For communications professionals in the southern Asian region

SOUTHERN ASIAN WIRELESS COMMUNICATIONS

Q3 2024 Volume 17 Number 2

- Sunsetting 2G/3G - too much, too soon?
- Reshaping telecommunications with AI
- Inflection for in-flight connectivity

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About PowerX

PowerX, a UK-based company, is redefining tower performance using advanced data science and Artificial Intelligence - the first solution dedicated to tower passive infrastructure that embeds data intelligence into the heart of tower management decisions, facilitating resilient and sustainable mobile connectivity growth. With PowerX, tower operators can monitor, control and apply continuous site-level efficiencies at scale for thousands of towers across entire networks.

PowerX solutions help Tower companies and Mobile Operators globally harness data intelligence driving timely actionable insights with automated workflows managed through to resolution. Proven across thousands of sites, the solution builds infrastructure resilience, improves assets efficiency and optimises tower operations. PowerX functionality delivers: reduced site inefficiencies; optimised energy usage; reduced diesel consumption and greenhouse gas (GHG) emissions; targeted predictive maintenance; reduced operational costs and increased revenue assurance.

Find out more: powerx.ai/aw

PowerX

KADIUM

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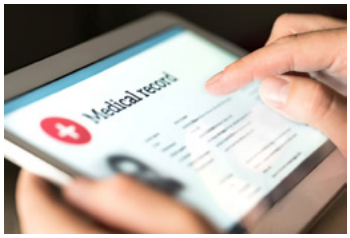
Thailand to gain smart healthcare

True Corp is collaborating with Intel to launch seven new smart healthcare solutions that leverage 5G connectivity and AI to improve diagnosis, treatment, rehabilitation, and patient data management in hospitals and healthcare agencies in Thailand.

TrueBusiness will deploy Intel's software solutions like OpenVino, which provide edge AI in healthcare solutions to support diagnosis and treatment times. The services will leverage True's 5G network and edge analytics powered by Intel Edge AI on Intel Core Ultra.

Among the new healthcare solutions to be offered is Patient Management as a Service (PMaaS), which essentially creates a 'digital patient twin' using various patient data, such as body temperature, heart rate, respiratory rate, sleep quality, and patient position on the bed.



The data is transmitted to sensors installed on the ceiling above the patient's bed and sent from there to a central system that collects and generates notification alerts when abnormalities are detected. TrueBusiness says this allows for closer, faster, safer, and more efficient patient monitoring without disrupting the patient's rest for regular measurements.

TrueBusiness will also launch a telemedicine service that connects medical equipment installed in various local areas to the hospital's central system via 5G, and stores patient data and medical history, enabling doctors to consult and treat patients in real-time remotely.

The solution also includes a large language model (LLM) AI platform for conducting initial symptom analysis and providing in-depth insights into the causes and treatment options for diseases or health issues, as well as the next steps in treatment. The AI platform can run on existing servers both on-prem and in the cloud using Intel's latest Xeon CPUs with SGX for secure computing, as well as OpenFL for federated learning Intel's oneAPI for AI training and inferencing using AMX acceleration.

Other smart healthcare solutions include Pathology as a Service, Ophthalmology as a Service, residential care management (which monitors elderly care patients using edge IoT devices), and a cloud-based medical data management solution that uses the AI platform to archive medical images that can be accessed anywhere.

TrueCorp chief business officer Pichit Thanyodom said that the collaboration will not only streamline Thailand's public health system, making it more efficient and cost-effective, but could also position Thailand as a competitive medical hub in Southeast Asia.

"TrueBusiness is accelerating the development of innovative services while integrating AI to enhance organizational capabilities," said Thanyodom. "By partnering with global leaders like Intel, TrueBusiness aims to create tangible and practical solutions to support Thai businesses in their digital transformation."

Singtel deploys Automated Radio Resource Partitioning at 2024 Singapore Grand Prix Formula 1 event

Singtel has commercially deployed Ericsson's Automated Radio Resource Partitioning (ARRP) at the 2024 Singapore Grand Prix Formula 1 event as part of Singtel's 5G Express Pass offering to consumers.

This advanced 5G technology allows for real-time, intelligent allocation of network resources, addressing the challenges of over- and under-provisioning that hindered earlier network slicing solutions. Singtel claims that it is the first in the world to commercially deploy this new 5G capability.

Unlike previous iterations of network slicing that require customers to pre-define their network needs, the new software solution intelligently allocates network resources to meet the varying workloads of enterprise and consumer applications, thereby overcoming issues of over- or under-provisioning and eliminating the risk of compromising network performance.

ARRP also simplifies the complexity of network management for enterprise customers and is particularly beneficial for mission-critical applications where demands on the network frequently change abruptly, Singtel explained in a joint statement.

The ARRP was put to the test during the 2024 Singapore Grand Prix, where it supported over 250,000 attendees with seamless connectivity for live streaming, social media sharing, and ride-hailing services.

"With Ericsson's Automated Radio Resource Partitioning (ARRP), businesses only need to specify their desired outcomes, and the software handles the rest. Even with no knowledge of network resourcing and management, businesses can tap into the new capabilities of 5G and network slicing. This paves the way for businesses to explore new use cases in dynamic environments like homeland security, healthcare, smart manufacturing, and even high-traffic consumer events," said Singtel Singapore in a statement.

The ARRP solution enables Singtel to define and set measurable objectives or 'intents' for its enterprise customers, pertaining to uplink or downlink throughputs, along with maximum resource utilisation in the network.

Vietnam delays 2G sunset in wake of Super Typhoon Yagi

Vietnam's Ministry of Information and Communications (MIC) has delayed its planned shutoff of 2G mobile networks by a month to mid-October as communities struggle to stay connected in the aftermath of Super Typhoon Yagi.

Under a roadmap issued by the MIC in July, telcos were scheduled to stop providing services to all 2G-only phones starting 16 September, with the exception of M2M 2G devices, as well as Vietnamese offshore platforms and the coastal archipelagos of Truong Sa (Spratley Islands) and Hoang Sa (Paracel Islands), which can continue to use 2G services for another two years.

However, the MIC has now pushed back the shutdown deadline to 15 October at the request of telcos as they struggle to keep people connected in the wake of the massive impact of Super Typhoon Yagi.

Yagi hit Hai Phong and Quang Ninh provinces in northern Vietnam on 7 September with winds up to 203 km/h, according to the Indo-Pacific Tropical Cyclone Warning Centre. As of Monday, the death toll was at 292 with 38 people still missing.

Another reason for the 2G shutoff postponement also seems to stem from the fact that around 1.8 million 2G-only subscribers have yet to switch to 3G or 4G services.

The 2G shutoff will still happen next month as part of its plan to free up the 900MHz and 1800MHz bands for other services, including 4G and 5G in the immediate term and potentially 6G in 2030. The MIC also intends to ditch 3G for the same reason, by September 2028.

Indonesia's communications services revenues to increase by 4.6% through 2029

Indonesia's communication services revenue will increase at a compound annual growth rate (CAGR) of 4.6% from $3.2 billion in 2024 to $4 billion in 2029, according to GlobalData, due to fibre broadband service adoption gaining traction.

"Fibre lines are estimated to account for about 88% share of the total fixed broadband lines in Indonesia in 2024 and will remain the leading broadband technology through 2029," said Srikanth Vaidya, Telecom Analyst at GlobalData.

Fixed broadband service revenue will also increase at a CAGR of 4.9% as its penetration gains pace, especially with the growing adoption of higher ARPU fibre-optic (FTTH/B) services. Indonesia's Fixed Communications Forecast for Q2 2024 revealed that fixed voice service revenue will decline at a CAGR of 0.7%. GlobalData attributes this to the continuous drop in circuit-switched subscriptions and a decline in fixed voice average revenue per user (ARPU) levels with users shifting from traditional telephone to mobile/OTT services.

Digicel Pacific and SES to tackle natural disaster

Digicel Pacific and SES have announced an agreement to bolster Digicel Pacific's network with SES's service to enable critical communications to be restored quickly in the event of natural disasters.

Following the earthquake that hit Tonga on 26 August, Tonga Domestic Cable Extension (TDCE), the island nation's only domestic subsea cable connection, was damaged. Through SES's satellite service, Digicel Pacific was able to restore inter-island voice, SMS, and data services on the islands of Vava'u within six hours.

"The expanded agreement with SES and the use of its O3b mPOWER network will give the nation of Tonga greater peace of mind that, in the event of a significant disaster, we will have the ability to access a large amount of low-latency, high-throughput connectivity," said Digicel Pacific regional hub markets CEO Shally Jannif. "Being able to implement disaster recovery networks quickly after the recent earthquake enabled people to get back online and assure their loved ones of their safety. At the same time, it also enabled local business to get their operations back up quickly, minimising the potential disruption to their businesses."

Philippines acts to protect telco infrastructure amidst new threats

PLDT, its wireless unit Smart Communications, and the government's Cybercrime Investigation and Coordinating Center (CICC) are spearheading a public-private project to protect telecoms infrastructure.

The project - PROTECTA Pilipinas (a.k.a. Protect Technology-Telecom Alliance) - was launched under an MoU signed by private and public stakeholders. The alliance aims to identify and advocate for measures that enhance the resilience of telecom networks, including redundancy, disaster recovery plans, and cybersecurity protocols.

In addition to PLDT, Smart and CICC, alliance members include the Philippine Chamber of Telecommunication Operators (PCTO), advocacy group CitizenWatch Philippines, public policy think-tank Infrawatch PH, the PNP Anti-Cybercrime Group (PNP-ACG), the Federation of International Cable TV Association of the Philippines (FICTAP) and Manila Electric Co (Meralco).

PROTECTA Pilipinas intends to collaborate with government bodies responsible for telecoms regulation and infrastructure management, including initiatives on policies, regulations, and enforcement mechanisms to protect telecom assets. The alliance will also work with telcos, equipment manufacturers, and service providers to encourage best practices, information sharing, and joint efforts to secure infrastructure. PROTECTA Pilipinas also covers protection of physical infrastructure, a major issue as telcos continue to struggle with equipment theft, including cables and batteries.

The alliance hopes to develop timely reporting mechanisms for suspicious activities or threats to telecom infrastructure to ensure swift action by relevant authorities. It will also push for legal frameworks that explicitly protect telecom infrastructure from vandalism, theft, and sabotage.

As part of the physical component, PROTECTA Pilipinas also plans to establish monitoring systems to track the health and performance of telecom facilities, as regular assessments can identify vulnerabilities, maintenance needs, and potential risks.

"These efforts will ensure that our critical infrastructure for communications are given proper attention in terms of security and integrity," said CICC executive director Alexander K. Ramos.

SITA smartens up Indian airports with AAI

SITA is installing its SmartPath technology across nine Indian airports in a partnership with Airports Authority of India (AAI).

Part of the wider DigiYatra initiative, the collaboration marks a milestone in Indian aviation. It introduces SITA's contactless boarding pass system to reduce waiting times, creating a seamless travel experience for passengers, and improves airport efficiency for every traveler.

AAI will use SITA's state-of-the-art products and solutions, including SITA Smart Path, Passenger Flow Management (PFM) solution, and Face Pods. These technologies offer biometric solutions at most touchpoints across the airport, meaning a contact-free travel experience across nine Indian airports, putting passengers in control of their journey, cutting down on wait times throughout the airports.

The partnership is a key element of AAI's strategy to digitalize Indian airports as part of DigiYatra, an initiative created by the Indian Ministry of Civil Aviation to revolutionize air travel in India by providing passengers with a paperless airport experience using advanced facial recognition technology.

"With a focus on delivering digital travel, improving airport efficiency, and future-proofing operations with smart, agile solutions, India has a unique opportunity to revolutionize its airports with truly world-class infrastructure. It is vital in this connected era that travel across the globe is as seamless as possible and we are ready to help India continue to innovate in their digitalization efforts with SITA technology as the DigiYatra initiative spreads across India," said SITA's biometric technology will transform the way travelers navigate through Indian airports. Sumesh Patel, President, APAC, SITA.

In 2023, over 20 million users experienced DigiYatra, and with its upcoming availability at 28 Indian airports, DigiYatra aims to cover approximately 90% of India's domestic flying population. The DigiYatra Foundation plans to align with IATA's One-ID initiative for global interoperability, further improving the seamless travel experience.

IGC deploys next-gen optical transport to DWDM network

International Gateway Company (IGC) has deployed Nokia's next-gen optical transport solution to modernize its existing DWDM network in Thailand.

The upgrade boosts capacity on the DWDM network – which connects the east region to Cambodia and the south region to Malaysia – to 400G per wavelength.

IGC has also deployed Nokia's data centre interconnect (DCI) solution in Bangkok and in the east and south regions. IGC CEO Pichit Satapattayanont said that both solutions will enable it to better manage data traffic more cost-effectively as demand surges, while also reducing energy consumption.

"Nokia's cost-effective and resilient DWDM solution, based on coherent technology, will help us delight our hyperscale customers by providing superior connectivity from the Cambodian border to the Malaysian border," said Satapattayanont.

The announcement comes just days after IGC signed an MoU with OMS Group subsidiary LitUp Network Singapore to collaborate on various projects in Thailand and in the ASEAN region, including cable landing stations and submarine cable systems. IGC and LitUp Network will work together to develop and deliver advanced network connectivity infrastructure to support growing demand for high-speed, reliable internet services.

LitUp Network and IGC are also working together on a new subsea cable system from Songkhla to Rayong, along with related terrestrial links. The Satun-Hatyai-Songkhla-Rayong cable system will complement two other systems planned for future development connecting Hatyai to Padang Besar and Hatyai to Bukit Kayu Hitam.

DNB, Ericsson and eMooVit trial 5G for autonomous driving

Digital Nasional Berhad (DNB), Ericsson and Malaysian autonomous vehicle solutions developer eMooVit Technology have staged a demo showcasing 5G use cases for an autonomous electric bus that's being tested for a planned trial later this year.

The demo, held at eMooVit's headquarters in Cyberjaya, was part of a proof-of-concept trial of 5G use cases such as in-vehicle public Wi-Fi backhauled by 5G, in-vehicle CCTV, real-time telemetry data monitoring and journey log collection.

According to DNB's chief strategy officer Ahmad Zaki Zahid, once these use cases are commercialised, they will make autonomous bus rides safer and more reliable for passengers, as well as help improve cost efficiency for the bus operator.

"5G enables real-time, reliable connectivity for data processing, mapping, and integration with other systems, which play vital roles in shaping the future of transportation," he said at the demo event. "5G also facilitates improved communication between vehicles and with infrastructure such as traffic signals, road signs, and centralized traffic management systems. Through 5G-enabled CCTV and real-time systems monitoring by the command centre, bus passengers can enjoy peace of mind, knowing that their safety is enhanced."

Malaysia's Transport Minister Anthony Loke Siew Fook said that 5G applications would boost implementation of autonomous public transportation in Malaysia, which the government hopes to commercialise once the necessary guidelines and legal frameworks are in place.

"The benefits of autonomous transport range from improved traffic flow to route optimisation, which leads to smoother traffic patterns, more efficient use of road infrastructure and reduced human error," said Loke. "There is also the potential to be more energy-efficient and environmentally friendly, especially if electric vehicles are used as they reduce greenhouse gas emissions and air pollution in urban areas."

VNPT to install base station for typhoon resettlement in Lao Cai province

VNPT has commenced work to install a cellular base station in Lao Cai province to serve a new resettlement area for Lang Nu residents displaced by Super Typhoon Yagi earlier this month.

The village of Lang Nu was swept away by landslides and heavy flooding when Yagi made landfall in northern Vietnam on 7 September, leaving 95 people in 37 households either dead or missing.

The location for the resettlement area for surviving villagers was finalised on 15 September, and work has since commenced on measurements, planning, construction and assessing compensation for site clearance. The resettlement area, which is located around 2km away from the site of the original village, is scheduled to be completed before the end of 2024.

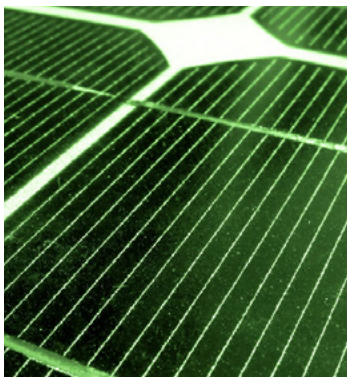
VNPT is installing the base station on a hilltop in the Bao Yen district of Lao Cai, 800m from the resettlement area and 2km from the original site of Lang Nu, where rescue efforts are ongoing. The base station will provide mobile and data connectivity to residents of the new village, as well as recovery and emergency teams still working in the area.

M1 Limited goes green with solar energy

M1 Limited's has installed solar panels at eight BTS sites across Singapore to reduce grid electricity consumption and overall energy use.

These installations have cut electricity consumption by about 20% per site, equating to approximately 4,800kWh annually per BTS, which is more than 13 months' worth of energy for an average four-room household.

The company plans to add solar panels to another 10 sites in 2025 and will continue to monitor technology trends and conduct trials to enhance its green energy use. It has also completed a pilot trial for smart network management technology, designed to reduce energy consumption during low traffic periods by adjusting the power use of network elements based on real-time traffic conditions. Initial assessments suggest potential energy savings of up to 300,000kWh per year across M1's network.



Viettel to offer free 4G feature phones to 2G-only subscribers

Viettel reportedly plans to give away 4G feature phones to 700,000 of its 2G-only subscribers to migrate them to 4G as the government's delayed shutdown of 2G draws near.

Viettel will spend VND300 billion to subsidise the 4G feature phones, which leverage the cloud to offer select OTT apps. Eligible users will receive an SMS telling them to go to the nearest Viettel store or contact local employees for help in receiving the handsets.

Viettel will prioritize subscribers in mountainous regions affected by Super Typhoon Yagi, including Lao Cai, Yen Bai, Tuyen Quang, Hoa Binh, Bac Kan, Son La, Dien Bien, Lai Chau, Cao Bang, and Ha Giang provinces.

Viettel – which has the largest 2G subscriber base in Vietnam – has migrated more than 8 million 2G subscribers to 4G devices this year. It has also installed over 6,000 new base stations across the country to expand its 4G coverage to 96% of the population, including 4 million new users in remote and rural areas.

All telcos will stop providing services to all 2G-only phones from 15 October, with the exception of M2M 2G devices, as well as Vietnamese offshore platforms and the coastal archipelagos of Truong Sa (Spratley Islands) and Hoang Sa (Paracel Islands), which can continue to use 2G services until September 2026.

India's 5G market overtakes USA

Prime Minister Narendra Modi recently visited the USA, where he said that India's 5G market has grown bigger than America's 5G market – in just two years.

While 5G has not yet found its footing in the Indian market as it has in the USA in terms of monetisation, the aggressive rollout is impressive, and the country hosts has more than 4.5 lakh 5G BTS.

The availability of affordable 5G phones in the Indian market will help in the fast adoption of high-speed internet services.

CelcomDigi and BoomGrow Productions partner on sustainable smart farming

CelcomDigi and agritech startup BoomGrow Productions have partnered to launch 5G and AI-powered machine farms that they say will enhance sustainable farming practices and food production in the country.

Under the partnership, CelcomDigi will integrate 5G connectivity, AI and extended reality (XR) with BoomGrow's precision farming technology. BoomGrow's machine farms will use 5G connectivity to gather real-time data from integrated sensors and monitoring systems, allowing for precise control of indoor farming environments and ensuring optimal conditions for crop growth.

Meanwhile, advanced analytics powered by AI enable deeper analysis of those datasets, with data from all machine farms consolidated into a centralised dashboard, enabling seamless oversight and management.

The XR component, powered by XR Associate, is a training tool for agronomists that enables them to learn how to manage modern farming systems from different locations where BoomGrow machine farms are present. This will also help facilitate BoomGrow in onboarding new agronomists as they scale to roll out more machine farms in future.

BoomGrow CEO and co-founder Murali Krishnamurthy said that the combination of these technologies will enable real-time monitoring, precise control of farming environments, and predictive analytics, leading to increased crop yields and overall resource efficiency.

"The integration of 5G technology into our operations allows us to unlock new levels of efficiency and sustainability, driving the future of agriculture," said Krishnamurthy. "With this enhanced connectivity, our customers will benefit from better predictability and control, ensuring consistently high-quality produce and more reliable outcomes."

MEASAT Partners with NewSpace India Limited

MEASAT Global Berhad is collaborating with NewSpace India Limited (NSIL) to support its business in India through a Collaboration Agreement.

NSIL is responsible for owning and operating its fleet of communication satellite and provide services to users from both government and private sectors. NSIL is also mandated to deliver other space-based products and services derived from Indian Space Programme to global clients, as well as fostering growth within India's space industry.

This partnership enables MEASAT to offer its satellite capacity for broadcasters, DTH operators, and other services in near future. Domestic services will utilise MEASAT-3b Ku-Band, while regional connectivity will be provided through MEASAT-3d Global C-Band, ensuring robust and reliable coverage across the region.

"MEASAT is pleased to strengthen the business relationship and expand the collaboration with NSIL, who has been our partner for more than 5 years. It is exciting to see the Indian Government's commitment to grow the space industry and we are keen to leverage our capabilities and reliable satellites to support the needs of current and future clients in the country. The success of our CONNECTme satellite broadband service in helping to close the connectivity gap in rural Malaysia could be replicated in India through this partnership. We are also keen to tap on NSIL's launch service capability and other services to support MEASAT's initiatives in the region," said Ganendra Selvaraj, Chief Commercial Officer, MEASAT.

"We are delighted with this expansion of our relationship with MEASAT. NSIL is committed to meet the demands of users in Indian Market and hence it would continue the successful business activities with international satellite solutions providers like MEASAT in line with India's national goals. Together, we will also drive new capacity offerings for existing customers and new business in India, which in turn, helps them achieve their own growth targets," said A. Arunachalam, Director, NewSpace India Limited.

Viettel to deploy 5G nationwide in Vietnam

Nokia has signed a new deal with Viettel Group (Viettel) to deploy 5G equipment for the first time nationwide in Vietnam.

The project will cover 22 provinces across the country and support Viettel's strategy of advancing 5G infrastructure and digital transformation. The project will also see Nokia modernize Viettel's 4G infrastructure, and will begin this year.

Under the deal, Nokia will supply equipment from its industry-leading 5G AirScale portfolio for the first time in Vietnam covering 2,500 sites. This includes Nokia's next-generation AirScale baseband solutions, Massive MIMO radios, and Remote Radio Head products. These are all powered by its energy-efficient ReefShark System-on-Chip technology and combine to provide superior coverage and capacity. It marks the first 5G network in Vietnam where the deployed products have also been locally manufactured, highlighting Nokia's commitment to the region.

Vietnam's Ministry of Information and Communications has placed great importance on 5G as a critical national infrastructure that will enable sustained socioeconomic development through science, technology, and innovation. Vietnam's digital economy is expected to contribute between 20% and 30% of GDP by 2030.

"This important project with our long-term partner Nokia, will play a critical role in advancing Viettel Group's strategy of deploying 5G infrastructure and driving digital transformation in Vietnam. 5G technology supports the development of national digital infrastructure and a digital service ecosystem, creating opportunities for economic growth and increased productivity," said Mr. Tao Duc Thang, President & CEO at Viettel Group.

"Nokia is proud to be Viettel Group's principal partner in this critical digital transformation project that will lay the foundations for Vietnam's future competitiveness. Nokia has been a part of Vietnam's growth over the past three decades, and this initiative of enhancing local technology production continues to strengthen our bond with the country. Our AirScale portfolio offers premium connectivity, low latency, and reduced power consumption supporting Vietnam's digital future," said Tommi Uitto, President of Mobile Networks at Nokia.

Philippines explores free wireless internet in roll-on, roll-off ports

The Philippines' Department of Information and Communications Technology (DICT) is preparing to tender a contract worth just over PHP37 million to roll out free wireless internet access services in 67 'roll-on, roll-off' (RoRo) ports across the country.

The winning contractor for the project must install Wi-Fi access in 29 RoRo ports in Luzon, 18 in Visayas and 20 in Mindanao. RoRo ports specialise in cargo ships transporting vehicles that can be driven on and off the vessel via ramps, as opposed to lifting them with cranes.

The contractor can decide what backhaul technology to use, but the contract sets speed performance requirements specific to the technology used. For satellite backhaul, download speeds must range between 100-220 Mbps, with a minimum uplink speed of 10Mbps and a round-trip latency of less than 100ms. For fibre backhaul, the Wi-Fi access points must support an average download speed of 150Mbps and a latency of less than 50ms.

Whoever wins the contract will be required to start installation within 30 days, and complete the project within four months, or by the end of this year, whichever is earlier. The budget for the project comes from the special account in the general fund for the Free Public Internet Access Program (FPIAP), which has been installing free Wi-Fi in public spaces and state-run schools. The FPIAP has had annual budget of PHP2.5 billion since 2022.

OMS Group allocates $300 million for ASEAN cables

OMS Group has allocated US$300 million for strategic investments in its global cable systems and terrestrial infrastructure in the ASEAN region.

The investment will focus on expanding its subsea cable systems and terrestrial infrastructure to meet growing regional demand for digital services driven by the growth of data centres and cloud services in the region.

The expansion strategy includes acquiring direct ownership of subsea cable systems and boosting its backhaul capabilities from cable landing stations to data centres. The aim is to integrate its subsea and terrestrial infrastructure to offer comprehensive services to clients, as per OMS Group CEO Ronnie Lim.

"We aim to be a one-stop shop for client needs across subsea, cable landing stations and terrestrial networks, starting with the ASEAN region," said Lim. "This integrated approach will not only streamline access to our comprehensive services but also lay the groundwork for further expansion into the broader APAC market."

Among OMS Group's subsea projects is the Malaysia India Singapore Transit (MIST) subsea cable system.

XL Axiata launches SIM registration with a twist

XL Axiata has launched a new prepaid SIM card registration process that uses facial recognition technology as a biometric ID verification measure, following a successful trial in September.

XL Axiata's prepaid customers will be required to scan their face using designated devices during the prepaid card registration process. The biometric data will be automatically cross-checked with government identity databases to verify the customer's identity.

The operator claims that facial recognition technology enables more precise identity verification, which will streamline the prepaid registration process. The technology also complies with industry Know Your Customer (KYC) protocols to ensure data accuracy and reduce the risk of fraud or identity theft. The biometric technology will help it comply with the Indonesian government's regulations on prepaid number registration that claim to 'enhance security and prevent the misuse of telecommunication services.'

XL Axiata staged a public trial of the biometric prepaid card registration process at XL Center Gandaria City in Jakarta, on 12 September. The trial was supervised by the Ministry of Communication and Informatics of the Republic of Indonesia (Kominfo).

"We believe this innovation will bring convenience, enhance security, improve speed, and minimize the risk of data forgery or duplicate identities," said Yessie D. Yosetya, director and chief enterprise business and corporate affairs officer at XL Axiata.

Use of facial recognition technology has been ramping up in Indonesia, particularly among government agencies and companies, with much of it applied to immigration checkpoints. In July, Indonesia Immigration implemented an automated border control system using facial recognition for the international seaport at Batam Centre. In September, state railway company KAI said it will introduce a new CCTV system with face recognition technology to identify and blacklist passengers involved in criminal activities.

Talking critical

Kevin Graham, TCCA CEO

Looking to the new capabilities of 5G for critical communications

TCCA promotes the use of standardised technologies to deliver mission-critical communication systems that are secure, available, resilient, interoperable and, ultimately, trusted. TCCA has driven the TETRA standard and market, and also supports other standardised narrowband technologies. With the establishment of its Critical Communications Broadband Group (CCBG) some 14 years ago, TCCA recognised the need to deploy 3GPP mobile broadband critical communications, which in many cases will complement or replace narrowband networks.

We are now in the 5G era, and with 5G rollouts advancing, the opportunities to further enhance critical communications are becoming clear. 5G is an ever-evolving technology with new features still being added. For example, network slicing is designed to allocate specific required resources to meet the requirements of different user groups, while multi-access edge computing (MEC) servers can enable low latency applications by moving processing closer to the edge.

Through 5G innovative features and technological innovation, 5G is envisioned to support unprecedented and diverse mission critical applications and use cases. These include:

- Isolated Operation for Public Safety (IOPS) – enabling continuous site operation even with backhaul link damaged
- Non-Terrestrial Networks (NTN) – enabling extended terrestrial coverage through satellite, and direct satellite to device connection
- Multimedia Broadcast and Multicast Services – improving broadcast, multicast and public warnings/ messaging systems' efficiency
- Unified Access Control – reducing signalling and processing in Next Generation Node B (gNB), ensuring network stability during high traffic loads/congestion
- National Roaming – enabling the roaming into multiple networks from commercial mobile network operators to public safety networks in situations of limited coverage

5G technology will essentially deliver improvements to users in two distinct ways: enhancing use cases initially enabled by 4G LTE in terms of scaling up these services to more users within a given locality; and addressing new and emerging use cases made possible with advancements in technology such as ultra-low latency mobile connectivity. Both will provide important user benefits, ranging from enhanced situational awareness - using advanced video recognition capability, artificial intelligence analysis of data collection and new immersive user applications - to greater use of remote and specialist expert analysis of incident ground environments for first responders. The information between agencies can be shared more easily via cloud-based application platforms. The net result is that the cooperation between first responders can be more effective and efficient, improving the safety of users and saving the lives of others. From a technology perspective, 5G will provide a plethora of new capabilities, most notably enhancing mobile broadband services with ultra-reliable low latency communications and supporting massive machine-type device deployments. Whilst these capabilities will be available across all bands, lower sub-1GHz spectrum allowing greater macro coverage while the benefit of some will be more pronounced at higher frequencies due to correspondingly larger channel bandwidths supporting higher capacities.

Security has been one of the main considerations in 3GPP standards development, ensuring that the resulting technology is trustworthy. Each generation of 3GPP standards has incorporated security improvements - underpinned by advancements in hardware and software - and against the backdrop of an ever-evolving threat landscape. Hence the security of 5G is a further enhancement over 4G LTE.

The global ecosystem committed to 5G will undoubtedly drive further standardisation and development of mission-critical services. Industry is also investing in and delivering solutions capable of providing new ways of monitoring network performance and assuring service levels using complementary software technologies such as automation, analytics, and artificial intelligence.

According to the GSMA, advanced Asia Pacific markets have taken the lead in 5G rollout. Countries such as South Korea, Australia, and China were among the first in the world to launch commercial 5G networks as more markets joined the ranks. 5G performance outranks Europe, with early adopters in the Asia Pacific region having outperformed major European markets, mainly due to factors like early spectrum availability and supportive government policies.

Whilst a significant amount of progress has been made by the critical communications community in establishing mission-critical broadband spectrum, standards, technology and a competitive marketplace, there is still more to achieve. We must continue to expand collaboration efforts with commercial mobile network operators (MNOs) to deliver and enhance mission critical mobile broadband services for critical communication users, leveraging 3GPP defined capabilities and utilising shared and/or dedicated spectrum for private deployments and rapid deployables. We must continue to prioritise, resource and support further 3GPP-driven standards definition and testing for features of particular benefit to the critical communications community and drive conformance, certification and interoperability. We must continue to identify any new 5G functionality that could be of benefit to critical network operators looking to deploy solutions involving multiple MNO infrastructures and hybrid private/commercial options, such as improvements in handover performance, security and interworking and interoperability in general.

The work of TCCA enables international collaboration on service deployment experiences and sharing of best practice. We recognise that the introduction of a next-generation technology requires careful consideration, including aspects such as coverage, security, resilience, capacity, performance, interoperability, and integration into user operations. In general, each organisation will, at their own pace, go through an evolution process, this technology shift providing the opportunity for new operational models to become institutionalised over time.

TCCA's vision is advancing global critical communications for a safer, more connected world. Our mission is to empower critical communication users with secure, trusted, and standardised technologies. We will work to help ensure that 5G fulfils its full potential in helping the critical communications sector deliver the best possible services and support for those users.

Airtel launches India's first AI-powered phone spam solution

Bharti Airtel has launched what it claims is India's first network-based, AI-powered spam detection solution that will significantly solve the issue of spam calls and messages for its customers.

The AI solution processes 1 trillion records in real-time, flagging 100 million spam calls and 3 million SMS messages every day. This first-of-its-kind solution from a telecom service provider in the country will alert customers in real time to all suspected spam calls and SMS messages. The solution is available free of charge and will be automatically activated for all Airtel customers without them needing to raise a service request or download an app.

"Spam has become a menace for customers. We have spent the last twelve months working to solve this comprehensively. Today marks a milestone as we launch the country's first AI-powered spam-free network that will shield our customers from the continuous onslaught of intrusive and unwanted communications," said Gopal Vittal, Managing Director and Chief Executive Officer of Bharti Airtel. "Designed as a dual-layer protection system, the solution features two filters: one at the network layer and the second at the IT systems layer. Every call and SMS passes through this dual-layered AI shield. In just 2 milliseconds, our solution processes 1.5 billion messages and 2.5 billion calls every day. This is equivalent to processing 1 trillion records in real-time using the power of AI. Our solution has successfully identified 100 million potential spam calls and 3 million spam SMS messages every day. For us, keeping our customers secure is a top priority."

The AI-powered solution has been developed by Airtel's data scientists and uses a proprietary algorithm to identify and classify calls and SMS messages as 'Suspected SPAM.' The AI-powered network analyses various parameters such as the caller or sender's usage patterns, call/SMS frequency, and call duration, among others, in real-time. By cross-referencing this information against known spam patterns, the system accurately flags suspected spam calls and SMS messages.

The solution also alerts customers to malicious links received via SMS. In addition to spam detection, the tool scans SMS messages for malicious links, using a centralised database of blacklisted URLs to safeguard users from potential threats. The launch aligns with the Government of India's guidelines, ensuring legitimate transactional calls from specific prefixes while managing promotional calls for those who have not opted for Do Not Disturb services.

BPCS to begin work on Bangladesh's first private subsea cable

The Bangladesh Private Cable System (BPCS) consortium is ready to start work on building the country's first privately-owned subsea cable.

BPCS comprises Summit Communications, CdNet Communications and Metacore Subcom, which each received licences from the Bangladesh Telecom Regulatory Commission (BTRC) in September 2022. The three companies subsequently formed BPCS to build a private international subsea cable that will supply at least another 45Tbps of bandwidth to Bangladesh.

Pioneer Consulting, which is advising on the project, said the project has now entered the construction phase. The new 1,300km cable will connect Cox's Bazar, Bangladesh to the Campana-owned UMO subsea cable, which runs from Thanylin, Myanmar to Tuas, Singapore. BPCS will own rights to three of the cable's fibre pairs, each supplying at least 15Tbps of bandwidth.

Pioneer Consulting has supported the BPCS consortium over the past two years on route assessment, due diligence, commissioning of the UMO cable system, supply contract formation, and purchasers' representative management for the survey of the branch route. Dave Marie, director of client solutions at Pioneer Consulting, said that BPCS has contracted the firm for project management, engineering, and quality assurance support of the branch cable for connectivity to Singapore.

"We're proud to be part of this groundbreaking project, poised to change the connectivity landscape of Bangladesh," said Marie. "We're off to a strong start, with all contracts in place and the marine survey completed well before the onset of monsoon season."

BPCS expects the new private cable to bring badly needed new bandwidth to Bangladesh, which currently has two subsea cable connections via SEA-ME-WE 4 and SEA-ME-WE 5, both of which are owned by state-owned Bangladesh Submarine Cables PLC (BSCPLC). BSCPLC also owns a stake in the SEA-ME-WE 6 cable, which is scheduled to be ready for service in 2025.

"Bangladesh deserves world-class internet capacity and accessibility; we believe this new cable will significantly enhance the country's ability to meet its internet demand in the coming decade," said K.M. Tariquzzaman, CTO of Summit Communications and project lead for the BPCS consortium. "This new infrastructure will greatly improve internet speed, reliability, and affordability across Bangladesh."

The BPCS cable is scheduled to go into service in the first quarter of 2026.

Beetel Teletech joins up with Cambium Networks

Beetel Teletech has announced a strategic distribution partnership with Cambium Networks (CMBM) to enhance India's digital infrastructure by leveraging Beetel's market reach and Cambium's technology.

Under the partnership, Beetel will distribute Cambium's portfolio of networking solutions, including fixed wireless, network switches, Wi-Fi, fibre, security, SD-WAN, and licensed frequency solutions. Beetel says the collaboration supports the 'Digital Bharat' vision, focusing on last-mile wireless connectivity and bridging the country's digital divide.

"Cambium's technologies will help us meet the rapidly evolving demands of India's digital infrastructure as internet access expands," said Sanjeev Chhabra, Managing Director and CEO of Beetel. "With projections indicating that 60-65% of Indians will likely have internet access by 2025, Cambium's advanced technologies will provide us with the essential tools to meet the evolving demands of India's digital infrastructure and drive transformative growth."

"India is a key market for us. Our largest design centers are now in India, where we are developing cutting-edge hardware and software for global adoption. By partnering with Beetel, we are excited about the prospects of expanding our presence in India," said Himanshu Motial, Regional VP for Asia Pacific at Cambium.

APAC merger and acquisition deals hit $7 billion in H1 2024

Asia Pacific telecom M&A deals grew to $7 billion in H1 2024, compared to $600 million from the same time last year, according to a Bain & Company report.

On a global scale, deal value surged from about $16 billion in the first half of last year to $43 billion in the first half of 2024, Global M&A value rose by 162% year-on-year (YoY), led by Europe and the Americas. A trend Bain also noticed is that many telecom companies are turning to M&A to mitigate unprecedented industry transformation and emerging competitive threats.

Scale deals accounted for the largest share of global deal value in H1 2024, a notable shift from the past two years. Mobile and fixed network companies pursued scale deals to expand networks whilst financial investors acquired fixed assets. This suggests confidence in digital infrastructure's business fundamentals despite recent headwinds.

DoT to streamline telco licences

The Department of Telecommunications (DoT), India. has introduced significant reforms to streamline the issuance of Experimental Licenses, Demonstration Licenses, and Equipment Type Approvals (ETA) in a bid to enhance ease of doing business within the telecom sector.

"These reforms are aimed at reducing delays and simplifying regulatory requirements, fostering innovation and streamlining operations for businesses and telecom operators," said the Ministry of Communications in a statement.

Experimental Licenses (Radiating Category) will now be approved within 30 days if no Inter-Ministerial Consultation is required. For cases needing consultation, comments are sought within 7 days. Provisional licenses will be granted after 60 days and converted to regular licenses after 90 days, provided there are no adverse comments.

Demonstration Licenses (Radiating Category) are deemed granted after 15 days without consultation and 45 days with consultation.

Additionally, ETA applications for license-exempt wireless devices can now be self-declared through the SARAL Sanchar portal, allowing for faster processing and certificate download. Futher stipulations include the immediate cancellation of provisional licenses upon unfavourable comments and the requirement to follow possession or disposal guidelines upon license expiry.

DoT noted that the existing terms from the Office Memorandum dated 23 July 2019 continue to apply. ETA holders must also secure a No Objection Certificate (NOC) from the Directorate General of Foreign Trade (DGFT) before importing equipment.

These reforms, based on TRAI's recommendations, aim to enhance regulatory efficiency and support innovation in India's telecom sector.

DIT buys ATC India

Data Infrastructure Trust (DIT) has sealed the acquisition of American Tower-owned ATC India for INR210 billion, making it the largest towerco in the nation, surpassing Indus Towers.

DIT has acquired around 76,000 sites from ATC India, expanding its portfolio to a total of approximately 257,000 telecom sites. This places it ahead of Indus Towers, which had a portfolio of 225,910 towers as of June 2024.

The Competition Commission of India approved the deal in August, and the terms and conditions of the buyout were finalised in September. The enterprise value of the acquisition stood at INR181.5 billion. ATC India, incorporated in 2004, reported a turnover of INR121.6 billion for the full year 2023-24, an increase from INR87.6 billion year-on-year.

"Our expertise, rooted in our history as an owner and operator of high-quality businesses, is exemplified by our acquisition of ATC India. It complements our existing business and further strengthens our footprint, creating the largest tower portfolio in the country and one of the largest platforms globally," said Arpit Agrawal, Brookfield Managing Partner and Head of Infrastructure for India and the Middle East.

Telkomsel targets the auto market

Telkomsel has signed two separate deals to boost its presence in the local auto market, including IoT and Wi-Fi connectivity for connected cars and a digital ecosystem for electric vehicles (EVs).

Telkomsel's enterprise unit is partnering with Toyota-Astra Motor to integrate IoT and in-car Wi-Fi into Toyota's T Intouch telematics app for its new generation of Fortuner SUVs. T Intouch enables users to access and control various vehicle features in real-time via a smartphone app, such as vehicle location tracking, remote engine switch-off, checking the condition of key vehicle components, and a "time fencing" feature that prevents the vehicle from being turned on at certain times. For the new Fortuner SUV series, customers can access T Intouch features via the head unit and rear-seat entertainment screen in the car. The new Fortuner models are also fitted with in-car Wi-Fi, which passengers can use as a hotspot for internet connectivity. Telkomsel is providing the backhaul for the Wi-Fi via its mobile network.

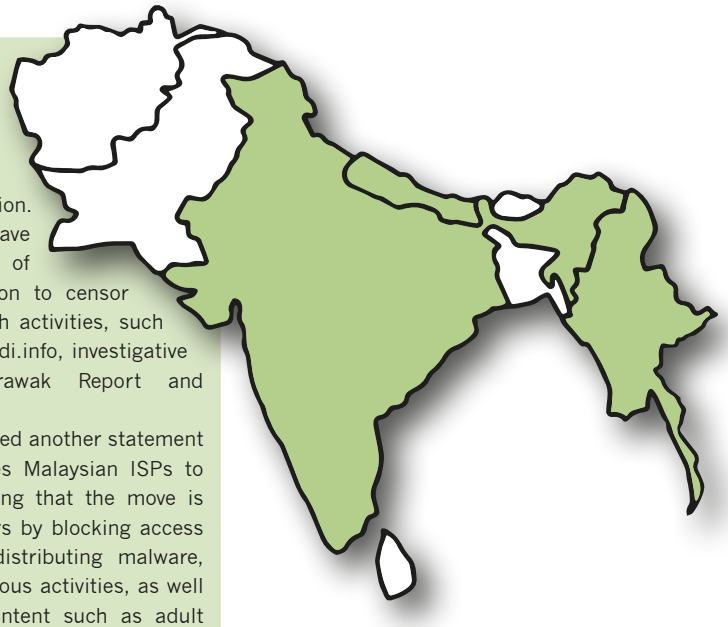
"With Telkomsel's wide coverage and stable connectivity even in remote areas, Toyota hopes that all of T Intouch's advanced features can be easily accessed through the mToyota application," said Toyota-Astra Motor VP Henry Tanoto.

The Toyota announcement comes a week after Telkomsel Enterprise signed a Memorandum of Understanding (MoU) with EV manufacturer Mobil Anak Bangsa Indonesia (MAB) to jointly develop a more integrated and environmentally friendly EV ecosystem. Under the deal, Telkomsel will provide connectivity, services and tech solutions, including IoT and broadband, to improve the operational efficiency of EVs.

"By utilizing the latest cellular technology such as broadband networks, vehicle connectivity, fleet operations management [and] energy monitoring, we are committed to improving overall efficiency and effectiveness," said Nyoman Adiyasa, Telkomsel's VP for area account management.

Telkomsel and MAB also plan to collaborate on future digital solutions, such as connectivity to support telematics and entertainment, and the ability to find charging locations directly from the dashboard.

MCMC calls for halt to ISP redirects away from DNS servers



Malaysia's Communications Ministry has instructed the Malaysian Communications and Multimedia Commission (MCMC) to stop forcing local ISPs to redirect domain name service (DNS) traffic away from third-party DNS servers.

Reports in August claiming that Malaysian ISPs – including Maxis, Time dotcom, U Mobile, CelcomDigi and Telekom Malaysia's Unifi – had implemented transparent DNS proxy, which redirects DNS queries to alternative DNS servers like Google Public DNS and Cloudflare back to local DNS servers. This method effectively prevents internet users from using alternative DNS servers to access websites blocked by the MCMC.

At the time, the MCMC responded with a statement that it was working closely with local service providers in relation to DNS management as a way to block access to websites that violate Malaysian law, but didn't directly confirm it was ordering them to redirect DNS queries. The MCMC also claimed that 95.7% of blocked websites were involved in illegal activities such as online gambling, pornography, copyright infringement, online scams and prostitution.

However, critics have accused the MCMC of also using DNS redirection to censor websites unrelated to such activities, such as election results site Undi.info, investigative journalism website Sarawak Report and blogger site Medium.

The MCMC has now issued another statement confirming that it requires Malaysian ISPs to redirect DNS traffic, stating that the move is necessary to 'protect users by blocking access to websites known for distributing malware, phishing, and other malicious activities, as well as filter inappropriate content such as adult material and violent websites.'

The MCMC also denied accusations that DNS redirection was 'draconian,' and said accusations that it was blocking legitimate websites were inaccurate. The statement added that "any websites that believe they have been unfairly targeted or affected may file an appeal through the established channels."

MTNL defaults on bank loans

Just three weeks after India's Union Bank froze the accounts of state-run telecom firm MTNL over non-payment of dues, local media reports that at least half a dozen lenders classified loans to MTNL as non-performing assets (NPA) in August.

MTNL has defaulted on payments to several banks from which it had earlier raised about US$664 million in debt but is said to have borrowings of about US$938 million from banks and financial institutions, and total debt of US$3.8 billion.

MTNL has suggested a debt recast plan which involves the payment of 40% of dues. Lenders have rejected this. However, it's not clear how MTNL will be able to find even these sums. It has issued some U$3.3 billion in bonds, which have unconditional government guarantees; however, the loans are not guaranteed.

To improve the fortunes of MTNL, the government has proposed rolling out 4G services, growing the telecom network, and de-stressing balance sheets. BSNL is apparently now handling the operations of MTNL and so will launch the 4G spectrum allocated for MTNL in Delhi and Mumbai.

NBTC to auction 5G-Advanced spectrum early in 2025

Thailand's National Broadcasting and Telecommunication Commission (NBTC) plans to auction off spectrum in the 2100 and 2300MHz bands early in 2025 to enable telcos to upgrade to 5G-Advanced and 6G.

This comes as part of NBTC's broader spectrum management roadmap between 2025 and 2030 to facilitate evolution to 5G-A and 6G.

While the overall roadmap covers several bands in the ranges of 3300-4000MHz and 6.425-7.125GHz, the NBTC would focus on the 2100 and 2300MHz bands first, as there is more immediate demand for it from telcos.

The 2100 and 2300MHz bands are currently held by state-owned National Telecom (NT), but its licence for both will expire in September 2025, along with its licence for 850MHz spectrum. NT had asked the NBTC for an extension, but True Corporation and Advanced Info Service (AIS) have been lobbying the commission to put the 2100 and 2300MHz bands up for auction, as they need it for 5G-A and 6G.

The new licences for the 2100 and 2300MHz bands will be good for 10-15 years.

Ncell explores fixed-broadband ISP options

Ncell has denied rumours that it has struck a deal to take over fixed-broadband ISP Classic Tech, although it confirmed that it is seeking some sort of deal with an ISP.

Several local media outlets have reported that Ncell had secured an initial deal to acquire shares in Classic Tech that would pave the way for a complete takeover of the ISP. The reports, citing anonymous sources, noted that the alleged deal had yet to be finalised. However, Ncell stated that such reports were "premature and speculative," and that it has not struck any such deal with any ISP.

However, the company is looking for some sort of tie-up with an ISP to expand its service portfolio.

"While Ncell is actively exploring opportunities in the ISP market, we remain committed to conducting thorough discussions and assessments," said Ncell's statement. "Our goal is to ensure that any potential decisions align with both the strategic objectives of Nepal and the broader telecommunications industry."

The Nepal Telecommunications Authority reports that there are 2.8 million fixed-broadband subscribers in Nepal, with a market penetration of around 42%. However, the fixed-broadband segment itself accounts for just 8.2% of Nepal's overall broadband internet space.

PhilTower and MIDC to combine

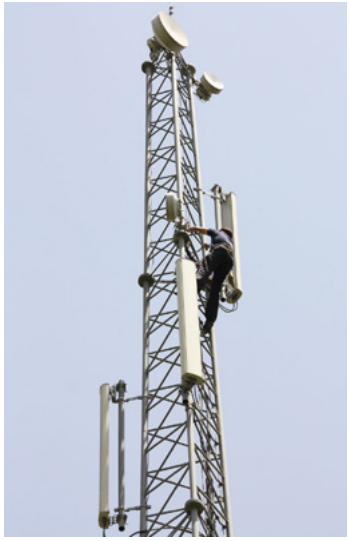
PhilTower Consortium (PhilTower) and Miescor Infrastructure Development Corporation (MIDC) has completed a transaction that creates one of the largest independent telecommunications tower companies in the Philippines.

This new entity is owned by a group of reputable global and local investors, including Macquarie Capital, Stonepeak, Manila Electric Company (Meralco), and Global Network.

Macquarie Capital has been a shareholder in PhilTower since 2021 and committed 100% of the equity to support PhilTower's acquisition of up to 1,350 telecommunications towers from Globe Telecom. By combining PhilTower's and MIDC's existing towers and expertise, the new entity will operate on a national scale with a portfolio of over 3,300 operational towers and a pipeline of more than 2,100 committed orders.

The new entity is expected to focus on improving coverage for its mobile network operator clients and driving further investment into digital infrastructure, while also creating new synergies with its three main customers, Globe, Smart, and Dito.

The transaction has been approved by the Philippine Securities and Exchange Commission (SEC) and the Philippine Competition Commission (PCC), with all deal completion conditions met, allowing both companies to move forward with the transition process.



Talking towers

David Tran, Head of Research – Asia, TowerXchange

The Philippines tower market shake-up

David Tran spoke to Devid Gubiani, President and CEO, PhilTower about the new JV formed with MIDC, set to transform Philippines' tower market.

The Philippines is home to a distinct three-MNO market formed of Smart, Globe Telecom (Globe) and new entrant DITO, underpinned by a common tower policy. The favourable regulatory framework, immense build-to-suit (BTS) opportunities and the prospect of significant sales and leaseback (SLB) deals with Smart and Globe spurred huge interest in the country.

However, its towerco market is bloated with some 21 independent tower companies. Two of those towercos, PhilTower and MIESCOR Infrastructure Development Corporation (MIDC), looks set to alter that dynamic.

In February, both organisations announced that they will merge, creating the second largest towerco and the first public consolidation in the Philippines. The transaction received regulatory approval in July.

The JV would have Philippine-wide coverage and is well placed to support the growing connectivity needs of the country, providing a platform for 4G and 5G mobile network infrastructure across the country.

The merged towerco will operate 3,500 towers inherited from its two parents. In terms of the organisational structure, Devid Gubiani, President and CEO, PhilTower will front the new organisation as Group CEO, with a senior leadership team that will include a CFO and CCO being appointed by the shareholders, the largest of those being investors Macquarie and Stonepeak, and Meralco (who own MIDC and is the largest power co-operation in the country, managing grid connections across much of Metro-Manila).

Its aspirations are high. The new operation is committed to build 2,000 BTS towers within the next three years, potentially lifting its tower count to upwards of 5,000 towers by then if its BTS commitments are honoured from past SLB transactions.

MNO troubles

The expansion of towercos' businesses hasn't been seamless, with financial irregularities curtailing digital infrastructure development in the Philippines. DITO has experienced financing issues. Secondly, Smart's parent company PLDT was rocked by a probe into a US$886 million budget overrun. And even with the country's third MNO Globe, there were operational challenges. Globe took the decision to focus more on co-locations than new sites in 2023, but nevertheless was still transacting. And with the market slowdown, PhilTower looked at options as to how other towerco market assets would complement its overall portfolio in the event the MNO market would stimulate once again.

With the expectation that Smart would come back to life, said Gubiani, the JV would then be suitably placed to meet any rollout plans. Its SLB portfolio of close to 3,000 and BTS network gave it the scale needed. "We thought we would come out with a very aggressive structure and a very professionally run team to be of extremely good use when the Smart turnaround was going to happen – including the management reshuffle within their organisation," he noted.

Smart's new management, to regain its position as market leader by mobile SIM subscribers, came with strong intentions to build its co-location presence by ordering 1,000 sites that are distributed with their partners. Despite a lengthy five-month process of deliberating on the valuation of the merger and the converged entity's business plan, the JV was then formed early 2024. "We started seeing signs of life, with market responding positively to what we were doing, and so we knew the merger was going to have a productive outcome from day one," expressed Gubiani.

The company structure of the JV will see both MIDC and PhilTower entities retain the contractual commitments it had with their MNO customers. The only core element of the organisation that merged was both the management and operations team.

Consolidation to follow in the Philippines?

Gubiani predicted that the JV could have a knock-on effect for the Philippines tower market. Despite the feeling the MNO market could turn a corner with Smart and DITO potentially on the cusp of making a bounceback, towerco challenges remain. He believed that the merger could instigate a period of consolidation in the market, and possibly one or two smaller towercos formulating an exit strategy.

"We are in an environment where cost optimisation in the operation is really biting hard because of escalating costs," said Gubiani. "When you have a portfolio of sites scattered around the country versus somebody that has a big chunk of a few hundred sites in one single geography it's difficult to be cost efficient. That's why smaller towercos are looking at executing their exit and abandoning the market."

Operationally and commercially, the JV may be a productive force, as the organisation will be helping to support Philippines' goal to hit 50,000 tower sites to achieve the ideal ratio of mobile subscribers per tower. An estimated 35,852 towers are currently installed in the country.

Towers in Philippines are heavier in comparison to other countries to resist adverse weather. The large majority of towers carry standard 2G, 3G or 4G spectrum, with many upgrades earmarked with either more 4G bands or 5G being introduced into those sites.

MNOs are keen to see 4G and 5G capacity densify into the networks, but higher speed coverage, at least for now, is limited to urban and suburban sites, potentially benefitting locations such as the Metro-Manila area in the north, and Cebu City and Davao in the south.

He concluded that there are good times ahead when DITO and Smart come back to the fold. "With our operational excellence in those territories that we have developed demonstrable strength, we would be able to get a better chunk of the build-to-suits that are awarded above and beyond the build-to-suit commitment from Globe."

TowerXchange Meetup Asia 2024 will take place at the Shangri-La Hotel in Kuala Lumpur on 26-27 November.

Setting a new standard for network intelligence

Earlier this year, we reported on the transformative results of a year-long strategic collaboration with Phil-Tower Consortium Inc. (PhilTower). The Philippines' leading tower company appointed us in 2023 and has since extended the project from an initial 1,350 sites to 3,500 sites. PhilTower was eager to adopt innovative new technologies to digitise their infrastructure from day one and drive significant savings on capital expenditure (CapEx) and operational expenditure (OpEx), enhance operational efficiencies, and achieve significant cuts in energy consumption across the entire PhilTower network. We were ready to help achieve these ambitious goals.

It's been six months now since PhilTower began leveraging our advanced AI-driven data intelligence. In that time, it has successfully identified and eliminated diesel generators (DG) at 50% of its locations, transitioning to battery backup systems, yielding almost $500,000 in generator OpEx savings – as well as reducing annual CO2 emissions by more than 700 tons. The streamlined operations, enabled by reduced DG usage and full visibility into the tower estate, have lowered maintenance costs, decreased Mean Time to Repair (MTTR) by 30%, and increased network availability to 99.98%. This has boosted telecom customer data usage and revenue while reducing annual OpEx by an additional $500,000 in fuel savings – a huge win for our customer.

In addition, new comprehensive battery health assessments and targeted investments of over $2.8 million into battery replacements and upgrades, enabled by PowerX, are expected to optimise backup capabilities while right-sizing CapEx. Throughout, we've helped automate reporting and decision-making processes, further reducing operational workloads, and improving the efficiency of alarm and trouble ticket management through closed-loop operational workflows – significantly reducing the need for human intervention.

And this is just the beginning. Looking to the future, PhilTower plans to continue its modernisation journey with initiatives including hybrid power installations, solar energy integration, cooling optimisations, and power system consolidations. Armed with critical insights into the health status of its network and energy growth projections, we expect that PhilTower will save more than $1.5 million in the coming year and reduce CO2 emissions by nearly 10,000 tons annually - reinforcing its commitment to sustainable, efficient, and cost-effective tower operations. Furthermore, these initiatives are extended with an additional 2,000 towers across the region as PhilTower completed its anticipated merger with Miescor Infrastructure Development Corporation (MIDC), bringing the estate to a total of 3,500 optimised towers. Of course, applying data science tools and optimisations to more than 1,000 sites within just six months is no mean feat.

Justin Head, co-founder and executive vice-chairman at PowerX, and Devid Gubiani, CEO at PhilTower

However, PhilTower's commitment to digitalisation has transformed its network, enabling rapid sale and leaseback transitioning, full remote asset visibility, efficient operations, and data-driven decisions that optimise CapEx and OpEx. And it's good news for customers too, with PhilTower passing on those significant savings to consumers while increasing uptime by three hours per site per month. With our platform, PhilTower has the tools to maximise asset leverage and drive revenue, creating a truly 21st-century tower network with next-generation maintenance and proactive energy efficiency plans. Indeed, the tower company has managed to optimise its distributed assets using a range of KPIs and has set ambitious targets to deliver substantial growth and value to stakeholders, including unparalleled service to mobile operators and ambitious carbon reduction initiatives.

All in all, we are delighted that PhilTower is seeing immediate and strategic benefits from the data-driven optimisations and automation provided by our platform. This collaboration highlights our pioneering role in leveraging deep data analytics, AI, and machine learning to deliver outstanding network efficiency. The PowerX platform has empowered PhilTower's teams to drive operational excellence, enhancing asset and energy performance and integrating data intelligence for future energy programs. Together, we are raising the bar, setting a new standard for network intelligence and site efficiency in the Philippines. ■

PowerX

Andrew Schafer, CEO, PowerX

Inflection for APAC's IFC market

Vaibhav Magow, Vice President, International Division, Hughes Network Systems

In-flight connectivity (IFC) remains rare on Asian-Pacific airlines primarily due to cost. The initial investment in IFC technology can be significant, and many Asian-Pacific airlines might be hesitant to make this substantial financial commitment, especially if they perceive the demand for such services as not yet critical.

Beyond that, implementing IFC requires advanced technology and substantial logistical efforts, including downtime for aircraft installation. Airlines need to devote resources to placing their aircraft into maintenance, repair, and overhaul (MRO) facilities to perform the upgrades.

Historically, passengers in the Asia-Pacific region (including countries like Indonesia, Malaysia, and Thailand) may not have had the same expectations for in-flight connectivity as those in regions like North America, Europe, and the Middle East – which could be a factor in the slower adoption rates among airlines.

Taking to the skies

With the exception of Air-to-Ground (ATG) services – GEO, LEO, and Hybrid GEO/LEO IFC services are of interest to APAC-based airlines.

At Hughes, we are seeing APAC airlines laser-focused on providing fast, reliable connectivity onboard while minimising the weight, drag, and maintenance complexity. As many of these airlines fly some of the longest routes in the world, weight and drag become a critical component of the IFC technology.

Passengers are increasingly expecting high quality connectivity. It has become a differentiator for airlines, and travelers are willing to pay for it. Indeed, robust IFC is becoming a fundamental part of airline offerings in other regions, even if it sometimes requires additional expenditure by passengers.

As the number of air travelers in the Asia-Pacific region increases, their expectations will align more closely with those of travelers in North America, Europe, and the Middle East, where robust IFC is already a norm. Once a carrier adopts an effective IFC solution, it gains a substantial competitive advantage over airlines that don't offer reliable connectivity.

As more airlines adopt IFC and the competitive landscape changes, passengers will likely expect this service, leading to an environment where they are more inclined to pay for reliable connectivity.

Staying aloft

In markets like North America, Europe, and the Middle East, customers have come to expect a robust IFC experience when they fly. That includes being able to stream movies, message friends and family, and overall use the internet like they are able to at home or in the office.

Overall, airlines can best meet the connectivity needs of their customers by selecting IFC technologies that are state-of-the-art and future-proof. This minimises the risk of technological obsolescence and ensures consistent service quality for years to come.

For airlines that need robust connectivity with little risk of interruption and that will be technologically relevant for years to come, multi-orbit is an attractive option. For marginally more money, the airline – and the customer – get a far better experience.

Beyond that, airlines should look to explore monetisation strategies for IFC that turn it into a profit centre. One option is to offer tiered connectivity services, including free basic access and premium high-speed options for an additional fee. Others include leveraging ticket or seat class base connectivity bundles. In all, selecting a fast, reliable service is key to delivering a competitive IFC service.

Across the industry, new hardware and software are making IFC more cost effective. New electronically steerable antennas (ESAs) that are smaller, lighter, and more efficient can lower the installation and operational costs of IFC systems.

Additionally, the use of software-defined networking (SDN) in IFC systems allows for more dynamic and flexible network management, which can optimise performance and reduce costs. SDN enables more efficient use of available bandwidth and can adapt to changing connectivity demands in real-time.

All aboard

For the next five years, we expect to see growth in IFC for the region. As APAC airlines are expanding their fleets by placing record-setting orders with Airbus and Boeing, connectivity is quickly becoming a must-have feature.

As IFC heads to the top of airlines' list of onboard equipment, there is more pressure on the unconnected airlines to adopt connectivity. Combined with new advances in IFC technology, we are at an inflection point for the APAC IFC sector. ■

Sunsetting 2G/3G – entering the corridor

As Asian nations increasingly look to sunset older mobile generations in favour of more efficient 4G/5G technology, we explore the opportunities, challenge, and likely outlook...

Much of the world is currently exploring the sunsetting of older mobile generations – 2G and 3G – to open up additional spectrum for 4G and 5G, which are much more spectrum efficient.

"This should help meet the growing demand for mobile data services," explains Jiashun (Jason) Tu, Technical Spokesperson, Chief Strategy and Ecosystem Expert, ZTE, highlighting the below key points:

- Valuable 'golden spectrum': 2G and 3G networks typically occupy lower frequency bands, often referred to as 'golden spectrum' due to their superior coverage capabilities. Reallocating this spectrum to newer technologies can significantly improve overall network performance and coverage.
- Higher spectral efficiency: 4G technology offers much higher spectral efficiency compared to 2G and 3G. This means that the same amount of spectrum, when refarmed to 4G, can serve a larger number of devices and provide higher data rates.
- Energy efficiency: 4G technology is also more energy-efficient than its predecessors, which aligns with efforts to reduce the carbon footprint of telecommunications networks.
- Global trends: According to the Global mobile Suppliers Association (GSA), as of June 2024, 192 2G and 3G network shutdowns have been completed, planned, or are in progress across 68 countries and territories. This indicates an accelerating pace of technology transition worldwide.
- Widespread 2G sunsetting: The GSA survey also shows that operators in 22 countries and territories have already shut down their 2G networks, with an additional 35 operators planning to do so.

While many Asian countries are already actively sunsetting 2G/3G, the efficiency of reallocation depends on how quickly governments and regulators can reassign the spectrum and whether they allow enough bandwidth for advanced services like 5G, which requires wide channels to deliver high performance. Indeed, while sunsetting 2G/3G helps create more efficient use of available spectrum, this mainly addresses short-term demands – which may come to outpace supply, particularly in densely populated cities where spectrum is already highly congested.

"Sunsetting 2G and 3G networks will undoubtedly free up valuable spectrum, but the question of meeting demand is more nuanced," explains Simon Trend, Group Managing Director – Americas, APAC, and MENA, Wireless Logic. "While this newly available spectrum will significantly boost 4G and 5G capacity, the exponential growth of IoT devices and data-hungry applications means we're likely to see continued pressure on spectrum resources. The key lies in efficient spectrum utilisation and advanced technologies like dynamic spectrum sharing, which will be crucial in maximising the benefits of sunsetting while addressing ever-growing connectivity demands. Flexible, multi-network solutions are becoming increasingly important in this evolving landscape."

Indeed, the success of 2G/3G sunsetting will depend on factors such as the speed of network upgrades, the adoption rate of newer devices by consumers, and the development of solutions for services that still rely on 2G or 3G networks (like some IoT applications), notes Jiashun (Jason) Tu, Technical Spokesperson, Chief Strategy and Ecosystem Expert, ZTE: "nonetheless, the global trend towards sunsetting older networks

is a crucial step in optimizing spectrum usage and meeting the ever-increasing demand for mobile data services."

"Shutting down 2G and 3G is necessary to free up spectrum for 4G and 5G and bring advanced connectivity to more communities," adds Kenneth Hardat, Telco Strategy Lead, BICS. "However, it is important not to lose sight of how many people still rely on these legacy networks and ensure that progress doesn't come at the cost of exacerbating the digital divide and leaving people behind."

Making the switch

Such a large-scale initiative requires hefty preparation. Communications service providers (CSPs) must manage the operational complexity of phasing out legacy technologies while ensuring the reliability of ongoing services.

"Operators have access to extensive network data and understand user device habits," says Tu. "They should leverage this data effectively for customer communication to ensure a smooth transition. By analysing usage patterns and preferences, operators can tailor their approach to different customer segments, minimizing disruption during the switchover process."

In some regions, particularly rural or remote areas, 2G or 3G networks are the only available options due to the wider coverage these lower frequency bands provide. Shutting down these networks too early could result in loss of service in areas where newer technologies haven't been fully deployed yet. This may require additional investment in infrastructure.

"Before initiating the sunsetting process, CSPs should conduct a comprehensive audit of their network usage, engage with major enterprise customers to understand their needs, and develop a phased migration plan," states Trend. "A 'connect and transition' approach is crucial for minimising disruptions. This can be facilitated by leveraging modern technologies such as eSIM (embedded SIM) and OTA (Over-the-air) programmable multi-IMSI SIMs. These technologies offer the flexibility to remotely provision and update connectivity profiles, enabling devices to seamlessly switch between networks and technologies without physical SIM replacements."

Moreover, many users, particularly in rural or developing regions, still rely on 2G and 3G networks for basic voice and messaging services. CSPs must create a smooth migration path for customers, ensuring they upgrade to devices compatible with 4G or 5G. This can involve subsidies for new devices, detailed communication plans, and customer education campaigns.

"While sunsetting older mobile generations presents challenges, new technologies, particularly AI-enabled devices, can better serve various user groups, including the elderly," says Tu.

Low-cost smartphones can be introduced, incorporating features like local language support and AI voice commands. "This approach helps impoverished and illiterate populations overcome barriers to using smartphones, effectively bridging the digital divide," adds Tu.

Many IoT/M2M devices, particularly those used in agriculture, utilities, and transportation, still rely on 2G and 3G networks. These devices often have long lifecycles, meaning many are still in operation and difficult to replace quickly. CSPs must engage with customers to identify affected devices and create strategies to upgrade or replace them with 4G/5G-compatible options. Moreover, they may need to maintain limited 2G/3G services to support these devices during the transition.

"The primary hurdles include supporting millions of legacy IoT devices, ensuring continuity of critical services, maintaining rural coverage where 2G/3G networks are often the backbone, and navigating diverse regulatory frameworks across different countries," agrees Trend. "A secondary consideration is the changing frequencies being used, and how they reach devices in specific locations (e.g. lift shafts or metering boxes) using low frequencies wavelengths, which may not be used by higher frequency alternatives and will therefore require testing of devices in-situ to understand the full impact of any sunset."

To achieve a successful sunset, CSPs must perform a thorough customer impact analysis; create comprehensive migration plans; adopt a gradual and phased approach; invest in network infrastructure; identify backup plans for critical services; and ensure regular communication with stakeholders, regulatory bodies and the public.

"Successfully sunsetting older mobile generations requires CSPs to balance the benefits of freeing up spectrum with the challenges of customer migration, device upgrades, and service continuity," says Tu. "By carefully considering the unique needs of their customers, industries, and regions, while working closely with regulators and stakeholders, CSPs can mitigate risks and ensure a smooth transition to faster, more efficient mobile technologies.

Ecosystem impacts

MNOs, naturally, have a huge role to play in the sunsetting of 2G/3G, and therefore also hold a significant amount of control in the switch over. The same cannot be said for MVNOs.

Tu suggests that "4G networks fully support MVNO operations from a technical standpoint. The virtual operator model can be seamlessly carried forward into the 4G era, suggesting that MVNOs may not face significantly different impacts compared to MNOs during the sunsetting process."

However, Trend believes that MVNOs - particularly those serving IoT markets - face challenges in migrating from the 2G/3G networks they've relied on for low-cost, low-bandwidth connectivity.

"This transition may involve higher costs and potential service disruptions as they update their technology stack to support 4G and 5G," explains Trend. "However, MVNOs also have advantages. They typically use more agile business models and multi-MNO partnerships to offer greater flexibility in adapting to network changes. This allows them to develop robust transition plans, selecting optimal networks for different use cases and regions. The key for MVNOs will be close collaboration with MNO partners and potential renegotiation of agreements to secure access to newer technologies. While challenges are significant, MVNOs' adaptability may allow them to turn network sunsetting into an opportunity for innovation and enhanced service offerings."

IoT/M2M operators, and those within the ecosystem, will also keenly feel the sunsetting of 2G/3G. Many such devices utilise older mobile generation networks "due to their low-frequency coverage," reminds Hardat. "If these networks are switched off, operators must work with industries to provide alternative connectivity solutions for sensors, trackers and other forms of low-powered IoT devices."

For continued support of IoT and voice services during the sunsetting of older mobile generations, transitioning to LTE-M (Long Term Evolution for Machines) and NB-IoT (Narrowband IoT), which offer power efficiency, low data rates, and extended coverage, similar to 2G/ 3G, should be considered. Dynamic spectrum sharing (DSS) is another option, which allows service providers to use the same spectrum bands for both 4G and 5G, supporting a more gradual transition that can help avoid coverage gaps during the shutdown of 2G/3G. Low-Power Wide-Area Networks (LPWAN) like Sigfox and LoRa, also offer an alternative to cellular networks for specific IoT applications, particularly those requiring low data rates and long battery life.

Trend believes that the key to maintaining robust IoT and voice services during network transitions lies in flexibility and foresight. A multi-technology approach, blending 4G, 5G, and low-power networks, allows for tailored solutions that match device needs with optimal network infrastructure.

"This adaptability is enhanced by eSIM technology, enabling seamless Remote SIM Provisioning and over-the-air network switching as the connectivity landscape evolves," elaborates Trend. "Technologies like Cat-1 BIS, a 4G LTE option with wide availability, play a crucial role in supporting various IoT applications such as sensors and metering, especially in areas where newer technologies may not be fully implemented."

Ultimately, success hinges on adopting technologies and management strategies that can adapt to changing network environments, says Trend. This approach not only addresses immediate sunsetting challenges but also future-proofs IoT deployments, ensuring they remain viable and efficient in an ever-evolving connectivity ecosystem.

Crunching the numbers

In less-developed nations, device affordability is a critical factor that could slow the sunsetting of older mobile generations.

Many users, particularly in rural areas or low-income brackets, continue to rely on 2G and 3G networks due to the high cost of upgrading to 4G/5G devices. Without significant reductions in

the cost of 4G/5G devices, government subsidies, or industry-backed programs, CSPs will face pressure to keep legacy networks active longer than in more developed markets.

"Device affordability is a significant factor that could slow down the sunsetting process in less developed Asian nations," agrees Trend. "The higher cost of 4G/5G devices, particularly for IoT applications, can be a barrier to widespread adoption in countries where cost sensitivity is high."

However, Wireless Logic sees promising trends that may mitigate this issue, including declining costs and government subsidised device upgrades.

"The cost of 4G/5G devices continues to decrease, making them more accessible. Additionally, recycling second-hand devices is a viable approach to increase affordability," adds Tu.

According to Trend, innovative business models with Pay-as-you-go and IoT-as-a-Service models are emerging, reducing upfront costs for businesses; while multi-mode modules can support both older and newer network technologies, providing a transition path for cost-sensitive applications.

Sunsetting corridor

Southern and southeastern Asia is a broad region, home to dozens of individual countries – all with their own governments and regulatory policies.

"While the overall trend is towards sunsetting 2G/3G networks, the timeline and approach vary significantly across Asia," says Trend. "Countries with less developed digital infrastructure, such as Myanmar, Laos, or Cambodia, may retain these networks longer due to the prevalence of legacy devices and the high cost of nationwide 4G/5G deployment. However, the situation is dynamic, with sunset dates constantly evolving. India, despite its tech-forward reputation, may also maintain 2G networks longer in rural areas due to the sheer scale of its market and the continued reliance on 2G phones in some regions. However, more developed markets like Singapore, South Korea, and Japan are likely to be among the first to complete the transition, driven by their advanced digital economies and the need for spectrum to support 5G and future 6G networks."

Given that the refarming of 4G networks requires network planning and investment support from various operators, "in open, competitive markets, earlier evolution is advantageous as it allows operators to provide better services to the majority of customers," says Tu. "While some countries might retain 2G/3G networks longer due to specific local needs or economic constraints, the overall trend suggests that the move to newer technologies is inevitable across Asia."

"The retention of limited 2G/3G capacity will likely vary by country, driven by specific economic, geographic, and technological factors," explains Trend. "Emergency services, certain IoT applications in agriculture or environmental monitoring, and some legacy banking systems may require this support. Take India for instance, with factors such as its vast rural areas and lack of affordable smartphones, may maintain some 2G capacity longer than its neighbours. However, this retention is likely temporary. The long-term trend points towards full migration to 4G/5G technologies, driven by spectrum efficiency needs and demand for advanced services. A 'sunset corridor' approach may emerge, where small portions of 2G/3G spectrum are maintained for specific applications while the majority is repurposed."

Indeed, the move to sunset 2G/3G now seems all but inevitable, but the transition will be gradual and tailored to each country's specific economic and technological landscape.■

The path from TowerCo to InfraCo

The evolution of TowerCos to InfraCos now seems all but inevitable amidst rapid digital transformation in Asia and beyond. The investments required are huge; but ultimately, the digital InfraCo stands to win big...

In recent years, as the telecommunications landscape shifts towards new technologies like 5G, edge computing, and the Internet of Things (IoT), the role of tower companies (TowerCos) has been evolving significantly beyond the mere delivery of cellular coverage.

"The rise of 5G, IoT, and smart infrastructure is pushing traditional tower companies to expand beyond providing traditional passive infrastructure to MNOs and CSPs," confirms Ramesh Khanna, COO, Tarantula. "To meet the increasing demand for advanced digital services, TowerCos must transform into infrastructure companies (InfraCos)."

"TowerCos are expanding their roles to become integral players in the digital ecosystem," agrees Gayan Koralage, Director of Group Strategy & Malaysia Business, EDOTCO Group. "To unlock new innovative services, TowerCos need to diversify their infrastructure offerings and expand their capabilities beyond connectivity focusing on next-gen digital services, supporting 5G use cases and enabling smart city IoT solutions."

Unlocking potential

To unlock and fully monetise new services, TowerCos have had to adapt.

Supporting 5G deployment requires the densification of networks, deploying small cells and distributed antenna systems (DAS), and amping up fibre rollout – no mean feat for a traditional TowerCo. For IoT networks, Low-Power Wide Area Network (LPWAN) solutions like LoRaWAN or NB-IoT are needed to support large-scale IoT applications. Meanwhile, enhanced site services like multi-tenant hosting to facilitate multiple carriers, OTT players and enterprise connectivity needs, and infrastructure sharing via colocation services for IoT and other wireless networks, is also in demand.

"With the saturation of towers and less need for new build, TowerCos will need to supplement revenue to continue growth and look at more imaginative ways to increase revenue," asserts Jim Prosser, CEO, NEXSYS-ONE. "The more traditional ways of expanding scope for fibre and other traditional telco areas come with cost increases also but we are seeing more ways of monetising some of their existing features."

The investments required for digital transformation of this scale are huge. Urban areas in mature markets like Singapore require heavy investment to advance densification of tower sites to support the strong uptick in 5G demand. Emerging economies like much of southeast Asia need a combination of macro towers with low frequency 5G spectrum (700MHz or 850MHz) for low population regions, and small cells with high frequency mmWave 5G spectrum for urban regions, to balance coverage and capacity. Fibre investment, too, is called for, especially in metro areas with a strong urban-rural divide like India, Indonesia, and the Philippines, as well as for underserved regions in Cambodia, Myanmar and Bangladesh.

"As InfraCos strive to build robust 5G access networks, strategic investments in small cell infrastructure, fibre networks, and edge data centres are imperative," confirms Koralage. "The integration of edge data centres is crucial for minimising latency and optimising the performance of 5G applications, especially content-intensive services like streaming, gaming, and AR/VR. By strategically combining these infrastructure investments, infrastructure companies can effectively deliver seamless content access across Asia, catering to the diverse needs of users in various regions."

"We are seeing things like Edge computing starting to become more important as open ran start to impact the telco, we see more operators looking for solutions that would support the new generation of networks," says Prosser. "Backhaul capacity, data centres and fibre connectivity are fundamental investment opportunities to consider. Investing in optimisation services to improve SINR, beamforming and the emergence of small cells are other areas to consider."

While edge data centres are considered a must, the high compute power required for this, and other infrastructure investments, places a heavy strain on power resources which must not be overlooked during the planning process. InfraCos need to consider renewable energy solutions, such as solar-powered towers and battery storage to help power sites in remote areas and improve the sustainability of telecom infrastructure.

"Backup power is something that we are seeing more TowerCos looking into, such as feeding this back into the grid for revenue or adding electric vehicle charging station to existing sites," adds Prosser. "At the same time cost pressures increase, calling for an acceleration of operational efficiencies which can be leveraged via digitalising the operations and the underlying processes. Typically, large savings can be obtained with end-to-end digital processes. "

"By investing in cutting-edge technologies like 5G and 6G, expanding fibre optic networks, collaborating with technology partners on IoT, AI and edge computing, prioritising sustainability, and addressing the digital divide, InfraCos can play a pivotal role in driving economic growth, fostering innovation, and ensuring equitable access to digital opportunities throughout the region," says Koralage.

With these investments, InfraCos are unlocking the region's digital potential by providing the underlying infrastructure needed to meet rapidly evolving demands. From enabling 5G and bridging the digital divide to supporting smart cities, IoT growth, and sustainable development, InfraCos are laying the foundation for the digital economy. And, as the region continues to digitize, InfraCos will remain central to empowering businesses, governments, and consumers with the connectivity and innovation necessary for sustained economic growth and technological leadership.

For the benefit of all

Customer demand is playing a significant role in driving the evolution from TowerCo to InfraCo. As digital services become more complex, varied, and data-intensive, customers — including telecom operators, enterprises, governments, and end consumers — are demanding more.

"Consumers expect faster internet speeds, low latency, and a seamless digital experience," shares Khanna. "Enterprises are also pushing for advanced infrastructure solutions, particularly private networks that allow them to implement IoT, automation, and real-time analytics. InfraCos, by offering end-to-end solutions, are responding to these demands and enabling businesses and consumers to thrive in an increasingly digital landscape."

"They want high-quality experiences for things like video streaming, gaming, and virtual reality. At the same time, businesses are demanding networks that support digital transformation through AI, IoT, and edge computing," agrees Koralage. "As consumers increasingly rely on mobile devices for data-intensive activities,

the demand for specialised infrastructure providers to enhance network capacity and reduce latency becomes paramount."

The move from TowerCo to InfraCo stands to benefit a wide range of stakeholders across the ecosystem. MNOs can offload the cost of infrastructure deployment, reducing their CapEx and allowing them to focus on core services like network management and customer acquisition. The new InfraCos themselves also stand to benefit from expanding revenue streams into new, high-margin services like edge data centres and managed fibre backhaul. For local municipalities and governments, the benefits range from improved connectivity and accelerated rollout of critical infrastructure, through to next-gen smart city developments that improve public safety and environmental well-being.

"The shift from TowerCo to InfraCo offers a win-win scenario, benefiting operators, infrastructure providers, investors, and consumers alike," asserts Koralage. "By outsourcing infrastructure, operators can reduce costs and focus on core business, while infrastructure companies can generate stable revenue and drive innovation. This transition can lead to improved efficiency (efficient utilization of infrastructure resources, reducing duplication via colocation), accelerated deployment (operators can deploy new services and technologies more quickly by using existing infrastructure), and better connectivity and services for consumers."

"The shift from TowerCo to InfraCo is not just a technological imperative but a market-driven necessity," adds Khanna. "The rise of 5G, combined with the explosion of data and the need for real-time, low-latency applications, means that traditional TowerCo models are no longer sufficient. InfraCos, with their ability to support data-heavy applications and monetize emerging technologies like edge computing and IoT, are positioned as essential players in driving Asia's economic and digital growth. This transformation benefits not just the MNOs, who can focus more on customer experience by outsourcing infrastructure management, but also enterprises, which gain access to private networks and IoT capabilities. These solutions are essential for powering digital transformation in industries such as healthcare, logistics, and manufacturing."

Early adopters

Several Asian countries are witnessing a rapid shift from TowerCo to InfraCo, while others evolve more gradually.

"The shift from TowerCo to InfraCo is rapidly gaining momentum in regions like Asia-Pacific, Europe, and North America," says Koralage. "Driven by factors such as regulatory changes, economics, technological advancements, and investor interest, this transition is shaping the landscape of the telecommunications industry."

"This shift in infrastructure management not only allows for operational efficiencies but also positions key regions, particularly Southeast Asia and India, to capitalize on emerging digital trends and meet the surging demands of an increasingly connected population," adds Khanna. "Rapid urbanization, coupled with government support for public-private partnerships, is driving the need for robust digital infrastructure in these markets."

According to Koralage, India is seeing rapid transformation in its infrastructure industry, where TowerCos are being acquired or merged by infrastructure providers, in line with the government's 'Digital India' initiative. Indus Towers and Bharti Infratel have started to expand their focus into fibre networks and small cells; and Reliance Jio is evolving into a broader digital infrastructure player by rolling out fibre, data centres, and cloud services alongside 5G.

In southeast Asia, Indonesia's archipelago creates unique challenges for telecom operators, particularly in terms of connecting remote islands and rural areas. TowerCos like PT Tower Bersama Infrastructure and Protelindo are expanding into fibre optic networks and satellite services to address these challenges. Further, the rollout of 5G and smart city initiatives in major cities like Jakarta, Bandung, and Surabaya is prompting a shift towards InfraCo models that can offer a combination of mobile towers, fibre networks, and digital solutions.

In the Philippines, the government's initiative to improve network coverage and reduce costs through common tower policies has led TowerCos to evolve into InfraCos. Like Indonesia, the Philippines' geography makes it difficult to deploy large-scale tower infrastructure, thus there is an increasing focus on fibre and small cell deployment to enhance coverage and connectivity, particularly in underserved regions. As such, companies like Globe Telecom and PLDT are collaborating with TowerCos to expand fibre backhaul and integrate digital infrastructure solutions beyond just tower services.

Malaysia, too, is leading the pack in the Asian TowerCo to InfraCo shift. State-owned DNB is creating a shared infrastructure model where InfraCos play a central role in managing network infrastructure for all telecom players, pushing TowerCos to expand into more active network management, fibre deployment, and smart city infrastructure.

In Vietnam, which is rapidly rolling out 5G, TowerCos like Viettel Tower Company are evolving into InfraCos capable of handling fibre, small cells, and data centre services in line with the government's emphasis on digital transformation.

Leading the charge

The future for digital InfraCos in South and Southeast Asia is bright; they stand to play a crucial role in building the digital highways that will drive economic growth, innovation, and societal transformation into the future.

"As 5G continues to roll out across Asia, InfraCos will become the backbone of the region's digital transformation," agrees Khanna. "Their investments will support the rise of smart cities, IoT ecosystems, and digital services across both urban and rural areas. This transformation will not only fuel economic growth but also ensure that the benefits of connectivity are accessible to all."

"InfraCos will not only support the development of 5G but will also become an essential enabler of smart cities, AI-driven applications, and digital inclusivity," adds Koralage. "As governments in these regions prioritise digital agendas, the partnership between public and private sectors will be critical in achieving the ambitious goals of building sustainable, future-proof digital infrastructure."

In this evolving landscape, InfraCos are not just adapting — they are leading the charge towards a connected, smart future for Asia.

"Their ability to scale, innovate, and provide future-proof solutions is critical in ensuring that the region remains at the forefront of the global digital economy, benefiting businesses, consumers, and governments alike," concludes Khanna. ■

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AI: reshaping the telecommunications landscape

This year's hot topic is seeing AI integrated into telecommunications left, right and centre to advance operative effectiveness, improve customer experience and cut costs. Samit Banerjee, division president, Amdocs cloud operations and customer services, advises operators to consider how, when and why, to ensure seamless and successful AI integration...

AI is profoundly reshaping telecommunications by leveraging technologies like machine learning (ML), automation, natural language processing, and predictive analytics. These advancements enable real-time data analysis for network optimisation, predictive maintenance, and proactive issue resolution, leading to improved efficiency, reliability, and reduced costs.

Generative AI (GenAI), a subset of AI, is further enhancing the sector by offering deep insights into customer behaviour, enabling highly personalised services that boost satisfaction and loyalty. GenAI-driven applications (such as chatbots) improve customer support with accurate, context-aware responses, while its predictive capabilities enhance network performance and targeted marketing. Overall, AI and GenAI are revolutionising telecommunications by optimising operations, enhancing customer experiences, and driving revenue growth through advanced data analysis and automation.

Despite its potential, implementing GenAI effectively requires high-quality data and skilled personnel, alongside addressing technical, legal, and governance challenges. Ensuring data quality, privacy, and robust governance are essential. And while GenAI technologies are advancing rapidly, many communication service providers (CSPs) are struggling to keep pace, as it is time and cost consuming to build their own GenAI platform.

Helping the operators

AI can play a significant role in helping mobile network operators (MNOs) address various day-to-day challenges.

When it comes to taking on the competition, AI can assist in analysing customer data, preferences, and behaviour patterns, enabling MNOs to offer personalised services, targeted promotions, and tailored pricing plans to retain customers and attract new ones. Moreover, predictive analytics can help identify potential customer churn risks and proactively take measures to address them, such as offering incentives or improving service quality.

Churn, a common challenge for MNOs the world over, can also be effectively addressed. Indeed, AI and machine learning models can analyse vast amounts of customer data, including usage patterns, complaints, and interactions with customer service, to identify potential churn indicators and predict customers at risk of switching providers. Based on these insights, MNOs can implement targeted retention strategies, such as personalised offers, improved customer service, or addressing specific pain points. Additionally, AI-powered chatbots and virtual assistants can provide personalised support and address customer queries more efficiently, improving overall customer satisfaction and reducing churn.

In combatting and fighting back against fraud, AI and machine learning algorithms can detect anomalies and patterns indicative of fraudulent activities, such as suspicious call patterns, unauthorised access attempts, or unusual data usage. Real-time fraud detection systems powered by AI can block or flag suspicious activities, preventing financial losses and protecting MNOs from various types of fraud, including subscription fraud, call fraud, and SIM box fraud.

Sustainability, an expanding topic of import for operators everywhere, can also be aided with AI. Energy optimisation techniques can help MNOs reduce energy consumption and carbon footprints by optimising network infrastructure, adjusting resource allocation based on demand, and identifying potential energy savings opportunities; while predictive maintenance powered by AI can detect potential equipment failures or degradation, enabling proactive maintenance and reducing the need for resource-intensive replacements or repairs.

By leveraging AI and its various applications, MNOs can gain valuable insights, optimise operations, enhance customer experiences, and improve overall efficiency, ultimately addressing network challenges more effectively.

Making money

With average revenue per user (ARPU) stalling for many mobile network operators, new ideas for monetisation are coming to the forefront – and telcos can leverage the power of AI to unlock new revenue streams.

"By leveraging AI and its various applications, MNOs can gain valuable insights, optimise operations, enhance customer experiences, and improve overall efficiency, ultimately addressing network challenges more effectively."

One key area is personalisation, where AI can analyse vast amounts of customer data, including usage patterns, preferences, and behaviour to create highly tailored offerings and targeted marketing campaigns. By delivering services, pricing plans, and promotions tailored

to individual customer needs, telcos can enhance customer satisfaction, increase revenue, and reduce churn.

One of the more impactful use cases is reducing average handle time (AHT) in call centres and repetitive calls. This can show immediate ROI from business and workforce perspective. Such use cases result in improved customer experience, decreased operations costs, latency enhancements, and accuracy improvements. Indeed, the path forward with monetising with AI around the care domains is analysing the interactions of customers with call centres and providing means to refrain the calls from coming to the call centre in advance.

AI-driven network optimisation can help telcos efficiently manage their infrastructure, allocate resources more effectively, and reduce operational costs. By leveraging AI for predictive maintenance, fault detection, and automated network management, telcos can minimise downtime, improve service quality, and optimise their overall operational efficiency, leading to cost savings and potential revenue growth. AI can also enable telcos to develop innovative services and business models, particularly in areas such as 5G and IoT. Companies are assisting telcos in monetising 5G and IoT use cases in sectors like logistics, healthcare, and connected devices. Here, AI can facilitate real-time monitoring, predictive analytics, and intelligent automation, enabling telcos to offer new value-added services to enterprises and consumers.

Overall, AI-powered agents, virtual assistants and predictive maintenance capabilities can significantly improve customer experience, leading to increased customer loyalty and reduced churn, contributing to revenue growth. With the advent of 5G and IoT, CSPs can leverage AI to offer intelligent edge computing and IoT services, processing and analysing data at the edge to provide real-time insights, predictive maintenance, and optimised services to enterprises. By embracing AI capabilities, CSPs can unlock new revenue streams through innovative services, personalised offerings, and data-driven business models, positioning themselves as key players in the digital economy.

Starting the journey

While the adoption of AI can bring significant benefits to MNOs, several factors may be holding back some operators from fully embracing this technology to improve their business strategies.

One significant barrier is the high initial investment required for AI infrastructure and skilled personnel, which can be prohibitive, especially for smaller operators. There is a lack of high-quality, clean data essential for training effective AI models, often compounded by data privacy and security concerns. The complexity of integrating AI into existing systems and workflows poses another challenge, requiring substantial changes to operational processes. The regulatory and governance issues, including compliance with evolving laws and standards, add an additional layer of complexity, making it difficult for MNOs to navigate the AI adoption process effectively.

Overcoming these barriers requires a strategic approach, such as investing in data management, upskilling employees, addressing cultural resistance, and carefully evaluating the potential risks and rewards of AI adoption, enabling MNOs to leverage the power of AI to improve their business strategies and remain competitive in the evolving telecom landscape.

Key factors to consider

Before integrating AI into their networks, operators should consider several crucial factors to ensure successful implementation and operation.

1. **Data quality and management:** High-quality, comprehensive data is essential for training effective AI models. Operators must ensure they have access to accurate, up-to-date, and relevant data, and employ proper data management practices.

2. **Security:** AI integration can introduce new security vulnerabilities. Robust cybersecurity measures are necessary to protect sensitive data and prevent unauthorised access. Continuous monitoring and updating of security protocols are essential.

3. **Scalability:** AI solutions should be scalable to handle increasing amounts of data and network traffic. Choosing AI platforms that can grow with network demands ensures consistent performance.

4. **Interoperability:** Ensuring seamless integration of AI systems with existing infrastructure is critical. Operators should select AI solutions compatible with their current hardware and software to avoid complex integration processes.

5. **Skill set and training:** Skilled personnel who understand both AI technology and telecommunications are vital. Investing in training or hiring experts is necessary for effective AI management.

6. **Regulatory compliance:** Adhering to local and international regulations regarding data privacy and AI usage is crucial. Compliance with laws like GDPR or CCPA helps avoid legal issues and maintain customer trust.

7. **Cost considerations:** Implementing AI involves significant costs. Operators should conduct a thorough cost-benefit analysis to ensure the investment delivers tangible returns.

By addressing these considerations, operators can effectively integrate AI into their networks, enhancing operational efficiency, improving customer experiences, and maintaining a competitive edge in the telecommunications industry. ■

Connecting Operation Antarctica Defence

Founded in 1977 as the Earthforce Environmental Society to tackle elephant poaching in Africa, conservation organisation Sea Shepherd moved into marine conservation with the acquisition of its first ship in 1978. Since then, it has engaged in various activities focused on protecting ocean wildlife and ending the exploitation and destruction of marine ecosystems.

Crucial to Sea Shepherd's mission is reliable, high-speed mobile satellite connectivity with global coverage. As such, the organisation is a long-standing partner of Inmarsat Maritime, with four of its nine current vessels subscribed to Fleet Xpress. This includes 'Allankay,' a former vessel deployed to Sea Shepherd's latest campaign, Operation Antarctica Defence.

Operation Antarctica Defence

Thanks in part to Sea Shepherd's efforts, whales are no longer being hunted in the Southern Ocean. However, they now face a new threat: the overfishing of krill, their primary food source.

Through Operation Antarctica Defence - launched in January 2024 - Sea Shepherd is highlighting the practice of krill fishing, which, while legal, is causing significant damage to Antarctica's fragile ecosystem.

To shed the light on this previously unseen issue to an international audience, Allankay travelled to the remote waters of Antarctica, where it documented supertrawlers indiscriminately ploughing through pods of fin whales. With the images sparking global outrage and bringing calls for the krill-fishing industry to be shut down, Sea Shepherd's ongoing efforts to raise awareness of this harmful practice are having an impact.

Cameras and connectivity

As for its other campaigns, in Operation Antarctica Defence, the camera is Sea Shepherd's weapon.

"Whether drawing attention to legal yet destructive activities or exposing illegal fishing practices that justify arrests, the ability to catch vessels in the act and quickly share photographic evidence is key," said David Wilson, Head of Fleet Communications, Sea Shepherd. "We require the capabilities to communicate with law enforcement in different jurisdictions and send out media releases as soon as possible to keep the public informed. We also need to track vessels in real time and quickly adopt tactics to catch them in the act – because without showing the world what's happening or sending evidence to the relevant authorities, we wouldn't be able to effect positive change."

During the mission, Sea Shepherd maintained mission-critical connectivity, even in remote and inhospitable locations like the Southern Ocean, using very small aperture terminal (VSAT) antennas configured for Global Xpress Ka-band and FleetBroadband terminals for ELERA back-up L-band. The maritime connectivity service delivers the speed and reliability the organisation requires to report harmful and/or illegal practices from the scene.

Sea Shepherd also uses Fleet Xpress for video conferencing. The organisation's Director of Campaigns, Peter Hammarstedt, virtually attended the World Ocean Summit & Expo 2023 in Lisbon, Portugal, from on board a vessel operating in Antarctica.

Photos courtesy of Sea Shepherd

Making a difference

Inmarsat Maritime takes pride in facilitating the decarbonisation initiatives of some of the world's leading shipping and offshore companies – however, opportunity to collaborate with non-profit organisations dedicated solely to environmental protection is a privilege.

"We serve companies worldwide in all kinds of industries, but nothing is more rewarding – or important – than supporting environmental conservation efforts," said Eric Talman, Director of Product and Solutions at Connecta Satellite Solutions, an Inmarsat Maritime partner. "The deterioration of the planet and its wildlife is happening right before our eyes, so the value of groups like Sea Shepherd cannot be overstated. They make a real difference, and it's an honour to assist them in any way we can."

"Previously a FleetBroadband user, Sea Shepherd upgraded to Fleet Xpress in 2017. Throughout this collaboration, Inmarsat Maritime has played an integral role in supporting Sea Shepherd's campaigns, providing mission-critical connectivity in harsh and isolated environments. For me, witnessing first-hand the positive impact of these campaigns has been a true privilege. We are also grateful to Connecta for its support in delivering our solutions to this unique customer," said Christian Cordoba, Account Manager, Inmarsat Maritime. ■

Offshore communications for Malaysia's booming oil and gas industry

HGIS plays a major role in Malaysia's offshore oil and gas industry, serving remote offshore sites owned by leading energy operators. To successfully maintain operations, it's crucial that HGIS can transmit data essential for monitoring operations, ensuring safety, and making informed decisions, from offshore sites to the mainland in a synchronised manner.

Shaky foundations

HGIS had historically been relying on L-band connectivity from another service provider to maintain communications.

However, it began to experience a series of problems that significantly hampered operations. Data loss was a constant issue, often attributed to slow data speeds and limited coverage from their incumbent solution. This not only created disruptions but also led to substantial additional costs. Personnel had to be deployed offshore repeatedly to retrieve missing data, increasing the risk of incidents, and impacting staff welfare in the sensitive offshore environment, where even minor mishaps could turn catastrophic.

HGIS reached out to Applied Satellite Technology Networks (AST Networks), whose team in Asia possessed a deep understanding of field operations in similar environments.

Point-to-point

AST Networks collaborated closely with HGIS to fully understand their requirements, the existing challenges, and the future opportunities they aimed to address. The remote sites' locations, coverage needs, and the sensitivity of the data being transmitted were all considered within the initial plans.

With this comprehensive data in hand, AST Networks designed a bespoke solution which involved establishing direct point-to-point connections to the customer's secure facilities, allowing the transmission of sensitive data to their end clients in a synchronised and secure manner. This not only resolved the data transmission issues but also provided the capability for additional data services and remotely monitored sensors, capitalising on the newly deployed high-bandwidth infrastructure.

Long-term goals

HGIS opted to deploy the solution across multiple sites in Malaysia, and in doing so, achieved transformational results, with data transmission becoming reliable, efficient, and secure. The solution was designed to be scalable and as a result, the service provider planned to replicate the solution on various other offshore sites across Malaysia.

"AST Networks' expertise and solution transformed our data transmission challenges in the Malaysian offshore sector, delivering secure, efficient connectivity and cost savings," said Andre Haramugam, Head - Commercial Operations at HGIS. "Their exceptional support and scalable technology exceeded our expectations, ensuring our operational success and safety."

One of the most remarkable outcomes of this collaboration was the significant cost savings achieved by HGIS. When compared to the previous solution, which was not efficient or reliable and incurred additional expenses, AST Networks' solution proved to be not only effective but also cost-efficient. HGIS was extremely pleased with the new solution, which addressed not just immediate challenges, but also support their long-term goals in ensuring seamless operations and safety in the demanding offshore oil and gas sector.

"AST Networks has exemplified our commitment to providing trusted connectivity solutions that empower our customers to effectively control their remote operations," said Sampaul Singh, Director at AST Networks Asia. "The successful delivery of this project showcases our expertise, unwavering dedication to exceeding customer expectations and our passion for resolving complex connectivity challenges." ■

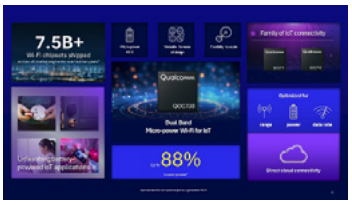
Photos courtesy of AST Networks

Qualcomm QCC730 micro-power WiFi system

Qualcomm Technologies, Inc. has launched the Qualcomm® QCC730, a micro-power WiFi system for IoT connectivity.

This technological breakthrough provides up to 88% lower power than previous generations and can revolutionize products in battery powered industrial, commercial and consumer applications. QCC730 will be complemented with an open-source IDE and SDK that supports cloud connectivity offloading for ease of development. Its versatility empowers developers to implement QCC730 as a high-performance alternative to Bluetooth® IoT applications for flexible design and direct cloud connectivity.

"Complementing high-performance, low-latency wireless connectivity solutions, Qualcomm QCC730 SoC is an industry-leading micro-powered Wi-Fi solution enabling WiFi for the world of battery powered IoT platforms. QCC730 enables devices to support TCP/IP networking capabilities while remaining form-factor and complete wireless constrained, whilst remaining connected to the Cloud platforms," said Rahul Patel, group general manager, connectivity, broadband and networking (CBN), Qualcomm Technologies, Inc. "Along with the rest of the our IoT connectivity portfolio, this new offering places Qualcomm Technologies at the centre of next generation battery-powered smart-home, healthcare, gaming and other consumer electronic devices, and reflects on our commitment to utilize our decades of R&D to pioneer new user consumer experiences."



HPE Aruba Networking Enterprise Private 5G simplifies deployment

Hewlett Packard Enterprise has introduced HPE Aruba Networking Enterprise Private 5G to help customers accelerate and simplify the deployment and management of private 5G networks, providing high levels of reliable wireless coverage across large campus and industrial environments and opening new, untapped use cases for private cellular.

With this expansion of its secure edge-to-cloud portfolio, HPE Aruba Networking becomes the only global enterprise infrastructure vendor to provide comprehensive WiFi and private 5G solutions, helping customers in industries such as manufacturing, healthcare, public venues, and education solve complex connectivity challenges across large and remote sites. HPE Aruba Networking Enterprise Private 5G also helps customers make productivity and innovation gains as a complement to the cost-effective, high-capacity connectivity provided by WiFi, in addition to expanding AI data capture and delivery capabilities for building AI data lakes and activating inference solutions.

HPE Aruba Networking Enterprise Private 5G also enables communications service providers (CSPs) to quickly deploy private 5G networks for their customers. This integrated private 5G solution complements existing WiFi-based managed services and will help telco customers service the growing private cellular market and generate new revenue from their existing enterprise customers.

With the debut of HPE Aruba Networking Enterprise Private 5G, enterprises can increase reliable, secure, high-performance connectivity with a fully integrated private 5G network.

Radio-over-fibre for affordable mm-wave networks for Beyond 5G/6G

NEC Corporation has successfully developed and demonstrated a radio-over-fibre system with a 1-bit fibre transmission method making it possible to affordably build stable millimetre-wave communication networks for Beyond 5G/6G.

With this method, high-frequency analogue signals can be transmitted using an inexpensive electrical-to-optical converter for general-purpose digital communications, enabling the realisation of a compact distributed antenna unit at low cost.

As a result, a stable millimetre-wave communication environment can be inexpensively achieved in high-rise buildings, underground malls, factories, railways, indoor facilities, and other obstacle-laden environments.

High-speed wireless communications leveraging millimetre-wave technology are expected to be a key technology for Beyond 5G/6G. Moreover, since 80% of mobile communication traffic occurs indoors, millimetre-wave is being considered as an indoor solution.

However, since there is significant propagation loss and high linearity in the millimeter-wave frequency band, it is imperative to ensure line of sight between base stations and terminals to achieve sufficient quality of service (QoS). While dense installation of distributed antenna units (DA) for direct transmission and reception of data with terminals and avoiding obstacles is known to be effective in resolving these issues, the size, power consumption, and cost of installing the required number of DA have proven to be major issues.

To overcome these issues, NEC developed a radio-over-fiber system (RoF) and a related transmission method which enables inexpensively building stable millimetre-wave communication networks in high-rise buildings, underground malls, factories, railways, indoor facilities, and other obstacle-laden environments. It will therefore promote the uptake of high-speed and large-capacity communications using millimetre waves for Beyond 5G/6G.

Reliable and robust NB-IoT with resilient geolocation from STMicroelectronics

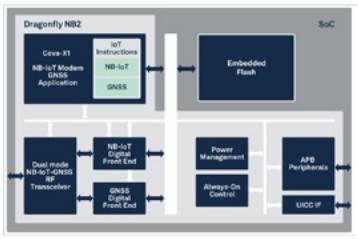
STMicroelectronics has licensed and deployed the Ceva-Waves Dragonfly NB-IoT platform in its recently introduced ST87M01 ultra-compact and low-power modules.

The combination provides highly reliable and robust NB-IoT data communication with accurate and resilient GNSS geo-location capability for IoT devices and assets.

Ceva's Cellular IoT IP platform powers STMicroelectronics' ST87M01 cellular IoT modules that are intended for a wide range of IoT applications including smart meters, smart grid, smart buildings, smart cities and smart infrastructure applications, as well as industrial condition monitoring and factory automation, smart agriculture and environmental monitoring. It is also suited to tracking applications with its accurate and resilient GNSS geo-location capability.

The Ceva-Waves Dragonfly platform integrates a Ceva-BX1 processor, an optimised RF Transceiver, baseband, and a protocol stack to offer a complete Release 15 Cat-NB2 modem IP solution that lowers entry barriers.

"We are proud to collaborate closely with STMicroelectronics and empower them to push the boundaries of cellular IoT performance and power efficiency with our complete Release 15 Cat-NB2 modem IP solution. The very impressive ST87M01 NB-IoT/GNSS module is tailored to the demanding requirements of the industrial market and we look forward to seeing the module successfully deployed in the field," said Tal Shalev, vice president and general manager, wireless IoT business unit at Ceva.



The Ceva-Waves Dragonfly is a complete eNB-IoT IP platform that can serve a wide range of applications. It is a fully software-configurable solution that can be extended with multi-constellation GNSS and sensor fusion functionality and includes a reference silicon of the complete modem design, including an embedded CMOS RF transceiver, an advanced digital front-end, physical layer firmware, and a protocol stack (MAC, RLC, PDCP, RRC, and NAS).

altGNSSSM GEO SecureTimeSM offer nanoseconds-accurate UTC timing via L and Ku-bands

Viavi Solutions Inc. has launched altGNSSSM GEO SecureTimeSM services that deliver nanoseconds-accurate UTC timing via L-band and Ku-band satellite signals for critical infrastructure including 5G networks, transportation, data centres, smart grid, high-frequency trading, military and first responder communications, and satellite terminals.

Operating completely independently of traditional GPS and GNSS, VIAVI's altGNSS GEO service is extremely difficult to jam or spoof and leads the industry with the broadest global coverage, further improving resistance to attacks on the rise.

SecureTime adds to its portfolio of solutions for resilient PNT, and features Navigation Message Authentication (NMA) which uses encryption to detect spoofing in any of the signals received from all sources – including GPS that does not support NMA. It builds on VIAVI's existing multisource assurance, combining signals from government and commercial constellations across geosynchronous orbit (GEO), low Earth orbit (LEO) and medium Earth orbit (MEO).

These services have been tested and proven in live-sky battlefield scenarios including successfully providing assured PNT in a simulated warzone with complete denial of GPS and GNSS services.

VIAVI will integrate these services in its own products while also providing receivers for third-party solution providers desiring to leverage the altGNSS services in their own systems.

"Critical infrastructure around the globe is increasingly susceptible to PNT disruption, but that is even more apparent in theaters of war," said Doug Russell, senior vice president, AvComm, VIAVI. "Our SecureTime services have steadily built up an unsurpassed capability to protect timing in critical networks, independent of any one source or frequency band."

Sea Tel 370s TV antenna brings TV to the sea

Designed primarily for use on cruise ships and mega yachts, Cobham Satcom's Sea Tel 370s TV 3.7m antenna is a groundbreaking solution designed to expand onboard access to the highest quality programming anywhere in the world, while significantly reducing lifetime technical costs.

Leveraging the newest generation Sea Tel Integrated Marine Electronics (IMA) platform, which is already proven in the world's most flexible and powerful marine VSAT antenna systems, Sea Tel 370s TV helps unlock several advantages for cruise and yacht charter companies by automating the manual processes that have until now been needed to make some of the most popular television channels available globally at sea.

Cobham Satcom's new TVRO antenna features automatic C-band switching between circular and linear polarisation, ensuring uninterrupted viewing and continuous availability of live television such as ESPN, one of the most popular cruise ship channels.

Look out for...

Securing quantum communications

The Paris Region Quantum Communication Infrastructure (QCI) consortium has implemented its first quantum communication network in existing fibre infrastructure.

Equipment related to quantum communications is expensive. To secure a link of less than 100km on a dedicated fibre, it takes approximately €180,000-250,000 just for a quantum key distribution (QKD) system. Accordingly, as part of the project, the consortium started with fibres already deployed by Orange France, some active and others dark.

The partners carried out measurements of optical losses by sending packets of photons into the fibre and characterising their round trips. Then they deployed a quantum communication system, developed by ID Quantique (IDQ), defined a 'seamless' network architecture, added a service layer, and implemented an encryption system that Thales adapted.

Quantum Key Distribution (QKD) was implemented on the infrastructure backbone with relays secured by post-quantum cryptography (PQC) to cover an extended distance range in Orange's fibre network. The solution combines IDQ's commercial Cerberis XG QKD system with embedded Clarion KX software suite (Key Management System), CryptoNext's Quantum Safe Library (C-QSL) and classical symmetric cryptography.

PQC is the next generation of public key cryptography designed to be resistant to quantum computer attacks. In this setup, QKD provides unbreakable key exchange between remote encryption systems, while PQC guarantees relays security in large scale QKD network deployment.

The quantum fibre network has a range of around 80km. It interconnects several quantum nodes which are represented by the project partners, from the Saclay plateau (Thales, Institut d'Optique, Télécom Paris) to the LIP6 Sorbonne Université laboratory in the center of Paris, via the Orange Gardens site in Châtillon.

The consortium has demonstrated that for the application of a QKD technology, using or reusing already deployed commercial fibre infrastructures is possible. This represents a huge step forward in the realisation of secure quantum communications – for both wired and wireless applications.

São Paulo State Government opts for Motorola Solutions body cameras

Motorola Solutions has announced that the São Paulo State Government will deploy 12,000 V500 body cameras to its Military Police (PMESP) to replace and modernize the state's body camera program.

This significant investment of over R$100 million underscores PMESP's commitment to leveraging advanced technology for the safety and protection of São Paulo state residents.

"Our investment in Motorola Solutions' body camera solution will equip our officers with state-of-the-art technology to help protect and serve the community, allowing our agency to achieve benefits such as providing greater protection of the population and officers," said Gustavo Barbosa, Colonel and IT Director of PMESP. "We are confident that this solution will act as a powerful tool to curb criminal activity while providing reliable evidence to help simplify and accelerate police actions."

The LTE-enabled V500 allows agents in the field to stream live video and location to the control room, giving incident managers a better understanding of events so that they can respond more quickly and efficiently. The footage is automatically uploaded to the digital evidence management system so that the handling, storage and sharing of evidence can be managed securely in the cloud or on-premise, protecting information and preserving the integrity of material for the police, public systems and judiciary.

"PMESP is leading the way in public safety innovation by equipping officers with the latest body camera technology," said Elton Borgonovo, MSSSI vice president, Latin America and Caribbean Region, Motorola Solutions. "This move positions PMESP among the most advanced law enforcement agencies and demonstrates its commitment to the safety of Sao Paulo's residents."

Vodafone rolls out private 5G at nuclear plant

Temelín nuclear power plant in Czechia has rolled out a private 5G network, provided by Vodafone. The company claims that the network is the first of its kind in Europe.

According to Vodafone, the pilot phase of the network covers outdoor space, as well as selected areas of a production unit. It is intended to enable transition away from two-way radio, as well as to facilitate the use of virtual reality glasses by technicians.

"By being entirely independent from the public network, our private 5G solution ensures that all user data and infrastructure are securely managed within the power plant's own systems. This is vital for maintaining the highest standards of safety and reliability," said CEO of Vodafone Czechia, Violeta Luca. "This technology is a key enabler in advancing the secure digitalisation of such critical infrastructure."

"A selected part of the nuclear power plant's communication network, as an element of critical infrastructure, must be completely separated from the external network. That is why we always maintain an alternative in the event of an outage, and the management system of course remains completely separate from the outside world," said ČEZ Group's nuclear division director, Bohdan Zronek. "We are the first nuclear power plant in Europe to actually test a private 5G network, while other European operators work mostly with 4G."

Telecom Fiji taps Kordia for North transmission network

Telecom Fiji is partnering with Kordia to implement its North transmission network in Vanua Levu.

The project will connect the Savusavu Submarine Cable Station to the Labasa Exchange using advanced Ciena transmission equipment, marking a significant milestone in strengthening Fiji's telecommunications infrastructure. Kordia has collaborated closely with Ciena to deliver a solution tailored to Telecom Fiji's requirements.

"This collaboration with Kordia is a crucial step in expanding our network's capacity and reliability, especially for Vanua Levu. The new transmission network will support the growing demand for high-speed connectivity and digital services across Fiji, enabling us to provide even more robust and scalable solutions for our customers," said Telecom Fiji in a release.

Kordia has also offered consultancy and fibre testing services for Telecom Fiji's optical fibre network.

Cellnex deploys DAS for 37th America's Cup

Cellnex has deployed a multi-operator mobile coverage solution along 3.5km of Barcelona's coastline, from Sant Sebastia to Mar Bella beach.

The deployment aims to enhance 5G coverage in preparation for the 37th America's Cup, a global sporting event running from 22 August 27 October.

As part of an agreement with the Barcelona City Council, Cellnex has installed a distributed antenna system (DAS) on the council's physical structures and street fittings along the city's beaches to serve the tens of thousands of visitors throughout the year. The infrastructure will remain in place on the city's coastline after the sporting event ends next month.

"DAS systems reinforce the connectivity of any mobile operator in areas with a high influx of people, such as the Barcelona coastline. We are also deploying such solutions in urban centers, stadiums, shopping centers, large buildings, networks, and metro stations, among other locations. This allows us to expand and densify the network's capacity to provide the public with reliable connectivity at all times," said Cellnex Spain in a statement.

Nigeria to shift emergency comms to the cloud

To keep its operations connected to the humanitarian community tackling insurgency in northeast Nigeria, the country's Emergency Telecommunications Sector (ETS) is seeking to migrate its systems to the cloud.

ETS confirmed the move in an update, revealing that, in collaboration with its main funder, the World Food Programme (WFP), it was reviewing a proposal provided by a cloud partner. ETS has not named the partner at this stage.

"The migration exercise will ensure availability of back-up data in the event of an emergency," said Patrick Midy, coordinator, ETS.

The ETS has confirmed receiving critical funding of $153,000 from the European Commission Humanitarian Aid Office. Of the $1.16 million required to maintain services in northeast Nigeria, ETS' funding is now at 42%. The figure previously stood at 28%.

As of the end of August, ETS provided data connectivity to 1,160 users from 122 organisations, comprising 16 United Nations agencies and 106 non-governmental organisations. During the month, connectivity for humanitarian agencies was disrupted when internet services were severely disturbed during a nationwide anti-government protest.

IHS Nigeria opts for solar energy

IHS Nigeria has announced a strategic partnership with Jaza Energy to roll out solar power hubs across 250 telecommunications towers in underserved communities in Nigeria.

This initiative aims to provide sustainable energy solutions not only for the towers but also for local communities, marking a major step forward in reducing reliance on fossil fuels.

The solar hubs will power the towers, ensuring consistent and environmentally friendly energy for telecommunication operations. Interestingly, these hubs will generate excess energy, which will be used to charge portable battery packs for local households and small businesses. This approach directly addresses the issue of energy access in remote areas, significantly reducing the dependence on diesel generators that are both costly and harmful to the environment.

Jaza Energy has already made a substantial impact in Tanzania and Nigeria, with over 3 million solar battery swaps and support for more than 100,000 individuals. Jeff Schnurr, CEO of Jaza Energy, emphasized that the partnership with IHS Nigeria is set to benefit an additional 200,000 people in Nigeria's most underserved regions by the end of 2025. The collaboration highlights both companies' commitment to creating sustainable, long-term energy solutions while fostering socio-economic development in areas with limited infrastructure.

LTG Group upgrades critical rail network

Ribbon Communications has successfully deployed a critical network upgrade for LTG Group, the Lithuanian railway company, in collaboration with Telia Lithuania.

The upgrade, one of the largest network modernisation projects in Lithuania's public sector in the past decade, is designed to enhance the security, speed, and reliability of LTG's communications network. The upgraded system is ready for advanced services such as Communications-Based Train Control (CBTC) and integrates enhanced cybersecurity features, ensuring LTG's compliance with industry standards.

"The upgraded network ensures smooth and safe train traffic and efficient office operations. From now on, we will share data within the Group via a network that offers greater security, faster data transfer, and a smoother roll-out of new services. This is one of the largest and most complex network modernisation projects of the past decade, not only for LTG but also in Lithuania's public sector," said LTG Group in a statement. "It covers everything from architectural design, replacement of network nodes, network management systems, and security systems, to cabling and migration of existing services to the upgraded network. It also includes seven years of service and support for the newly installed equipment."

Free Mobile delivers France's first 5G 3.5GHz SA network

Free Mobile, part of Iliad, has announced the launch of what it calls France's first 5G 3.5GHz Standalone Access (SA) network on a national scale.

With over 20,000 5G sites in service, including nearly 7,000 on the 3.5GHz band, Free now covers approximately 95% of the French population.

The operator said 5G SA is the final phase of 5G network development. The new 5G SA network enhances mobile communication by providing faster speeds, lower latency, and higher reliability, independent of 4G infrastructure. Its deployment will allow the full potential of 5G technology to be realised through new services and applications in various domains.

Additionally, Free has introduced VoNR (Voice over New Radio), which improves voice communication over 5G, offering faster connection times and better voice quality. Subscribers to the 5G Free Mobile Plan can access 5G SA at no extra cost, provided they have a compatible device.

GSMA and MNOs launch Responsible AI (RAI) Maturity Roadmap

The GSMA launched in conjunction with 19 operators its Responsible AI (RAI) Maturity Roadmap to provide operators with guidelines to effectively and safely tap into the emerging technology.

The initiative is being championed by Axiata, Deutsche Telekom, Orange, Telefónica and Telstra. Other operators to commit to the roadmap include Globe Telecom, MTN, Turkcell, True and Vodafone.

McKinsey estimated the expanded use of AI in the telecoms sector can deliver between US$450 billion to US$680 billion to the industry over the next 15-20 years. The guidelines being launched today were developed with insight from McKinsey.

The GSMA also took heed of existing global regulations and recommendations from international bodies such as the OECD and the UNESCO Recommendation on the Ethics of AI to create a roadmap for the whole industry to align on the use of responsible AI.

"The transformative potential of AI has long been apparent but its integration in our work and our lives must be done in a responsible and transparent way for it to be truly effective and sustainable. This roadmap will now empower more MNOs to embrace AI in the knowledge they, in line with the whole sector, are doing so responsibly and ethically," said GSMA Director General, Mats Granryd. "Responsible AI is the right way to explore and unlock the many opportunities the technology presents, and the telecoms industry is proud to lead the way as the first sector to commit to this approach – we hope others will follow our example."

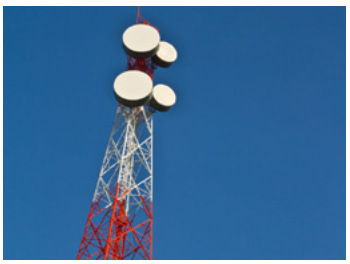
Omantel completes RedCap lab trial

Omantel has successfully conducted a laboratory trial of RedCap to improve the speed and efficiency of the 5G network at a lower cost.

This technology was developed in collaboration with Huawei and aims to enhance internet connectivity while expanding the range of applications available to users. RedCap is designed to meet the demands of Internet of Things (IoT) applications, offering high speeds and energy efficiency, making it ideal for a variety of devices, from smart wearables to advanced industrial equipment.

This technology ensures fast and seamless user experiences while extending the battery life of connected devices, thereby reducing operational and maintenance costs.

"The successful trials of RedCap's 5G technology mark a significant milestone in our journey toward a thriving digital future for Oman. We believe this technology will revolutionise the telecommunications sector and unlock new opportunities for innovation and business growth," said Omantel.



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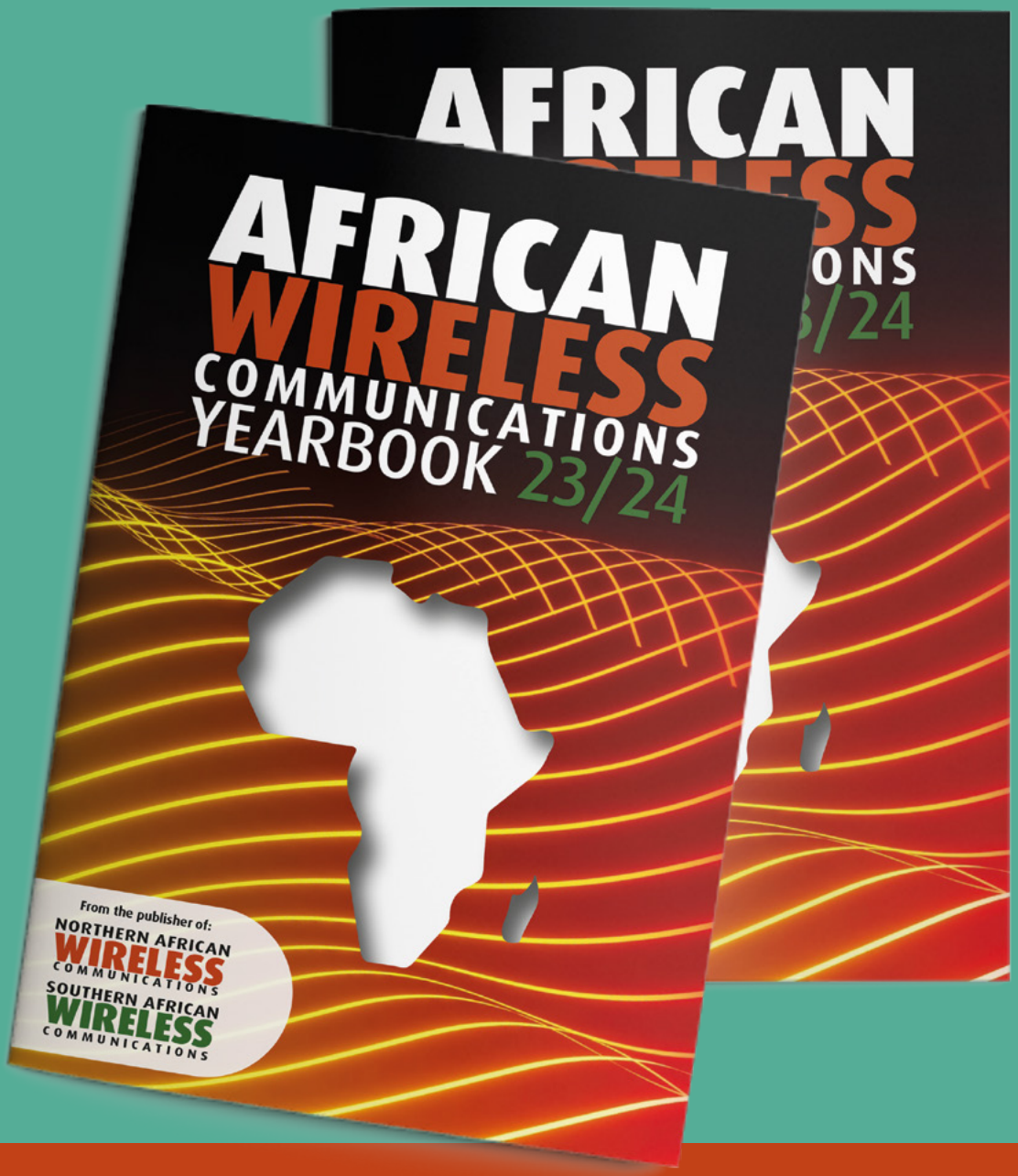

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