full compatibility with 3GPP Release 14 LTE-M/NB-IoT and 1.9GHz DECT NR+. For the longest of long-range communication, Nordic has pledged support for satellite communication in an updated firmware.

Nordic has also launched the nRF9151 Development Kit (DK), a development board that breaks out the SiP's features into an easily-accessible form factor — including support for using its general-purpose input/output (GPIO) headers on Arduino UNO-format pin headers. The board is ready, complete with a bundled SIM card with pre-loaded data allowance, and comes with an embedded SEGGER J-Link for programming and debugging — usable also with external targets, if desired.

"I'm excited that the nRF9151 is now entering production because we know our customers and many other IoT developers demand a highly integrated, compact, and low power LTE-M/NB-IoT and DECT NR+ solution," said Nordic's Øyvind Birkene. "Not only does the nRF9151 bring class-leading performance to cellular IoT, but Nordic is also the only global company to offer a complete cellular IoT solution. We are eager to also close gaps and bring global coverage through the upcoming NTN support."

Latest wireless transceiver cuts energy costs and boost computation power

EnOcean's new TCM 600 and TCM 615 wireless transceivers provide significantly more memory and much higher computation power while reducing energy consumption.

The TCM 615 provides a simple, compact, and cost-effective way to add EnOcean radio communication functionality to OEM customer solutions. It is pin-to-pin compatible with the previous TCM 515 device and uses the same, well-established ESP3 interface protocol. Users can therefore directly upgrade existing designs from TCM 515 to TCM 615 without the need for hardware or software redesign, and thereby immediately benefit from the latest functionality.

With the TCM 600, customers can combine their own application with the latest EnOcean radio communication technology in the same module. This solution is therefore ideal for implementing in space-constrained wireless applications such as ultra-compact relays and dimmers.

TCM 600 and TCM 615 implement the open, industry-leading EnOcean radio communication standard ISO1453-3-10 and ISO14543-3-11. This standard is characterized by high reliability and very low power consumption thanks to the use of small, redundant messages making them ideal for energy harvesting and low power applications.

"This latest wireless device family further extends the leadership of EnOcean products in creating a smart, connected and sustainable world. With a significant performance boost, TCM 600 and TCM 615 enable differentiated applications based on the latest EnOcean technology," said Matthias Kassner, vice president product marketing at EnOcean GmbH.
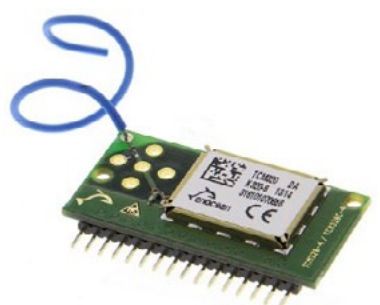
Elevāt's Ecosystem Management Platform simplifies IoT OEM communications

Elevāt has launched its enhanced Ecosystem Management Platform rollout, marking a significant step forward in OEM communication, asset management, and operational efficiency.

The enhanced platform focuses on creating seamless communication across OEM networks, integrating a range of stakeholders, including dealers, service teams, partners, and asset owners into a unified ecosystem. Elevāt's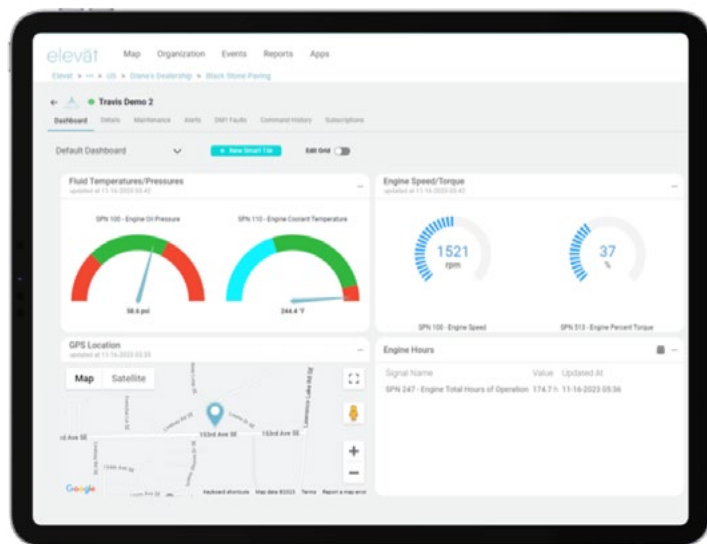 solution supports the flow of critical information, enabling stakeholders to collaborate more effectively, optimize service coordination, and enhance operational performance.

"Our industry is evolving rapidly — from connecting machines, to connecting businesses, to connecting entire ecosystems. Our enhanced platform is designed with this at its core. We understand that the ability to maintain clear communication across all levels of the OEM ecosystem is vital. We are not just connecting machines, we're empowering businesses to make faster, informed decisions while strengthening relationships across their entire network," said Adam Livesay, Co-Founder of Elevāt.

Key benefits of Elevāt's Ecosystem Management Platform include streamlined communications across all touchpoints in the OEM ecosystem, ensuring all stakeholders stay aligned and informed throughout the service lifecycle; ecosystem-wide dashboards for tracking condition-based alerts, DM1s, maintenance reminders, and service requests; a streamlined service request system with real-time tracking and updates, enabling faster and more efficient handling of service needs similar to a ticketing system; and scalability designed to support growing ecosystems, easily integrating new assets, users, and partners as business needs evolve.

The Ecosystem Management Platform is tailored for the interconnected industrial environment, enabling proactive communication and data sharing, reducing downtime, and ensuring operational excellence.

World's first AI-powered 5G indoor FWA

ZTE Corporation has launched the world's first AI-powered 5G indoor FWA. This cutting-edge solution offers a 20% increase in bandwidth efficiency and a 30% reduction in network congestion, ensuring more reliable and high-performance connections even in the most demanding environments.

Equipped with a 13dBi ultra-high-gain antenna, the ZTE G5 Ultra leverages AI-driven bandwidth optimization, AI QoS management, and AI signal tracking technology to deliver seamless, robust connectivity, positioning it as a game-changer in the market. Empowered by the new Wi-Fi 7 technology with a peak data rate of up to 19Gbps, users will benefit from enhanced network reliability, making it perfect for high-bandwidth activities such as HD streaming and remote work.

ZTE has also showcased a future-ready 5G-A outdoor FWA, ZTE G5F, designed to provide ultra-high-speed connectivity with peak data rates of up to 10Gbps. This next-generation device supports Sub6G and mmWave carrier aggregation and dual connectivity, allowing users in both urban and rural areas to enjoy a top-tier 5G experience.

From windows to base stations

JTower recently announced the deployment of a new glass antenna, created with glassmaker AGC and NTT Docomo.

The first was installed on a window in Tokyo's Shinjuku district, and, according to Shota Ochiai, a marketing manager at AGC, is "the world's first antenna that turns a window into a base station that can be attached to a building window inside and turn the outdoors into a service area without spoiling the cityscape or the exterior appearance of the building."

5G networks, lauded for their high-speed low latency capabilities, require many more base stations than older generations of mobile networks to achieve the same coverage. Accordingly, to expand 5G footprint without installing unsightly equipment, Japanese companies are now developing transparent glass antennas that allow windows to serve as base stations that can be shared by several carriers.

NTT Docomo uses transparent conductive materials as the basis for its antenna, sandwiching the conductive material along with a transparent resin, in between two sheets of glass. The WAVEANTENNA antenna can be engineered according to the thickness of the glass to reduce the attenuation and reflection of the radio signals being absorbed and emitted.

"The glass antenna uses our proprietary technology to smooth out the disruption in the direction of radio waves when they pass through a window," added Ochiai.

Compatible with frequencies in the sub-6GHz band, the WAVEANTENNA's lower frequency ranges penetrate walls and buildings better than the higher bandwidth mmWave portions of the 5G spectrum. A s such, these next-generation glass antennas could prove a real boon to expanding 5G coverage, particularly within dense urban regions, especially amidst growing infrastructure sharing.

"I don't think the idea for using transparent conductive materials as an antenna existed before," said AGC's general manager Kentaro Oka. "The durability of the antenna was significantly increased by placing the conductive materials between glass."

Claro signs up with Starlink for broadband

Claro has announced its partnership with SpaceX's Starlink, making it the first local operator to deliver satellite internet services, targeting businesses across the country's remote regions.

The new offering promises to bridge the connectivity gap in areas that have long struggled with reliable internet access. By leveraging Starlink's cutting-edge satellite technology, Claro is set to provide tailored broadband solutions for businesses of all sizes – from small start-ups to large corporations. The service will support download speeds ranging from 40-220Mbps, upload speeds between 8-25Mbps, and latency between 20-60 milliseconds.

Claro's satellite service is designed with industries such as mining, agriculture, banking, logistics, and government services in mind. These sectors often operate in geographically isolated areas where traditional internet infrastructure is sparse or non-existent. With this new service, businesses in these fields can now access high-speed, low-latency internet, crucial for day-to-day operations and growth.

The launch of Starlink-based services in Colombia represents a significant leap forward for the country's broadband landscape, providing a vital tool for businesses to remain competitive in an increasingly digital world. Claro's expansion into satellite internet services is set to reshape connectivity, not just for the tech-savvy, but for entire industries working in Colombia's more remote corners.

Neutral Host Networks 38% greener than 5G-Standalone

New research from ABI Research commissioned by Boldyn Networks has revealed that Neutral Host Networks (NHNs) are 38% greener and up to 47% more cost-effective than traditional standalone 5G deployments.

Increased network demand and higher frequencies used for 5G technology mean a higher densification of base station sites is required to support 5G network rollouts. Those requirements result in additional costs incurred from building and maintaining new 5G sites, as well as a negative impact on national power grids. As telco players continue their efforts to deliver an interconnected future, models of network sharing present new opportunities.

In dense urban environments, ABI Research expects net energy savings of 20% and cost savings of 40% from 5G small cell deployments via NHN when compared with individual standalone deployments. In urban environments, expected net energy savings range from 27-33% and cost savings reach 47%. In suburban areas expected net energy savings range from 35-38% and cost savings remain 47% cheaper than traditional 5G small cell deployments.

"ABI Research's industry proven network model indicates that there are significant cost, energy and efficiency benefits when considering a neutral host over a traditional network deployment," said Dimitris Mavrakis, Senior Research Director at ABI Research. "Network modelling in New York and Rome shows costs and energy savings as high as 40%, providing a substantial improvement to 5G expansion operator efforts. ABI Research expects neutral host operators, such as Boldyn, will play an increasing role in network densification efforts in the next few years."

"Advances in 5G will enable new possibilities in the way we live, work, and play. But as an industry we have the responsibility to roll out new networks in a way that is both cost-effective and sustainable," said Brendan O'Reilly, Group Chief Operating Officer at Boldyn Networks. "The neutral host model is an elegant, practical solution to reducing capital and operating expenditure for MNOs. It is also critical to accelerating the adoption of 5G and ensuring the delivery of transformative connectivity services for businesses, people and communities worldwide. If the telecoms industry is to truly deliver on the promise of a sustainable, inclusive, interconnected future then mobile operators must consider neutral host a real alternative to delivering future networks."

MoMo operators partner for cross-border transactions

MTN MoMo in South Africa and EcoCash in Zimbabwe have partnered to provide what are described as effortless direct cash transfers between the two countries.

The partnership provides a reliable, efficient and affordable way to move money directly into EcoCash electronic wallets, according to Kagiso Mothibi, Chief Executive Officer for Fintech, MTN South Africa.

"Many Zimbabweans in South Africa using MTN MoMo as their mobile money provider can now use EcoCash link, which does away with the need to use expensive and, often, time-consuming traditional remittance channels to get money to loved ones," said Mothibi.

The most attractive part of EcoCash is the low remittance fee structure and the ability to withdraw payments made in South African rands as United States dollars at any of 9,000 EcoCash representation points in Zimbabwe if recipients wish. In addition, all transfers occur in real time on the MTN MoMo app and are immediately reflected in the chosen EcoCash wallet across the border.

Batelco launches first off-grid mobile site

Beyon's telecommunications arm, Batelco, has launched the first off-grid mobile site in the region powered entirely by renewable solar and wind energy.

The solution operates independently of traditional energy, resulting in an annual reduction of 280 tonnes of carbon emissions and conserving 400MWh of energy per site. This solution also ensures zero noise pollution, making it ideal for mobile telecom towers in urban and remote areas.

"Batelco is thrilled with the performance of its first-off grid site and is excited to expand its renewable energy initiatives to mobile sites across the kingdom, reinforcing our commitment to sustainability and innovation," said Batelco's Chief Technology Officer Rashed Mohamed.

Sateliot invests in STEM training

Sateliot has formalised a collaboration agreement with UNESCO Santiago, the regional office for Latin America and the Caribbean of the United Nations Educational, Scientific and Cultural Organization.

Central to the partnership is the Sateliot Impact Challenge, an ambitious training programme that will offer teacher training and education for young people in STEM fields and entrepreneurship. This will enable teachers to lead project-based learning. At the same time, young people will learn to design and implement innovative proposals to address real community problems.

The Sateliot Impact Challenge will launch its first edition in Latin America, starting in schools in Brazil and Chile. It will then expand to Africa, Asia, and the Middle East, culminating in the BCN2026 Hackathon, where the most outstanding projects from each country will be presented. Through STEM and entrepreneurship training, access to an interactive platform, and mentorship support, the project aims to ensure that teachers and youth can participate fully in the global economy.

"This partnership empowers students in remote areas to acquire transformative skills essential for quality employment in the future. It's a responsible and meaningful way for us to contribute to a more equitable world through the transformative power of education," said Jaume Sanpera, CEO and co-founder of Sateliot.
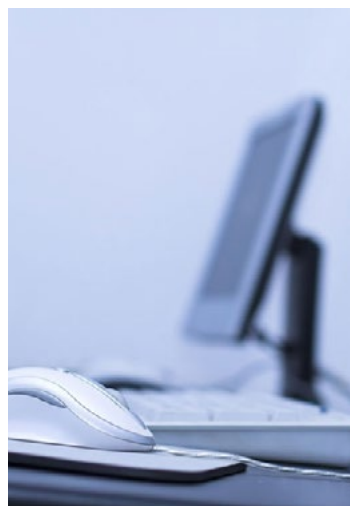
INWIT completes Smart City Roma deal

INWIT has completed the purchase from Boldyn Networks of a majority stake (52.08%) in Smart City Roma, formerly called Boldyn Networks Smart City Roma. INWIT has an option to acquire the remaining shares in Smart City Roma which may be exercised after the project testing, scheduled for July 2029.

Smart City Roma was set up as a joint venture between Boldyn Networks and Roma Capitale, the city's administrative authority and provider of public services. Under the project, Smart City Roma will build wholesale 5G infrastructure delivering connectivity in all the main hubs of the Italian capital, including metro lines, squares and streets. The project also envisages improving public safety and providing smart services to residents and tourists. There is a 25-year concession for the construction, management, operation and maintenance of infrastructure available to all mobile operators. Some of the investment in the infrastructure will come from the public sector.

INWIT said that the acquisition is in line with its 2024-2026 business plan and strategy to make neutral host investments to support the network development plans of mobile operators in response to the growing demand for digital services and integrated digital infrastructure, outdoors and indoors, and in smart city projects.

Eutelsat and Clear Blue Technologies team up for African connectivity

Eutelsat has entered into a partnership with Clear Blue Technologies to strengthen connectivity services in Africa by deploying energy-efficient broadband solutions that are particularly suited to areas with unstable electricity supply.

"Our strategic partnership with Clear Blue marks an important step forward in our mission to extend digital inclusion across Africa. Eutelsat's expertise in power optimisation, combined with Clear Blue's intelligent energy management technologies, enables us to deliver new sustainable connectivity solutions," said Cyril Dujardin, President of Eutelsat's Connectivity business.

According to the World Bank, only 36% of Africa's 1.3 billion people have access to the internet, and in some areas the quality of connection is far below that of other regions of the world. To address this challenge, the two companies will deploy energy-efficient broadband connectivity solutions, targeting businesses and local Wi-Fi networks even in areas where energy supply is limited. Eutelsat will integrate Clear Blue's energy technology into the GEO Konnect and LEO OneWeb platforms, enabling users to be less dependent on fluctuating energy infrastructures.

Turkcell's 5G-Advanced trial exceeds 32Gbps

Turkcell and ZTE have surpassed 32Gbps speeds in a 5G-Advanced trial in Istanbul, claiming a new record for the fastest 5G-Advanced speed in Europe. The NRDC trial utilised ZTE's 1.6 GHz bandwidth mmWave AAU, 64TR N78 AAU, and ZTE's commercial CPE.

"The significance of 5G-Advanced cannot be overstated. This next-generation technology is designed to enhance connectivity in unprecedented ways. By improving data transmission rates, reducing latency, and increasing overall capacity, 5G-Advanced lays the groundwork for a plethora of new applications. These include live broadcasting, extended reality (XR), ultra-HD video streaming, and ultra-low latency services, all of which have become increasingly integral to today's digital landscape. As a result, users can expect an immersive audio-visual experience that not only meets but exceeds current standards," said the companies in a statement.

Both companies believe that the potential applications of 5G-Advanced technology are vast and varied. From smart cities to autonomous vehicles, the improvements in connectivity can transform industries, enabling them to operate in ways previously unimaginable. This technology not only promises to enhance existing services but also paves the way for entirely new business models and opportunities.

Iraq ponders foreign companies for 5G

The Iraqi government is in talks with foreign companies to operate the country's planned 5G network, a year after the 5G network plan was greenlighted by the Iraqi Communication Ministry.

Iraqi Minister of Communications Hiyam Al-Yasiri apparently said that negotiations are underway following the Iraqi cabinet's approval of a team tasked with talking directly with international operators. The team – chaired by Al-Yasiri – is focusing on operators with experience in Middle Eastern countries.

However, Zain already operates a mobile network in Iraq alongside domestic telcos Asiacell and Korek. Zain Iraq launched a 'virtual 5G-ready mobile network' in 2021 in partnership with Matrixx Software under the brand Oodi, although the service uses its 4.5G network.

VMO2 launches Total Not Spot site

Virgin Media O2 (VMO2) has become the first mobile operator in the UK to launch a Total Not Spot (TNS) site as part of the second phase of the Shared Rural Network (SRN) programme.

The new site, located on South Uist in the Outer Hebrides, brings 4G mobile coverage to previously underserved areas, including the villages of Balivanich, Grimsay, and Liniclate, as well as nearly all of Benbecula.

It will also improve connectivity along the 30km stretch of the A365, benefiting both residents and tourists. The site will support all mobile networks, ensuring coverage for around 200,000 annual visitors to the region, including major attractions like the Ushenish Lighthouse and the Hebridean Way. Additionally, the site is also crucial for seafarers operating in the nearby Little Minch waters, the operator said.

The operator worked with build partner WHP Telecoms to deliver the site in six weeks, overcoming significant challenges such as bad weather.

IC Mobile opts for Openmind's messaging system

Openmind Networks has supplied its state-of-the-art messaging systems software and Short Message Service Center with Application Router for IC Mobile.

Openmind Networks' advanced messaging systems software is tailored to meet the needs of telecom providers worldwide. Focusing on security, reliability, and scalability, Openmind Networks enables operators to deliver seamless messaging experiences while protecting customer data and privacy.

"The partnership with Openmind Networks will help bolster our market share in business messaging and enhance our offerings as the landscape evolves," said Duncan McCready, President of IC Group.

"We are excited to be chosen as the messaging system software provider for IC Mobile," said Alex Duncan, CEO of Openmind Networks. "This partnership provides a fantastic opportunity to deliver high-quality messaging products to the North American market and explore new ways to enhance the end-user messaging experience."