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# SAMENA TRENDS

FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

BUILDING DIGITAL ECONOMIES



**MBBF 2023:**  
"Bring 5.5G into Reality"  
on Oct 10<sup>th</sup>

**GCF 2023:**  
"Charting Shared  
Priorities in Cyberspace"  
on Nov 1<sup>st</sup>

THIS MONTH  
**CYBERSECURITY FRONTS IN DIGITAL TRANSFORMATION**

# SAMENA TRENDS

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## CONTENTS

### 04 EDITORIAL

### 09 REGIONAL & MEMBERS UPDATES

- Members News
- Regional News

### 64 SATELLITE UPDATES

- Satellite News

### 73 WHOLESALE UPDATES

- Wholesale News

### 82 TECHNOLOGY UPDATES

- Technology News

### 90 REGULATORY & POLICY UPDATES

- Regulatory News
- A Snapshot of Regulatory Activities in the SAMENA Region
- Regulatory Activities Beyond the SAMENA Region

### ARTICLES

41

The Crucial Role of Cybersecurity in Digital Transformation

47

5G Drives the Development of Digital Economy and Industry 4.0

71

Changing Connectivity Requirements in Roaming Requires the Operators' Attention

86

Institutionalizing Digital Education Ecosystem Development in Developing Countries

### FEATURED

06



GCF Institute to Bring Stakeholders Together to Chart Shared Priorities in Securing Cyberspace

44

The Crucial Dimensions of Cybersecurity in the Era of Digital Transformation

61

Cybersecurity Fronts in Digital Transformation

79

Data Security Governance: Safeguarding the New Digital Frontier

## CONTENTS



**Let's advance together digital transformation for all!  
Let's Partner2Connect!**

## Cybersecurity Fronts in Digital Transformation

Information is central to human freedom in the digitally connected future. As digitalization increases and digital economy expands, enterprises and individuals must rely on information and technology assets.

Without stable and reliable internet connectivity, access to relevant information and technology assets, and a secure cyber environment, people are less likely to benefit from information and contribute to digital trust-building.

This complexity of the ecosystem and business models in place, access to the network, and numerous uses of the communication infrastructure, inherently makes network and data security a daunting challenge.

Our inter-dependence, inter-networking, information exchange rests on the need and ability to sustainably use, exchange, and protect information and infrastructure assets. Given that the Internet or the cyberspace is central to the existence of digital economy and to new digital capabilities, experiences, digital business models, and possibilities, we have no choice but to protect cyber assets.

This November 1st, an important cybersecurity-centric event is being held in Riyadh by the GCF Institute of Saudi Arabia, aiming delve into multiple areas across societal and business domains where cyberspace has taken on a central place. Ultimately, and such events are truly helpful in this regard, we very much require taking collective action for ensuring cyber stability; understanding the critical and evolving role

of cyber economics; exploring behavioral levers and motivations in cyberspace to better understand cybercrime; and seeing how emerging digital technologies can positively help realize a secure, sustainable cyberspace.

Cybersecurity policy and regulation, and its various other fronts, should be concerned with the welfare of society. In the interest of the society, Policymakers and Regulators need to view the Private Sector as the enabling engine of ICT-driven nation-building and sustainable development and not as a mere revenue contributor to the national treasury. Therefore, before taking any regulatory or interventional steps, sufficient efforts should be made to capture the impact of an intervention on the economic welfare of all participants in the market, including digital ecosystem players, consumers, and the economy, as a whole.

SAMENA Council believes that Operators need to be enabled and incentivized to invest in infrastructure development, including in cybersecurity infrastructure, to ensure that everyone gets connected, remains connected, and that adequate infrastructure is available for the increasingly bandwidth-hungry and complex services and content, especially in a highly inter-connected and cyber-threat prone environment. Thus, we need to adopt a multi-prong collaboration and incentivization strategy among Operators and Governments.

Ideally, we want more cybersecurity and less cyber control. These two are not one and the same. 🌱



**Bocar A. BA**  
Chief Executive Officer  
& Board Member  
SAMENA Telecommunications  
Council



# Our transformation strategy is set to meet the growing demand for **innovative solutions**

**Mobily Wholesale** offers its clients a state of art portfolio with complete flexibility and customization.

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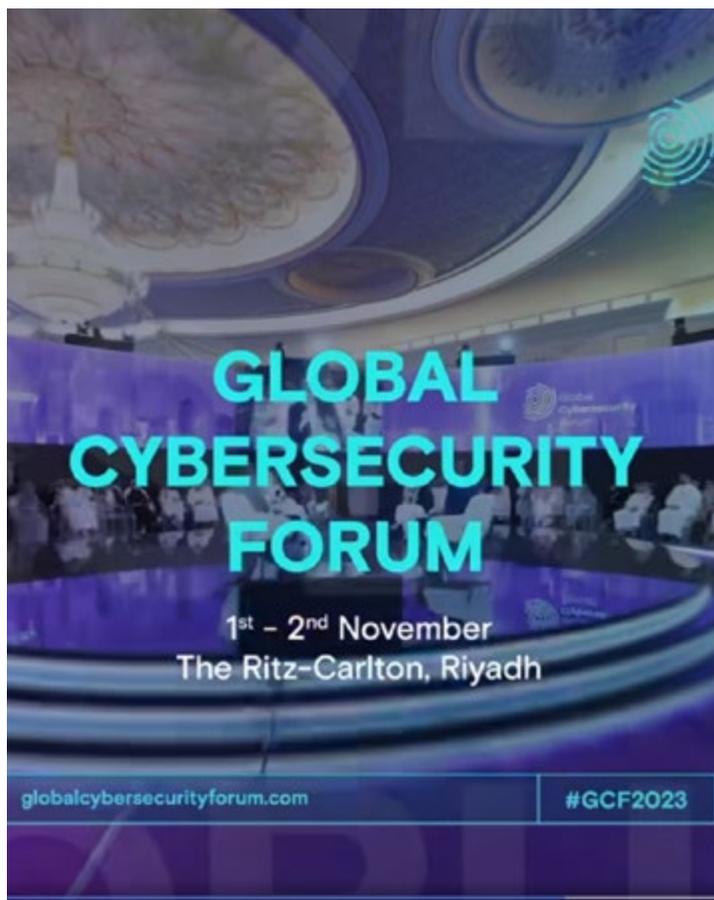
## Global Cybersecurity Forum

# GCF Institute to Bring Stakeholders Together to Chart Shared Priorities in Securing Cyberspace

Global thought leaders, decision makers, and cybersecurity experts will convene again in Riyadh, Saudi Arabia, for the Global Cybersecurity Forum (GCF) on November 1 this year.

This year's event will be held under the theme of 'Charting Shared Priorities in Cyberspace' and will build directly from the outcomes and insights of the successful 2022 GCF event, aiming to advance the global cyber community towards aligning on strategic priorities, expanding future opportunities, and deepening multi-stakeholder engagement.

Amidst various global challenges – from widespread economic turmoil to geostrategic competition, cyberspace remains a critical domain of importance for businesses and countries alike, transcending physical and conceptual borders. Given the pervasiveness of the domain, cybersecurity represents both a central imperative and a tremendous opportunity for a wide range of stakeholders.



### New Global Cybersecurity Institute to Harness the Potential of Cyberspace

Aiming to unite global action around the shared principles and values, the GCF Institute will tackle the most challenging cybersecurity issues facing governments, businesses, and individuals. It will be a catalyst for the exchange of ideas, driving thought leadership and developing research to inform policy solutions and action. In addition, it will also facilitate international projects and partnerships to strengthen existing efforts on key initiatives.

The GCF Institute will serve as a platform to advance stability, security, and prosperity of Cyberspace by catalyzing socioeconomic change, pushing knowledge boundaries, and uniting global champions. Its objective is to pioneer global initiatives that will maximize the benefits of Cyberspace and build resilience through dialogue, investment, research, and innovation.

Headquartered in Riyadh, the GCF Institute will be guided by an international Board of Trustees, tasked with the responsibility of safeguarding the institution's sustainability and independence. In addition, the institute will have an Advisory Council, composed of international experts carefully drawn from the highest echelons of government, academia, think tanks, and private sector.

Given the inherently integrated and pervasive nature of Cyberspace, its safe and secure development is a shared global responsibility. The ongoing dialogue among key global cybersecurity stakeholders has underscored the need for a new entity that can provide an action-oriented platform, designed to develop solutions to the most pressing issues in Cyberspace. With the launch of the GCF Institute, the global community will be able to count on a new instrument to complement existing efforts and harness the potential of Cyberspace.

Through the Institute, the annual Global Cybersecurity Forum will continue to convene experts and decision-makers from around the world to meet and discuss protecting the most vulnerable in Cyberspace, while maximizing its benefits for everyone.

GCF 2023 seeks to expand dialogue on these diverse challenges and opportunities, advance knowledge generation, and steer collaborative efforts. The forum will be divided into five thought-provoking sub-themes.

*In the last edition of GCF, Bocar BA, CEO – SAMENA Council, had stated that, “In terms of technological innovation, our possibilities are limitless. Next year at the GCF [2023] what we may have to look at is the convergence of two businesses, the business as we know it today and the space economy.”*

**Cyberspace Amidst Polycrisis:** Advancing collective action for cyber stability will look at how multilateral cybersecurity can be progressed in a global environment of overlapping crises and institutional challenges.

**Cyber Growth Unlocked:** Harnessing markets, incentives, and global public cyber goods delves into how cyber economics can be steered, driving growth of the cybersecurity sector to meet current and future challenges and needs.

**Across Cyber Divides:** Building a human-centered and inclusive cyberspace, asks how we can bridge social and development divides across stakeholders and within organizations and institutions.

**Inside Cyber Minds:** Exploring behavioral



levers and motivations in cyberspace maps the behavioral and psychological aspects of cybersecurity and cybercrime, illuminating the impacts of behavior and decision-making in cyberspace.

The final subtheme, **Emerging Cyber Horizons:** Maximizing the benefits of paradigm-shifting technologies, considers the future of emerging technologies and their cybersecurity dimensions, and how we can harness their accelerative properties.

The GCF, hosted by the National Cybersecu-

urity Authority (NCA), was launched in February 2020, during the Kingdom of Saudi Arabia’s G20 Presidency, as a global platform aiming to build a more resilient and better cyberspace for all. The platform emphasizes the importance of international collaboration among diverse stakeholders and nations to accomplish this goal.

Registrations and the GCF 2023 program, announcing high-profile international speakers, will be made available in due course. 🌐

### About the GCF Institute (GCFI)

The GCF Institute (GCFI) is a global platform that seeks to strengthen society’s cyber resilience through shared priorities, purposeful dialogue, and impactful initiatives. The GCFI will serve as a space where the world’s cybersecurity stakeholders collaborate and act to benefit people of all backgrounds and nations. By harnessing intellectual power and spearheading multilateral collaboration, the GCFI aims to contribute to a more stable and secure cyberspace for all.



# stc

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**stc** kuwait Security Operations Center (SOC) provides continuous monitoring, detection and investigation of incidents to ensure the coordinated operation of your security systems.

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- Real-time report on suspicious activities

## MEMBERS NEWS



The prominent ICT provider in Saudi Arabia, "solutions by stc", has recently announced a binding offer with Devoteam SIS (France) and Ortel company. The offer entails the acquisition of a 40% stake in Devoteam Middle East, a top-performing entity in the digital consulting domain across the region. This move aligns with stc's strategic expansion and growth plans, focusing on accessing lucrative sectors and investments. After completion of this transaction and receiving all necessary approvals, the move will further strengthen stc position as a group in the ICT industry as a digital enabler. This will be accomplished by integrating its subsidiaries eco-system specializing in digital infrastructure, IoT, cloud computing, cybersecurity, digital financial services, and business process outsourcing services. The move follows the Group's recent acquisition through its subsidiary Tawal of the communication towers assets owned by United Group, which marked its entrance into the European market. Devoteam Middle East

## stc Group Continues to Invest Qualitatively in Commitment to Excellence Through Its Subsidiary "solutions"



is a member of the Devoteam global group, where it extends a local and regional presence with international expertise. This unique combination of capabilities allows the company to provide strategic digital services, business transformation, data analysis, artificial intelligence, and business automation. The aspirational "DARE"

strategy implemented by stc involves the expansion in scale and scope through the growth in digital infrastructure, information technology, and emerging technologies as stc is the enabling engine of digital transformation in the region allowing the achievement of the digital economy goals.

## iot Squared Cements Its Position as National IoT Champion Through Acquisition of Machinestalk

stc Group, an engine of digital transformation in the MENA region, announces that iot squared, a joint venture between the Public Investment Fund (PIF) and stc group, is completing a highly successful first year since its establishment with signing a binding agreement to acquire 100% of Machinestalk, a pioneer provider of IoT solutions and applications in Saudi Arabia. The acquisition will accelerate iot squared's growth and solidify its position as the leading provider of IoT solutions in the region. iot squared delivers industry-leading IoT solutions, which provides real-time insights into Saudi Arabia. Since its establishment in 2022, iot squared has

played a significant role in the adoption of IoT technologies in various sectors and has collaborated with industry leaders to advance the IoT eco-system in the Middle East to revolutionize multiple sectors and advance the local digital transformation plans. iot squared supports businesses operating across three key verticals, including smart cities, Industry 4.0, and smart mobility and logistics, by supplying IoT technologies, such as IoT sensors, platforms, and applications to improve and develop the performance and productivity of industrial processes with the power of real-time insights. The acquisition represents an important milestone in

the collaboration between PIF and stc as this reflects the major investment strategy in the products and services in ICT industry, including investments in digital Clouds, Cybersecurity, Fintech and digital entertainment. These investments contribute to driving digital transformation and contribute to Saudi Arabia's Vision 2030 in leading digitization in the region. Machinestalk is one of the largest Saudi companies in the IoT domain, founded in 2015 as a subsidiary of NOMD Holding. It has actively contributed to the Kingdom's telematics domain over the past years, delivering diversified solutions focused on Smart Mobility, with additional capabilities

in Smart Buildings & Facilities, Smart Cities, and Industrial IoT. It is active across the IoT stack, with core capabilities in IoT platforms and Applications, and additional capabilities in IoT sensors, IoT Network, and Services. Othman Al Dahash, CEO of iot squared, said: "We are pleased to announce signing a binding agreement to acquire 100% of Machinestalk, which steers to an exciting new chapter in our growth story. As we continue to strengthen our position as the national IoT champion, in line with our BOLD strategy, we are eager to play a pivotal role in supporting Saudi Arabia's ambitions to lead the region's digital transformation and adoption of emerging technologies. Furthermore, by fully realizing the potential of IoT and unlocking the value of connected things, we are committed to enabling a 'connected Kingdom' and turning the knowledge-based economy from a concept into reality." The acquisition will augment iot squared's capabilities across the IoT value chain. Machinestalk's applications complement iot squared's three key verticals: smart cities, Industry 4.0, and smart mobility and logistics, through which the Company supports governments, enterprises, and SMEs across the MENA region to advance the adoption of smart solutions and IoT technologies, positioning stc Group and Saudi Arabia as a regional hub for IoT in MENA. Furthermore, the acquisition will unlock value for iot squared through Machinestalk's strong field services capabilities, technology, and delivery teams, Proprietary IoT platforms, internal development capabilities, local and international partner and customer relationships, inc. large government entities and a wide range of product offerings. With these capabilities and comprehensive solutions, iot squared will be the local IoT leader in KSA covering a wide range of focus use cases aligned with its commitment to accelerate the adoption of IoT in the region whilst enabling the

**iot squared** | **machinestalk**  
innovation frontier

## iot squared accelerates to new heights by signing a binding agreement to acquire Machinestalk

Driven by the aspirations of the PIF and stc group's expansion and growth strategy

### Why to acquire?

- Drive the digital transformation and contribute to the Kingdom of Saudi Arabia's Vision 2023.
- Strengthen iot squared's position as the national IoT champion.
- Accelerate iot squared's growth.
- Expand iot squared's capabilities across the IoT value chain.

### About Machinestalk

Machinestalk is a pure-play Saudi IoT company founded in 2015 as a subsidiary of NOMD Holdings ([www.nomd.sa](http://www.nomd.sa)). Machinestalk is active across the IoT stack, focusing on smart mobility, smart cities, smart buildings and facilities, smart transportation, and industrial IoT. It has delivered IoT solutions for over 2,000 public and private sector institutions that benefit from Machinestalk's extensive, high-quality offerings in Saudi Arabia.

### Machinestalk focus

- Smart Cities
- Smart Buildings
- Smart Mobility
- Industry 4.0

\*The transaction is subject to regulatory approvals from the relevant authorities and fulfilling transaction conditions.

public and private sectors to unlock value. The transaction is subject to regulatory approvals from the relevant authorities and fulfilling transaction conditions.

## stc Achieves 10Gbps Speed in 5G mmWave Technology Trials

Saudi Telecom Company (stc) has announced the successful completion of 5G Millimeter Wave (mmWave) technology trials in the Middle East and

North Africa region, exceeding speeds of 10Gbps in the experiments. stc says this achievement 'signifies a new stage in facilitating digital transformation in

the region and places the Kingdom of Saudi Arabia at the forefront of advanced nations in the field of telecommunications.'

## center3 Announces Expansion of Khurais Riyadh Data Center to Drive Growth and Innovation in the Region



center3, the leading digital hub and provider of hosting and data services in the MENA region and an stc Group subsidiary, has completed a 9.6MW expansion of its hyperscaler-grade data center Khurais in Riyadh. The expansion enhances center3's hosting capacity for customers and accelerates the development of the MENA region's digital industry. The newly expanded data center features state-of-the-art infrastructure and advanced

technologies and is built to meet global hyperscalers requirements. The additional capacity will allow center3's customers to scale their cloud services and other digital services faster and more reliably. This expansion follows center3's plan to build new data centers across Jeddah, Riyadh, Dammam, and other strategic locations in the Kingdom to address its customers' requirements for high availability, disaster recovery, and scalability. The new facilities will feature operational standards that support service-level agreements and key performance indicators aligned with best-in-class international standards. Eng. Fahad AlHajeri, CEO of Center3, commented: "We are proud to announce the expansion of our Khurais data center in Riyadh. We are committed to investing in the latest technologies and providing exceptional

services to our customers while meeting growing demand. Through this milestone, we also contribute to the regional data center industry's development, which is crucial for the Kingdom and the wider region's digital transformation as it enables the localization of digital applications." The new developments at center3 are a continuation of stc Group's expansion in scale and scope by providing its customers with a full ICT ecosystem through a number of subsidiaries. center3 aims to reach over 300MW of managed capacity in the next few years, not just within Saudi Arabia but beyond as well. This operating model is well-aligned with stc Group's "DARE" strategy and the Group's development plans to position Saudi Arabia as a major digital hub for the MENA region.



e& enterprise teamed with Abu Dhabi's Department of Economic Development to accelerate the adoption of Industry 4.0 technologies by local businesses, targeting improvements in sustainable manufacturing. In a joint statement, e&'s business arm noted it will use its expertise in areas including cybersecurity, IoT, cloud computing and AI to help enterprises digitalize their operations. The partners claimed the deal is part of the UAE's wider strategy to solidify Abu Dhabi's position as the region's "most competitive industrial hub", and a joint working group will be formed to support the initiative. Under the agreement, the pair will explore ways to provide digital tools to aid sustainable and efficient operations for industrial enterprises, alongside publishing joint studies and hosting workshops around sustainable manufacturing. Alberto Araque, CEO of IoT and AI at e& enterprise said its partnership with the government

## e& Backs Abu Dhabi Industry 4.0 Strategy

"underscores our dedication to empowering businesses to flourish in the digital era while fostering environmentally responsible

methods." The UAE is preparing to host the United Nations COP28 Climate Change conference later this year.



## Strong Quarter for e&, with Sales Up 4.8%

e& has reported revenues of AED13.61 billion (USD3.71 billion) for the second quarter of 2023, up 4.8% year-on-year and an increase of 12.0% in constant currency terms. The group, which has operations across the Middle East, Africa and Asia, said that the positive result was driven by growth in all key markets. In its home market of United Arab Emirates (UAE) revenues were up 5.8% at AED8.15 billion. Consolidated EBITDA stood at AED6.57 billion in the second quarter, down 1.1%

year-on-year, resulting in an EBITDA margin of 48% compared to 51% in the year-earlier period. The decline was attributed primarily to inflationary pressures, the termination of Egypt's national roaming agreement, and a challenging macro environment that continues to impact the group's international operations and has led to currency devaluation. Q2 consolidated net profit after federal royalty was up 3.8% at AED2.52 billion. In operational terms, the group claimed 165.0 million total

aggregate subscriptions at the end of June 2023, up from 160.0 million twelve months before. e& said there was strong subscriber acquisition in Egypt, Pakistan, UAE, Chad, Burkina Faso, Afghanistan, Togo and Benin. As noted in a separate CommsUpdate story today, e& has agreed to acquire a controlling interest in four central European telcos from PPF Group as the UAE-based firm looks to expand its interests in Europe. It is already the largest shareholder in UK-based Vodafone Group, with a 14.6% stake.



## e& Swoops for Majority Stake in 4 European Operators

PPF Group agreed to sell a controlling stake in its telecoms units in Bulgaria, Hungary, Serbia and Slovakia to e& for an initial €2.2 billion, as the UAE-based operator continues a strategy to increase interests outside of its home market. Under the agreement, e& will buy a stake of 50 per cent plus one share in PPF Telecom Group, though the transaction excludes the latter's assets in the Czech Republic, which are being moved into a separate company. The deal was announced alongside e&'s Q2 results and is subject to regulatory

approval. It comes after the pair revealed discussions were underway on a potential partnership last month. Under the terms of the agreement, e& could end up paying an additional €350 million, or be able to claw back up to €75 million depending on PPF Telecom meeting certain financial targets within three years of closing. PPF Telecom CEO Balesh Sharma is set to remain in place following the closure of the deal. In a joint statement, the companies noted the "transaction sets the foundation for a partnership between PPF and e& that will

seek to build a major telecommunications business in central and eastern Europe". They expect to gain synergies in procurement, wholesale and roaming agreements, among others, alongside launching new services. PPF bought its mobile assets in Hungary, Bulgaria and Serbia from Telenor in 2018 together with a business in Montenegro it subsequently sold. The O2 Slovakia business included in the deal has been part of the company since 2014. The stake sale to e& is expected to close before the end of Q1 2024.

## e&, Samsung Join Hands to Host Unpacked in The Metaverse

To celebrate the launch of 'e& universe' in the region and showcase its full potential, e& collaborated with Samsung Gulf Electronics to host its Galaxy Unpacked event in the e& metaverse, allowing users to pre-order their favorite Galaxy devices in the virtual space and take advantage of the exciting pre-order offers on the new devices. At the Galaxy Unpacked event that took place in Korea for the first time, Samsung unveiled a slew of new devices that included the Galaxy Z Fold5, Galaxy Z Flip5, Galaxy Tab S9 Series and the Galaxy Watch6 Series. This was the first time Samsung took to the metaverse and partnered with a global technology



group such as e& to host a unique activation. Commenting on the occasion, Khaled Elkhoully, Chief Consumer Officer, etisalat by e&, said: "At e&, we are committed to fostering partnerships that drive innovation. We're thrilled to collaborate with Samsung and host its global Unpacked event in the e& universe, showcasing the full potential of our revolutionary metaverse. "Bringing together various zones of boundless possibilities, the launch of e& universe is set to reshape the way we interact, explore and create, offering all our users a truly immersive experience. With our shared commitment to redefining possibilities, we are excited to embark on this journey and shape the future of the metaverse." DooHee Lee, President, Samsung Gulf Electronics, said: "The unwavering support from our technology partners, such as e&, especially during flagship product launches is truly encouraging. At Samsung, we constantly strive to challenge boundaries, foster forward-looking thinking, and encourage open collaboration with industry leaders. Hosting our global Galaxy Unpacked event in the e& universe has truly been a milestone; we look forward to more of such exciting collaborations and bringing the best of technology to our users." Hosted virtually in Arcadia Planitia, a virtual place on Mars, e& universe is a strategic and ambitious tribute to the UAE's national space strategy and the success of the Hope Probe mission, the first mission led by an Arab country. e& universe invites users into a vibrant and dynamic digital realm, offering a multitude of exciting areas to explore and enjoy including e& universe Virtual Home, e& universe Shop and e& universe Arena & Stadium. During Samsung Unpacked hosted in the e& universe, Galaxy users were able to pre-order their favorite Galaxy devices in the metaverse, and avail of the exciting pre-order offers Samsung is rolling out on the new devices across UAE and the wider GCC. These include free storage capacity upgrades, free Samsung Care+ support service, trade-in benefits, Samsung Rewards as well as free mobile accessories.

## etisalat by e& Introduces Wi-Fi as a Service to Deliver an Upgraded Experience to UAE Businesses

etisalat by e& announced the launch of its latest offering, Wi-Fi as a Service, a cutting-edge solution specifically designed to empower businesses with enhanced connectivity by extending their Wi-Fi signal and coverage throughout their premises. etisalat by e& has crafted a solution to address the specific demands of businesses requiring enhanced Wi-Fi coverage in areas with high-density users. The service can be deployed on an existing Internet connection -irrespective of the provider- ensuring customers enjoy robust connectivity. The all-encompassing service includes end-to-end implementation, 24x7 support, and reducing OPEX (operating expenses), enabling businesses to enjoy an upgraded Wi-Fi experience without the burden of investing into upgrading the infrastructure. Wi-Fi as a Service offers businesses a range of competitive features, enhancing connectivity and customer engagement. With broader coverage, businesses can improve the virtual experience for clients and visitors, in addition to boosting the business productivity of their employees. Esam Mahmoud,



Senior Vice President, Small & Medium Business, etisalat by e&, said: "Wi-Fi as a Service represents a game-changing opportunity for SMBs, offering an affordable and scalable solution that caters to their unique requirements, unlocking new possibilities for businesses to thrive in today's connected world. The managed Wi-Fi solution is adaptable, scalable, and carefully tailored to meet the distinct needs of businesses, revolutionizing connectivity in businesses like offices, cafes, restaurants, clinics, and business centers." etisalat by e& will manage the entire implementation process, from procuring and delivering hardware to installation, setup, and configuration, ensuring a smooth and hassle-free experience for businesses. Mahmoud added: "We are dedicated

to delivering an enriched Wi-Fi experience for SMBs, enabling them to stay connected like never before. With us, they can enjoy the peace of mind from knowing their Wi-Fi is in good hands." The new managed Wi-Fi Service offers businesses three packages based on the number of access points and users, starting from as low as AED 125/month; which further simplifies the process. The solution offered by etisalat by e& seamlessly integrates enterprise-grade access points and cabling, ensuring businesses experience top-notch performance and reliability from their Wi-Fi network, helping them maximize their potential. The company also offers round-the-clock remote assistance throughout the service lifecycle to continuously support its Wi-Fi as a Service offering.



## Mobily Earns Fourth Local Content Certificate, Bolsters Vision 2030 Support

In light of Mobily's efforts to contribute to the realization of the Kingdom's Vision 2030, and as part of its objectives to support the local content initiative; through which an agreement was signed with the Local Content and Government Procurement Authority. We are pleased to announce that, for the fourth consecutive year, Mobily has obtained the local content certificate for the fiscal year

2022, as this certificate is an important element in supporting the company to provide its services to all customers, according to the Local Content Preference Policy. Mobily confirms that it will continue to support this initiative, which is approved by the Content and Procurement Authority, as a contribution to strengthening the various sectors.



## Omantel Posts 11.2% Jump in H1 Group Revenue

Oman Telecommunications Company (Omantel), the Sultanate's incumbent telecoms operator, has published its preliminary unaudited financial results for the first six months of 2023. The group reported revenue of OMR1.439 billion (USD3.73 billion), an increase of 11.2% from OMR1.294 billion a year earlier, as domestic turnover rose 10.3% to OMR305.4 million. Domestic revenue was driven by wholesale transit voice (up 37.7%) and device (56%) revenue, as well as turnover from mobile post-paid and fixed broadband, which grew by 11.1% and 4.0%, respectively. Group EBITDA for H1 2023 reached OMR511.1 million, an increase of 4.9% year-on-year, while group net profit jumped 31.3% from OMR128.6 million in the first half of 2022 to OMR168.9 million a year later. Domestic net profit was relatively stable year-on-year at OMR39.8 million, as strong revenue growth was offset by aggressive competition in both the mobile and fixed segments. Omantel's total domestic subscription base was 3.3 million as of 30 June 2023 (or 3.8 million including mobile resellers), up 5.6% from 3.1 million a year earlier.



## Omantel Celebrates Triple Win at Global Carrier Community Awards in Berlin, Emphasizing Strong Leadership and Industry Excellence

Omantel, the leading provider of integrated telecommunication services in the Sultanate of Oman, scored an enormous victory at the prestigious Global Carrier Community Awards recently held in Berlin, winning three significant titles. Sohail Qadir, former VP of Wholesale at Omantel and recently appointed CEO of Zain Omantel International (ZOI - Omantel and Zain Group's new joint venture specialized in global wholesale business), was recognized as the 'Most Influential and Inspirational Wholesale Executive of the Year'. Qadir's leadership has been pivotal in launching and driving ZOI, positioning the company for even greater success in the international wholesale domain. Commenting on the achievement, Qadir said, "This recognition is a testament to the strong foundation that Omantel has built over the years. As we transition into the new era of ZOI, we are poised to take this legacy forward, combined with Zain's extensive regional presence and success in the retail and digital arenas, to elevate our role into a global powerhouse and reshape the future of the telecom wholesale industry. Due to its unique characteristics, ZOI has strongly positioned itself as the gateway from the Middle East to the world". In a historic moment for the industry, Huda Al Ghabshi, Senior Manager of Capacity and Submarine Cables at Omantel, was awarded the



'Telecom and Tech Woman of the Year.' This achievement marks Al Ghabshi as the first Middle Eastern woman to receive this prestigious award, an honor that testifies to her instrumental role in driving Omantel's expansion in the global wholesale domain. "I am truly honored to receive this award. I have only joined the wholesale industry back in 2019 but it has been a fast-learning journey since then. I would like to thank Omantel, management, colleagues, and even our wholesale customers and partners for all their trust and support. This global recognition marks an important milestone in my career and gives me enormous motivation to further excel and positively represent my beloved country." Al Ghabshi commented. Lastly, Omantel's unwavering commitment to global connectivity, which was demonstrated throughout the years,

was recognized as the company bagged the 'Best Subsea Cable Operator of the Year' award. This recognition celebrates Omantel's comprehensive international wholesale network, with the majority of subsea cables that connect the region with the rest of the world passing through it. These triple awards stand as a testament to Omantel's robust and influential presence in the wholesale industry, its dedication to gender diversity and equality, and the influential leadership that continues to drive its growth. ZOI is set to take this journey forward and further expand its presence in the international wholesale scene. As Omantel celebrates these achievements, it remains committed to pushing boundaries and leading digital transformation on a global scale.

## Omantel Reinforces the Importance of the SME Sector Through a Slew of Enhanced Offerings

Omantel, the leading provider of integrated telecommunication & ICT services in the Sultanate of Oman, is intensifying its focus on the SME sector through a slew of enhanced offerings, to underline the vital importance SMEs hold in Oman's economy. Among the key initiatives that were announced recently is the upgraded A'amali service under the tagline 'More business, less worries', which includes various bundles and tailored services to SMEs to kickstart their journey. The service gives unlimited Internet and free mobile and fixed line calls within a company. In addition, Omantel launched a "Lucky Draw" promotion for SMEs, rewarding them with travel vouchers,

smart devices, and other valuable prizes in four weekly draws and a grand draw. The promotion targeted new subscribers to enterprise products (such as Postpaid Mobile line, Fixed Broadband packages, A'amali, ICT services & etc.) and existing customers who upgraded their plans. Special workshops tailored for SMEs are being conducted on a regular basis to create awareness on using the latest technologies for enhancing their productivity & business operations efficiency. Two main workshops held so far dealt with the Internet of Things (IoT), Strategic Thinking, Innovation in Business and Key to Financial Management. Prizes were given in lucky draws, including

100,000 free SMS marketing messages using the Oman first big data marketing platform "TASIL", as an incentive for SMEs to use ICT solutions and sign up for the different services. Omantel is the Sultanate's first and leading integrated telecommunications services provider, enabling the digital economy to flourish, allowing new ways of doing business and delivering a world of information & communications technologies. While striving to ensure an optimum customer satisfaction, Omantel plays a key social role to provide the required support and assistance to all sectors amongst the Omani society.



## Zain Wins Two 'Best Corporate Governance in Kuwait' Awards from World Finance and the Arab Federation of Capital Markets

Zain, a leading provider of innovative technologies and digital lifestyle communications operating in seven markets across the Middle East and Africa, announces winning the World Finance 'Best Corporate Governance Award 2023 for Kuwait', for the third consecutive year. Zain was also deemed to provide the 'Best Corporate Governance of a listed company in Kuwait' in 2023 at the Arab Federation of Capital Markets (AFCM) Annual Conference held in Muscat recently. London-based World Finance is a reputable print and online magazine providing comprehensive coverage and analysis of the financial industry, international business and the global economy. The AFCM was established in 1978 to be the guiding body for Arab stock exchanges, under the recommendation of the Arab Central Banks Conference. Zain's Investor Relations and Corporate Governance Framework is a cornerstone of the company's regional appeal, and has attracted ongoing praise and admiration as its exemplary operation provides stakeholders including shareholders, industry analysts, and regulatory authorities with the greatest confidence on the company's state of being. As a leading entity listed on the Premier Market, Zain is in regular communication with the country's Capital Markets Authority (CMA), abiding fully to market regulations issued by all financial regulatory bodies in Kuwait including the Ministry of Commerce and Industry, the CMA, and Boursa Kuwait. Bader Al-Kharafi, Zain Vice-Chairman and Group CEO said, "Zain has established a culture to exceed expectations across all its areas of operation; and maintaining a positive, transparent relationship with market stakeholders is fundamental to our ongoing success. We are committed to adhering to the highest levels of governance, providing all our stakeholders an accurate picture of Zain at any point, and interact with us in a straightforward and productive manner." Al-Kharafi continued, "The publication of detailed regulatory disclosures, Corporate Governance framework, operational and financial results reporting, as well as sustainability and thought leadership reports annually, all point to our efforts to provide quality, informative and actionable facts about the company and its '4Sight' transformational and profitable growth strategy." Zain believes good governance plays



a significant role in providing long-term sustainable value to stakeholders. Accordingly, the organization has an impressive track record in providing all stakeholders with accurate and transparent access to company information, beyond the minimum disclosure requirements. Zain's Corporate Governance framework helps the company to mitigate risks and facilitates an effective Board oversight over the company's executive management by monitoring the implementation of policies when running daily operations. Corporate Governance promotes strong internal controls to improve integrity of financials and establishes a culture of compliance. This governance structure has helped Zain to win the confidence of the market and attract global investors. Zain's Investor Relations, Sustainability and Corporate Governance departments are committed to raising awareness on issues related to the environment, social, and governance (ESG) matters in response to global trends and best practices. Accordingly, Zain has developed new policies and is working to increase transparency in addition to focusing on social responsibility. Such policies and procedures are flexible, and take into account both short- and long-term challenges and risks. Zain has placed sustainable growth at the forefront of its activities, believing in the nurturing of positive relationships among all stakeholders.

## Zain Teams Up with Google Cloud to Accelerate Its Digitization Journey

Zain announces a collaboration in Kuwait with Google Cloud, wherein the company has selected Anthos, a hybrid and multi-cloud platform that enables enterprises to run workloads on premise, on the cloud, and at the edge consistently using an open model that brings choice and flexibility. The step comes to reaffirm Zain's relentless pursuit of achieving full digital transformation across its entire business. The announcement was made at the Zain Innovation Campus (ZINC) in the company's main headquarters in



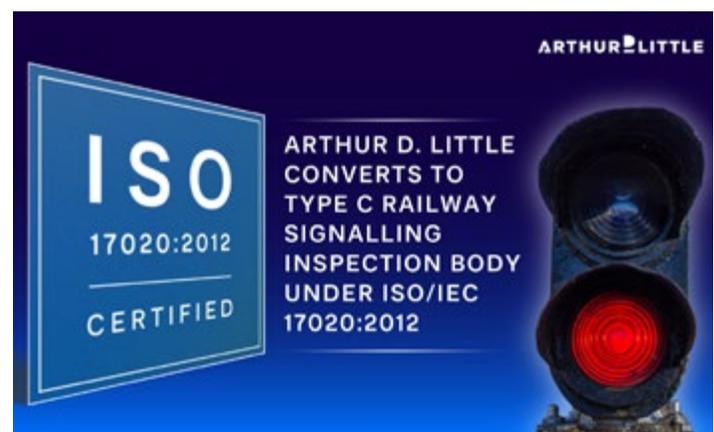
Shuwaikh, where CEO Eaman Al Roudhan welcomed Abdulrahman Al Thehaiban, Managing Director, Middle East, Turkey and Africa, Google Cloud in an official visit. The partnership was sealed with the attendance of Zain Kuwait and Google Cloud's executive teams. Commenting on the partnership, Eaman Al Roudhan said: "We're proud to be the first company in Kuwait to launch the Hybrid Cloud Management platform with Google Cloud, setting a solid foundation for our core cloud strategy deployment and elevating our enterprise agility." "This collaboration comes at a significant moment where Google Cloud recently announced its intent to open a new cloud region in Kuwait, a step that will support our years-long vision to accelerate digital transformation within the public and private sectors." Al Roudhan added. Abdulrahman Al Thehaiban said: "Zain has been renowned for its innovative approach in the telco space, and we are really proud to launch the first Anthos project in Kuwait. We truly believe that our open and multi cloud technology is key today because it gives choice and flexibility to our customers and collaborates freely with all the vendors in the market." Today more than ever, companies from across industries, especially telecom operators, are transforming every aspect of their business operations, aspiring to reimagine their application portfolio and reinforce their infrastructures with the most advanced technologies to drive higher efficiencies and lower costs. Zain has long started its digital transformation journey, continuing to see the fruitful results of its early investment in digitization across its

entire business. Zain has partnered with Google Cloud to expand on its transformation journey by embracing Anthos as its hybrid cloud management platform of choice. Anthos is built on the firm foundation of Google Kubernetes Engine (GKE), Google Cloud's fully managed Kubernetes service, that helps enterprises innovate faster and provide customer services as well as enterprise solutions in a secure and reliable cost-effective way. Zain has selected Anthos as a foundation layer for its Telco Cloud to utilize it for a wide range of workloads to drive more enterprise solutions to the edge, such as computer vision, image recognition, pattern detection, or any number of other emerging use cases for edge applications that are often forced to rely on fragmented solutions across on-premises and cloud deployments. Eaman Al Roudhan recently joined a special panel discussion that coincided with the launch of Google Cloud's new region in Qatar. The panel, Fostering Innovation with Google Cloud, saw the Zain Kuwait CEO discuss innovation and digital transformation opportunities in the region with other regional executives. Through its solid strategic partnerships ecosystem with the world's biggest tech players, Zain continues to lead the way towards a new stage of empowering digital transformation within the public and private sectors. The company offers an extensive portfolio of solutions like cloud computing, cybersecurity, 5G, and much more to serve the needs of all public and private sector institutions, serving the community's needs and achieving the nation's developmental goals.

## Arthur D Little

### Arthur D. Little Converts to Type C Railway Signaling Inspection Body Under ISO/IEC

Arthur D. Little (ADL) announced that the United Kingdom Accreditation Service (UKAS) has confirmed its conversion to a Type C railway signaling system independent safety assessor (ISA) and assessment body (AsBo) under ISO/IEC 17020:2012, in accordance with the CENELEC standards EN50126, EN50128 and EN50129. ISO/IEC 17020:2012 is an internationally recognized standard that assures the compliance, performance and efficiency of an inspection body. As the highest standard for inspection bodies, such as ISAs and AsBos, it provides independent verification that ADL meets established quality standards and is competent to carry out specific conformity assessment tasks. This ensures that ADL's clients can use its in-depth and rigorous assessment services, safe in the knowledge that assessments are certified as impartial, objective, transparent and effective. ADL's Risk Practice is highly experienced at providing assurance of complex and/or novel rail signaling systems around the world. Delivered by its core team of expert engineers, each of whom has over 20 years experience, the practice specializes in safety assurance of technically challenging projects with demanding timescales and processes that are not yet fully defined. The team works proactively with clients, assessing processes as they are developed and highlighting specific high-risk issues to optimize project effort and support on-time project delivery. Conversion to a Type C inspection body allows ADL to offer



this signaling assurance expertise, not just as an ISA and AsBo, but also for broader signaling assurance requirements "We have built a strong reputation as a leading signaling system independent safety assessor, working with clients on railway systems around the globe," said Clive Adams, Associate Director, Arthur D. Little. "Conversion to a Type C inspection body enables our clients to benefit more broadly from our experience and expertise in the sector, providing assurance of the safety and processes of their complex and challenging projects."



## AT&T Unboxes Self-Install FWA Service

AT&T moved to make its fixed wireless access (FWA) service easier to install, expanding availability of equipment enabling set-



up in 15 minutes as it seeks to scale availability. In a blog, Erin Scarborough, president of broadband and connectivity initiatives, explained its Internet Air equipment has been deployed in areas where it is closing its copper-based DSL service. The set-up is also being used by small businesses and could be deployed in rural areas covered by government broadband subsidies. CEO John Stankey highlighted potential to improve self-installation levels for AT&T's FWA service during its Q2 earnings call. Scarborough explained Internet Air installation can be completed in five steps, with customers scanning a QR code to access instructions. AT&T also has an app to identify the optimal location for the FWA router. The service cost \$55 per month, fixed for a year, with no overage or equipment charges, and no need for an annual contract. It offers typical data rates of 40Mb/s to 140Mb/s in the downlink, well in excess of the average 6Mb/s on AT&T's DSL service.

## AT&T Advances C-Band Rollout with Spectrum Bump

AT&T doubled the amount of C-Band spectrum available for deployment after two satellite companies cleared it for use by mobile operators, enabling capacity and data rate increases. A representative told Mobile World Live (MWL) network performance in some cities will improve over the coming months as AT&T continues to roll out its licensed C-Band spectrum by an average of 80MHz in each market. It now has access to a minimum of 100MHz of mid-band spectrum in the contiguous US and an average of 120MHz nationwide. "That's bandwidth in every available city, 406 locations in all," the representative stated. AT&T

began using C-Band spectrum in 2022 after several delays due to airline industry concerns over interference. Its deployments of mid-band spectrum including a combination of C-Band and 3.45GHz spectrum currently covers more than 175 million people. Equipment deployed including radios are capable of handling the full bandwidth spectrum load once software updates are completed. AT&T's representative told MWL it returned C-Band equipment previously deployed in 46 locations to provide faster data rates and increased capacity.

## AT&T Wins School Prize with Connectivity Deals

AT&T got its sums right in a move to land a contract to provide connectivity services to a school purchasing cooperative, a deal the US operator stated will boost access for rural and tribal communities. The operator agreed a trio of offers for Cooperative Educational Services (CES), which covers 89 public school districts in the US state of New Mexico, including one product relying on AT&T's FirstNet emergency services network. FirstNet will be employed to improve safety in schools by connecting school staff and information systems, emergency call handlers and personnel to cut response times. AT&T stated the set-up can also be configured to provide push-to-talk systems to enhance "situational awareness and emergency operations". A second element covers a cybersecurity agreement offering means to prevent attacks and breaches: AT&T cited ransomware incidents as an example. The third element involves providing a Wi-Fi-equipped school bus, a feature AT&T noted would be welcome for students with lengthy journeys. It added this function can also enable bus drivers to access FirstNet "in a crisis". AT&T stated CES took action after "witnessing the discrepancies in connectivity for students" during

the Covid-19 (coronavirus) pandemic, which highlighted a "need to transform educational technology on a broader scale". Joe Drygas, VP of public sector with the operator, stated the offers AT&T devised "will help close the digital divide for students across the state", with the wide-ranging connectivity systems set to "enhance the learning experience".

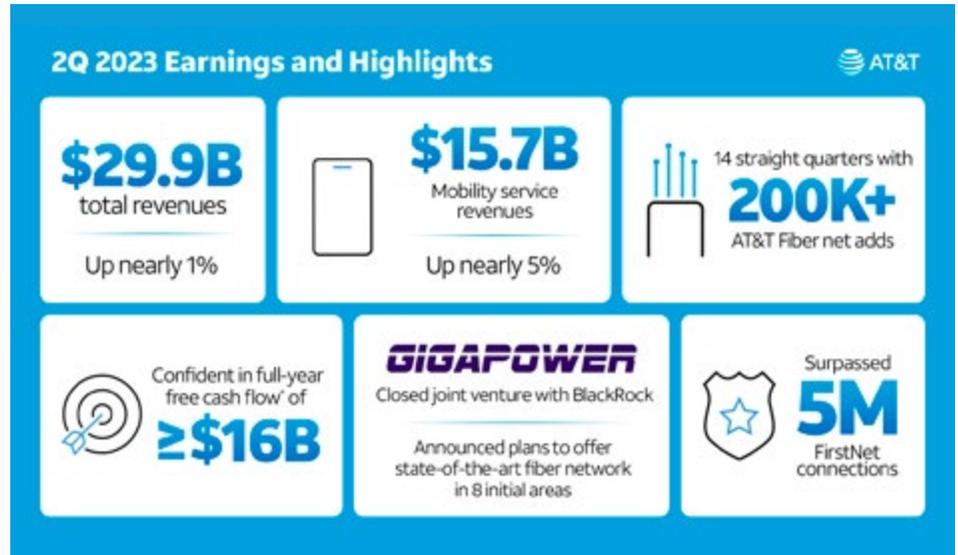


## AT&T 2Q23 Revenues Up to USD29.9bn

US telecoms giant AT&T Inc has reported consolidated operating revenues of USD29.917 billion for the three months ended 30 June 2023, up 0.9% from USD29.643 billion on an annualized basis, while operating income increased 29.3% from USD4.956 billion in 2Q22 to USD6.406 billion in the period under review. Adjusted EBITDA for the second quarter, meanwhile, climbed from USD10.330 billion to USD11.053 billion. Finally, net income attributable to AT&T increased from USD4.157 billion to USD4.489 billion in 2Q23. In operational terms, AT&T reported a total of 229.031 million mobile subscriptions in its domestic market as of 30 June 2023, which included 117.177 million connected devices and 6.656 million reseller accounts. In terms of consumer fixed broadband meanwhile, AT&T claimed 13.695 million subscriptions in 2Q23, of which 7.738 million were connected via fiber-to-the-home (FTTH)

technology. Elsewhere, AT&T’s ‘Latin America’ segment reported 21.689 million mobile subscriptions in Mexico as of end-June 2023. AT&T ended June 2023 with mid-band 5G coverage of 175 million

people, equivalent to around 51.6% of the population. In terms of FTTH coverage, AT&T’s networks passed 20.2 million homes as of mid-year, alongside a further three million business locations.



## UC Names Avaya CEO as UC Leader of the Year

Avaya, a global leader in customer experience solutions announced that Alan Masarek, the company’s chief executive officer, received the top honor of UC Leader of the Year during the UC Awards 2023 presented by UC Today. UC Today is the leading online publication for unified communications and collaboration technology. The UC Awards is in its sixth year and celebrates unified communications and collaboration technology innovation and industry success. Winners are chosen based on their ability to innovate, the impact on their niche, and various other factors, including the impact each company has on its intended customer. The fully virtual ceremony included honoring Masarek as the UC Leader of the Year and recognizing his industry success, leadership, strategic influence, and overall individual contributions to Avaya with a focus on improving experience, innovation, and execution. “This award is powerful affirmation of how much Avaya has accomplished in the last year, and I’m

proud to accept this on behalf of our employees, partners, and customers who have been so supportive throughout this journey – this award is more about them than me,” said Alan Masarek, CEO, Avaya. “I’m particularly pleased that this recognition comes so quickly on the heels of our successful customer event, Avaya ENGAGE, which served as an epicenter where customers

and partners convened who are shaping the future of communications technology.” He added, “Avaya is unquestionably back, and UC Today’s award is recognition of our progress.” An industry innovator with deep domain expertise in enterprise communications and operational transformations, Masarek was appointed as Avaya’s CEO and member of the company’s Board of Di-



rectors in August of 2022. In just his first year in the role, Masarek led the company through a remarkably successful, financial and business restructuring, and garnered extraordinary results. The transformation eliminated nearly \$4 billion in debt, while securing \$650 million in incremental investment. Avaya emerged from its restructuring with significant financial strength and ample liquidity to accelerate the company's investment in its innovative, cloud-based portfolio, especially across customer expe-

rience offerings powered by AI, while positioning Avaya for long-term success. Jon Arnold, Principal, J Arnold & Associates, has judged many UC Awards categories and acknowledges that the Leader of the Year is his favorite. He says all the entries highlight strong technologies, so selecting a winner can prove to be challenging. "What's harder to come by is visionary leadership, and in my view, Alan brings that in ways I didn't see from other entries in this category," said Arnold. "From the outset,

I've felt that Alan was the right man for the job when coming to Avaya, and in short order, he has delivered." Arnold added, "Well done on the award and I hope to see this great momentum continue for Avaya." UC Today relies on an outside, impartial panel of judges, including renowned industry analysts and influencers. This year's panel included: Zeus Kerravala, Tim Banting, Melissa Swartz, Blair Pleasant, Dom Black, Evan Kirstel, Jon Arnold, and Kevin Kieller.

## Avaya's U.S. and Canadian Customers Can Now Procure Avaya Products and Services Directly or Through an Authorized Partner on a Cooperative Contract

Avaya, a global leader in customer experience solutions, announced that it has been awarded a cooperative purchasing contract in the Unified Communications and Contact Center categories at Sourcewell - the leading Government Cooperative Purchasing Organization in North America with more than 500 competitively solicited contracts to government, education, and nonprofit entities. Avaya is the only major communications and collaboration solution provider that can offer public, private, or hybrid cloud at enterprise scale to customers. Sourcewell awarded Avaya this contract after following a rigorous request for proposal process resulting in contracts that meet, or exceed, local procurement requirements. Sourcewell's contracts capture the buying power of more than 50,000 government, education

and nonprofit organizations, saving these organizations time and money in their acquisition process. The contract delivers immediate value to these customers because the competitive solicitation is complete and ready to use, streamlining acquisition, and allowing immediate delivery of Avaya's preferred products and services. Avaya's 48-month contract is open to U.S. and Canadian customers, allowing them to procure the full catalog of Avaya products and services directly or via authorized Avaya partners. "At Avaya, we are committed to facilitating seamless cloud migrations for our customers, fostering innovation without causing disruption, and eliminating the costly and prolonged 'rip and replace' methodology typically associated with updating their communication technology infrastructure,"

said Jenifer Bond, Vice President of SLED, Avaya. "Securing a Sourcewell cooperative purchasing contract in the Unified Communications and Contact Center categories amplifies our reach, enabling us to simplify the contractual process for an increased number of customers. This development empowers them to transition their communications technology to the cloud at a pace and budget that aligns with their unique needs." Jim Benson, Supplier Development Administrator at Sourcewell, welcomes Avaya to its purchasing consortium in North America and looks forward to working with the team. "Avaya offers a portfolio of solutions to make the jobs of those in government, education, and non-profit organizations more efficient while saving them time and money," said Benson.



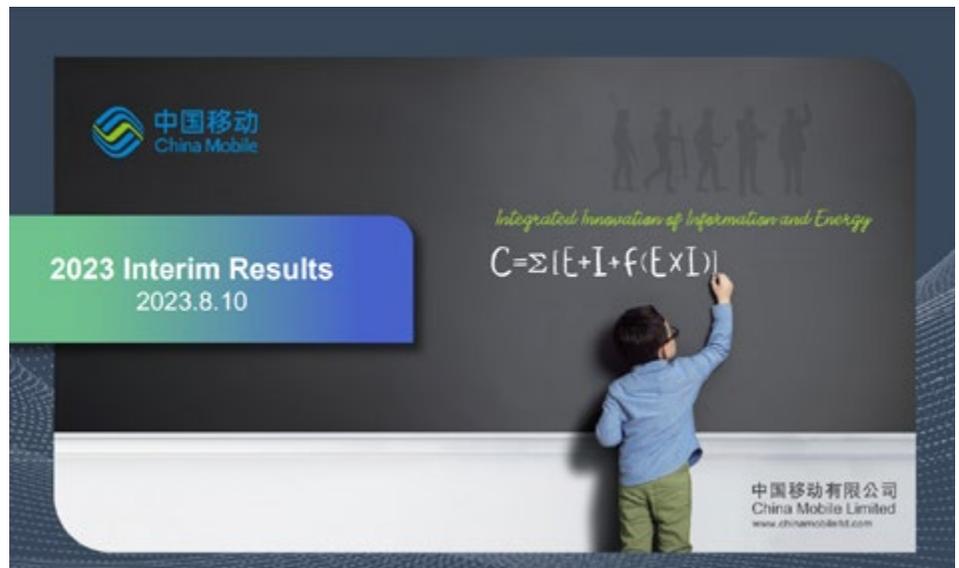
## China Mobile 'Home' and 'Business' Divisions Drive H1 Revenue Growth

Chinese full-service provider China Mobile has booked net profit of CNY76.17 billion (USD10.6 billion) for the six months to end-June 2023, up 8.4% year-on-year, driven by an increase in operating revenue of 6.8%, to CNY530.72 billion. EBITDA for the period grew by 5.5% to CNY183.46 billion. Mobile reported a 6.1% uptick in service revenue, including growth across all four it's 'CHBN' segments: 'Customer'

- retail mobile services; 'Home' - fixed voice and broadband, pay-TV and smart home services and applications; 'Business' - a broad range of services including corporate services, mobile cloud, industrial 5G solutions and data centers; and 'New', consisting of international services, digital content and financial technology solutions. The Customer market saw the smallest increase in revenue at just 1.3% but makes

up a little over 57% of the group's service revenue, generating turnover of CNY259.40 billion for the six-month period. The group counted a total of 985.39 million mobile customers as at end-June 2023 (up from 969.85 million in H1 2022), including 393.26 million 5G network subscriptions (262.64 million IN June 2022). Revenue growth in the segment was hampered by price competition, with overall mobile ARPU

inching upwards from CNY52.3 to CNY52.4 between H1 2022 and H1 2023, whilst 5G ARPU fell from CNY85.0 to CNY81.1 over the same period. Mobile's Home grouping booked a 9.3% increase in turnover, to CNY64.95 billion, with the number of residential fixed broadband subscriptions increasing to 254.85 million by June 2023 (from 230.34 million a year earlier), and ARPU improving slightly y-o-y from CNY43.0 to CNY43.3. Business market revenue grew by 14.6% to CNY104.39 billion, with the number of corporate customers increasing to 24.3 million by mid-2023. Revenue from dedicated 5G networks grew by 69.7% to CNY2.51 billion. Finally, New business saw the biggest uptick in revenue, growing by 18.4% y-o-y to CNY23.51 billion.



## CMI and Zain Omantel International (ZOI) Form a Strategic Partnership to Revolutionize IoT and IoV Innovation in the Region

China Mobile International Limited (CMI) and Zain Omantel International (ZOI) announced a strategic partnership aimed at accelerating the adoption and advancement of Machine-to-Machine (M2M), Internet of Vehicles (IoV), and Internet of Things (IoT) technologies across the Middle East region. The collaboration orchestrates a dynamic confluence of industry expertise and resources, uniting two trailblazers in a synergistic bid to shape competitive M2M, IoT and IoV products and solutions. By leveraging CMI's successful experiences and technical capabilities, and ZOI's extensive global network and deep wholesale industry knowledge, the partnership is set to drive innovation and unlock new business opportunities in the rapidly evolving M2M, IoT and IoV landscape. "We are excited to join forces

with ZOI, the premier global wholesale service provider in the region, in this strategic partnership," said Mr. Alex Lee, Managing Director of CMI Middle East, said, "By combining our strengths and expertise, we aim to accelerate the development and deployment of M2M, IoT and IoV solutions in the region where we see huge growth potential. This collaboration will enable us to better serve our customers and meet the evolving demands of the digital era." Echoing this sentiment, Sohail Qadir, CEO of ZOI, stated, "CMI's success in delivering pioneering M2M, IoT and IoV solutions aligns perfectly with ZOI's unwavering commitment to providing cutting-edge technological services to meet the increasing demands of our customers. This collaboration is set to be a key that unlocks a treasure of opportunities and catalyzing

digital transformation across various industries. Our advanced 5G international roaming setup in ZOI's countries of operations is forming the foundation to offer the connectivity that such services continuously require." CMI strives to create a partner ecosystem with regional and global carrier partners, empowering local operators to provide convenient services and leverage on China Mobile's leading 5G and IoT capabilities. CMI's carrier-specific service, iConnect, offers comprehensive professional services including Voice, SMS, Mobile, Data, and Professional Services to global operators. ZOI, a joint venture between Zain and Omantel, is set to redefine the telecommunications industry on a global scale. With Zain's extensive regional presence and success in the retail and digital arenas, complemented by Omantel's exceptional wholesale capabilities and comprehensive international networks, ZOI emerges as a powerhouse poised to revolutionize telecommunications services. The strategic partnership between CMI and ZOI is expected to have a significant impact on the M2M, IoT and IoV landscape, facilitating the adoption of smart technologies and fostering digital innovation. With their sights firmly set on a shared vision, both companies are well-positioned to deliver transformative solutions and create a robust and sustainable ecosystem.





## Cisco Targets Network Monitoring Company SamKnows

Cisco struck a deal to buy UK-based broadband network monitoring company SamKnows to strengthen its network

assurance portfolio. Financial terms of the deal were not disclosed, but Cisco expects to close it in fiscal Q1 2024, which runs

to late October. Privately-held SamKnows gathers connectivity information from millions of vantage points on home routers and mobile devices globally. Cisco SVP and GM of Network Assurance Mohit Lad stated in a blog the company plans to use Accedian and SamKnows to link additional data into its ThousandEyes cloud to provide more visibility into broadband networks and last-mile performance. The deal will also put ThousandEyes' end-to-end network assurance platform in front of more broadband service providers to help them isolate and troubleshoot issues at a faster rate, Lad said. EVP and GM for Cisco Networking Jonathan Davidson explained in a blog the SamKnows team will join the network assurance business. Davidson stated applications for hybrid working, 5G, IoT, and AI have increased the need for real-time visibility across broadband networks.



## Cisco Buoyed by Software Revenue, AI

Cisco CEO Chuck Robbins touted the result of a shift to subscription-based software revenue, and new generative AI products and services, as he revealed fiscal Q4 2023 figures he claimed rounded out a milestone year. CFO Scott Herren used an earnings call to note 85 per cent of its software revenue was subscription based. "Looking at our [fiscal] Q4 revenue in more detail, total product revenue was \$11.7 billion up 20 per cent," Herren stated. "Service revenue was \$3.6 billion up 4 per cent." Robbins said Cisco "delivered on our operational and financial goals while accelerating our transformation" in fiscal 2023, which ended on 29 July. He said security remained one of the company's top priorities going forward, while new generative AI products announced during fiscal Q4

position it "very well to build out the infrastructure that hyperscalers and others need to build AI/ML clusters". He stated the company booked AI product orders of more than \$500 million from top-tier companies. "This is a huge opportunity for Cisco and we are laser-focused on leading and winning in this space." Fiscal Q4 net income grew 36 per cent year-on-year to \$4 billion and revenue

16 per cent to \$15.2 billion. Software revenue rose 17 per cent to \$4.6 billion and software subscription 20 per cent to \$3.9 billion. Total subscription revenue was \$6.6 billion, up 13 per cent. Fiscal 2023 profit grew 7 per cent to \$12.6 billion with revenue up 11 per cent to \$57 billion, which Robbins branded its highest growth rate in more than a decade.

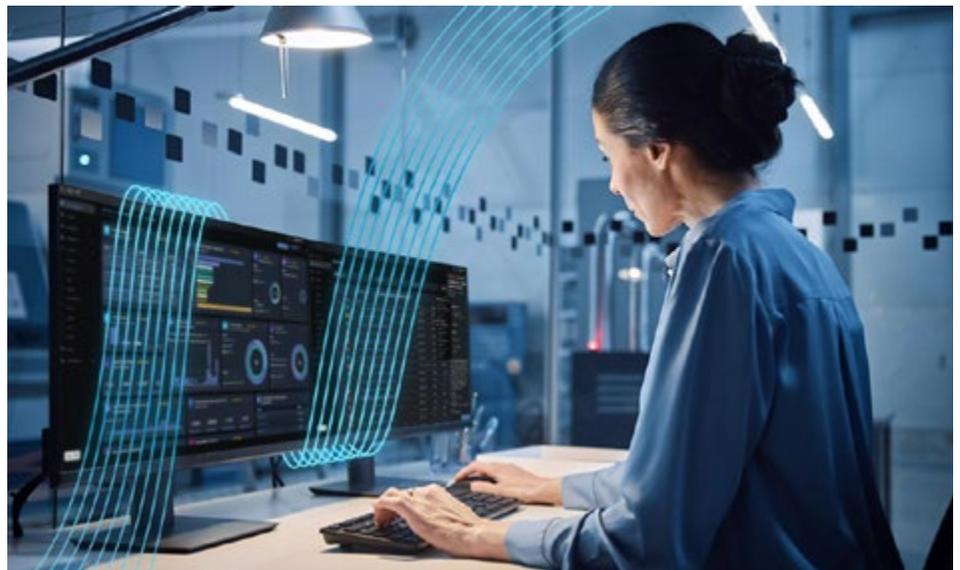


## Cisco Transforms Crisis to Control with New Automated Ransomware Recovery

Cisco, the leader in enterprise networking and security, is dramatically enhancing its Extended Detection and Response (XDR) solution. By adding recovery to the response process, Cisco XDR is redefining what customers should expect from security products. This announcement brings near real-time recovery for business operations after a ransomware attack. Cisco continues to drive momentum towards its vision of the Cisco Security Cloud—a unified, AI-driven, cross-domain security platform. With the launch of Cisco XDR at the RSA Conference this year, Cisco delivered deep telemetry and unmatched visibility across the network and endpoints. Now, by reducing the crucial time between the beginnings of a ransomware outbreak and capturing a snapshot of business-critical information to near-zero, Cisco XDR will further support that vision, while enabling new levels of business continuity. “The exponential growth of ransomware and cyber extortion has made a platform approach crucial to effectively counter adversaries. Our objective is to build a resilient and open cybersecurity platform that can withstand ransomware assaults and recover with minimal impact, ensuring uninterrupted business operations,” said Jeetu Patel, Executive Vice President and General Manager of Security and Collaboration at Cisco. “As a global infrastructure provider that built the network, Cisco is redefining what a security product should deliver. Our innovations with automated ransomware recovery are a significant step towards achieving truly unified detection and response data, turning security insights into action.” During the second quarter of 2023, the Cisco Talos Incident Response (IR) team responded to the highest number of ransomware engagements in more than a year. With the new capabilities in Cisco XDR, Security Operations Center (SOC) teams will be able to automatically detect, snapshot, and restore the business-critical data at the very first signs of a ransomware attack,

often before it moves laterally through the network to reach high-value assets. “Cisco is quickly disrupting the security landscape across their entire portfolio and their XDR solution could become the de facto reference architecture organizations turn to,” said Chris Konrad, Area Vice President, Global Cyber, World Wide Technology. “Not only does it provide broad visibility by integrating data across endpoints, network, cloud, and other sources - this extensive attack surface insight allows for superior threat detection using advanced analytics. Organizations should strongly consider the implementation of Cisco XDR to bolster their security posture and safeguard assets effectively. Cisco undoubtedly is contributing to the overall resilience of any organization.” Cisco is expanding its initially released, extensive set of third-party XDR integrations to include leading infrastructure and enterprise data backup and recovery vendors. Today, Cisco is excited to announce the first integration of this kind with Cohesity’s DataProtect and DataHawk solutions. “Cybersecurity is a board-level concern, and every CIO and CISO is under pressure to reduce risks posed by threat actors. To this end, Cisco and Cohesity have partnered to help

enterprises around the world strengthen their cyber resilience,” said Sanjay Poonen, CEO and President, Cohesity. “Our first-of-its-kind proactive response is a key piece of our data security and management vision, and we’re excited to bring these capabilities to market first with Cisco.” Cohesity has a proven track record of innovation in data backup and recovery capabilities. Cohesity’s products provide configurable recovery points and mass recovery for systems assigned to a protection plan. The new features take this core functionality to the next level by preserving potentially infected virtual machines for future forensic investigation, while simultaneously protecting data and workloads in the rest of the environment. Cohesity’s engineers worked alongside Cisco technical teams to dynamically adapt data protection policies to offer organizations a stronger security posture. This complements Cisco XDR’s robust detection, correlation, and integrated response capabilities and will enable customers to benefit from accelerated response for data protection and automated recovery. Cisco XDR is now available globally to simplify security operations in today’s hybrid, multi-vendor, multi-threat landscape.





## Successful Entry into Service of The Multi-Mission EUTELSAT 10B Satellite

Eutelsat Communications (Euronext Paris: ETL) announces the successful entry into service of the multi-mission high-capacity EUTELSAT 10B satellite at the 10° East orbital position. Responding to strong growth in demand for mobile connectivity, EUTELSAT 10B is carrying two multi-beam High-Throughput Satellite (HTS) Ku-band payloads: a payload covering the North Atlantic corridor, Europe, the Mediterranean basin, and the Middle East, offering significant throughput in the busiest air and sea traffic zones, and a second payload to extend coverage across the Atlantic Ocean, Africa, and the Indian Ocean. Firm multi-year capacity commitments are secured with several leading maritime and in-flight connectivity service providers, - and discussions are well advanced with others. These partners, such as Panasonic and Intelsat, will rely on EUTELSAT 10B to provide ships and airlines with mobile connectivity services, in air and at sea, for passengers and crews. EUTELSAT 10B will also cater Eutelsat ADVANCE services, a global network of unparalleled coverage providing high-end connectivity to users beyond the range of terrestrial networks, through an innovative satellite network-as-a-service experience. Cyril Dujardin, General Manager for the Connectivity Business Unit, said: "EUTELSAT

10B satellite will boost our global connectivity services with High Throughput capacity, to meet increasing in-flight and maritime demand. EUTELSAT 10B's Ku-band payload complements the Ka-band of the EUTELSAT KONNECT VHTS satellite, that will enter into service progressively in Autumn, reflecting our ability to serve our customers in both Ka- and Ku-bands with the best-in-class space assets. Moreover, this satellite brings innovative new resources that will be able to complement Eutelsat's GEO-LEO offering." EUTELSAT 10B is also carrying two widebeam payloads in C-band and in Ku-band to ensure continuity of the video services on the EUTELSAT 10A satellite, whose operational life is scheduled to end later this year. The 10° East location that EUTELSAT 10B occupies has been operated by Eutelsat since 1987 and provides unrivalled coverage of Europe, the Middle East and Africa for video services. Historic clients such as Arqiva and Eurovision will be able to benefit from the newest resources and enhanced services at 10° East. Laurence Delpy, General Manager for the Video Business Unit, said: "With EUTELSAT 10B we are bringing the newest resources and enhanced services to 10° East, one of Eutelsat's long-standing, leading orbital locations and a key position for professional video networks. Satellite maintains an integral role in the media supply chain, particularly to support the live transmission of major news and sporting events. Our clients can look forward to an ever-better service with this powerful new satellite." EUTELSAT 10B is an all-electric satellite with a powerful 5th generation digital transparent processor, offering capacity allocation flexibility and an optimal spectrum use. Built by Thales Alenia Space and based on the Spacebus NEO platform, the satellite was launched on 23 November 2022 from Cape Canaveral, Florida. A state-of-the-art technological mastery, on a par with the coming EUTELSAT KONNECT VHTS satellite, EUTELSAT10B brings unparalleled cutting-edge in-orbit assets to Eutelsat's fleet.



## AVS Leverages Optimum Coverage of EUTELSAT 65 West A Satellite Over Brazil to Expand Broadcast Services

AVS, a leading Brazilian service provider and integrator in the public and private sectors, has signed multiple contracts with Eutelsat Communications (Euronext Paris: ETL) for capacity on its EUTELSAT 65 West A satellite. This partnership has allowed AVS to deploy public channels such as TV ALEPR, TV ALESC, TV ALEPE and TV ALBA on the EUTELSAT 65 West A satellite, avoiding interference generated by the activation of 5G, underway in the country. Brazil is implementing 5G in the 3.5 GHz band, which is currently used to support satellite TV services in the C-band. The planned C-band of EUTELSAT 65 West A is a single frequency band with a frequency range between 4.5GHz to 4.8GHz, operating at 800MHz above the 5G operating frequencies in Brazil. Consequently, EUTELSAT 65 West A allows for cost-effective geographic expansion for broadcasters, as filters do not need to be installed to avoid 5G interference. Commenting on the contracts, José Ignacio González-Núñez, Eutelsat Senior Regional

VP, Media Sales Americas, said: "We are delighted to support this partnership with AVS through EUTELSAT 65 West A. Our 'Planned C Band' solution offers a transparent and cost-effective proposition



for broadcasters forced to migrate their signals out of the lower end of the C-Band spectrum, while offering them unparalleled coverage of the Brazilian territory. We will continue this support aimed at increasing

AVS's business" João Paulo Erthal, Engineering Manager at AVS, said: "Today there is great interest in expanding the audience of public TVs, aiming to bring the content produced to the entire population

and for that, we need to guarantee a very high quality of service for our customers. Pleased to have EUTELSAT as one of our main partners to achieve this goal".



## Huawei FusionCube Named One of DCIG's Top 5 Enterprise HCI Providers

The Data Center Intelligence Group (DCIG), a globally-leading technology analyst firm, has selected Huawei FusionCube as one of the world's top enterprise hyper-converged infrastructure (HCI) providers in their DCIG 2023-24 Top 5 report. Huawei FusionCube was awarded this title for its simplified and intelligent O&M management, diverse computing ecosystems, and high density and flexible hardware integration. The DCIG Top 5 report provides comprehensive and detailed analysis and recommendations on products and technologies. It takes into consideration the main factors that influence customer choices when it comes to IT infrastructure, including business benefits, efficiency and O&M. By including it in their annual report, DCIG believes Huawei FusionCube HCI has advantages in all of these key areas. In terms of O&M, Huawei FusionCube HCI uses FusionCube MetaVision and eDME software for unified O&M of compute, storage, and network resources. With one-click deployment, management, maintenance, and upgrade features, FusionCube HCI allows users to utilize intelligent, unattended O&M services. FusionCube HCI comes with its software and hardware pre-integrated so that IT

infrastructure can be initialized in one step with a single automation tool. FusionCube HCI also supports cloud transformation. Combined with Huawei's Datacenter Virtualization Solution (DCS), it helps customers build a more lightweight, elastic, resilient, and reliable cloud foundation that supports intelligent management and diverse ecosystems. When it comes to full-stack ecosystem construction, the FusionCube HCI lineup actively embraces diverse computing ecosystems. For example, FusionCube 1000 supports both Arm and x86 hardware in a same storage pool for unified management. FusionCube A3000 is a training/inference HCI appliance

tailored for foundation model training and inference in multiple industries, and it features easy deployment and one-stop delivery. Huawei has been a key player in the HCI market since its inception, and has served more than 5,000 HCI customers around the world in various industries, including energy, finance, public utilities, education, healthcare, and coal mining. Huawei has stated that it will continue to pursue breakthroughs in HCI to continuously improve the capabilities of its innovative products, facilitate its customers' digital transformation, and serve as a driving force behind enterprise cloudification.



## Huawei Hails Mobile Ecosystem Growth

Huawei claimed its AppGallery marketplace had solidified its spot among the top three mobile app ecosystems globally, with monthly active users on the platform jumping to 580 million. In a release, the vendor noted its app store now counted 6.4 million registered developers, and of the 580 million monthly active users, 170 million used its Quick App feature, part of AppGallery's offerings allowing users to access apps without downloading them. Huawei provided a big update on its AppGallery in

2021, when it claimed to have around 530 million monthly active users and 2.3 million registered developers. It has long outlined its ambitions to become one of the three major app ecosystems globally, alongside Apple and Android. AppGallery is part of Huawei Mobile Services (HMS), a suite of products designed to offer alternatives to Google's Android Platform following a US ban. The app store was released globally in 2018. Commenting on the progress, Atanas Raykov, VP of Growth at Rakuten Viber said

its Viber messaging app was one of the first to come onboard on AppGallery and be integrated with HMS software. Raykov claimed the app had amassed millions of European and Middle Eastern users ever since. He believes this is also due to Huawei's Petal Ads advertising ecosystem, which is integrated into AppGallery. Further, Huawei also inked an MoU with Tourism Andalucia and open-sourced advertising Poly-Gamma, in a deal which will see its partners use its Petal Ads services to boost global presence.

## UNIDO and Huawei Launch the Global Alliance on Artificial Intelligence for Industry and Manufacturing (AIM Global) at World AI Conference in Shanghai

At the sixth World Artificial Intelligence Conference (WAIC), UNIDO, Huawei, and other partners officially launched on 6 July 2023 the "Global Alliance on Artificial Intelligence for Industry and Manufacturing" (AIM Global). Led by UNIDO, AIM Global will integrate public and private partners to foster the use of and innovation around AI in industry and manufacturing. Addressing the WAIC audience during the opening ceremony, Mr. Gerd Müller UNIDO Director General, said: "It is our shared responsibility to ensure that advancements in the field of AI are made in a manner that is safe, ethical, sustainable and inclusive. AIM Global recognizes the importance of bridging the digital divide between nations and industries, and ensuring that no one is left behind in the AI revolution. AIM Global will be at the forefront of shaping the AI landscape. Let us work collaboratively to build a future where AI is a force for good, where its benefits are accessible to all, and where innovation thrives in harmony with our shared values." Mr. Gerd Müller UNIDO Director General highlights the importance of working collaboratively to build a future where AI is a force for good "We are proud to be a strategic partner of AIM Global. Working closely with UNIDO and other Alliance partners, Huawei will use AI to bring new momentum to industry development," said Vicky Zhang, Vice President Corporate Communications at Huawei. She added: "Huawei is building a strong foundation in computing capabilities and is launching multiple large models designed for specific industries. Our goal is to develop AI solutions that more effectively serve all industries – and that better support scientific



research." The Alliance will benefit from the local networks and insights of UNIDO's investment and technology promotion offices that offer support to SMEs globally. The resulting deep understanding of actual SME challenges across sectors will inform the strategy of AIM Global in order to maximize its impact. UNIDO is committed to supporting pioneering efforts to enhance industrial competitiveness and sustainable development through AI. Mr. Ciyong Zou, Deputy to the Director General and Managing Director of UNIDO, Vicky Zhang, Vice President of Corporate Communications at Huawei, and other partners during the official launch of AIM Global. AIM Global will serve as a platform for collaboration, knowledge sharing, and the development of best practices. It will focus on four key areas. First, AIM Global will facilitate research and develop-

ment of AI technologies specific to industry and manufacturing. Second, the Alliance and its partners will engage to develop and promote ethical guidelines for the use of AI in industry and manufacturing. Those will include environmental as well as societal criteria. Third, with the help of the Alliance UNIDO seeks to convey policy recommendations to governments and international organizations on the use of AI in industry and manufacturing. This shall drive the development of national AI strategies. Finally, AIM Global will promote the adoption of best practices for the use of AI in industry and manufacturing. Huawei will actively support AIM Global with case studies on industrial AI implementation, insights from its intensive research and development as well as making its global network of experts available.

## Huawei Obtains Highest-Level Security Certification for Smart Device Oss

Huawei's HongMeng Kernel was awarded the industry's first Evaluation Assurance Level 6 Augmented (EAL6+) certificate as part of Common Criteria for Information Technology Security Evaluation (CC), the highest security level available in the field of general-purpose operating system (OS) kernels. Huawei is the world's first smart device manufacturer to receive the

certification in this particular domain. OS kernels are the foundation of OS security and privacy. CC, also known as the ISO/IEC 15408 standard, is an information security certification that is among the most influential in the global IT industry. CC is a widely used and globally recognized standard for product security evaluation. SGS Brightsight, a major security evaluation

lab, performed the security evaluation for HongMeng Kernel. Mr. Kai-Fan Chang, COO Asia of SGS Brightsight, said: "SGS Brightsight, the largest security evaluation lab in the world, is honored to have performed the security evaluation of Huawei's HongMeng Kernel and found that it reached international Common Criteria EAL6+ level. We believe that HongMeng Kernel will become

one of the most important building blocks in future Huawei IoT and mobile products. Securing CC EAL6+ also shows the dedication of Huawei to create secure products." Gong Ti, President of Huawei's Consumer BG Software Engineering Dept, said: "The security capabilities of the HongMeng Kernel are now recognized by internationally accredited certification bodies, reflecting the fact that the HongMeng Kernel has reached the highest security level for OS kernels and bringing device and ICT security to new heights." Dr. Michael Lemke, Chief

Security Officer of Huawei Germany, stated: "Kernels are the foundation of system security and privacy. Huawei is committed to ensuring security and privacy in the ICT and device domains. Moving forward, Huawei will continue to comply with the shared global standards for foundational software and cyber security and ensure that the security capabilities of Huawei's products continue to meet internationally recognized best practices." The CC EAL6+ certificate marks a new level of industry recognition for Huawei's cyber security. To

date, Huawei has obtained more than 500 certifications under industry-recognized cyber security schemes like CC, FIPS, ISO 19790, PCI DSS, and CSA STAR. Cyber security and privacy protection are Huawei's top priorities, commitments that are above and beyond any commercial interests. Huawei continues to maintain a solid track record in cyber security, and our efforts have earned widespread recognition in over 170 markets around the world, where we serve more than three billion people. Customer trust is the most solid testament to the security and quality of Huawei's products and services. On the industry front, Huawei firmly believes that openness and collaboration lead to shared success. We actively engage with the ICT industry, working with our peers and industry stakeholders to share best practices in cyber security and privacy protection. In 2022, we submitted nearly 300 cyber security standards proposals to 3GPP and GSMA. Working side-by-side with stakeholders all along the value chain, we are innovating together to bolster the industry's cyber security and privacy protection capabilities. Together, we are building a more secure digital world.



## Huawei Announces 2023 H1 Business Results

Huawei announced its business results for the first half of 2023 today. Overall performance was in line with the forecast. In 2023 H1, Huawei generated around USD 42.9 billion in revenue, with a year-on-year increase of 3.1% and a net profit margin of 15.0%. The company's ICT infrastructure business contributed USD 23.05 billion, its consumer business USD 14.3 billion, its cloud business USD 3.3 billion, its digital power business USD 3.3 billion, and its intelligent automotive solution (IAS) business USD 137.8 million. "I'd like to thank our customers and partners for their ongoing support," said Sabrina Meng, Huawei's Rotating Chairwoman. "I'd also like to thank the entire Huawei team for its solidarity and dedication. Huawei has been investing heavily in foundational technologies to harness trends in digitalization,

intelligence, and decarbonization, focusing on creating value for our customers and partners. In the first half of 2023, our ICT infrastructure business remained solid and our consumer business achieved growth. Our digital power and cloud businesses both experienced strong growths, and our new components for intelligent connected vehicles continue to gain competitiveness." In the Middle East and Central Asia (ME & CA), Huawei continues contributing to the regional digital transformation goals, developing the ICT ecosystems and providing advanced products and solutions for carriers, enterprise markets, cloud, digital power, and consumers. With its industry-leading innovations, Huawei continues to push the deployment of 5G and has already introduced 5.5G to the region in collaboration with multiple regional carriers. Huawei has

also expanded and advanced its cloud business by opening new cloud regions in ME&CA as well as growing its digital power business, helping facilitate carriers' shift from energy consumers to energy producers and enablers and aligning with government carbon emissions reduction objectives. Further, Huawei has also been keen to push the boundaries in the talent ecosystem through its successful CSR programs, such as Huawei ICT Academy, Seeds for the Future, ICT Competition, and much more. In the Middle East and Central Asia, there are 240 Huawei ICT Academies. Huawei has trained over 200,000 ICT talents and is committed to achieving more in collaboration with its partners, while over 46,000 people have obtained Huawei certification.

## HUAWEI CLOUD Researchers Develop AI Weather Forecast System with 10,000x Faster Predictions Compared to The Traditional Model

HUAWEI CLOUD published a breakthrough paper on the Pangu Weather AI model in one of the world's top scientific journals, Nature. The paper describes how to develop a precise and accurate global AI weather forecast system based on deep learning using 43 years of data. Pangu-Weather is the first AI prediction model to demonstrate higher precision than traditional numerical weather forecast methods. The model allows a 10,000x improvement in prediction speed, reducing global weather prediction time to just seconds. Pangu-Weather challenges the previously held assumptions that the accuracy of AI weather forecast is inferior to traditional numerical forecasts. The model, developed by the HUAWEI CLOUD team, is the first AI prediction model with higher precision than traditional numerical prediction methods. The paper, titled "Accurate medium-range global weather forecasting with 3D neural networks" provides independent verifications of these capabilities. The publication marks the first time that employees of a Chinese technology company are the sole authors of a Nature paper, according to Nature Index. With the rapid development of computing power over the past 30 years, the accuracy of numerical weather forecast has improved dramatically, providing extreme disaster warning and climate change predictions. But the method remains relatively time-consuming. To improve prediction speeds, researchers have been exploring how to use deep learning methods. Still, the precision of AI-based forecasting for medium and long-term forecasts has remained inferior to numerical forecasts. AI has been mostly unable to predict extreme and unusual weather such as typhoons. Every year, there are around 80 typhoons worldwide. In 2022, in China alone, the direct economic loss caused by typhoons was 5.42 billion yuan, according to the figures from China Ministry of Emergency Management. The earlier that warnings can be sent out, the easier and better it is to make adequate preparations. Because of their speed, AI weather forecast models have been attractive but have lacked precision for two reasons. First, the existing AI meteorological forecast models are based on 2D neural networks, which cannot process uneven 3D meteorological data well. Second, medium-range weather forecast can suffer from cumulative forecast errors when the model is called too many times. How Pangu-Weather



addresses these challenges. During scientific trials, the Pangu-Weather model has demonstrated its higher precision compared to traditional numerical prediction methods for forecasts of 1 hour to 7 days, with a prediction speed gain of 10,000 times. The model can accurately predict in seconds fine-grained meteorological features including humidity, wind speed, temperature, and sea level pressure. The model uses a 3D Earth-Specific Transformer (3DEST) architecture to process complex non-uniform 3D meteorological data. Using a hierarchical, temporal, aggregation strategy, the model was trained for different forecast intervals using 1-hour, 3-hour, 6-hour, and 24-hour intervals. This resulted in a minimization of the quantity of iterations for predicting a meteorological condition at a specific time and a reduction in erroneous forecasts. To train the model for specific time intervals, the researchers trained 100 epochs (cycles) using hourly samples of weather data from 1979-2021. Each of the sub-models that resulted required 16 days of training on 192 V100 graphics cards. The Pangu-Weather Model can now complete 24-hour global weather forecasts in just 1.4 seconds on a V100 graphics card, a 10,000-time improvement compared with the traditional numerical prediction. Explaining why the HUAWEI CLOUD

AI team chose to focus on weather predictions, Dr. Tian Qi, Chief Scientist of HUAWEI CLOUD AI Field, an IEEE Fellow, and Academician of the International Eurasian Academy of Sciences, explained "Weather forecasting is one of the most important scenarios in the field of scientific computing because meteorological prediction is a very complex system, yet it is difficult to cover all aspects of mathematical and physical knowledge. We are therefore delighted that our research has been recognized by the Nature magazine. AI models can mine statistical laws of atmospheric evolution from massive data. At present, Pangu-Weather mainly completes the work of the forecast system, and its main ability is to predict the evolution of atmospheric states. Our ultimate goal is to build next-generation weather forecasting frameworks using AI technologies to strengthen the existing forecasting systems." Commenting on the significance and quality of the research by HUAWEI CLOUD, academic reviewers from Nature explained that not only is Pangu-Weather very easy to download and run, but that it executed quickly on even a desktop computer. "This means that anyone in the meteorological community can now run and test these models to their hearts' desire. What a great opportunity for the community to explore how well the model predicts

specific phenomena. That's going to help with progress in the field." Another reviewer noted that "the results themselves are a significant step beyond previous results. This work will, in my opinion, make people reevaluate what forecasting models might

look like in the future". In May 2023, Typhoon Mawar caught the world's attention as the strongest tropical cyclone of the year thus far. According to the China Meteorological Administration, Pangu-Weather accurately predicted the trajectory of Typhoon Mawar

five days before it changed course in the eastern waters of the islands of Taiwan. In addition, in order to continuously advance leading AI weather forecast models, stable cloud environments, work suites, and corresponding O&M are also essential.

## KEARNEY

Kearney, a leading global management consulting firm, today announced the acquisition of Silicon Foundry, an advisory firm that helps corporations navigate new technologies and market shifts and engage with the global innovation ecosystem. This acquisition represents the firm's commitment to helping C-suite executives truly transform their organizations, by providing corporate executive leaders worldwide with access to the most cutting-edge new technologies, start-ups, and venture investors at the core of the innovation ecosystem. As Kearney approaches 100 years of helping clients evolve their business models, this acquisition is yet another example of its industry leadership and dedication to enhancing expertise and expanding services to better respond to the uncertainty and volatility of the modern business landscape. Businesses now understand and emphasize the importance of access to the venture world to improve business agility and increase their overall ability to innovate.

## Kearney Adds Seasoned Venture Capital and Innovation Professionals to its Team

"We're excited to welcome Silicon Foundry to the Kearney family and look forward to partnering with their world-class experts in providing best-of-breed innovation services for our clients," said Ben T. Smith IV, Partner, Americas Lead for Telecommunications, Media, and Technology and Member of the Kearney Board of Directors. "Given Kearney's global reach, the ability to provide clients across Europe, Middle East, and Asia with direct access to some of the most disruptive start-ups across the major global technology ecosystems will truly set the firm apart from our competitors." "We are thrilled to join forces with Kearney," said Neal Hansch, CEO of Silicon Foundry, "and in doing so, to leverage and further enhance the range of its resources, the depth and breadth of its relationships with top executives and entrepreneurs spanning all major industries, and add to the full range of expertise and services capabilities across the firm. Becoming a part of the Kearney family will immediately accelerate Silicon

Foundry's ability to scale globally, as well as to extend the reach of the sectors we currently serve, and range of solutions we can offer. We're equally as excited for the impact this combination will have on our current and future clients, who will benefit from the firm's brain trust and access to the thousands of Kearney professionals around the world." Corporate leadership teams increasingly express interest in tapping into the innovation ecosystem for strategic partnerships, investments, and acquisitions but often lack either the expertise or network to reach those in Silicon Valley and beyond. "As the pace of innovation continues to accelerate, corporations recognize the need to stay better connected to the investors, entrepreneurs, and thought leaders who are driving this change. Silicon Foundry will help our clients participate in this ecosystem efficiently, and when done correctly, will play a key role in helping them continue to transform and evolve," added Evan Guttoff, Kearney Partner and Americas Strategic Transformation Lead, and Manager, Kearney Venture Capital. The symbiotic relationship will benefit both sides, bringing Kearney teams and consultants closer to the innovation ecosystem while providing Silicon Foundry with a strong network of corporate executives from which it can continue to expand. "This acquisition reaffirms our firm's commitment to innovating the management consulting model, and providing transformative services to our clients and learning opportunities to our consultants and professionals," added David Hanfland, Kearney Partner and Americas Region Chair.

**Silicon Foundry joins Kearney**

**Silicon Foundry**  
a KEARNEY company





## Nokia Expands Manufacturing in U.S. to Fiber Broadband Optical Modules for Department of Commerce BEAD Program

Nokia announced that it is the first telecom vendor to manufacture fiber broadband optical modules in the U.S. for use in the Broadband Equity, Access and Deployment (BEAD) program. Partnering with Fabrinet, a global manufacturer of highly precise optical products, Nokia will produce multi-rate optical modules at Fabrinet's state-of-the-art facility in Santa Clara, California. Production will start in 2024 and brings additional high-tech jobs to the country. The announcement builds on Nokia's previous decision to produce fiber-optic broadband network electronic products in Kenosha, Wisconsin. Optical modules are a key high-tech component of fiber broadband networks. They convert electrical signals into light and vice versa, and are essential for connecting homes to high speed, multi-gigabit broadband. By manufacturing these optical modules in the U.S., Nokia continues to expand its list of products and solutions for networks rollouts using BEAD or other funding. States and infrastructure players seeking to participate in BEAD and the \$42.45bn of available funding allocated for broadband rollouts to unserved and underserved communities are required to use equipment manufactured in the U.S. Operators seeking to leverage BEAD funding to bridge the digital divide now have access to the latest cutting-edge technology for their deployments. Today, more than 70 percent of fiber broadband lines in North America are powered by Nokia. Using multi-rate optical modules and products allows operators to easily upgrade speeds from 1 Gig to Multi-Gig. Combined with Nokia's award-winning 25G solutions and research into 100G technology, this ensures that operators are building fiber networks that will meet user requirements for generations to come.

Sandy Motley, President of Fixed Networks at Nokia, said: "Many in the industry have said that manufacturing optical modules in the U.S. was impossible. Today, we're proving it can be done. Working alongside the Department of Commerce and Fabrinet, we're excited to add optical modules to the list of technology solutions that will be produced here in the U.S. and become available to programs like BEAD which are so critical to bridging the digital divide." Harpal Gill, President and COO of Fabrinet, said: "Fabrinet specializes in manufacturing complex, precision optical and electro-optical products used in telecommunications networks and data centers. As a trusted partner of the world's most demanding OEMs, we are excited to help bring the production of Nokia's optical modules to the U.S. and support their efforts to bridge the digital divide. We're pleased to partner with Nokia in order to help provide high-speed fiber broadband access to more people, homes and communities."



## Nokia Unveils Comprehensive 25G PON Starter Kit Solution to Help Operators Capture New 10Gbs+ Service Opportunities

Nokia announced the launch of a comprehensive 25G PON starter kit solution that can help operators harness new revenue generating 10Gbs+ opportunities. The 25G PON kit is designed to provide operators with everything they need to accelerate the deployment of high-speed connectivity to businesses. Each kit has the capability to connect up to 10 businesses and is available for immediate shipment. In today's landscape, 10Gbs business connectivity has emerged as the golden standard in markets worldwide. With 25G PON, operators can leverage their existing fiber assets to deliver true 10Gbs speeds and beyond to businesses, farms, schools, and other enterprises. Accelerating productivity and collaboration, a

true 10Gbs service can help organizations to be more competitive and embrace resource-intensive cloud-based applications, virtual reality and AI with unprecedented ease. The comprehensive 25G PON kit solution paves the way for operators to efficiently capitalize on 10G+ opportunities, today. The 25G PON starter kit bundles in one solution all of the fiber broadband technology needed to deliver 1, 10 and 25G PON services to end-users including line cards, optics and Optical Network Terminals (ONTs). Geert Heyninck, General Manager Broadband Networks at Nokia, said: "With the 25G PON starter program, we help operators seize the lucrative opportunities presented by 10G+ connectivity. The 25G PON kits are available immediately and provide operators with the tools needed to quickly deploy and capitalize on the growing number of multi-gig broadband services consumers and enterprises seek – all on their existing fiber network." Rupert Wood, Research Director at Analysys Mason, said: "Depending on the SLAs, practically all of that dedicated connectivity market is addressable for an operator with 25GS-PON capability. The addition of 25GS-PON to XGS-PON makes the fastest-growing portion in revenue terms, 'true'10Gbit/s (and even above) symmetrical connectivity, addressable right now."



## Nokia and BT Group Demo Enhanced 5G SA Uplink Aggregation

BT Group and Nokia have announced the successful uplink aggregation of two carrier components in a 5G Standalone (SA) live network spectrum. The tests were conducted at BT Group's facility in Adastral Park, Ipswich, using Nokia's 5G AirScale portfolio and a device powered by a Snapdragon 5G Modem-RF System from Qualcomm Technologies, following initial lab-based trials. According to BT, uplink speeds of more than 230Mbps were achieved in the test, with downlink speeds of more than 1Gbps also recorded. It was noted that demonstration was 'conducted with 15, 30 and 40MHz NR2600 carrier independently aggregated with a 40MHz NR3500 carrier component'. The tests were undertaken as part of BT Group's efforts to ensure that, when 5G SA services are launched via its mobile unit EE, it maintains its 5G network quality for end users. Commenting, Greg McCall, Chief Networks Officer at BT Group, said: 'Carrier aggregation will be key to delivering the very best 5G experience to our customers, with this latest trial in partnership with Nokia demonstrating significant performance increases in terms of uplink speeds. This builds on last year's



success of achieving 4CA in 5G SA downlink, and we look forward to achieving further milestones in this space as we continue to progress towards 5G SA.'

## Nokia Tasked with Canada 5G Upgrade

Finnish vendor Nokia agreed a deal with Canada-based cable TV and telecoms company Eastlink to enhance and modernize its 5G network covering seven provinces. Nokia stated it will deploy its AirScale portfolio including its 5G RAN to improve Eastlink's mobile



experience by boosting data rates and network capacity. The deal involves site expansion and upgrades, with the first Nokia-powered location to go live this month. Eastlink is a relatively small operator in the country, which has invested around \$500 million since 2013 to grow its mobile services. It provides a range of residential, business and public sector services in seven Canadian provinces, as well as Bermuda. CEO Jeff Gillham said it expects Nokia to cover "a sizeable portion" of its mobile RAN over the next few years. Nokia partnered with various government entities in Canada in 2022 to construct an R&D facility focusing on the development of various technologies including 5G. Its major rival Ericsson also made a splash in Canada this year, agreeing a five-year partnership with the country's government to pump more than CAD470 million (\$350 million) into two R&D centres and step up research into a range of new technologies.

## Nokia, TPG Telecom and MediaTek Demonstrate 360-Degree Video Broadcasting Using 5G Uplink Carrier Aggregation

Nokia, in collaboration with TPG Telecom and MediaTek showcased a ground-breaking live 360-degree video broadcast on the future of the Metaverse, enabled by Nokia's state-of-the-art 5G Uplink Carrier Aggregation (CA) technology, TPG Telecom's commercial 5G network and MediaTek's 5G mobile chipset technology. The demonstration highlighted how CA technology can transform the experience of watching TV, movies and sports, and took place at Nokia's 5G Futures Lab, Sydney, Australia. By combining two or more sub-6 GHz frequency bands, Nokia's CA technology delivers optimized 5G uplink speeds, enabling real-time transmission of high-quality 360-degree video. The demo utilized solutions from Nokia's latest energy-efficient AirScale portfolio including baseband, massive MIMO, and Remote Radio Head products,

powered by its ReefShark chipset. MediaTek provided its 5G mobile platform using the MediaTek M80 5G modem, which has been incorporated into the Dimensity SoC series. The demo used the combination of a 15 MHz carrier on the 700 MHz band (n28) and a 90 MHz carrier on the 3.6 GHz band (n78) using Uplink Carrier Aggregation technology to achieve a peak uplink throughput of 159 Mbps. During the demonstration, Leslie Shannon, Nokia's Head of Trend and Innovation Scouting gave a talk about the future of the Metaverse. The talk covered how 360-degree video livestreamed over 5G is a key component of some Industrial Metaverse experiences, allowing workers, for example, to view a remote location through a VR headset while remotely controlling a robot in that location doing a potentially dangerous job, such as handling

explosives. According to "The metaverse at work" study, an overwhelming 96 percent of respondents recognize the industrial metaverse's potential to mix physical and virtual use cases. They believe that the metaverse will bring additional innovative capabilities, allowing them to accelerate the deployment, adoption and monetization of Industry 4.0 for their businesses. David Yeo, General Manager of Wireless Access Networks at TPG Telecom, said: "This is a great demonstration of the immersive and innovative capability that TPG Telecom's cutting-edge 5G network can deliver to consumers and businesses alike. We look forward to future collaborations with Nokia and MediaTek as we work

together to unlock a new world of content and possibilities for our customers." Andrew Cope, Head of Oceania at Nokia, said: "Collaborating with TPG Telecom and MediaTek on this exciting project showcases a key building block of the Metaverse: 360-degree video streaming. Powered by Nokia's two component carrier 5G Uplink Carrier Aggregation technology, this breakthrough technology is vital for the immersive future needed to take industrial digitalization to the next level. We are proud to feature Leslie Shannon, Nokia's Head of Trend and Innovation Scouting and author of 'Interconnected Realities,' as the subject of this broadcast, highlighting the importance of 5G 2CC in realizing the

transformative potential of the Metaverse." Dr. HC Hwang, General Manager of Wireless Communication System and Partnerships at MediaTek, said: "The 360-degree video broadcasting demonstrates the diverse capabilities of MediaTek's industry-leading M80 5G modem. Our collaboration with Nokia has shown the clear benefits of another real-world application utilizing essential 5G technologies like Uplink Carrier Aggregation. We are enabling our vision is to grow the 5G ecosystem through continuously enhancing 5G capacity and performance with features that add value to consumers of smartphones and mobile broadband 5G devices."

## Nokia Rolls Out Its Interleaved Passive Active Antennas Across Oceania

Nokia announced that its state-of-the-art, modular Interleaved Passive Active Antenna (IPAA+) will be deployed by multiple service providers, including Optus and TPG Telecom in Australia and One NZ across New Zealand, accelerating 5G deployment in the Oceania region. Optus has already started rolling out an 8T8R variant of Nokia's IPAA, while TPG Telecom and One NZ plan to commence deployments later this year. Service providers typically face the challenge of finding additional space on towers and rooftops to add 5G antennas. Nokia's IPAA+ accelerates the deployment of 5G by addressing this practical issue. Its modular design supports a wide range of frequencies, from 700 MHz to 2.6 GHz and the 3.5 GHz 5G band with a compact antenna solution. Nokia has developed these latest versions in collaboration with CommScope. Nokia has also created an Optus-specific variant that incorporates a

2.3 GHz 8T8R array easing the deployment of both 2300 and 3500 TDD bands within the same antenna footprint. Rob Joyce, Chief Technology Officer at Nokia Oceania, said: "We are thrilled that several service providers have placed their trust in Nokia's state-of-the-art products and have taken the

lead in deploying IPAA+ in the region. Our latest solutions are designed in accordance with feedback from our customers. These products address a major pain point of our customers by allowing a single integrated 5G antenna to cover all sub-6GHz 5G frequency bands."



## Nokia Claims New Extended Range mmWave Speed Record

Finnish vendor Nokia says it has achieved a new download speed record of more than 2Gbps over a distance of almost eleven kilometers using mmWave and 5G fixed wireless access (FWA) technology. In a press release regarding the matter Nokia noted that the speeds were achieved using its 5G extended range mmWave solution at the OuluZone test facility in Oulu, Finland. Specifically, the vendor said its test had utilised its AirScale baseband and AirScale 24GHz

(n258 band) mmWave radio and a Nokia FastMile 5G PoC CPE, and involved eight component carriers (8CC) in the downlink, aggregating 800MHz of mmWave spectrum. According to Nokia, this enabled a top downlink speed of 2.1Gbps, and an uplink speed of 57.2Mbps. Commenting, Ari Kynaslahti, Head of Strategy and Technology at Nokia Mobile Networks, said: 'We just set a new speed record for extended range 5G mmWave. This demonstrates

that mmWave solutions will be an essential building block for operators to efficiently deliver widespread, multi-gigabit 5G broadband coverage to their customers in urban, suburban, and rural areas, complementing sub-6GHz spectrum assets. This is a substantial achievement that reflects how we are constantly innovating and evolving our 5G services and solutions.'



## Over Quarter Million Users Subscribe to Oman Broadband Company's Optical Fiber Network

The number of subscribers to the optical fiber network (Fiber) in Oman Broadband Company exceeded 250,000 till the end of July 2023. The number of subscribers to the optical fiber network (Fiber) in Oman Broadband Company exceeded the quarter million barrier until the end of July 2023 by 250,046 subscribers, while the total units covered in the various governorates of the Sultanate of Oman reached about 697,527 units. Engineer Sultan bin Ahmed Al Wahabi, CEO of the Oman Broadband Company, said that the total subscribers to the optical fiber service in the Dhofar Governorate until the end of July of this year amounted to 14,585 subscribers, while the total units covered reached 65,615 units. "Pointing out that the sites for the extension of the fiber optic network and the new sites that are planned to be included in the expansion plan in the Dhofar Governorate have been

reviewed. The CEO of the Oman Broadband Company confirmed that the company's work team continues its efforts to expand in the various governorates of the Sultanate of Oman, so that the expansion plan for the fiber optic network will reach the areas of "Awtab" and "Suwaihra" in the Wilayat of Sohar, and "Al-Khashda", "Hillat Al-Rawashid", "Majz Al-Sughra", "Abu Al Darous", "Al-Ghuwaisa", "Sur Al-Shiadi" and "Al-Qasha" in the Wilayat of Saham. In addition to "Al-Amra" and "Al-Rumais" in the Wilayat of Barka, and a number of areas in Ja'alan Bani Bu Ali, and the Rusayl area in the Governorate of Muscat, among others. Al Wahabi indicated that the company seeks, through the work team, to activate the model of partnership with the governorates in providing broadband infrastructure in order to provide and improve Internet services, support the economic system, and broader and faster



coverage of high-speed home Internet networks, in addition to providing jobs in the field of information technology in various governorates. "The partnership model with the governorates will contribute to finding investment opportunities for the governorates in line with the national broadband strategy and benefit from strengthening the education, health and other sectors," Al Wahabi added.



## Protiviti Named a 2023 Best Workplace for Millennials by Fortune and Great Place to Work

Global consulting firm Protiviti has been named to the 2023 list of Best Workplaces for Millennials™ by Fortune magazine and Great Place to Work®. The annual list, which is based on anonymous survey responses from more than 500,000 U.S.-based millennial employees, recognizes companies that create the most consistently positive experience for millennials. This marks the fifth time Protiviti has made the list in the large company category (1,000 or more employees). "We are proud to provide a flexible workplace that is di-

verse, equitable, and inclusive, inspiring our people to grow and become the best version of themselves," said Jessica Harrison, vice president of human resources Protiviti. "Our purpose-driven work culture supported by in-depth training, thoughtful mentoring relationships, and collaboration creates an empowering experience where everyone can thrive." The Best Workplaces for Millennials list is highly competitive. Great Place to Work uses rigorous analytics and confidential employee feedback to determine the list. Only Great Place to Work-Certified™

organizations are eligible. "With the largest share of the workforce today, the workplace experience of millennials says a lot about your organization," said Michael C. Bush, CEO of Great Place To Work. "These workers are looking for authentic leadership, meaningful work, and a healthy work environment – and they show loyalty to those who can deliver." In 2023, Protiviti was named to the Fortune 100 Best Companies to Work For® list for the ninth consecutive year, to the Best Workplaces in the Bay Area™ list for the fifth time and was named by Seramount a Best Workplace for Multicultural Women for the third year in a row. In 2022, Protiviti was named one of the Best Workplaces for Parents™, and to the Fortune lists of Best Workplaces for Millennials™ and Women™. The firm was also recognized by Seramount as a Best Company for Dads and one of the 75 Top Companies for Executive Women. Additionally, Protiviti was named one of the 2022 PEOPLE Companies That Care®.





## SES completes C-Band Clearance in US

Satellite operator SES won a stamp of approval from the US Federal Communications Commission (FCC) for clearing and relocating C-Band spectrum to free up access for mobile operators. The satellite company is now eligible to receive a relocation payment of \$3 billion from US operators having completed something known as a Phase II clearance scheme. It expects to receive payment in Q4. The deadline to meet relocation requirements is 5 December. Clearing the spectrum is meant to enable mobile operators which acquired C-Band spectrum in an auction to begin using it for 5G services. They are required to pay early relocation fees to SES. Under the Phase II scheme, SES

repacked all its C-Band downlink services and associated Earth stations across the continental US into the upper 200MHz of C-Band. It also launched five new satellites to maintain digital TV services to nearly 120 million homes along with so-called

critical data services using the 4,000MHz to 4,200MHz range. SES CEO Ruy Pinto stated the project will enable the FCC to advance 5G access and innovation while ensuring current C-Band broadcasts and radio services are maintained.



## U.S. DoD awards US\$134 million Global X Band Blanket Purchase Agreement to SES Space & Defense

DRS Global Enterprise Solutions (GES), acquired and now part of SES's wholly-owned subsidiary SES Space & Defense, has been awarded a five-year X-Band Blanket Purchase Agreement (BPA) with an estimated value of USD 134 million in support of the U.S. Department of Defense (DoD). The single award BPA was awarded through Defense Information Systems Agency's (DISA) Defense Information Technology Contracting Organization (DITCO) by the US Space Force. To deliver a near-global solution, SES Space & Defense

has partnered with several industry-leading players, including integrators, SATCOM and teleport operators. Together, the contracted satellite operators will deliver Global X-Band satellite capacity, teleport and network services over a highly secure global terrestrial network, and other ancillary services to meet enduring and emerging DoD requirements. To provide secure satellite communications service, SES Space & Defense will leverage the multi-mission GovSat-1 satellite, which features high-power X-band and Military Ka-band

beams. GovSat-1 is a satellite operated by GovSat and is entirely dedicated to government and military missions. "SES Space & Defense believes the BPA is one of the foundation blocks in accelerating MILSATCOM-COMSATCOM integration for the space enterprise. The US Space Force established this contract as a mechanism to enable access to commercial X-band capacity globally for the DoD," said SES Space & Defense President and CEO David Fields. "We have partnered with industry-leading X-Band owners and operators as we understand the demand for secure, non-preemptible mission-assured capacity for critical operations. By combining satellite capacity, SATCOM services can achieve the highest availability with redundant X-Band coverage and diverse gateway connectivity within sovereign space." The Global X-Band BPA is the first integration services agreement awarded to SES Space & Defense since the acquisition of DRS GES by SES was finalized in August 2022. SES Space & Defense is dedicated to delivering the most trusted end-to-end global communications through a fully integrated Information and Communications Technology Ecosystem to the U.S. government and military.



## SES and Quanta Partner to Serve Sports and Events Customers in Latin America

SES, the leading global content connectivity solutions provider, and Quanta, a leader in infrastructure, post-production, delivery, management and innovation capabilities for the audiovisual market, have announced their partnership that will see the companies interconnect their content delivery networks for sports and events customers operating in Latin America. As part of the agreement, Quanta's newly-inaugurated teleport in São Paulo has been interconnected with SES's hybrid distribution network and media centers to allow for simplified content delivery services to global and Latin American takers via satellite, IP and fiber networks. Sports and events customers will also be able to leverage post-production capabilities at Quanta's facilities, including commentary recording, graphics and advertisement. "We are excited to partner with one of the global distribution leaders in live sports and events," said Laudson Diniz, Business Development and Production Manager at Quanta. "This agreement gives us the ability to leverage SES's robust hybrid network to distribute live sports matches and tournaments for our customers globally and in Latin America, marking the next step in complementing our service infrastructure offering." "Quanta is a leader in video service

infrastructure in Latin America with their extensive sound stages and facilities. We are delighted to partner with them to jointly expand the offering for our customers and deliver their key sports and events content with an end-to-end integrated solution," said Michele Gosetti, Head of Sales, Sports & Events at SES.



## Meshary Al-Hamad Appointed as New CEO of e-Portal Holding Company

Kuwait Telecommunications Company – stc, a world-class digital leader providing innovative services and platforms to customers, enabling the digital transformation in Kuwait, announced the appointment of Meshary Al-Hamad as the new Chief Executive Officer of e-Portal Holding Company (e-Portal), a wholly-owned subsidiary of stc Kuwait. stc released a statement indicating that Al-Hamad's appointment comes as a strategic move to grow and evolve the Company's operations, especially within the ICT field. Additionally, Al-Hamad will continue to lead and develop the company's digital transformation journey, which also aligns with Kuwait's 2035 vision. His operational expertise will strengthen e-Portal's value proposition where he will work closely with stc to grow e-portal presence in the market, to and leverage e-portal's capabilities to support the digital transformation process in Kuwait in addition to providing the best services, products and solutions that shall exceed our enterprise and Govt. sector customers' expectations and aspirations. Meshary joined stc in 2015 as General Manager - Customer Service Department and later ascended to the position of General Manager of Sales & Account Management at solutions by stc, the specialized business arm of Kuwait Telecommunications Company – stc, that focuses on providing connectivity solutions, fixed, mobile or 5G wireless services, 5G technology led by stc, ICT, IoT, M2M, and the IT products and services. He has consistently delivered outstanding



results, contributing significantly to the growth and development of solutions by stc. His wealth of expertise extends across several areas within the company, providing him with a comprehensive understanding that will be integral in leading e-Portal's growth and success. Al-Hamad holds a Bachelor's Degree in Mass Communication from Kuwait University and a Masters of Business Administration's Degree from the Ahlia University in Bahrain.

## stc Bahrain Offers IPv6 in the Kingdom to Retail and Business Customers

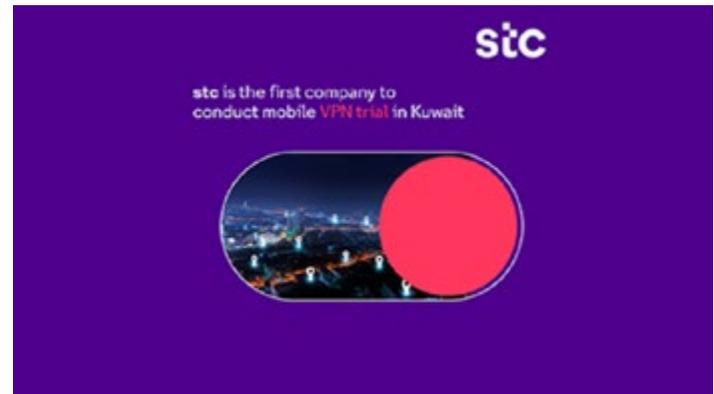
stc Bahrain has taken a new step in enabling advanced technologies by launching IPv6, an upgrade from IPv4, the primary version of Internet Protocol. The upgrade is a crucial step in meeting the increasing demand for IoT and digital products in the billions, allowing for a more efficient technology for internet users. The launch of IPv6 reaffirms stc Bahrain's commitment to work with the government of Bahrain in advancing the digital economy and empowering digital transformation in the Kingdom in line with the Economic Vision 2030. The transition to IPv6 will enable more efficient connections, reducing the burden on network infrastructure and offer better security solutions and scalability. The implementation of IPv6 in Bahrain is designed to support emerging technologies and the growing number of devices connected to the internet by allowing for more unique IP addresses.



As the world becomes increasingly connected, IPv6 ensures that every device can have a unique IP address, facilitating seamless communication and connectivity, allowing for exponential growth in the number of devices that can be uniquely addressable. Commenting on the launch of IPv6, stc Bahrain Chief Technology & Digital Officer, Mr. Ahmed Alsharif said, "We are proud to work with the government of Bahrain to implement the latest technologies that will improve efficiency, connectivity, and transform the way internet users operate, meeting the growing demand of the exchange of data between devices and the rapid growth of internet use." He continued, "At stc Bahrain, we are committed to delivering the most advanced, efficient and transformative technologies that contribute to Bahrain's digital transformation agenda and allow for increased connectivity for companies, institutions and daily internet users. The launch of IPv6 in Bahrain is undoubtedly an important milestone as it seeks to make Bahrain an advanced digital tech hub in the region." The implementation of IPv6 will transform the way businesses, individuals, companies and all internet users interact and connect with each other. Enterprises will be able to expand their online presence and reach a wider audience without any limitations. Gamers will not need to share IP addresses with other users, resulting in faster connectivity. IPv6 will also offer a more secure network by implementing a secure name resolution, and supporting end-to-end encryption and Secure Neighbor Discovery (SEND) protocol – helping the "man-in-the-middle" attacks become significantly more difficult.

## stc Leads the Way in Mobile VPN Testing

Kuwait Telecommunications Company – stc, a world-class digital leader providing innovative services and platforms to customers, enabling the digital transformation in Kuwait, announced its successful completion of a pilot test for the new Mobile VPN technology, becoming the first telecom operator in Kuwait to achieve this remarkable feat. stc proved its technical prowess and dedication to offering secure and dependable mobile communication solutions through the implementation of Mobile VPN, a groundbreaking technology enabling mobile users' secure and efficient access to public and private networks. The innovative solution tested by stc addresses challenges that arise in connecting to poor public-private network collaboration and unsatisfactory intelligent transformation, empowering organizations to access government and campus private networks securely from anywhere, at any time. With Mobile VPN, users can seamlessly connect to both public and private networks without the hassle of changing cards or numbers, fostering enhanced collaboration, heightened security, and seamless connectivity. This marks a significant step towards a new era of digital transformation and productivity, further solidifying stc's position as a leader in the telecom and digital solutions industry. The pilot test reflects stc's unwavering focus on expanding its service offerings and maintaining its competitive pioneering position within the telecommunications



industry. As the first telecom operator in the Kuwait to achieve this milestone, stc strengthened its position as a leader in offering transformative solutions to businesses and individuals. Engineer Fahad Abdul Rahman Al Ali, CTO of stc, said, "At stc, we are driven by innovation and customer-centricity. Our successful Mobile VPN pilot test represents our commitment to empowering businesses and individuals with secure and seamless mobile communications. Our focus is to not only provide convenience and a breadth of digital solutions, but also provide our valued customers with secure access to their sensitive information."

### Advanced and Secure Connectivity

The success of the Mobile VPN pilot test marks the potential for stc to develop and introduce new service offerings in various industries, providing numerous benefits for key sectors in the Kuwaiti market:

- **School Campuses:** With Mobile VPN, educational institutions can transform their campus networks, providing seamless and secure connectivity for both remote and on-campus education. The service enables efficient online learning, access to educational resources, and collaborative tools, ensuring uninterrupted education during pandemics or other disruptions.
- **Government:** The use of Mobile VPN empowers government entities to establish secure and efficient 5G private networks. This enables seamless data transmission, secure communication,

and efficient collaboration amongst government officials, accelerating digitalization efforts and enhancing the services provided for citizens.

- **Kuwaiti Enterprises:** Application of the Mobile VPN enables enterprises and public utility providers to create private 5G networks, fostering smart healthcare solutions and facilitating remote work capabilities. It ensures secure access to critical information, promotes telemedicine, and enhances overall operational efficiency.

Following the success of the Mobile VPN's pilot test, stc is primed to revolutionize the telecom industry, providing superior user experiences, enhanced security, and cost-effective solutions for enterprises across various verticals.



## Tech Mahindra Appoints Atul Soneja as Chief Operating Officer

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions, announced the appointment of Atul Soneja as the Chief Operating Officer (COO) effective 7th August, 2023. With over 28 years of experience as a technology executive, Atul is a proven leader known for deep strategic expertise, building a culture of success, and driving business transformation through focused execution in

challenging and competitive markets. Prior to this, Atul served as the Chief Operating Officer at CitiusTech where he was responsible for managing the overall Delivery, Service lines and Operations for CitiusTech. Before joining CitiusTech, Atul held several leadership roles in Infosys and its subsidiaries, from managing multi-billion service lines across multiple industry segments like Financial Services, Retail and Manufacturing, to heading the AI and Automation platform business of Edgeverve, a subsidiary of Infosys, conceptualizing and driving several strategic programs through his tenure. CP Gurnani, Managing Director & Chief Executive Officer, Tech Mahindra, said, "On behalf of the Board and the entire team, I am happy to welcome Atul Soneja to Tech Mahindra. His rich experience and vast knowledge of the industry, combined with his relentless dedication to automation, make him an ideal candidate to lead our operations. At Tech Mahindra, we have always strived to be ahead of the curve and have continuously invested in the future of technology and the people who can enable it. We are confident that Atul's expertise will help us drive growth and enhance our capability to deliver innovative solutions." Mohit Joshi, Managing Director & Chief Executive Officer Designate, Tech Mahindra, said, "We are happy to welcome Atul Soneja as our COO. He complements our high-performance culture, and his execution-focused approach, firm belief in extreme ownership and zeal to build a collaborative culture make him the perfect choice to lead our operations. With him on board, we look forward to driving scale and growth globally." Commenting on his appointment, Atul Soneja, said, "I am thrilled to join the leadership team of Tech Mahindra. I believe it is a business with an extraordinary global mark, a strong brand portfolio, a highly skilled team, and an unparalleled reputation as a leader in technology. My vision is to continue the momentum that Tech Mahindra has by leveraging next-gen technologies."



# Tech Mahindra Q1'24 Revenue Up 3.5% YoY

Tech Mahindra Ltd., a specialist in digital transformation, consulting and business re-engineering services announced the audited consolidated financial results for its quarter ended June 30th, 2023.

### Financial highlights for the quarter (USD)

Revenue at USD 1,601 mn; down 4.0% QoQ, down 1.9% YoY

- o Revenue reduced by 4.2% QoQ in constant currency terms

EBITDA at USD 163 mn; down 33.7% QoQ, down 31.8% YoY; Margin at 10.2%, down 460bps QoQ

Profit after tax (PAT) at USD 84 mn; down 38.0% QoQ, down 41.1% YoY

Free cash flow at \$ 106 mn, conversion to PAT at 126%

### Financial highlights for the quarter (₹)

CP Gurnani, Managing Director & Chief Executive Officer, Tech Mahindra, said,

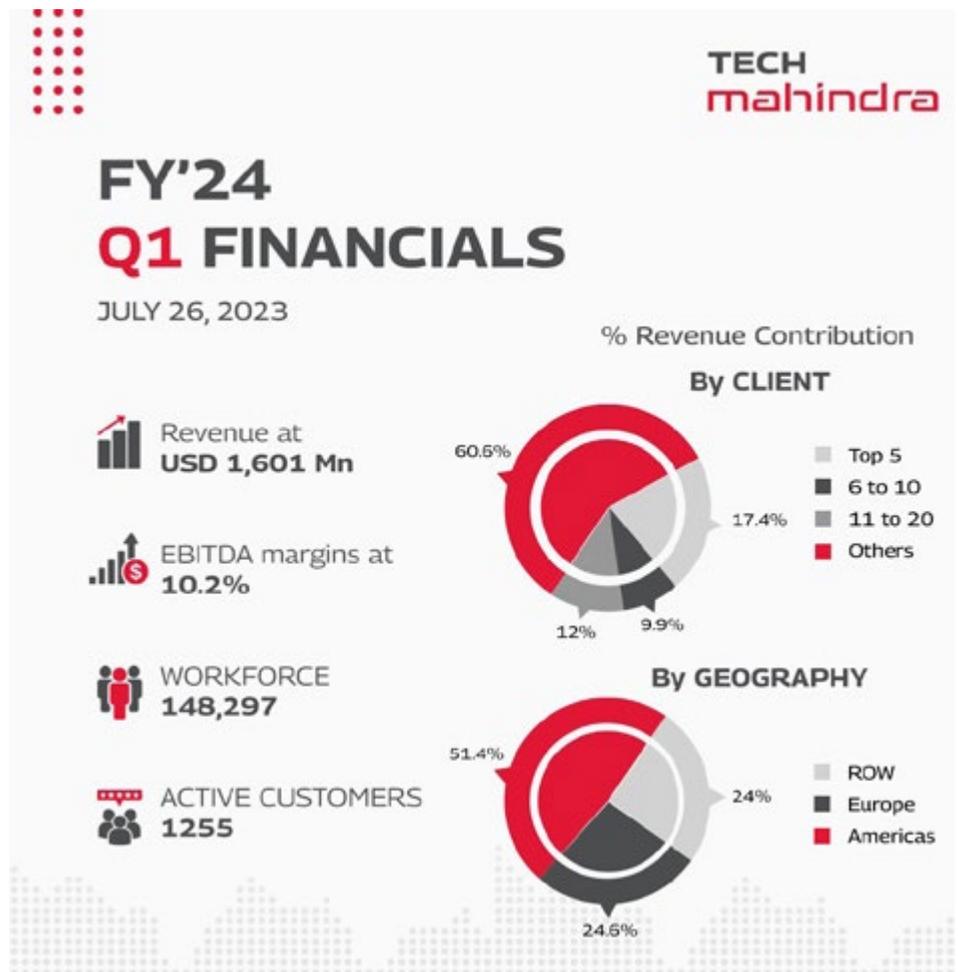
“Our results this quarter reflect the uncertainty in the global economy and the IT sector. We are confident that we have the right strategy and the right team to overcome this temporary setback and deliver long-term value for our customers and shareholders.”

Rohit Anand, Chief Financial Officer, Tech Mahindra, said,

“This quarter was a challenging one for us as revenue growth faced strong headwinds and that had an impact on profitability. **We have taken swift and decisive actions to address these issues and improve our execution.**”

### Key Wins

Tech Mahindra was selected as a strategic partner by a large telecommunications operator in America to assist in the Cloud migration of ML platform; implement predictive analysis program to personalize Sales and Market Retention recommendations for the client by leveraging big data analytics and microservices development. Tech Mahindra was chosen by one of the largest tyre manufacturers in the world for its end-to-end enterprise process transformation. Tech Mahindra will be revamping core processes from Lead to Cash to Foreign Trade in what will be one of the largest strategic transformations in Europe. Tech



Mahindra won a multiyear strategic deal from a leading Networking OEM in America for managing their public cloud operations, including various workloads for its fast-growing AI-based SaaS offerings, and for its upcoming Data & Cloud-based offerings of its Engineering and IT units. Tech Mahindra was selected by a large retail player in the US for Service desk management leveraging AI and bot first transformative technology with built-in quality automation. Tech Mahindra was selected as a strategic partner by one of the leading technology companies in the world to augment AI capability by managing machine rewrites and content validation.

### Business Highlights

Tech Mahindra has announced an integration with Microsoft to enable Generative AI-powered Enterprise Search. The new offering, Generative AI-Powered

Enterprise Knowledge Search under Tech Mahindra's TechM amplifAI0->∞ integrates Microsoft Azure OpenAI Service, Azure Cognitive Search, and Azure Language understanding to increase effectiveness and personalization enabling capabilities like content summarization, knowledge graph-led knowledge structuring, and a new kind of query interface. Tech Mahindra and Espresso, partner to provide automated and cost-effective digital workplace assistance. The partnership will enhance the overall employee experience of their customers by automating requests in real-time through an AI-based virtual support agent, Espresso Barista. The platform's advanced Natural Language Processing (NLP), Natural Language Understanding (NLU), and machine learning capabilities will ensure responses are highly personalized to reassure employees that their requests

have been fully understood and resolved in real-time. Global Chess League, a joint venture between FIDE and Tech Mahindra, will be the world's largest and first-ever league-style chess tournament. The inaugural edition which took place in Dubai from 21st June to 2nd July'23, featured six teams with six players each including a minimum of two female players and one Icon player per team. World Champions like Viswanathan Anand, Magnus Carlsen, Ding Liren and Hou Yifen were part of the tournament. Tech Mahindra and IndoSat launched a Center of Excellence (CoE) lab powered by Google Cloud in Jakarta to accelerate Indonesia's digital transformation. This will harness advanced next-gen capabilities like 5G, Edge computing, Data analytics, Internet of Things, Augmented Reality and Virtual Reality. Lab seeks to provide intelligent analytics to CSPs through hyper-personalized offerings throughout customer journey. Tech Mahindra and Mahindra Lifespace Developers, partnered to drive innovation in PropTech platform. The platform will provide first-of-its-kind photo realistic

and fully immersive 3d-experiences to home buyers by generating images of a complete home environment, in near real manner using Epic Games Unreal Engine 5. Tech Mahindra unveiled Generative AI studio under its amplifAI0->∞ suite of AI offerings. The studio will be a one-stop-central providing customers with both structured and customized aspects of AI, bringing all six aspects of content generation – code, document/text, image, video, audio, and data - under one roof. The studio is also scalable, making it suitable for businesses of all sizes. Tech Mahindra and EarthID, an award-winning decentralized Identity management platform, announced a strategic partnership to create a blueprint for Self-Sovereign Identity (SSI) powered Metaverse platform that will provide users control over their data through privacy & consent. SSI- powered Metaverse will empower enterprises to mitigate security concerns related to stolen identities and sensitive data, which may lead to huge legal and financial losses.



## Zain's "Tamam" Platform in Saudi Arabia Awarded 'Best Personal Finance Solution' in Middle East

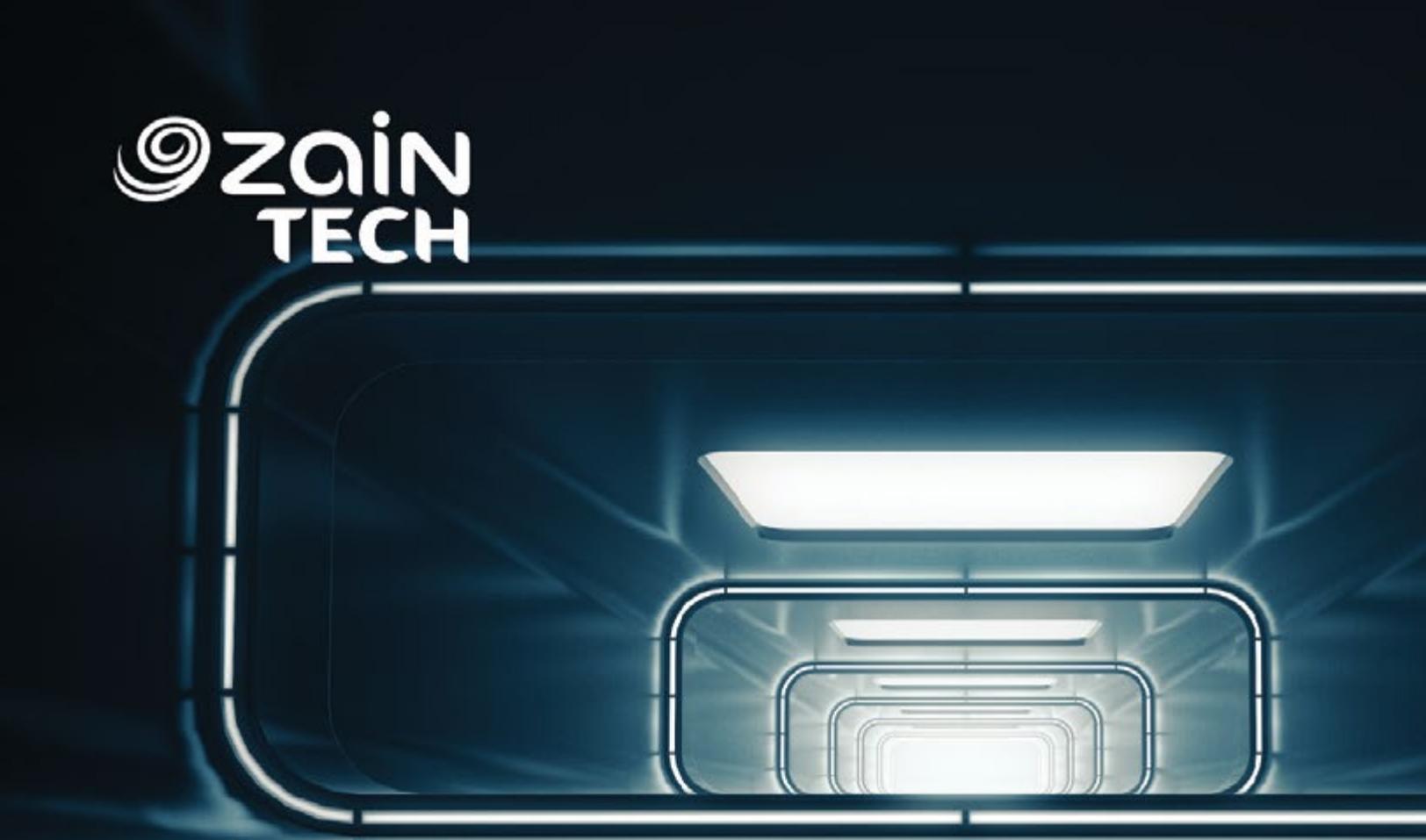
Zain, a leading provider of innovative technologies and digital lifestyle communications operating in seven markets across the Middle East and Africa, announces that its "Tamam" financing services operation in Saudi Arabia has been selected as the 'Best Personal Finance Solution' by Entrepreneur Middle East Magazine, at its 2023 Middle East Fintech Awards event held in Dubai recently. With the aim to increase financial inclusion in line with the Kingdom's 'Vision 2030' Financial Sector Development Plan, Tamam was established in 2019 under the Saudi Central Bank's Regulatory Sandbox program. Following 18 months of extensive proof-of-concept testing, on December 31, 2020, Tamam attained the first consumer micro-financing commercial license awarded in the Kingdom and the region to offer micro-loans via a fully digital customer experience on a mobile app. Tamam offers the fastest response financing services in Saudi Arabia, providing individuals with the opportunity to receive Shari'a-compliant loans without physically visiting a bank location. The platform's end-to-end application and award process takes just minutes from the time of downloading the app to the loan amount being paid out. Commenting on the award, Tamam CEO, Yousef AlMusailleem said, "We are extremely proud of the work we do at Tamam in driving financial and digital inclusion across the Kingdom. We believe firmly that everyone deserves fair and equal access to financial services and take our participation in the Kingdom's Vision 2030 Financial Sector Development Plan extremely seriously, with the aim of bringing as many individuals as possible into the digital economy."

### Key Features of Tamam

As one of Saudi Arabia's most innovative micro-financing digital institutions, Tamam' solutions cater to the evolving financial needs



of its customers. The platform's products include instant approvals; short-term financing; and fully digital, quick, easy, and secure solutions. Potential customers can apply easily, using the Tamam app, receive rapid approval, and take advantage of the flexible conditions and easy processes. Loans are provided to Saudi nationals and residents, without the requirement of a salary transfer or guarantor, with a finance amount up to SAR 50,000 available for a 24-month tenure. Tamam is passionate about its vision of becoming a leader in delivering innovative fintech solutions, supporting the socio-economic development of Saudi Arabia and beyond. 📌

A perspective view of a futuristic, brightly lit tunnel with glowing blue and white lights, creating a sense of depth and technology.

# THINK TOMORROW TODAY

Leveraging Zain's global reach, unique regional footprint, and infrastructure, ZainTech drives the transformation of enterprises and governments across eight countries in the MENA region by providing a center of excellence and managed solutions through multiple ICT verticals including Cloud, Cybersecurity, Big Data, IoT, Smart Cities, Drones and Emerging Technologies.

**ARE YOU READY TO STEP INTO THE FUTURE, TODAY?**

## ARTICLE

# The Crucial Role of Cybersecurity in Digital Transformation



**Andrew Hanna**

CEO  
ZainTech



Digital transformation is giving rise to tremendous business and social opportunities, though digitization and interconnectivity come at a cost. Digitization creates an expanding threat surface, that is targeted by threat actors, which might result in incidents potentially impacting the operations and lives of businesses and individuals.

We continue to be reminded of the potentially devastating impact of cyber incidents, particularly as the lines between state-sponsored threat actors blur with those of cyber criminals and hacktivists. In June, the MOVEit cyber-attack exploited a vulnerability in the file transfer software used by hundreds of organizations globally, stealing data and leaving the companies susceptible to financial and reputational losses.

*"Anonymous Sudan will highly likely continue to cause disruption to entities globally to garner attention to their causes"*

In another example of the widening expanse and complexity of the cyber threat landscape, the hacktivist group, Anonymous Sudan, has caused disruptions to organizations in Sweden, Denmark, France, the UAE, and Kenya, with Microsoft also having fallen victim to the hackers' activities. "Anonymous Sudan will highly likely continue to cause disruption to entities globally to garner attention to their causes" commented Naveed Hamid, ZainTech's VP of Security Solutions.

Businesses are increasingly relying on cloud-based platforms and remote collaboration tools, making the risk of falling victim to threats such as phishing or ransomware attacks significantly greater. If successful, these attacks can compromise valuable business data, lead to financial losses, and tarnish an organization's reputation.

**Cyber resilience**

To mitigate this ever-present and growing cyber threat, organizations need to be proactive. Cyber resilience, distinct from cybersecurity, refers to the ability to detect, respond, and recover from a cyber incident promptly while causing the least disruption to operations.

It is advisable for organizations to partner with cybersecurity specialists to bolster cyber resilience. This approach is even more effective when engaging with a company such as ZainTech, which is active across the entire cybersecurity lifecycle, and therefore has a deep knowledge and understanding of potential cyber threats and solutions.

**Partnering with ZainTech**

ZainTech possesses a wealth of industry expertise and collaborates with leading cybersecurity vendors, showcasing its commitment to staying at the

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*Artificial Intelligence and machine learning can be leveraged to play a pivotal role in detecting and mitigating cyber threats in real time, while regular updates and patching can keep systems up to date, which is a simple yet effective way to mitigate potential security threats.*

forefront of cybersecurity innovation and implementation. Earlier this year, we announced our operations in Kuwait and Jordan received International Organization for Standardization (ISO) certifications for their respective cloud and security operations stacks. This endorsement provides peace of mind internally and externally to customers and partners, that ZainTech is implementing the highest levels of security management over its systems.

At ZainTech, we also recommend board-level representation of cybersecurity within organizations, given that digital transformation has grown to become critical to the ongoing operational success of entities.

**Mitigating cyber threats**

We believe that mitigating cyber threats requires strategic planning and ongoing vigilance, with organizations advised to consider cultivating a security-aware culture in which employees at all levels are educated about the potential risks and their role in preventing cyber attacks.

Artificial Intelligence and machine learning can be leveraged to play a pivotal role in detecting and mitigating cyber threats in real time, while regular updates and patching can keep systems up to date, which is a simple yet effective way to mitigate potential security threats.

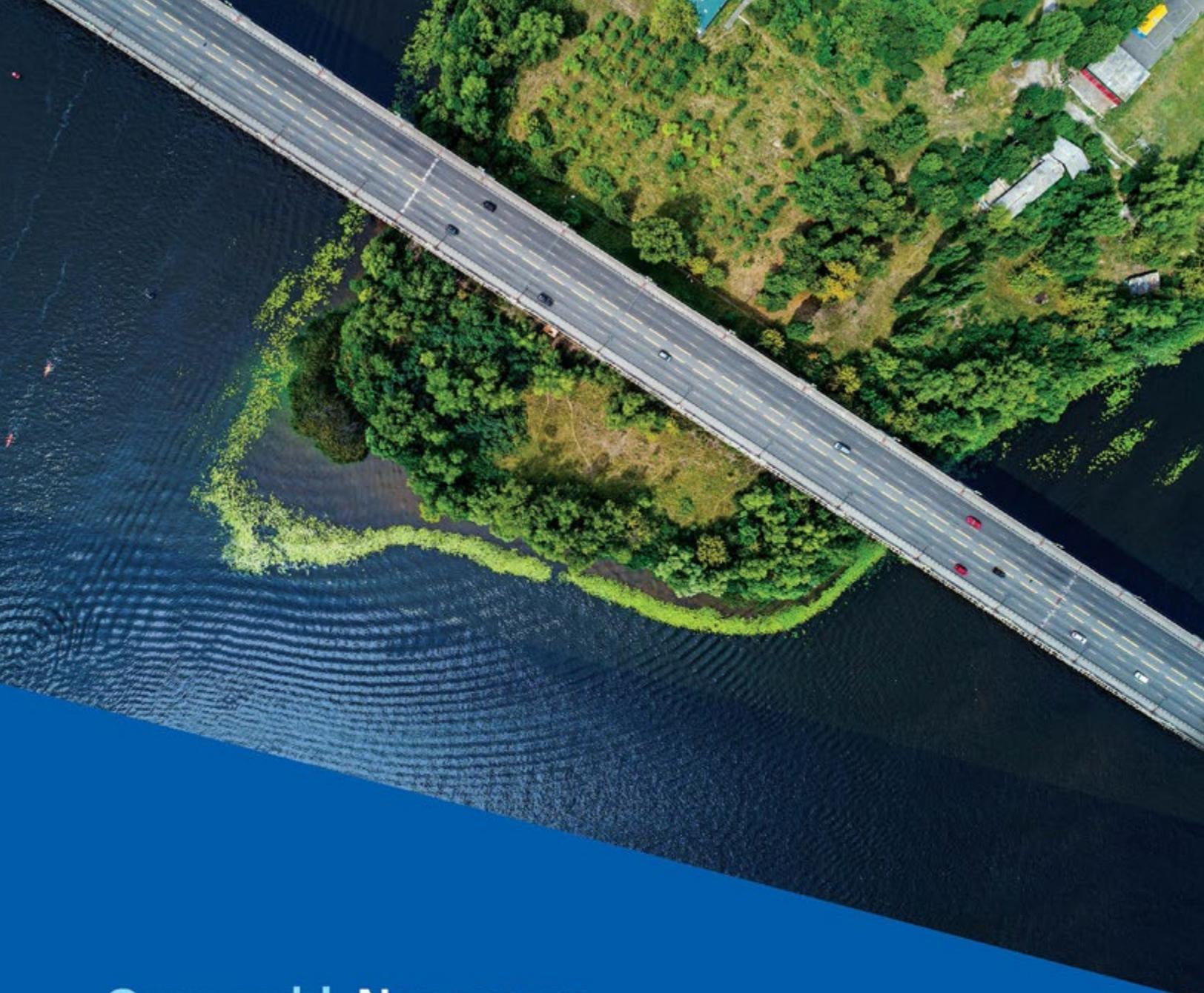
The use of cyber threat intelligence boosts proactive defense by predicting potential threats, improving situational awareness, and aiding informed decision-making. It is also advised that continuous cybersecurity monitoring be implemented, offering real-time detection of threats, and reducing the potential for damage by initiating immediate responses.

**Cybersecurity as an economic enabler**

In a modern world where digital transformation holds the key to further economic development, securing digital infrastructure is akin to securing business and economic success.

For us to benefit fully from digital transformation, an end-to-end approach to cybersecurity is required, with an ongoing monitoring and proactive security stance adopted, securing the foundation on which economic activity can occur successfully and sustainably.

Digital transformation is powering the most significant changes to business processes ever witnessed since the industrial era, and with this overwhelming potential comes the requirement to ensure the integrity of digital ecosystems and operations. Companies such as ZainTech are best positioned in the Middle East to support organizations across the region to leverage the gains of digitization while ensuring they are secure and enabled to progress and succeed. 🌱



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## ARTICLE

# The Crucial Dimensions of Cybersecurity in the Era of Digital Transformation



**Issa Al Suwait**  
GM, Cyber Security  
stc Kuwait

**stc**

As the world undergoes a remarkable digital transformation, organizations are embracing cutting-edge technologies to enhance efficiency, innovation, and customer experiences. However, with this digital revolution comes an unprecedented surge in cyber threats. The integration of technology into every aspect of our lives has made cybersecurity a paramount concern. In this article, I am listing the essential fronts of cybersecurity in the context of digital transformation and highlight key measures to ensure a secure and resilient digital ecosystem.

## 1. Cloud Security

Amid the rapid adoption of cloud computing, securing data and applications in remote environments becomes a primary focus. Organizations must implement robust authentication mechanisms, data encryption, and stringent access controls to safeguard sensitive information stored in the cloud. Regular audits and compliance checks are necessary to maintain a secure cloud infrastructure.

*Amid the rapid adoption of cloud computing, securing data and applications in remote environments becomes a primary focus. Organizations must implement robust authentication mechanisms, data encryption, and stringent access controls to safeguard sensitive information stored in the cloud.*

## 2. The Internet of Things (IoT) Security

The proliferation of interconnected smart devices in the IoT landscape presents unique security challenges. Strengthening IoT security requires the implementation of stringent authentication protocols, frequent software updates, and regular vulnerability assessments. Secure communication channels and real-time monitoring are essential to thwart potential cyber threats targeting IoT ecosystems.

### 3. Data Privacy and Protection

With vast amounts of data generated and processed daily, safeguarding privacy and sensitive information is critical. Organizations must adhere to strict data protection regulations, implement robust encryption mechanisms, and ensure that data access is limited to authorized personnel only.

### 4. Mobile Security

The ubiquitous use of mobile devices demands robust mobile security strategies. Organizations should enforce device encryption, deploy secure mobile apps, and educate users about potential mobile threats. Emphasizing the importance of regular security updates and mobile hygiene practices can thwart malicious activities targeting mobile devices.

### 5. Identity and Access Management (IAM)

IAM plays a pivotal role in managing user access to digital resources. Organizations should adopt multifactor authentication, employ privileged access management (PAM) solutions, and regularly review user privileges to minimize the risk of unauthorized access and potential insider threats.

### 6. AI and Machine Learning Security

The integration of AI and machine learning algorithms opens up new possibilities for businesses. However, it also introduces new cybersecurity challenges, such as adversarial attacks. Organizations must implement robust AI model validation techniques and ensure the integrity of AI training data.

### 7. Cybersecurity Training and Awareness

Employees remain a crucial link in the cybersecurity chain. Regular cybersecurity training programs help raise awareness of cyber threats and empower employees to recognize and report potential attacks. A culture of cybersecurity awareness fosters collective responsibility in safeguarding digital assets.

### 8. Incident Response and Cyber Resilience

Despite comprehensive preventive measures, cyber incidents may still occur. Having a well-defined incident response plan in place enables swift



detection, containment, and recovery from cybersecurity breaches. Regularly conducting simulated cyber drills enhances an organization's cyber resilience.

### 9. Supply Chain Security

The interconnectedness of supply chains requires organizations to address third-party security risks. Assessing and vetting vendors for their security practices, establishing contractual security obligations, and conducting regular audits ensure a robust and secure supply chain ecosystem.

### 10. Regulatory Compliance

Navigating the ever-evolving landscape of cybersecurity regulations is essential. Organizations must stay updated on data protection laws and industry-specific regulations to maintain compliance and avoid potential legal ramifications.

### 11. Cybersecurity Governance and Leadership

Establishing a strong cybersecurity governance framework is pivotal for an organization's success in the digital era. Cybersecurity should be a top priority, supported by dedicated leadership and allocated resources to ensure that security initiatives are effectively implemented.

### Conclusion

As digital transformation continues to reshape the modern landscape, cybersecurity emerges as an indispensable pillar for organizations. By proactively addressing the critical fronts discussed in this article, businesses can create a secure and resilient digital environment. Embracing a comprehensive cybersecurity approach not only safeguards sensitive data and assets but also instills trust among customers and partners. With unwavering commitment and strategic foresight, organizations can thrive in the digital age while effectively countering the evolving cyber threats that lie ahead. 🌐

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## ARTICLE

# 5G Drives the Development of Digital Economy and Industry 4.0



5G technology is driving the development of the digital economy and transforming society in unprecedented ways. With its high-speed connectivity, low latency, and ability to support a range of applications, 5G enables digital applications that interconnect people, organizations and machines, creating new opportunities for innovation and growth.

As the foundation of enterprise digitalization and Industry 4.0, 5G technology fuels the high-speed flow of information and creates value via information technology integration and intelligent business transformation. It

*China Mobile is a pioneer in creating 5G applications for industry. With the convergence of AI, the Internet of Things, cloud computing and other technologies on 5G, China Mobile is working with a variety of industry players in China and around the world to drive the development of the digital economy, nurture the growth of Industry 4.0 and help build a community of shared future.*

is now having a huge impact on traditionally conservative industries, like healthcare and financial services, and on legacy industries like forestry, energy and shipping.

5G-enabled healthcare applications range from autonomous healthcare robots in hospitals to patient monitoring with wearable devices and telemedicine using cloud video streaming.

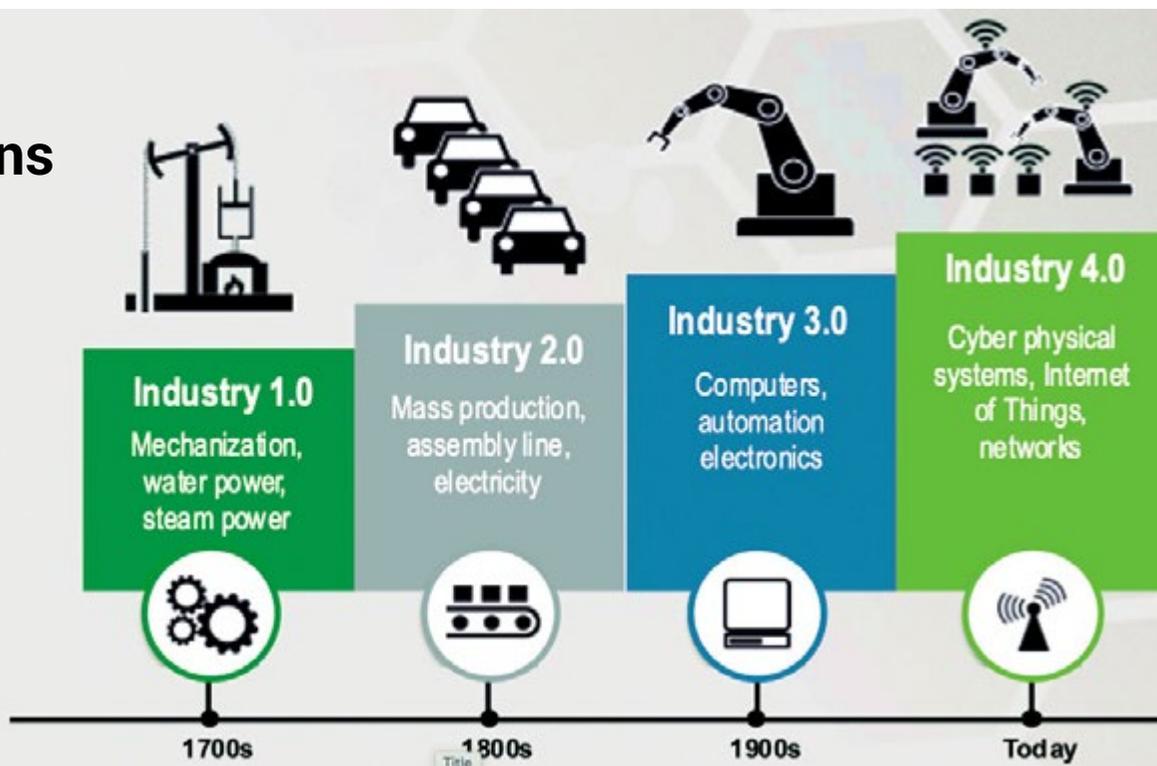
A hospital in Southwest China installed 5G networks to support a host of new services, including a fleet of connected ambulances. Combining an integrated information platform and intelligent onboard equipment, the system reduces

response times and enables paramedics to offer the same emergency treatments as patients would receive in the hospital itself. With China Mobile's extensive 5G network and very low latency, a patient's data can be transmitted to the hospital in real-time while they are in transit. This ensures more accurate diagnosis and faster treatment.

Another traditional industry benefiting from 5G is forestry. Also in Guizhou, 5G technology is being deployed to monitor the forest around the clock and provide alerts whenever a potential fire hazard is identified. This helps to prevent and manage forest fires, supporting forest protection workers and safeguarding people, wildlife



# Industrial Revolutions



*China Mobile has deployed a 5G drone system to inspect tall communication towers in rural Sichuan. It takes an engineer two hours to conduct a routine tower inspection. A drone can inspect a tower in 15 minutes, saving manpower and eliminating a potentially risky climb to improve work safety.*

and property. If a fire should occur, China Mobile can use drones to deploy air-based mobile network base stations and provide network coverage to support firefighters and other emergency services as well as any members of the public in the area.

5G-powered drone systems are also used today across various industries for infrastructure inspection and maintenance. These tasks can be automated to increase efficiency: when the artificial intelligence (AI)-based inspection algorithm detects a defect, it alerts a human operator for confirmation and action. This is particularly

useful in remote locations. China Mobile has deployed a 5G drone system to inspect tall communication towers in rural Sichuan. It takes an engineer two hours to conduct a routine tower inspection. A drone can inspect a tower in 15 minutes, saving manpower and eliminating a potentially risky climb to improve work safety.

To achieve development in the digital economy, it is crucial to integrate technology with various aspects of our economy and society. This involves not only automation and intelligent transformation to improve efficiency and safety, but also

the implementation of smart city initiatives to promote sustainable development. By optimizing infrastructure and services, we can enhance the quality of life and reduce the environmental impact of modernization. In addition, application scenarios such as smart factories, remote services, and unmanned farms can also benefit society by increasing productivity, reducing operational costs, and improving resource utilization efficiency. These initiatives can help create a more sustainable and prosperous society that benefits everyone.

China Mobile is a pioneer in creating 5G applications for industry. With the convergence of AI, the Internet of Things, cloud computing and other technologies on 5G, China Mobile is working with a variety of industry players in China and around the world to drive the development of the digital economy, nurture the growth of Industry 4.0 and help build a community of shared future. 🌱

## REGIONAL NEWS

### TDRA Hosts Fourth Meeting of the National Preparatory Team for WRC-23

The Telecommunications and Digital Government Regulatory Authority (TDRA) hosted the National Team's Fourth Preparatory Meeting for the World Radiocommunication Conference (WRC-23) at TDRA's office in Dubai, with the presence of the team members from government entities and UAE licensees. The meeting discussed the latest developments on the conference agenda and the unified positions concerning these developments. The conference will be held in Dubai from November 20 to December 15 of this year. The meeting reviewed the preparation processes and organizational measures for WRC-23. It also discussed and followed up on developments in the action plan through which all agenda items and topics expected to be discussed during the upcoming conference were discussed, in addition to setting a clear perception of the coordination mechanism during the upcoming Gulf and Arab meetings. H.E. Eng. Mohammed Al Ramsi, TDRA Deputy Director General for the Telecommunication Sector, said: "Coordination and team spirit have been the keys to our success in international events. Today, we are preparing for one of the most important international conferences in the telecom sector, and we are preparing topics for discussion that serve the goals of the UAE, foremost of which is "We the UAE 2031" Vision and UAE Centennial Plan 2071." Al Ramsi added: "Through the intensive work we are doing at the national team level, we seek to adopt elaborate plans that ensure the smooth running and success of the conference, in a way that meets the aspirations of the International Telecommunication Union regarding the results of this year's edition. At the same time, we continue to



coordinate with our partners regionally and globally to ensure reaching the best results in the conference." The meeting discussed a set of proposals to be submitted to the conference agenda with the aim of developing the International Radio Regulations to achieve optimal use of the frequency spectrum at the global level. The meeting also examined the possibility of establishing new partnerships on the sidelines of the conference, with the aim of enhancing

the efficiency of the telecom sector performance in the UAE, as well as opportunities to sign MoUs that serve future projects and innovation initiatives adopted by the UAE Government, to drive the digital transformation process the UAE, especially with regard to enhancing future smart city infrastructure, boosting the digital economy, and harnessing the potential of artificial intelligence applications, which hold significant prominence in today's world.

### Egyptian Mobile Companies Attract 130,000 New Voice Service Subscribers, 700,000 New Internet Users in April

Egypt's mobile companies recorded about 130,000 new voice service subscribers

during April, according to the Ministry of Communications and Information Tech-

nology. According to the Ministry's report, the number of mobile service subscribers

increased from 102.77 million in March to 102.9 million subscribers in April. The report monitored an increase in the number of Internet users by about 700,000 new customers during April. The total number of Internet users in April was about 84.4 million users, compared to 83.7 million users in March. The number of ADSL users recorded a slight growth of 0.46% to 11.37 million in April, compared to 11.32 million users in March. According to the report, the number of mobile internet users grew by 1.26% during April compared to March, as the number of users increased from 69.86

million users in March to reach 70.74 million users in April. On the other hand, the report showed a decline in the number of Internet users using USB modems during the month of April, by 7.3%, as the number of users declined from 2.52 million users in March to reach 2.33 million users in April. In terms of landline users, the report showed an increase in the number of users by about 530 thousand users during the month of April compared to March, recording a growth rate of 4.5%. The number of landline users increased from 11.68 million users in March to 12.21 million users in April.



## UAE Regulator and Telcos Reach 10Gbps in 5G-Advanced Trial

The Telecommunications and Digital Government Regulatory Authority (TDRA) in the United Arab Emirates (UAE) has announced the completion of the second phase of testing of 5G-Advanced services in the 6GHz band. The regulator is working with local service providers Etisalat and Du on the trial, with the aim of achieving 10Gbps download speeds using 400MHz of spectrum in the 6GHz range. The TDRA's Director General, Majed Sultan al-Mesmar, commented: 'The exponential number of internet users, and the scientific advances witnessed by the world today, require new speeds to accommodate the increasing load on networks and keep up with the high specifications of emerging technologies on the world stage such as metaverse applications, to name a few. Having attained a speed of 10Gbps ... this new, globally unprecedented speed will lead to faster data transfer, ushering in a new era of high-quality streaming and seamless cloud services. The trial will also enhance the IoT by providing the infrastructure necessary to simultaneously handle multiple connected devices, while ensuring seamless and reliable connectivity.'

## PTA and UNESCO Collaborate to Formulate a Digital Gender Inclusion Strategy

For a long time, the national telecom regulator Pakistan Telecommunication Authority has been striving to minimize the digital gender gap in the country. To further strengthen its efforts in this regard, PTA is in collaboration with UNESCO to formulate a "Digital Gender Inclusion Strategy." The main goal of the strategy is to enhance the use of the internet, cell phones, and digital skills among females. It is also in line with the guidelines of the International Telecommunication Union (ITU) 2030. Furthermore, the strategy proposes actions and measures for PTA and its core partners to enhance women's digital access, connectivity, and affordability. Through this plan, PTA along with its collaborators aims to foster collaboration and bridge the digital gender gap in Pakistan. It is pertinent to mention here that back in 2022, PTA started the process of data collection and analysis. This involved expert surveys by national and international digital/gender experts, physical surveys targeting the unconnected population, and IVR surveys for mobile users. PTA also organized workshops in Karachi,

Lahore, Peshawar, and Quetta. The strategy will be unveiled after receiving validation from stakeholders.



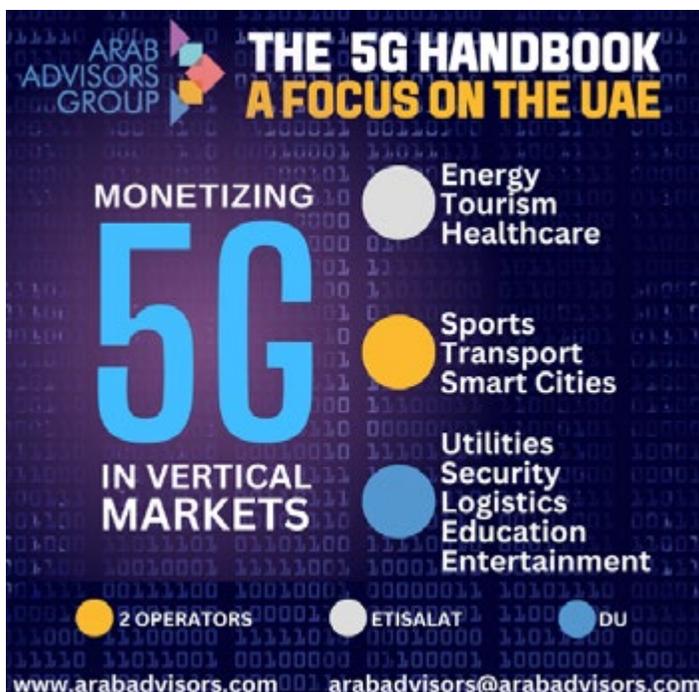
## CST Announce the Opening of the Registration for Mawhoob Competition in Collaboration with “Mawhiba”

The Communications, Space & Technology Commission (CST) announces the opening of the registration for Mawhoob Competition to qualify for the Astronomy and Space Olympiad, in collaboration with King Abdulaziz and his Companions Foundation for Giftedness and Creativity “Mawhiba”, with the intention of building a generation of leaders and innovators in the Space Sciences and technology, raising the society’s awareness on this field, training human cadres in the Space sector, in addition to inspiring the next generation to be interested in the field’s careers. The competition aims to attract gifted students from middle and high schools to participate in a number of Astronomy and Astrophysics courses where they nominate some of the applicants to represent Saudi Arabia in the International Olympiad of Astronomy and Astrophysics. CST is welcoming gifted students to register in Mawhoob Competition until 25 September 2023 through this link,, indicating that the program’s requirements are the following: applicant must be a Saudi citizen, a middle or high school student, in addition the applicant must meet the program’s requirements. This program is part of the CST’s efforts to elevate the Kingdom’s position and global leadership in Space and Space science through programs and initiatives aimed at qualifying developing national capacities and skills, spreading awareness and interest in Space science, and boosting national competitiveness.



## Arab Advisors Group Publishes “The 5G Handbook - Focus on the UAE”

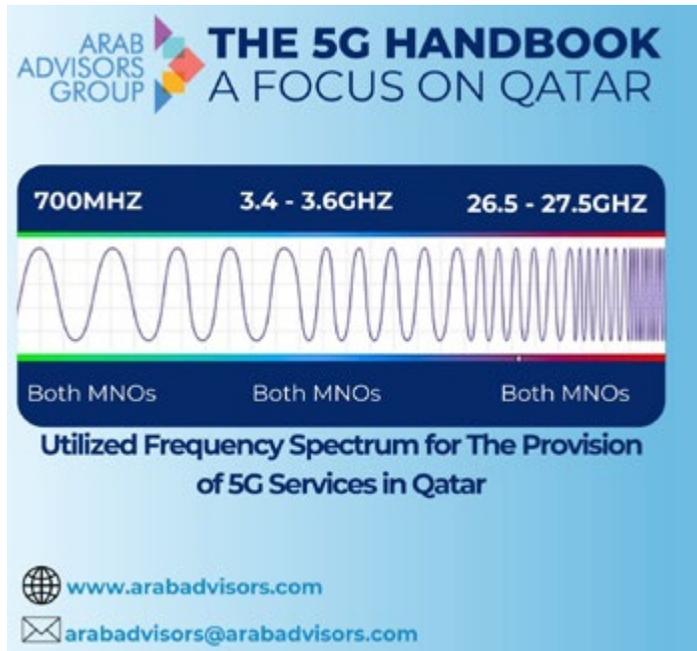
“The 5G Handbook - Focus on the UAE” report with the below details:



5G adoption is on the rise on global and regional levels. Its use cases are surpassing traditional telecom services to penetrate and revolutionize vertical markets. Arab Advisors Group released a new series of reports: The 5G Handbook. The series tackles one 5G-operating Arab country at a time, to explore, review, and analyze the development of 5G networks and study the efforts put forward by all stakeholders. Arab Advisors Group released the first report of the series, “The 5G Handbook – A Focus on the UAE”, in July 2023. The report answers the following questions: What type of 5G plans do telecom operators in the UAE offer? What frequency bands are utilized by the UAE’s telecom operators? And with which vendors did telcos collaborate to build their networks? How are telecom operators in the UAE monetizing their 5G networks? Are telcos’ 5G services in the UAE limited to traditional telecom services only? Or did they penetrate vertical markets? How mature are the 5G use cases deployed by telcos in the UAE? and in which sectors did they deploy these cases? How transparent are the UAE’s telecom operators when it comes to reaped benefits of 5G implementations? How did the UAE government encourage the deployment of 5G technology in the country, especially in vertical markets?

## Qatar's MNOs Provision 5G Services Utilizing a Blend of Spectrum Within the Low, Mid, and High Bands

Qatar's MNOs provision 5G services utilizing a blend of spectrum within the low, mid, and high bands, according to Arab Advisors



Group's newly released report: The 5G Handbook - A Focus on Qatar. 5G adoption is on the rise on global and regional levels. Its use cases are surpassing traditional telecom services to penetrate and revolutionize vertical markets. Arab Advisors Group released a new series of reports: The 5G Handbook. The series tackles one 5G-operating Arab country at a time, to explore, review, and analyze the development of 5G networks and study the efforts put forward by all stakeholders. Arab Advisors Group released the third report of the series, "The 5G Handbook – A Focus on Qatar", in July 2023. The report answers the following questions:

What type of 5G plans do telecom operators in Qatar offer? What frequency bands are utilized by Qatar's telecom operators? And with which vendors did telcos collaborate to build their networks?

How are telecom operators in Qatar monetizing their 5G networks? Are telcos' 5G services in Qatar limited to traditional telecom services only? Or did they penetrate vertical markets?

How mature are the 5G use cases deployed by telcos in Qatar? and in which sectors did they deploy these cases?

How transparent are Qatar's telecom operators when it comes to reaped benefits of 5G implementations?

How did the Qatari government encourage the deployment of 5G technology in the country, especially in vertical markets?

## Telecommunications Regulatory Authority (TRA) Empowers Bahraini Youth at the 12th Edition of Youth City 2030

The Telecommunications Regulatory Authority (TRA) Bahrain proudly announces its sponsorship of the highly anticipated 12th edition of Youth City 2030, a month-long festival dedicated to enriching the skills, confidence, and creativity of Bahraini youth. This visionary initiative aims to equip the young generation with invaluable insights about its pivotal role as Bahrain's esteemed telecoms regulator. This year's event, organized by the Ministry of Youth Affairs in collaboration with the Labor Fund (Tamkeen), is taking place at Exhibition World Bahrain for the first time. Excitingly, it offers over 100 programs and a whopping 2,740 training opportunities for all participants. TRA's Communications Manager, Taiba AlBinali said: "We are delighted to extend our sponsorship to this highly anticipated annual event, dedicated to enhancing the skill sets of young Bahrainis and equipping them for successful integration into the labor market, thereby fostering the holistic development of the Kingdom. We eagerly anticipate the opportunity to welcome esteemed visitors to our exhibit, where we aim to facilitate a comprehensive understanding of the Telecommunications Regulatory Authority (TRA), its core functions, and its significant contributions." She added: "The TRA is committed to enlightening the nation's youth about issues that directly impact them. For example, our online safety initiative raises awareness among young people about potential dangers, such as cyberbullying, and ways they can minimize the risk. Youth City is an ideal platform for us to

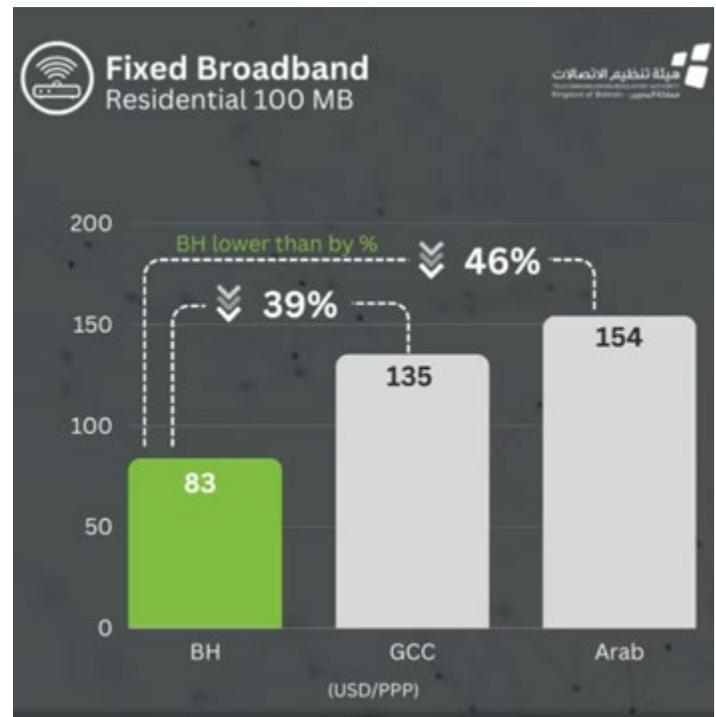


highlight such projects and the exciting career opportunities open to them in the telecommunications sector."

## Bahrain Tops GCC Countries with Most Affordable Fiber Broadband

The latest Arab Price Benchmarking Report confirms Bahrain's position as one of the Arab regions most competitive telecommunications markets. The report highlights the country's telecom services as being among the most competitively priced in both the Gulf Cooperation Council (GCC) countries and the wider Arab world. The report highlights notable reductions in residential fixed broadband prices (18.6%) and in Mobile Broadband (16%) between 2021 and 2022, attributed to the TRA's efforts in promoting competition within the broadband market. As a result, Bahrain ranks among the top 20 countries worldwide in fiber penetration, according to 2023 Fiber to The Home (FTTH) Broadband Global Ranking, published by FTTH Council Europe. Also, mobile prices in Bahrain are the most affordable in the GCC, with a decrease of up to 58.5% between 2021 and 2022. This significant drop can be attributed to the introduction of new mobile packages offering lower prices and enhanced benefits. The report also highlights that Bahrain's leased line prices are among the cheapest in GCC, below the Arab average, and on par with The Organization for Economic Cooperation and Development (OECD) average. Bahrain's telecommunications industry is rapidly growing, with a 7.6% growth in fiber broadband subscriptions and a 7% increase in fixed broadband data usage between 2021 and 2022. The Kingdom's commitment to providing high-speed internet services is evidenced by the fact that 86% of all residential premises are now able to buy fiber broadband. As of June 2023, 68% of households have active fiber connections and 42% of households have wireless home broadband (5G) which means that all households in Bahrain have access to ultra- fast broadband services. The latest residential survey highlights that 100% of people in Bahrain utilize internet services, and 100% of households have access to ultra-fast internet services. TRA's General Director, Philip Marnick affirms: "A competitive market ensures that consumers and businesses obtain their desired services at reasonable prices. It is good to see the recognition of our leading position and competitive prices in

the latest Arab benchmark report. Consumers in Bahrain benefit from some of the lowest prices for the essential services required to engage in the digital society. Everyone in Bahrain is using the internet and all of us can access ultra-fast broadband services. We are pleased to see the collective efforts made by industry players and the TRA, as evidenced by our ranking among the top 20 countries globally for both fiber rollout and fiber service adoption. Moreover, the TRA acknowledges the need for further action to ensure Bahrain becomes one of the world's best-connected destinations, where all consumers can purchase the services, they require at competitive prices."



## Quality of Telecom Services at Dhofar, Here's What TRA Says

The Telecommunications Regulatory Authority (TRA) has issued a report on the quality of telecommunication services in tourist sites in the Dhofar Governorate, which was conducted between July 31 and August 3. These measurements included the Attin Square, Ain Hamran, Dahariz Beach, Al-Haffa Market, Al-Mugh sail, Wadi Dabat, Al-Haffa Walk and Sha'at. The highest download



speed for data service covered by the 5G network in Sahel Atin by Oman Telecommunications Company (Omantel) was 263 Mbps, with an average of 95 Mbps. While the highest download speed for the same service was covered by the Omani Qatari Telecommunications Company (Ooredoo) at 505 Mbps, with an average of 311 Mbps. In Wadi Dabat, the highest download speed for 5G data service by Omantel was 164 Mbps, with an average of 49 Mbps. The highest download speed covered by the Ooredoo was 1303 Mbps, with an average of 421 Mbps. The authority conducts these surveys using specialized measurement tools and approved methodologies that simulate the user's experience, aiming to raise the level of awareness of beneficiaries and enhance competition in the sector. The most important indicators such as coverage level, data download speed, percentage of successful calls, and other indicators are measured.

## TDRA Empowers Youth for a Sustainable Future Through “Digital Skills Forum” on International Youth Day

The Telecommunications Regulatory Authority (TDRA) marked International Youth Day with a resounding commitment to the UAE's future by hosting a dynamic "Digital Skills for a Sustainable Future" forum. The event, orchestrated by the TDRA Youth Council, gathered prominent figures from esteemed government entities, including the Ministry of Education, the Federal Authority for Government Human Resources, and the Emirati Talent Competitiveness Council "Nafis". In alignment with the UAE government's visionary theme for 2023, "Today for Tomorrow," the forum epitomized TDRA's dedication to fostering the next generation of leaders and visionaries who will drive sustainable growth in the digital era. The occasion was graced by the presence of H.E. Eng. Majed Sultan Al Mesmar, Director General of TDRA, who highlighted the UAE's unwavering commitment to youth empowerment, underscoring their role in shaping a technologically empowered and sustainable future. Al Mesmar emphasized, "Gathering today, to deliberate on both present challenges and future opportunities, signifies the prominence of digital technologies. The urgent questions of tomorrow underscore the immense impact of digitalization. While the discourse on AI potentially replacing human roles prevails, experts contend that true success stems from our ability to lead and harness technology for our collective advancement." Distinguished voices resonated throughout the forum, echoing the importance of digital skills in shaping a sustainable tomorrow. Mr. Mohammed Al Hassani, Senior Government Services Engineer at TDRA and Chairman of the



Telecommunications Sector Youth Council, elucidated TDRA's comprehensive strategy for nurturing digital competencies. This strategy included initiatives tailored to different age groups, such as the "TDRA Virtual Camp" targeting students aged 7 to 18, and the "TDRA Virtual Academy," a platform offering diverse training programs to upskill professionals and enhance their proficiency in cutting-edge technologies. Reflecting on the government's commitment to human capital investment, Ms. Maryam Al-Zarooni, Manager of the Human Resources Planning Department at the Federal Authority for Government Human Resources, emphasized their holistic approach towards both digital and non-digital domains. This, she asserted, was essential in elevating the efficiency and productivity of government personnel. Ms. Ahlam Al-Marzooqi, Emiratization

Manager for Galadari Brothers Group and representative of Nafis Youth Council, delved into the significant career domains enriched by digital skills, such as information technology, digital marketing, programming, and blockchain. Ms. Maryam Al-Saadi, representative of the Youth Council of the Ministry of Education, shed light on the Ministry's initiatives, notably the "estedad" National Ambassadors Program, fostering digital education in collaboration with universities and esteemed institutions. The forum embraced interactive workshops, delving into the realm of artificial intelligence. Participants explored AI's contemporary relevance, the mechanics of algorithms, and its imminent influence on business and human resources. These discussions culminated in strategies for harnessing digital advancements to elevate performance benchmarks.

## Lebanese Fixed Broadband Tariffs Hiked by 700%

Ogero, Lebanon's state-backed national fixed telecoms provider. The new rates for fixed broadband packages will take effect on 1 September 2023. An entry-level volume-based monthly tariff with

80GB and connection speed up to 50Mbps (depending on local access facilities) will now cost LBP420,000 (USD28 – but worth just USD4.70 using the local market exchange rate of USD1 = LBP89,600 at the

time of the report's publication), up from the existing price of LBP60,000 in effect since last July.

## Telecom Emergency Response Plan Discussed in Bahrain

An emergency telecommunication services plan that prevents possible disruptions and ensures the regulator can work with operators was discussed in a meeting organized by the Telecommunications Regulatory Authority (TRA). The Emergency Response Committee meeting reviewed the Telecom Emergency Response Plan, comprising key stakeholders, including mobile operators, the committee discussed the implementation of proactive measures for addressing potential telecommunication challenges in times of crisis. TRA General Director Philip Marnick said their “top priority is to ensure uninterrupted connectivity and reliable communication for consumers, even during emergencies”. “The plan

reflects our proactive approach to handling all situations and commitment to ensuring the safety and resilience of Bahrain’s

telecommunications infrastructure and services,” said Mr. Marnick.



## du Begins Three-Carrier 5G Deployment for Fixed Wireless Services

United Arab Emirates (UAE) fixed and mobile operator Du says it has achieved a major milestone in the implementation of 5G technology, as it begins the deployment of multi-carrier aggregation in its commercial mobile network. The upgrade will utilize three 100MHz carriers in the 2.6GHz and 3.5GHz bands, tripling existing

data speeds. The multi-carrier deployment will be focused on fixed wireless home broadband services. Saleem AlBlooshi, Chief Technology Officer at Du, said: ‘Since inception, Du has placed immense importance on continuously enhancing the user experience and has been staying ahead of the curve when it comes to connectivity

demands of UAE consumers. We anticipate that in the near future average bandwidth demands of users will increase multi-folds. Multi-carrier aggregation is a proven way to enhance the peak and average throughputs of wireless networks.’

## Kazakhstan and Afghanistan Communication Providers Sign Coop Agreement

The national communication providers Kazakhtelecom and Afghan Telecom signed a partnership agreement, Kazinform

reports. This April in Kabul Kazakhstan and Afghanistan debated the project between Kazakhtelecom and Afghan Telecom.

Addressing the Kazakhstan-Afghanistan Business Forum in Astana, Deputy Prime Minister – Trade and Integration Minister of Kazakhstan Serik Zhumangarin congratulated the nations on signing the agreement of great importance for further practical cooperation. Kazakhstan considers the national providers have great potential for consolidation of technological capacities and promotion of cooperation to a new level through the transit via Afghanistan to other countries. As earlier reported, Kazakhstan is interested in preserving established trade and economic, transport and logistics, and energy ties with Afghanistan. The turnover between the two nations for the past six months made 343.6 million US dollars.



## Saudi Arabia Decides to Mandate USB-C As Common Smartphone Charger by 2025

Saudi Arabia has decided to standardize charging ports for mobile phones and electronic devices effective from Jan.1, 2025. The USB Type-C will be the lone standardized connector. The mandatory stages of unifying charging ports for mobile phones and electronic devices in the Saudi market were announced by the



Saudi Standards, Metrology and Quality Organization and the Communications, Space and Technology Commission. They stressed that the decision aims to improve the experience of users of connectors in the Kingdom and not to incur additional costs. This is also to provide high-quality shipping and data transfer technology, in addition to supporting the principles of environmental sustainability by reducing the volume of electronic waste. The decision will contribute to reducing the amount of annual domestic consumption of chargers and charging cables for mobile phones and electronic devices by more than 2.2 million units annually, and saving spending from consumers in the Kingdom to more than SR170 million. This also helps to achieve the Kingdom's goals for sustainability in the technology

sector through reducing electronic waste by approximately 15 tons annually. The mandatory enforcement of the decision will take place in two phases. The first phase will begin on January 1, 2025 and it will include mobile phones, tablets, digital cameras, e-readers, portable video game devices, headphones, earphones, amplifiers, and keyboards and computer pointer devices (mouse), in addition to portable navigation systems, portable speakers, and wireless routers. The second phase will start on April 1, 2026 and will include laptops. It is scheduled to start obligating companies and suppliers to standardize the types of charging ports from the year 2025 to be USB Type-C, according to the technical and administrative requirements stipulated in the technical regulations and related standards.

## PTA, PITB Inaugurate IXP to Boost Digital Connectivity

The Pakistan Telecommunication Authority (PTA) and the Punjab Information Technology Board (PITB) inaugurated the Lahore Internet Exchange Point (IXP) to boost digital connectivity; this state-of-the-art facility stands poised to revolutionize digital connectivity across the region. PTA Chairman Major General Hafeez-ur-Rehman (R), PITB Chairman Faisal Yousaf, industry leaders, government officials, vital stakeholders and prominent Internet Service Providers (ISPs) attended the inauguration ceremony while international stakeholders namely Internet Society (ISOC), Asia Pacific Network Information Centre (APNIC) and Japan Registry Services (JPRS) attended the event remotely. The launch event featured presentations and insightful speeches from key industry figures, emphasizing the IXP's potential to enhance digital infrastructure and support the growth of Pakistan's internet economy. Speaking at the event, the PTA Chairman emphasized the critical importance of the Lahore IXP, highlighting its multifaceted benefits. He lauded the IXP's potential to galvanize economic growth, facilitate

greater access to digital services and enhance network efficiency. PITB Chairman Faisal Yousaf said that launching IXP locally would reduce dependency on international data routes. Additionally, it would ensure rather reliable and robust internet connectivity. Key speakers at

the ceremony also included PTA Director General CVD Dr. Muhammad Mukaram Khan, PITB Chief Information Officer Sajjad Ghani, Regional Director ISOC Naveed Haq, IXP Specialist at ISOC Aftab Siddiqui, APNIC Director General Paul Wilson and JPRS GM Kazuhiro Kitamura.



## Pakistan Produced 6.07 million Mobile Phones in the First Half Of 2023

In the first half of 2023 (January–June), local manufacturing units in Pakistan produced around 6.07 million mobile phones. However, the country imported only 0.53 million mobile phones commercially. In June 2023, local manufacturing plants in Pakistan produced approximately 1.19 million mobile handsets. Similarly, they only imported 0.12 million mobile phones commercially in June. Out of the total 6.07 million mobile phone handsets produced locally in Pakistan, 4.77 million were 2G devices, and 1.3 million were smartphones. According to the Pakistan Telecommunication



Authority (PTA), smartphones account for 56% of mobile devices, while 2G devices make up the remaining 44% of the country's network. During the fiscal year 2022–23 (FY23), Pakistan imported \$570.071 million mobile phones. This shows a significant decline of 71.19% compared to the previous fiscal year 2021–22 when imports stood at \$1.978 billion. In June 2023, Pakistan experienced a 24.03% monthly increase in mobile phone imports, reaching \$53.583 million. This figure is higher compared to the \$43.201 million of mobile phone imports recorded in May 2023. Mobile phone imports in June 2023 witnessed a significant 66.30% year-on-year (YoY) growth compared to the \$32.220 million in June 2022. Telecom imports in Pakistan totaled \$956.921 million during the fiscal year 2022–23 (FY23). It shows a negative growth of 64.45% compared to the \$2.684 billion recorded in the same period of 2021–22. Compared to June 2022, overall telecom imports in June 2023 grew by 11.18%, reaching \$96.481 million compared to \$86.777 million. Additionally, on a month-on-month basis, telecom imports increased by 19.07% in June 2023 compared to \$81.028 million in May 2023. Furthermore, imports of other apparatus reached \$386.850 million in the July-June FY23 period. In June 2023, imports of other apparatus amounted to \$42.898 million, showing a 21.37% decrease compared to June 2022, when they were \$54.557 million. On a month-on-month basis, it experienced 13.41% growth compared to May 2023, when it was \$37.827 million.

## Jordanians Consumed 1.38B GB Of Data in Q1 2023

A government source revealed that Jordanians' consumption of internet and data services has risen by 20.3 percent during the first quarter of the current year compared to the same period last year. The source, who chose to remain anonymous, stated that Jordanians consumed approximately 1.38 billion gigabytes during the first quarter of the current year, compared to 1.154 billion in the same period last year, Al-Ghad news reported. The source explained that Jordanians' internet and data consumption during Q1 2023 was as follows: Jordanians consumed around 947.7 million gigabits through broadband fixed internet networks, while total consumption of data by Jordanians through wide-scale mobile communication and internet networks (including 3G, 4G, Advanced 4G, and early-stage 5G) was approximately 440.9 million

gigabytes. The source attributed the increase in internet and data consumption to several key factors, including the growth in the number of internet and mobile communication services users, people's increased reliance on the internet for social and work purposes, the digital transformation witnessed across various economic sectors, and the digital transformation of government services. The source indicated that the local market is witnessing the initial stages of introducing 5G services. As its expansion continues, this will constitute a qualitative addition to the existing internet networks, including 3G and 4G, and fiber optic networks. This is expected to meet users' data service needs, likely leading to a substantial increase in internet usage in the coming years.

## ADSL Internet Subscribers in Egypt Up By 11% YoY in June 2022

The number of ADSL internet subscribers in Egypt rose by 10.7% year on year (YoY) in June 2022 to 10.5 million, compared to 9.5 million, the Central Agency for Public Mobilization and Statistics (CAPMAS) announced. The number of mobile internet users increased 14.9% to 68.5 million in June 2022, up from 59.7 million

in June 2021. On the other hand, the number of USB modem users went down 34.5% YoY in June 2022 to 2.1 million from 3.2 million in the same month of the prior year. Meanwhile, the number of mobile phone lines amounted to 98.30 million in June 2022, down 0.3% from 98.6 million lines during the same month last year.

## Egypt Aims for US\$9 Billion in Digital Services Exports By 2026

Egypt is aiming to reach \$9 billion in digital services exports by 2026 after closing at \$4.9 billion last year, as it continues to push ahead with its national strategy aimed at doubling the revenue of tech-enabled offshoring services. In a review meeting held on Tuesday, Prime Minister Mostafa Madbouly held discussions with the Minister of Communications and Information Technology Amr Talaat on the developments of the plan, which aims to increase the volume of Egyptian exports of information technology products and services. The strategy also looks to enhance Egypt's competitiveness in the fields of research and development and value-added services, while contributing to accelerating the growth of the knowledge economy. During the meeting, Talaat shared the initiatives taken to raise the skill levels of graduates and workers in the outsourcing industry. He added that the number of workers specialized in exporting these services will reach about 550,000 in 2026. These initiatives are designed to increase the supply of skills and cadres specialized in various outsourcing fields, in addition to language programs and personal, administrative, and leadership skills. He added that the ministry has also assisted businesses

in implementing strategic programs. These included in-kind incentives, external marketing initiatives aimed at enhancing Egypt's global perspective, and internal marketing strategies designed to enhance the reputation of the call center sector in Egypt among graduates. Launched in February 2022, the strategy was aimed at increasing the export revenue of tech-enabled offshoring services, with a 19 percent compound annual growth rate, a ministry press release stated at that time. It is intended to provide a full suite of incentives to attract investments and boost the country's competitiveness in R&D and value-added services, the release added. At the launch of the strategy last year, Talaat revealed the ministry multiplied its training budget 22 times, helping achieve a 50-fold increase in the number of trainees. At 16 percent growth rate, ICT is the highest-growing state sector in Egypt, the minister had noted, adding that the sector contributes to the gross domestic product by 5 percent, but he stressed that they intend to achieve 8 percent within three years. The strategy stands on three main pillars: talent development, ecosystem development, and marketing and sales, the release added.

## Ooredoo, Zain, TASC Towers to Create Independent Multinational Tower Company



Qatar-based Ooredoo Group, Kuwait-based Zain Group and UAE-based TASC Towers Holding have entered exclusive negotiations to combine their approximately 30,000 telecoms tower assets in Qatar, Kuwait, Algeria, Tunisia, Iraq and Jordan into a jointly owned independent tower company in a cash and share deal, with a view to signing definitive agreements in Q3 2023. The proposed partnership would form the largest tower company in the Middle East and North Africa (MENA) region, the parties stated. The enlarged company would continue to operate as an independent and standalone entity providing passive infrastructure as a service throughout the region with a focus on operational efficiencies, synergies and reduction of carbon footprint. Ooredoo and Zain would retain their respective active infrastructure, including antennas, intelligent software, and intellectual property with respect to managing their telecom networks. Ooredoo noted that its tower network in Oman 'is following a standalone process'.

## Qatar Investment Authority Expected to Acquire Stake in Vodafone Egypt by September

Following reports last month which claimed that Qatar Investment Authority (QIA) was aiming to acquire Telecom Egypt's (TE's) entire stake in Vodafone Egypt, it has now been suggested a deal could be finalized by September this year. According to Daily News Egypt, which cites unnamed sources familiar with the matter, a deal had actually been expected to be finalized last month after the parties involved agreed on the valuation of Vodafone Egypt. It was, how-

ever, delayed as the stake to be sold remained a topic of debate; it is understood that QIA continues to seek TE's entire 45% stake in Vodafone Egypt, while the Egyptian government – TE's majority shareholder – remains keen to divest only a 25% shareholding. Nonetheless, the sources quoted by the local press outlet said that negotiations are continuing, and it is expected that implementation of a deal will take place before end-September 2023.

## Telecom Operators Body Vows to Bolster Digital Economy

Pakistan's long-awaited Telecom Operators Association (TOA) has been formed and held its first meeting here the other day. TOA members include Jazz, Ufone/PTCL, Telenor, Nayatel, Cybernet, and TWA while new membership is open to all license-holders of Cellular Mobile Operators (CMO), Long Distance International (LDI) Operators, Wireless Local Loop Operators (WLL), and Local Loop Operators (LL) (Fixed Line). The board members nominated Aamir Ibrahim (CEO Jazz) as the first Chairman of the Association, while Wahajus Siraj (CEO Nayatel) was appointed as Vice Chairman, Naveed Butt (Group Chief Regulatory Officer PTCL & Ufone) as President of the Management Committee and Syed Fakhar Ahmed CC&RO Jazz as Interim Secretary General. The association's ultimate objective is to accelerate digitization of the

Pakistani economy by advocating policy and regulatory interventions in the telecom and broadband industries. The goal is to find favorable solutions that facilitate foreign investment, foster growth within the telecom industry and provide innovative

and exciting services to hundreds of million customers in Pakistan. Furthermore, the association aims to foster digital inclusion, especially of marginalized communities and geographies, especially rural, youth and women.



## eGovernment Excellence Award Categories Updated

**Private & Public sectors in the Kingdom of Bahrain are invited to participate in the eGovernment Excellence Award 2023**

**Awards Categories:**

- Best Website
- Best Practice in eParticipation
- Best Integrated eServices
- Best Application for Smart Devices
- New** • Best Work Environment for Digital Innovation
- New** • Best Utilization of Artificial Intelligence
- New** • Best Project for Digital Transformation

**Registration deadline is 31<sup>st</sup> August 2023**

[egovaward.bh](http://egovaward.bh) #egovaward

and private sector categories have now been merged, acknowledging the rapid technological advancements across all sectors of the kingdom, said the Information & eGovernment Authority (iGA) Chief Executive, Mohammed Ali Al Qaed. This integration aims to better highlight various technological initiatives, enhancing the reputation of the kingdom and its ICT sector at the local, regional, and global levels, he said.

Digital innovation

This year's award embraces digital innovation by introducing new categories such as 'Best Utilization of Artificial Intelligence (AI)', 'Best Environment for Digital Innovation', and 'Best Project for Digital Transformation'. These updates align with the significant investments made by various entities in the kingdom to embrace emerging technologies and innovation in developing businesses, systems, services, and electronic products. In addition, the award categories for this year cover excellence in both the public and private sectors, such as 'Best Website', 'Best Practice in eParticipation', 'Best Integrated eServices', 'Best Application for Smart Devices', 'Best Environment for Digital Innovation', 'Best Utilization of Artificial Intelligence (AI)' and Best Project for Digital Transformation. Additionally, individuals can also participate by demonstrating their innovative digital initiatives through the "Best Digital Initiative" award.

The 12th edition of Bahrain's eGovernment Excellence Award 2023 has undergone updates to align with

the current and future requirements of the Information and Communication Technology (ICT) sector. The public

## Iraq's Ministry of Communications Holds Talks with SpaceX to Introduce Space-Based Internet

Iraq's Minister of Telecommunications, Hiyam al-Yasiri, met with representatives from SpaceX to discuss the introduction of space-based internet services in Iraq,

an official press release said on Saturday. "Al-Yasiri met, for the second time, with representatives from the global company, SpaceX. The representatives had visited

Baghdad to discuss the details of introducing space-based internet service to Iraq," the ministry said. "During the meeting, the technical and security designs of the project were discussed, as well as the mechanism for providing citizens with internet service, in line with the Ministry's aspirations to upgrade the level of services provided." Al-Yasiri expressed the ministry's keen interest in offering the service at the lowest possible prices compared to what SpaceX offers in other countries. Al-Yasiri shed light on the ministry's vision for the security measures and legal procedures that must be adopted in the project before signing contracts with the companies willing to provide this service, according to the statement.



## Saudi Arabia Partners with Egypt and Turkiye on Digital Economy

In a bid to promote collaborative ties in the digital economy, Saudi Arabia's minister of communications and information technology held talks with counterparts from Egypt and Turkiye on the sidelines of the G20 ministerial meeting in India. These discussions reflected the Kingdom's commitment to fostering international partnerships in the realm of digital transformation, the Saudi Press Agency reported. Abdullah Al-Swaha's discussions with the Egyptian Minister of Communications and Information Technology Amr Talaat revolved around strategic projects promoting youth, women and entrepreneurship. Additionally, as stated by the Egyptian Ministry, there was a shared emphasis on the importance of enhancing bilateral cooperation in critical areas such as communication infrastructure and submarine cables. Moreover, Al-Swaha's meeting with Turkish Minister of Industry and Technology Mehmet Fatih Kacir centered on opportunities to enhance collaboration in emerging technologies, support entrepreneurs and boost the digital economy, as outlined by SPA. Al-Swaha reaffirmed that Saudi Arabia's Vision

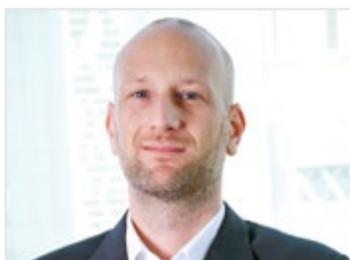
2030 plays a pivotal role in bolstering the leadership and competitiveness of the nation by empowering youth and women and establishing a sustainable future based on technology and innovation. The Saudi minister underscored that the digital economy has the potential to create future jobs and new business models yet highlighted the global challenge of approximately 2.7 billion individuals lacking internet connectivity and a demand for 4 million data scientists and 4 million cybersecurity specialists. He referenced initiatives that narrowed the digital divide in Saudi Arabia and three other G20 nations to just 1 percent. Discussing Saudi Arabia's digital achievements, Al-Swaha noted that the country succeeded in connecting 99 percent of its population to digital infrastructure. During the visit, the minister also signed a cooperation agreement on digitization and electronic manufacturing with India's minister for railways, communication, electronics and information technology, Ashwini Vaishnaw. The agreement aims to enhance Saudi-Indian cooperation in digital infrastructure, e-health and e-learning while strengthening



both countries' partnerships in digital research and innovation. Additionally, it reinforces Saudi Arabia's role as a regional hub for technology and innovation. The Kingdom is an active member of the G20, shaping digital policies and leading several initiatives to drive global efforts in bridging the digital divide. According to the International Telecommunication Union, it holds advanced positions within the G20, ranking second in the amount of radio spectrum and digital infrastructure readiness. 🇸🇦

## ARTICLE

## Cybersecurity Fronts in Digital Transformation



**Rob Van Dale**  
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Head - Digital Transformation



**Hadi Faraj**



**Reddy Prashaen**



**Guy Ngambeket**

KEARNEY

Over the last decade, digital and technology transformations have rapidly changed the way public and private organizations operate and conduct their business. These transformations have taken an even more drastic turn during the last pandemic when the world had to rapidly adapt and shift to remote ways of working. Early this year, very few people knew about generative AI. Today, organizations are assessing how disruptive this technology will be and what ramifications it will have on the business environment and the workplace. Across the Middle East, technological advancement and related innovations have been adopted as key enablers of the region's overall economic, cultural, and urban transformation. For instance, developing smart cities has become a top priority for GCC countries aiming to enhance citizens' quality of life while simultaneously promoting sustainable living. Significant investments are undertaken into new cities as well as upgrades to existing ones to develop smart city use cases leveraging technology (computer vision, machine learning, IoT, ...).

As these transformations generate tremendous value across the region, they are also becoming increasingly complex as they combine multiple technologies within constrained environments (legacy systems, business readiness, available resources, ...). In this context, the critical importance of cybersecurity cannot be overstated. Cutting-edge technologies are surging in the region and with the rise of OT and IoT, cybersecurity becomes an essential safeguard to protect sensitive data and infrastructure, especially as it is expected that IoT will replace humans as the weakest link in cybersecurity (estimates indicate that the number of IoT devices operating solely within KSA will supersede 145 million by the year 2030)<sup>1</sup>.

Despite a growing awareness of its significance, many organizations tend to neglect cybersecurity and/or take inappropriate measures during swift transformations, inadvertently leaving themselves vulnerable to cyber-attacks

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which are not only becoming more and more complex and sophisticated but also cheaper to perpetrate. This oversight often stems from a failure to perceive cybersecurity as an equally valuable business enabler, viewing it solely as an additional cost or burden and "a set of rules to comply by". However, the repercussions of cyberattacks can be devastating and costly not only at the organizational level but also at a nation-state level. According to Statista, the average cost of a data breach in the Middle East reached \$7.44 million in 2022, emphasizing the toll cyber incidents can take on organizations<sup>2</sup>. Considering this, it is imperative for organizations in the Middle East and beyond to recognize that cybersecurity is not just a defensive measure but more importantly a strategic asset that builds and enhances stakeholders trust and confidence. Embracing cybersecurity as an integral aspect of digital transformation is vital to ensure business operations and continuity. Below are couple of recommendations, based on Kearney's experience working with entities across the globe, for organizations and policy makers to consider during digital transformations.

### Proactively set the tone at the top

Cybersecurity is a strategic activity of any organization. While most of successful attacks remain manageable within organizations, only one data breach on sensitive/personal information can ruin hard-earned customers and investors trust. The US' Securities and Exchange Commissions (SEC) recognized the impact a major cyberattack can have on a business and issued very recently new rules requiring all publicly traded companies in the US to release details of a cyberattack within four days of determining that it has a material impact. By placing cybersecurity at the forefront of their agenda, leaders (management and boards) demonstrate their commitment to protecting valuable assets, sensitive information, and customer trust. As pointed out in one recent Kearney article<sup>3</sup>, they should adopt a proactive approach, ensuring that cybersecurity strategies align with the evolving threat landscape and organization risk appetite, and outcomes are regularly assessed using right technical and operational performance metrics (E.g., Lost manufacturing hours, lost engineering hours, lost sales hours). This involves not only investing in robust cybersecurity resources and capabilities (technological and human) but also commit their personal time to infuse and foster a robust cybersecurity-aware culture across the organization, emphasizing the shared responsibility of all stakeholders in safeguarding data and systems. CISOs (Chief Information Security Officers) have an important role to play to educate, support and enable business executives on their ability to make thoughtful and meaningful cybersecurity decisions, by ensuring at a minimum that assets are identified and classified, and executives are fully aware and informed of the associated risks.

### Fix the basics

A recent study<sup>4</sup> that Kearney conducted with several executives worldwide, showed that approximately 50% of organizations had still a reactive approach to cybersecurity and the basics are not met. The threshold of what is considered as basics is not static and depends on numerous factors such as the risk appetite, the state of technological

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advancement, the complexity and cost of cyberattacks, the regulatory framework or even the maturity of the organization and industry in which a specific it operates. However, there are some basic umbrella measures that we recommend ensuring they are in place during the digital transformation:

- **Ensure security is by design and by default:** Organizations should ensure security is by design during project and system design (e.g, implementing DevSecOps practices) and by default in every configuration to proactively protect against cyber threats. Many organizations are tempted to move fast in their transformation and neglect cybersecurity, leaving several loopholes that will be exploited by hackers. While policies and procedures are important to implement security by design and by default, it is mostly an organizational mindset that need to change and evolve towards that philosophy.
- **Manage supply chain risks:** In recent years, it is estimated that around 50 percent of cyberattacks came from third parties, with negative effects on customer churn<sup>5</sup> reaching 20 percent<sup>6</sup>. Cybersecurity-related disruptions in the supply chain have cost businesses \$1 trillion in the US and Europe alone. Good starting points to mitigate these disruptions are to conduct regular—and comprehensive—"value-at-risk" assessments, design disciplined vendor risk management capabilities and implement software bill of material verification in order to identify software components and dependencies and thus

address software supply chain related risks.

- **Develop partnerships and collaboration:** Cyber threats, especially those arising from technology, transcend geographical and organizational boundaries, necessitating a unified and cohesive approach to defense on top of individual approaches. Organizations should work with governments and international entities to foster collaboration within their relevant cyber ecosystem to enable intelligence, best practices, and resource sharing and development of standardized frameworks, regulations and approaches to collectively address emerging threats and vulnerabilities.
- **Invest in the human factor:** As approximately 70% of cyber-attacks are caused by human errors, a cybersecurity strategy without a comprehensive and innovative approach to cybersecurity education and awareness is incomplete and cannot yield the expected return.

### Consider advanced cybersecurity techniques and technologies

After fixing the basics, organizations should move to a visionary state and consider trying different approaches that will fit the evolving threat landscape.

- **Adopt zero-trust principles:** implementing a Zero Trust model is essential for bolstering cybersecurity and can safeguard critical assets, as traditional perimeter defense measures prove insufficient against sophisticated threats. Zero Trust operates on a "need-to-know" basis, assuming no implicit trust of users, devices, or applications, even within the organization's network

perimeter. This approach minimizes lateral movement and potential damage from cyber incidents. Employing micro-segmentation enables strict access controls within network segments, limiting attackers' reach. Treating all network objects as potentially malicious and using multifactor authentication and identity and access management solutions further enhances security.

- **Enhance detection and response capabilities:** Organizations should migrate from traditional signature-based threat detection to behavioral-based, AI-enabled threat detection and response. By utilizing one or more of technologies such as SIEM (Security Information and Event Management), SOAR (Security Orchestration, Automation, and Response) or XDR (Extended Detection and Response) and combining them with a cybersecurity data platform enhanced with AI capabilities, organizations can significantly bolster their detection and response capabilities. For example, XDR can integrate data from multiple sources,

offering a comprehensive view of the attack chain for better threat detection. AI-driven models, leveraging machine learning, will identify patterns indicative of cyber threats and suggest adapting to evolving attack techniques.

- **Reinforce authentication and authorization:** Reinforcing identity and access management is crucial in transformation context where organization are sometimes dealing with multiple systems from several different providers and on different infrastructures. It is very challenging to orchestrate the identification, authentication, and authorization across all these systems in the organization and intruders can take advantage of these complexities to impersonate real users and gain access to systems and data with sometimes elevated privileges. By applying behavioral and biometric authentication, organizations can mitigate some of risks of intrusion. In addition, using authorization policies based on trust scoring will also help reducing the risks

of improper privileges on organizations resources and assets.

At last, we advise organizations to continuously assess the impact of emerging technologies on cybersecurity by augmenting their threat intelligence capabilities with an emerging tech observatory and collaborating with their relevant RDI ecosystem to identify ways to tackle evolving threats.

In summary, organizations should embrace cybersecurity as a strategic asset, and must proactively address basics, adopt advanced techniques like zero-trust principles or behavioral AI-enabled threat detection, and continually assess emerging technologies' impact on cybersecurity to ensure secure and successful digital transformations. These actions should be driven by top leadership and boards of public and private organizations, as well as from Nation states. 🌍

<sup>1</sup> <https://www.telecomreview.com/articles/telecom-operators/2985-stc-projects-that-iot-revenue-to-exceed-7bn-in-saudi-arabia-by-2030>

<sup>2</sup> <https://www.statista.com/statistics/463714/cost-data-breach-by-country-or-region/#:~:text=Among%20the%20examined%20countries%20and,was%204.35%20million%20U.S.%20dollars.>

<sup>3</sup> <https://www.kearney.com/service/digital/article/-/insights/ceo-proactiveness-a-winning-cyber-response-strategy>

<sup>4</sup> <https://www.kearney.com/service/digital/article/-/insights/cybersecurity-how-to-make-it-pay>

<sup>5</sup> Percentage of customers that stopped using organization's product or service

<sup>6</sup> <https://www.kearney.com/service/operations-performance/article/-/insights/it-s-now-or-never-to-get-ahead-of-supply-chain-cyber-risk>

## SATELLITE NEWS

### VIAMI Introduces NTN and HAPs Network Testing for 5G and 6G Satellite Communication

Viavi Solutions Inc. (VIAMI) announced the availability of base station and end-to-end testing supporting Non-Terrestrial Networks (NTN) and High Altitude Platforms (HAPs). Wireless technologies are increasingly augmenting traditional terrestrial communication networks, with satellite communications helping to provide near-complete coverage. The VIAMI TM500 and TeraVM test platforms validate the conformance, performance and reliability of gNodeBs and entire networks under the unique service link conditions of NTN and HAPs networks. 3GPP Release 17 specifications formally introduced support and guidelines for NTNs, with subsequent

releases expected to continue to refine the standards. These specifications will help improve the performance of NTNs, allow them to converge with terrestrial telecoms networks and enable support across existing 5G mobile handsets and chipsets. A VIAMI analysis estimated that the growth in satellite communications will result in approximately 30,000 new satellites orbiting the Earth, significantly expanding the potential of NTNs to provide universal coverage. Satellite communication in 5G brings another level of complexity for testing. NTNs need to be reliable to cope with the distance, speed and mobility of both satellite, HAPs and User Equipment

(UE), while still delivering on performance. Test solutions are not only required to emulate different UE mobility and fading profiles, but they must also take the large doppler shifts from fast-moving satellites and airborne platforms into consideration. To validate the base station prior to non-terrestrial deployment, the TM500 can emulate a high volume of devices, new mobility patterns, signal propagation delays, and other conditions unique to NTN while TeraVM emulates the core network. This test scenario is ideal for early functional tests such as 3GPP protocol testing and can be applied to both regenerative and transparent architectures. Further test scenarios are focused on testing and optimizing the network end-to-end, using a real core to validate the performance and reliability of the entire network. "NTNs offer new opportunities and partnerships for mobile and satellite operators and the exciting potential to offer connectivity to both underserved and over-populated areas as well as support mission-critical applications," said Ian Langley, Senior Vice President, Wireless Business Unit, VIAMI. "However, amidst the growing interest and race to deploy these networks, it's vital that reliability, stability, and performance testing are done to ensure success."



### Intelsat is the Latest Satellite Operator to Clear C-Band

Intelsat, operator of one of the world's largest integrated satellite and terrestrial networks, has confirmed that it will receive nearly US\$3.7 billion in the fourth quarter of 2023 after completing its C-band frequency clearing obligations. The Federal Communications Commission's (FCC)'s 'C-band Transition Order' set a deadline to clear the spectrum by December 2025 but offered

incentive payments to satellite operators if cleared before December 2023. With the validated certification now complete, Intelsat says it will receive accelerated relocation payments totaling USD3.67 billion. Intelsat's fellow satellite operators Telesat and SES have previously announced that they have concluded their own respective C-band clearing obligations.



## Uncapped Satellite Broadband Service Gains Traction in Rural Areas

Australian Communications Minister Michelle Rowland has revealed that the new Sky Muster Plus Premium satellite broadband service has attracted more than 21,000 subscriptions since its launch in June 2023. Announcing the development, the minister suggested that almost half of all Sky Muster Plus customers in rural and regional areas have taken up the new service, which offers end users uncapped data and faster speeds of up to 100Mbps. The service had been enabled by the current government's AUD480 million (USD307 million) investment to upgrade the National Broadband Network's (NBN's) fixed wireless access (FWA) network. As per this investment, upgrades are moving around 120,000 premises from satellite to fixed wireless, freeing up capacity on the Sky Muster satellite. Speaking about the matter, Ms. Rowland was cited as saying:

'The strong take up of NBN Sky Muster Premium is further proof of the growing demand for data across rural Australia, and the importance of continuing to evolve the NBN ... Across the Sky Muster, fixed wireless and fixed line networks, the Albanese Government is dedicated to improving the NBN to give Australian businesses and households access to the 21st century

communications infrastructure they need and deserve.' On the back of the success of Sky Muster Plus Premium, meanwhile, NBN Co – the company responsible for managing the NBN – is now reportedly consulting with industry on the introduction of more uncapped data plans at lower price points and further improvements to speeds.



## Türkiye's 1st Domestic Communication Satellite to Be Launched In 2024

Industry and Technology Minister Mehmet Fatih Kacır has announced that Türkiye's first domestic communication satellite, Türksat-6A, will be launched into space in March 2024, stating that his ministry has also made significant strides in high-speed 5G telecom networks and artificial intelligence. Despite the tests of the communication satellite taking some time, Türksat-6A, like İMECE, will be successfully launched into space, Kacır expressed during his speech at the ceremony held for the 60th anniversary of the establishment of the Scientific and Technological Research Council of Türkiye (TÜBİTAK). On April 15, Türkiye launched its first domestically produced observation

satellite İMECE. Reminding that Türksat-6A was developed by TÜBİTAK UZAY, Kacır also emphasized the ministry's willingness to work closely with the institution. Kacır also shared that the ministry has allocated a budget of over 57 billion Turkish Liras (\$2.1 billion) to a total of 24,202 projects since 2002. Providing information regarding the ongoing studies on 5G technology and artificial intelligence, Kacır informed that one of the largest budgets in public R&D support was allocated to the 5G development project. "Important steps are being taken for the development of national 5G technology. One of the largest budgets in public R&D to date will be used for the project. As a result of this support,

the work has come to the productization stage," Kacır said. Kacır emphasized that rapidly maturing domestic systems will play a crucial role in establishing the 5G mobile communication infrastructure in the country, leading to an increase in data capacity in a short period. Additionally, he also noted that efforts are underway to develop factory systems based on artificial intelligence. Within the scope of a program initiated under the umbrella of the "National Intelligence Academy," leading technology companies offer artificial intelligence courses at universities, the minister also said. The ministry aims to develop national strategies to develop major language models, support private sector initiatives, and accelerate public investments in this field, Kacır said, adding that the project also addresses ethical, legal and security issues that arise with further development of AI technology. "Türkiye participates and contributes to the work of the Council of Europe Artificial Intelligence Committee [CAI], which aims to identify the elements of a legal framework for the development, design and implementation of AI based on human rights," he added.



## Telefonica Signs Worldwide Partnership Deal with Starlink

Starlink, the satellite constellation arm of Space X, launched its business solutions early this year. Spanish telco Telefónica has signed a deal with Starlink to become its worldwide partner, through its global business division Telefónica Global Solutions (TGS). The deal will allow TGS to access Starlink's Low Earth Orbit (LEO) satellite constellation, incorporating the satellite services into its existing global portfolio of connectivity services. The Starlink service can deliver high speed internet (up to 350 Mbps downstream) across the world, including to rural and hard-to-reach areas. The service is focused on the business sector and "[allows] them to connect to existing networks, thus providing a complement to their connectivity services in

stores, operational centres, warehouses, and other places," according to Rafael Arturo González, Country Director for Movistar Empresas Mexico. Telefónica debuted this Starlink offering in Mexico in June this year but is now extending the service to five other key markets— Chile, Colombia, Peru, Brazil, and Spain – of which the latter two are two of its four core markets. "The satellite industry is undergoing an unprecedented revolution," said Julio Beamonte, CEO of Telefónica Global Solutions. "Satellite enables connectivity projects to be executed very quickly and efficiently. At Telefónica Global Solutions, we have been offering added value satellite solutions for many years and with this partnership, we start working hand in hand with Starlink

Enterprise to offer new generation solutions to our customers." Starlink connectivity is intended to be used in addition to existing connectivity solutions rather than to replace them. In Mexico currently, the service uses a subscription-based model which is priced between MXN 1,000–5,000 (\$52.52–292.60) per month. It is uncertain whether the same subscription-based model will be used in other countries. This is not the first satellite deal that Telefonica has signed in recent months. Last month, the firm signed a deal with Hispasat to resell their rural satellite broadband to isolated areas of Spain, and Telefonica has also partnered with Spanish satellite group Sateliot to connect the Internet of Things (IoT) through satellite and 5G technology.

## CNT Inaugurates New O3b mPOWER Satellite Terminals in Galapagos

Ecuadorian state-owned operator Corporacion de Telecomunicaciones (CNT) and satellite operator SES inaugurated the first O3b mPOWER satellite terminal on Santa Cruz Island in the Galapagos on Wednesday. The enhanced connectivity provided by SES will enable the expansion of Medium Earth Orbit (MEO) satellite capacity in the archipelago, allowing CNT to offer fixed and mobile broadband services at double the current speed. CNT announced an upgrade deal with SES earlier this year to significantly increase its MEO capacity from 1.5Gbps to 2.5Gbps on the O3b constellation and migrate to the recently launched next-gen O3b mPOWER system, which is scheduled to start providing services at the end of the year. CNT is already serving its residential,

corporate and government customers with MEO connectivity on Santa Cruz Island,

and plans to roll out 4G networks to the neighboring islands.



## Starlink Launches Satellite Internet Services in Malawi

Malawi has become the latest country in Africa to see a commercial launch of satellite broadband services by Starlink, the satellite internet business of SpaceX. The firm's Low Earth Orbit (LEO) satellites are designed to offer high speed, low latency broadband internet in remote

and rural locations across the globe. The service is currently priced at MWK52,000 (USD48.9) per month, while hardware costs MWK655,000. Starlink says that users can expect 'typical high speed internet with brief periods of intermittent service and high latency', and will be able to 'engage in

common internet activity like email, online shopping, or streaming a movie, but will not be able to engage in activities like online gaming or video calls'. The firm adds that the service will improve 'dramatically' over the next year.

## OneWeb and IP Access International Ink Distribution Deal in US



OneWeb, the Low Earth Orbit (LEO) satellite communications company, and IP Access International have inked a distribution partnership agreement to deliver high-speed, low-latency broadband connectivity across the US. IP Access International will blend OneWeb's satellite services with all major terrestrial cellular providers in the US, providing mobile communications through a single service plan and support

center. This partnership makes OneWeb's LEO constellation the first to be integrated into IP Access International's SuperGIG service, a connectivity solution designed specifically for public safety and enterprise critical mobile operations that seamlessly aggregates terrestrial and space-based networks. The integration aims to deliver robust connectivity in rural areas outside of cellular coverage areas, as well as in

urban locations affected by events such as natural disasters and other conditions impacting connectivity. "Space-based communications have been a cornerstone of resilient communications for decades, but now with the OneWeb LEO constellation, our SuperGIG™ solution will be even faster with lower latency. This will be a game-changer for our clients," said Bryan Hill, CEO of IP Access. Stephen Beynon, OneWeb's chief commercial officer, said: "Adding OneWeb's high-performance, low-latency connectivity to the IP Access International portfolio gives customers a new and even more robust solution to ensure they meet their mission, regardless of local connectivity services currently in place."

## Xplore Confirms Launching 100Mbps Satellite Broadband This Autumn

Canadian rural broadband specialist Xplore has confirmed that it will launch 100Mbps (download) satellite internet services this autumn (fall), doubling its existing satellite broadband top speed and matching the 100Mbps/10Mbps (downlink/uplink) performance of its '5G Home Internet' fixed wireless access (FWA) packages. Xplore's upcoming services – using the bandwidth of the newly launched EchoStar XXIV 'JUPITER 3' geo-synchronous (GEO) satellite which entered orbit on 28 July – will also feature higher data volumes, its website states. The geographical coverage

of JUPITER 3 includes 80% of Xplore's current customers, and the operator says its next-generation satellite broadband services are aimed at communities outside of the deployment zones for its fiber and 5G FWA networks. The company will not charge any upfront hardware costs for JUPITER 3-based packages, while its existing satellite customers 'will have priority to get service on the new platform', although they will incur a conversion fee to make the switch. 'Special offers and incentives at launch' are also promised.



## SpaceX Falcon Heavy Rocket Launches Massive EchoStar Internet Satellite



With an ever-increasing demand for internet access, EchoStar launched a powerful new communications satellite atop a SpaceX Falcon Heavy rocket that will deliver broadband service across nearly 80% of North and South America. Running two days later after a last-minute scrub Wednesday, the Falcon Heavy's first stage, made up of three strapped-together Falcon 9 boosters, roared to life with a sky-lighting burst of flaming exhaust at 11:04 p.m. Eastern time. An instant later, with its 27 engine generating more than five million pounds of thrust, the rocket majestically climbed away from historic pad 39A at the Kennedy Space Center in Florida, putting on a spectacular overnight show for area residents and tourists as it arced away to the east over the Atlantic Ocean.

## Thaicom and Eutelsat Announce Plans for HTS Launch

Asian satellite and space tech company Thaicom has announced the signing of a partnership agreement between Space Tech Innovation Limited (STI), a subsidiary of Thaicom, and Eutelsat Asia, a subsidiary of satellite operator Eutelsat. This partnership relates to a new satellite to be launched at the orbital slot of 119.5 degrees East. Under the agreement, Eutelsat is committed to lease and operate the service for 50% of the satellite capacity during its lifetime of 16 years. Thaicom is currently finalizing the procurement process of the satellite. The actual launch date does not appear to have been announced yet. Thaicom says its satellite is part of a new generation of broadband software-defined high throughput satellites (HTS). This means, the company says, that it will allow flexibility and instant reconfiguration to adapt dynamically to the service areas and will thus provide a significant confidence boost for the company's customers



and partners throughout Asia-Pacific. Patompob (Nile) Suwansiri, Thaicom's Chief Executive Officer, says: "This partnership is strategic for our new satellite project at the orbital slot of 119.5 degrees East as it

not only provides a long-term and secure utilization of 50% of our new satellite, but more importantly, it will create synergies between the two organizations to capture new growth opportunities in the future."

## New Hughes Satellite Promises Connectivity Boost for Latin America



Heralding what the company calls the start of a new era of connectivity, Hughes Network Systems' JUPITER 3 ultra-high-density satellite has successfully launched on a SpaceX Falcon Heavy rocket from the Kennedy Space Centre in Florida. Described as the largest commercial communications satellite ever built, it will more than double the capacity of the Hughes JUPITER fleet and is engineered to deliver gigabytes of connectivity to customers across North and South America. Hamid Akhavan, CEO of parent company EchoStar, says: "JUPITER 3 is the highest-capacity, highest-performing satellite we've ever launched," adding: "This purpose-built satellite is engineered uniquely to meet our customers' needs and target capacity where it's needed most, such as the most rural regions of the Americas." Over the coming weeks, JUPITER 3 will travel into a geosynchronous orbit 35,786 kilometers above the Earth to its destination at the 95 degrees west orbital slot. It will then undergo extensive bus and payload testing before entering service and augmenting

the Hughes JUPITER fleet with more than 500 Gbps of additional capacity. With this satellite, Hughes says it will enhance its HughesNet satellite internet offerings for customers in Latin America and the US with more broadband capacity overall and higher speed plans in many markets—some with download speeds up to 100 Mbps. The company says it will also offer higher speed HughesNet Fusion plans, a reference to the low-latency home internet that leverages multipath technology to blend satellite and wireless technologies seamlessly into a low-latency satellite internet experience. The new satellite will also support applications such as in-flight Wi-Fi, enterprise networking and cellular backhaul for mobile network operators. The Via Satellite news service points out that the new satellite will give Hughes much-needed capacity as the satellite operator is 'maxed out on its current fleet' and losing subscribers amid competition from Starlink. It adds that the new satellite was originally supposed to launch in 2021 but was held back by a number of delays.

## Airtel Backed OneWeb to Begin Satellite Internet Services from September

Airtel is set to start providing satellite internet services in selected regions. This service will be offered by OneWeb, in which Airtel has a shareholding of 30%. OneWeb will let users access fully-fledged internet using Earth orbit satellites. OneWeb is a satellite service provider, that was backed by SpaceX, Qualcomm, Airbus, and Google in the past. In 2020, the company filed for bankruptcy, but it was bailed out by Airtel and the United Kingdom Government. Since then, Airtel has been investing resources to enter the satellite internet services business through OneWeb. OneWeb has been placing satellites in the lower-earth orbit, which will act as a relay service to provide internet services to any ground station below it. The technique is very similar to Elon Musk's Starlink but on a smaller scale. As of now, OneWeb has a constellation of 542 satellites for its internet services. For comparison, Starlink currently has 4487 satellites, which is almost ten times of OneWeb. Starlink is undoubtedly the market leader for satellite internet services, but Airtel's OneWeb is catching up pretty fast to enter the competition. For comparison, Starlink currently has 4487 satellites, which is almost ten times of OneWeb.



Starlink is undoubtedly the market leader for satellite internet services, but Airtel's OneWeb is catching up pretty fast to enter the competition. OneWeb currently has a limited number of satellites that mainly cover the Arctic region. These include the UK, Greenland, Alaska, and some parts of Canada. This will further be expanded to the US and Australia. OneWeb will monitor its business operations in these regions first, and later expand to other markets like the Middle East, and South Asia. It is very

unlikely that Airtel will bring its satellite internet services to India. The company is currently focusing on expanding its Airtel Xstream fiber connections in the country as a priority. Airtel has also been investing heavily in deploying 5G connectivity across all circles. It also holds a 25% market share in DTH in India. Amongst all these projects and its existing operational costs for cellular and DTH spectrum, it is very unlikely that Airtel will try to bring OneWeb to India.

## Turkish Company Launches World's Smallest Satellite

Startup Hello Space, described as Turkey's first commercial 'pocketcube' satellite venture, has launched what it describes as the world's tiniest satellite – with the help of SpaceX. Hello Space aims to send a pocketcube constellation into space and offer uninterrupted end-to-end IoT data services from space to businesses in agriculture, logistics, energy industries, and many more. Istanbul, the first Hello Space, test pocketcube, with dimensions of 5cm x 5cm x 5cm, was launched into space this week from California, with the SpaceX Falcon-9 Transporter-8 mission. Established in May 2022, Hello Space completed software and hardware production followed by a space launch in under 13 months. Concurrent with the pocketcube satellite production process, the Hello Space Ground Station was built to serve as the management and control center for the pocketcube satellite constellation. Through its advanced narrowband data communication technology, Hello Space will provide continuous and reliable data services globally by providing coverage from space. Hello Space will be able to offer IoT services, even in remote areas with low population density and uncovered regions such as oceans and remote but significant agricultural lands. If everything

goes to plan, the services offered will include the provision of location data from containers shipped in the ocean, humidity data from remote agricultural lands, and end-to-end temperature data in long-distance cold-chain food logistics. Consistent, accurate data from space will improve the efficiency of businesses, says Hello Space. Hello Space says is now getting ready for the deployment of four new test pocketcube satellites, planned to be launched in October 2023. 📡





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## ARTICLE

## Changing Connectivity Requirements in Roaming Requires the Operators' Attention

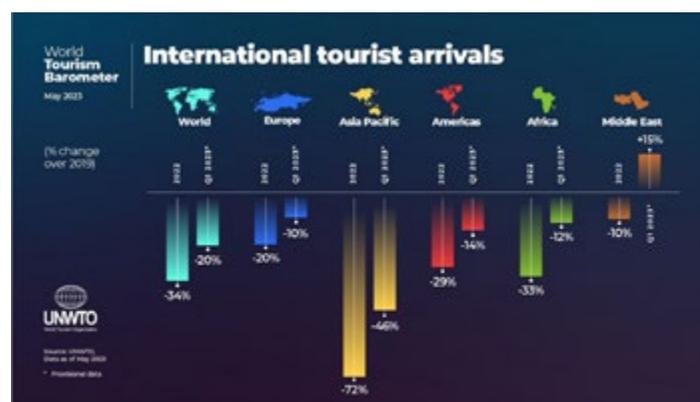


**Dany Rahal**

Sales Executive Director  
Syniverse

**syniverse.**

Travel and tourism are back. The latest statistics provided by the United Nations World Tourism Organization in its "World Travel Barometer" leave no doubt about it.



UNWTO Travel barometer

In fact, the Middle East is leading the pack by being the first region that has shown travel statistics in 2023 surpassing those of 2019 (pre-pandemic).

I work for Syniverse, a company that plays an instrumental role in accelerating the intelligently connected world, no matter whether it concerns humans, or devices. Travel and cross border communication are interwoven. Syniverse sits at the heart of it all and unsurprisingly, I tend to observe travel behavior and opportunities to improve the user experience in roaming.

Recently, I traveled for work from the UAE to Kenya. I continue to be impressed with the activity and overall vibe at the airports. Thousands of people, all eager to make their way from points A to B, had more than one thing in common (and I invite you to make this observation yourself on your next trip): What item, beyond a suitcase, does every traveler bring along?

### Mobile devices.

Travelers have the desire to be continuously connected and mobile communications goes beyond calling and messaging. Roamers want to experience digital and mobile, just like at home. I'll name a few familiar observations on the airport:

- The paper boarding pass has long ago become an app-based bar code. Without connectivity, the code may not show up.

- Paperbacks and magazines from the kiosk have found their way to tablets and smartphones. Endless access to (streaming) content on devices helps people through those dull moments at airports and elsewhere.
  - Calling and messaging home has been enhanced with photos and video calls and people are using it.
  - If you imagine what else is going on in airplanes and at an airport, you can quickly conclude that we're living in an increasingly intelligently connected world:
  - Luggage tracking devices.
  - In-flight connectivity for passengers.
  - Connected watches.
- Just to name a few.

### Managing roaming expectations

When I traveled to Kenya, I left the UAE with a 5G signal icon on the display of my phone, and somehow, as an end user, I expected to see that 5G icon in Nairobi, which I got. In large parts of the city 5G coverage is available, as announced on billboards. Even in places where the signal fell back to 4G+ networks in Kenya I quite enjoyed on the quality-of-service experience. I could do what I wanted to do on my devices, and I never felt that my service had degraded. Besides the excellent "guest" networks in Kenya itself, a key element for this quality-of-service experience is the home routed internet connection in roaming over the IPX network back to the UAE (an IPX is a private network and delivers secure internet connectivity for roaming).

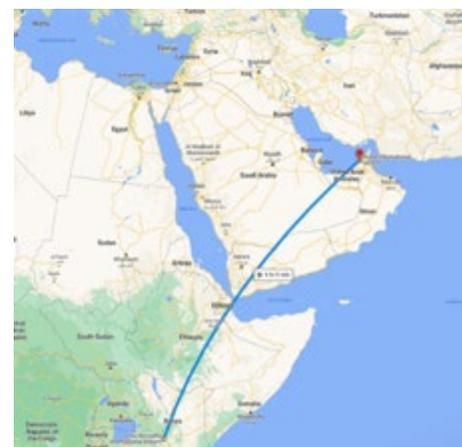
**So, why do Changing connectivity requirements in roaming require the operator's attention?** Let me split this in three parts, to segregate between humans, devices, and

new network deployments:

**1. For travelers.** From a traveler's perspective the roaming service is expected to work and perform. Always and everywhere. Moreover, the user's expectation is to receive equal experience as at home. Unlimited data, maximum speed and at a reasonable price. Is that possible? It is to a large extent, and operators are increasingly meeting the customer's expectations. With the exponential growth in travel though, it is important that operators augment their capacity, such as that of the IPX and that they choose an IPX that can scale them up to the requirements for 5G roaming. You can think of Quality of Service, latency, bandwidth, and security.

**2. For the Internet of Things.** Delivering on the promises of 5G and IoT requires scaling up of wholesale activities. Poor performance or even outages in roaming can interrupt the use cases behind Internet of Things. Understanding which devices roam on the network and how they behave is critical. Once that is understood, an operator can adequately start to support wholesale partners operationally and commercially. There is an absolute need to abandon manual processes in favor of maximum automation. This goes hand in hand with the streamlining of processes in operations and reduction or complete elimination of inter-operator disputes.

**3. Private 5G networks.** Rapidly popping up across the globe and full of potential, private 5G networks are making their way into more places than just airports. Private Wireless solutions require a multitude of functionalities targeted at delivering valuable network connectivity, including cellular access between private



Flight route

and public mobile networks; extended visibility and control of connected devices; and facilitation of additional connectivity models. I'm excited about this and our patented Automated Network Reselection (ANR) technology, which allows for seamless movement and connectivity between private and public networks.

### Anticipate, scale, and grow

Being part of this innovative and impactful telecommunication industry is truly exciting. I hope my observations give you food for thought, as to some of the endless possibilities and use cases provided by mobile roaming and how changing user expectations can be met. Roaming plays a critical role in keeping the world connected today, and failure is not an option. The telecommunications industry has the momentum to continue to grow through successful implementation of new use cases and expectations. I am ready to help operators deliver on the promise of accelerating an intelligently connected world. 🌍

### About Syniverse

Syniverse is the world's most connected company. We seamlessly connect the world's networks, devices, and people so the world can unlock the full power of communications.

Our secure, global technology powers the world's leading carriers, top Forbes Global 2000 companies, and billions of people, devices, and transactions every day. Our engagement platform delivers better, smarter experiences that strengthen relationships between businesses, customers, and employees.

For over 30 years, we have accelerated important advances in communications technology. Today we are an essential driver of the world's adoption of intelligent connectivity, from 5G and CPaaS to IoT and beyond.

Find out more at <https://www.syniverse.com>.

### About Dany Rahal

Dany Rahal is a Sales Executive Director at Syniverse, serving the MEA region. Throughout his career Dany has lived and worked in a variety of countries. Dany has always been at the heart of the telecommunications industry, enabling growth, efficiency, and success for communications service providers. Some of his previous employers are Nokia, Siemens, and RedKnee.

## WHOLESALE NEWS

### Northleaf Capital Invests USD200m in FTTP Wholesaler Tillman FiberCo

New York-based fiber-to-the-premises (FTTP) wholesaler Tillman FiberCo has secured investment worth USD200 million from funds managed by Northleaf Capital Partners. The funding will accelerate the expansion of fiber in underserved neighborhoods across the US. As per the terms of the deal, Northleaf has the potential to invest a further USD300 million as Tillman FiberCo scales its operations. Founded in 2021 and based in New York, Tillman FiberCo designs, builds and owns gigabit-capable fiber infrastructure which is accessible to enterprises and wholesale customers across all industries. Tillman

FiberCo is part of the Tillman Global Holdings portfolio, a holding company founded by Sanjiv Ahuja.



### Telefónica Wants to Launch the First 5G Roaming Connection for Space

Sateliot has teamed up with Telefónica to extend the reach of 5G networks into space. In a press release, the two companies stated this is a “first” in telecommunications history. Detailing the achievement, the two companies said they recently ran a test in which they extended the coverage of Telefónica’s terrestrial 5G network through standard GSMA roaming, using Sateliot’s satellite network. The test was overseen by the European Space Agency (ESA). During the test, the team used a regular SIM card, plugged into

an Internet of Things (IoT) device. That device managed to “seamlessly” switch to Sateliot’s network of low-Earth orbit (LEO) satellites, making the trial a success. The conclusion of the test is that a standard roaming connection can be authenticated using Telefónica’s core network even when it’s going through a non-terrestrial network. An important cog in this machine comes in the form of “Store & Forward”, Sateliot’s proprietary two-step authentication process that stores data when the satellite is not in position to connect with a ground

station, and then releases it when it is. “Sateliot has achieved an important milestone by successfully demonstrating the integration of Low-Earth orbit and NTN (Non-Terrestrial Network) with roaming capabilities in Store&Forward mode, along with two-step authentication into a 5G cellular network,” said Antonio Franchi, Head of Space for 5G and 6G Strategic Program at the ESA. Telefónica announced the solution will be offered commercially next year, providing ‘everywhere-in-the-planet connectivity’ for IoT devices. The telecommunications firm wants to be the first mobile network operator offering narrowband IoT connectivity around the globe. “This is the culmination of years of studies and developments of our Store & Forward two-step authentication procedure that gives Sateliot a unique position to establish roaming extension for NB-IoT NTN delay tolerant applications. We are in front of a game changer in future 3GPP networks that will reduce costs based on low density constellations and reduced ground segment infrastructure, minimizing the impact in space and reducing time to market,” said Sateliot’s chief technology officer Marco Guadalupi.



## National Mobile Roaming Now Effective



Senegal's Regulation Authority for Telecommunications and Posts (L'Autorite de Regulation des Telecommunications et des Postes, ARTP) has welcomed the implementation of roaming arrangements between the country's mobile network operators (MNOs). 'National roaming is now a reality in Senegal,' Abdou Karim Sall, Director General of the watchdog, confirmed on Wednesday following initial testing in the Diourbel region. He noted, however, that while 100% of calls and SMS were successfully switched between networks, the operators still need to resolve some technical issues with mobile data traffic. Introduced in response to a request by President Macky Sall to expedite initiatives to achieve nationwide mobile network coverage, roaming aims to extend network connectivity in underserved areas, promote competition between operators, and ensure service continuity in the event of network disruption.

## 1&1 Looks to Vodafone for National Roaming Services

1&1, which is set to launch Germany's fourth mobile network in the next couple of months, has announced the conclusion of binding heads of terms for a long-term exclusive national roaming partnership with Vodafone. The parties have committed to conclude a final national roaming cooperation as soon as possible, including the non-discriminatory provision of national roaming services in areas that are not yet covered by the new 1&1 mobile network. It will comprise access to Vodafone's 2G, 4G and 5G networks, as well as future mobile standards and technologies. The start date will be one year after conclusion of the final national roaming cooperation, at the very latest on 1 October 2024, with the base term set at five years from that point on. 1&1 will have the right to twice extend the term of the national roaming cooperation by five years each and the end of the contract term is followed by a transition period of three years. From the launch of the 1&1 mobile network, all customers with 4G mobile tariffs will initially be supplied with nationwide national roaming services by Telefonica until the national roaming supply by Vodafone is available. From then on, 5G mobile tariffs can be offered nationwide on the 1&1 network. In the transition period, 1&1 will provide its customers mobile 5G services within the framework of the previous MVNO model and 1&1 will obtain the mobile services required for this

from Telefonica or Vodafone. As soon as all 1&1 customers have been activated for national roaming services by Vodafone, 1&1 will exclusively draw national roaming services from Vodafone during the contract term. The calculation basis is a so-called capacity model, under which 1&1 will pay a fixed price per percentage point for such percentage of the Vodafone network which is used by its customers. This fixed price changes in line with the cost development of the Vodafone network, enabling 1&1 to make competitive offers over the long term.



## Four SADC Countries Drop Roaming Charges

Four countries in the Southern African Development Community (SADC) have agreed to end cross-border mobile roaming charges. The deal covering Botswana, Malawi, Zambia and Zimbabwe comes into effect in August, according to a report from Deutsche Welle. The SADC published its first set of regional roaming guidelines in 2015.

## Malaysia Strikes Deal for Wholesale 5G Access

Malaysia's communications minister revealed the government has reached a deal outlining stakes in its wholesale 5G company Digital Nasional Berhad (DNB) for the nation's five MNOs. Fahmi Fadzil said in a statement the Malaysian Communications and Multimedia Commission's '5G Task Force' worked on striking a deal with CelcomDigi, Maxis, Telekom Malaysia, U Mobile and YTL Communications. The MNOs are all processing and finalizing their shares in DNB. Maxis was the last operator to sign up for the government's controversial singular 5G network plan, having agreed to join its rivals earlier this month. 5G services are expected to launch sometime after Q3 from Maxis. Fadzil stated the government is targeting to deploy 5G coverage to 80% of the population by the end of the year.



## TCRA Issues Determination on New Interconnection Rates

The Tanzania Communications Regulatory Authority (TCRA) has issued Determination No. 6 on Cost Based Interconnection Charges Among Telecommunication Network Service Licensees, following an inquiry conducted last month to obtain input from stakeholders on the proposed new cost-based interconnection rates. The study, which was carried out by M/S Incyte Consulting, used the Hybrid Long Run Incremental Cost+ (LRIC+) study methodology. The TCRA said it concurs with the observation that all network

service licensees have a monopoly on terminating calls on their networks, and that in order to promote fair competition there is a need for regulatory intervention on interconnection charges and that such rates need to be reduced. As such, effective from 1 January 2023 the TCRA is implementing the following glide path for cost-based interconnection charges: TZS1.86 (USD0.00076) per minute from 1 January 2023; TZS1.76 twelve months later; TZS1.68 from 1 January 2025; TZS1.60 a year after that; and finally,

TZS1.52 on 1 January 2027 until the end of that year. The interconnection charges shall be used for termination of domestic traffic of the telecommunication networks service licensees in Tanzania, although all operators are free to negotiate and apply interconnection charges that are lower than those outlined by the determination. All networks service licensees are required to enter into new interconnection agreements and submit these to the TCRA by 31 July 2023.



## Delayed Brazil-Chile roaming pact takes effect

The agreement to scrap cross-border roaming fees between Brazil and Chile commences today (25 July), following a six-month postponement. The arrangement was originally expected to take effect on 25 January 2023, only for Chile's Ministry of Foreign Affairs (Ministerio de Relaciones Exteriores, MRE) to request a six-month delay. The deal covers mobile phone users and IoT devices. The Decree No. 10,949

was published in Brazil's Official Diary of the Union (Diario Oficial da Uniao, DOU) on 26 January 2022, concluding a process that got underway with the signing of a Free Trade Agreement between the two countries in Santiago on 21 November 2018. As per the terms of the document, roaming charges were to be cancelled within one year of the decree being signed.

## Meridiam Signs FTTH Wholesale Agreement with Vodafone

French investor Meridiam has announced a wholesale arrangement with Vodafone Germany to deploy fiber-to-the-home (FTTH) networks across different municipalities in the country outside of the operator's existing gigabit cable footprint. Under the partnership, Meridiam has begun deploying fiber in seven underserved regions, reaching homes currently without access to gigabit connectivity, with an expected completion date by the end of 2024. The investor aims to deploy FTTH networks for 500,000 homes passed in underserved areas over the next five years, and Vodafone will market gigabit broadband to these potential customers. The project will be financed through a 30-year long-term bond, amounting to EUR100 million (USD111.4 million), arranged by MEAG on behalf of institutional investors.



Meridiam initiated its fiber strategy in 2020, and since then has invested close to EUR2 billion in the digital infrastructure sector in Europe (Germany, Austria and Romania)

and North America (the US and Canada) to connect people to high quality fiber networks and contribute to reducing the digital divide.

## Asterion-Owned Olin Group Looking to Build Wholesale Telco After Snapping Up Ten Regional Operators

Spanish investment fund Asterion Industrial Partners is looking to use its recently acquired fiber assets to create a wholesale fiber company capable of taking on Telefonica. Since June 2022 the fund has purchased no fewer than ten regional operators – such as Olivenet, a regional telecom provider that operates in Andalusia with a presence in approximately

35 municipalities and more than 900,000 homes passed (acquired in partnership with Teras Capital) – and established a fiber start-up, Olin Group, which is reportedly in the process of acquiring a further seven telcos before the year end. According to the online news portal Expansion, the investment group, created by the entrepreneur Jesus Olmos, has

in Olin Group a platform of 1.6 million connected homes and close to 6,000km of fiber – which will only increase once the seven pre-agreements are completed. Its XGS-PON-powered network is capable of delivering speeds of up to 10Gbps, and it is reportedly looking to open up more than half its footprint to third-party operators during the course of 2023.

## CityFibre Announces Launch of 2.5Gbps Wholesale Product



British full fiber infrastructure operator CityFibre has launched what it claims is the UK's first wholesale 2.5Gbps symmetrical consumer broadband product. According to CityFibre, the new wholesale offering is being made available to its ISP partners on a rolling basis, starting in the operator's 'most mature' XGS-PON deployment areas. It says it expects the 2.5Gbps wholesale product to be available at all premises served by its 'rapidly expanding' XGS-PON platform 'in the coming months'. CityFibre notes that by the end of 2023 it aims to have deployed its XGS-PON equipment into over

90% of its fibre exchanges with the new 2.5Gbps product becoming available to around 20% of its ready for service footprint – which currently stands at 2.5 million premises. Meanwhile, multi-gig speeds will also reportedly be made available for premises where CityFibre's network is yet to be upgraded to XGS-PON. According to the operator such a development will be achieved via a 2Gbps/1Gbps asymmetric GPON product that it plans to launch in the coming months. These services will ultimately be migrated to the XGS-PON platform when available.

## Slovakia's 4ka and Orange Agree 4G Roaming Deal

Slovak operator SWAN, which trades under the 4ka brand, has signed a 4G roaming agreement with Orange Slovakia, adding to their existing 2G and 3G roaming arrangements. A report from Zive.sk says that from the beginning of next year 4ka

customers will be able to connect via Orange's nationwide 4G network when out of range of 4ka's own LTE infrastructure. 4ka's LTE network currently covers around 87% of the population and the deal with Orange will improve this to more than 96%.



## Ghana, Cote d'Ivoire Kick Off Bilateral Free Roaming Deal in West Africa

Ghana's National Communications Authority (NCA) and the Telecommunications Regulatory Authority of Cote d'Ivoire (Autorite de Regulation des Telecommunications de Cote d'Ivoire, ARTCI) have officially launched bilateral roaming services

(voice, SMS and data) between the two countries. Implemented in collaboration with the mobile network operators (MNOs) of both countries, the initiative eliminates surcharges for roaming between the two nations, resulting in substantial cost sav-

ings and enhanced convenience for subscribers. Ghana and Cote d'Ivoire are the first countries to activate roaming services under the Economic Community of West African States (ECOWAS) Roaming Regulations.

## ACM Draft Decision: No Reason for Further Local Access Market Regulation



The Netherlands Authority for Consumers & Markets (ACM) has issued a draft decision on the Wholesale Local Access fixed broadband internet market. Following

analysis of the retail market for fixed internet access – determining that five different geographic markets can be distinguished – ACM also investigated the national market for business network services, but the regulator has not identified any risk of significant market power in any of these markets and concludes that these retail markets are, or will become, sufficiently competitive, and therefore sees no reason to further investigate the market for local wholesale access. ACM will take comments on its draft decision until 4 September 2023. In mid-2020 ACM started an investigation into the necessity of regulation based

on the Telecommunications Act and/or intervention based on the Competition Act. On the basis of this investigation, ACM foresaw certain market risks in the access conditions to the fiber-optic network of KPN and Glaspoort on the wholesale market. In July 2021 ACM announced that it would prepare a market analysis decision. In March 2022 KPN and Glaspoort submitted commitments to ACM, which, after consultation, declared these commitments binding in August 2022. In September ACM resumed its investigation for the market analysis decision, in which it included the commitments as new data.

## Eutelsat Exiting Retail European Broadband Market to Focus on Wholesale

Eutelsat Communications has reached an agreement to sell its European broadband retail activities to 'an experienced private operator'. The operations being divested include affiliate Bigblu Operations and other European retail activities in the UK, Ireland, France, Germany, Italy, Spain, Portugal, Poland, Hungary and Greece. The unnamed private operator 'will also become a wholesale distributor in existing markets,' a press release added. Eutelsat's release highlights

the 'considerable success' of its wholesale go-to-market model to distribute its satellite broadband capacity over Europe, underpinned by major wholesale deals signed with Orange (France), TIM (Italy), Hispasat (Spain) and Swisscom (Switzerland) for the capacity in their respective markets on the Eutelsat KONNECT satellite. The statement continued: 'This strategy will be further bolstered by the entry into service of KONNECT VHTS expected in the second half of

2023, with 230 beams over Europe and MENA, representing a Ka capacity of 500Gbps, adaptable according to demand and specific needs in each country. Firm commitments have already been secured for part of this incremental capacity by important European telecom operators (e.g. Orange, TIM or Swisscom), confirming the ability of KONNECT VHTS to provide a compelling and competitive solution for broadband to under-served regions of Europe.'

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## ARTICLE

## Data Security Governance: Safeguarding the New Digital Frontier



**H.E. Dr. Mohamed Al-Kuwaiti**

Head of Cybersecurity of UAE Government and  
Chair of UAE Cybersecurity Council



**Dr. Aloysius Cheang**

Chief Security Officer  
Huawei Middle East & Central Asia and Advisor  
to UAE Cybersecurity Council



What you could not see with the human eye is always a challenge. For example, you can't tell whether the water coming out of the tap has impurities that can harm your body, nor can you tell whether the electricity provided by the grid will not have a sudden surge that will damage your device. The same goes for cybersecurity.

Unseen challenges are ever-present, posing potential risks to our well-being. Consider the water flowing from a tap, carrying invisible impurities that could harm us, or the electricity from the grid, carrying hidden surges that might damage our devices. Similar challenges arise in cybersecurity when defining security boundaries and distinguishing between various security aspects like internet security, network security, data security, and cybersecurity. The relationship between information security and cybersecurity also mirrors the timeless puzzle of "which came first, the chicken or the egg?".

*Unseen challenges are ever-present, posing potential risks to our well-being. Consider the water flowing from a tap, carrying invisible impurities that could harm us, or the electricity from the grid, carrying hidden surges that might damage our devices.*

While the questions posed above may look innocuous, it is crucial that we have clear answers to them as we aim to define and redefine cybersecurity while making the quantum leap into the future. Cybersecurity will be fundamental for business success and national prosperity in the future digital era. In our previous articles, we have emphasized the need to build a strong technical foundation, that will serve as the basis for the Chief Information Security Officer (CISO) to build trust and deliver value.

The CISO's role is now evolving. He must safeguard both his organization's assets and customer data. He also serves as a technical leader, bridging the gap between business and technical aspects effectively. This CISO renaissance should be built on strong fundamentals.

## Follow the Data

What would be the beacon guiding cybersecurity as we traverse a sea of technology advances and trends where we struggle not to run aground, as every tussle with the challenge of extracting the maximum value from a complete end-to-end digital transformation? The answer is very simple, actually. We just need to “follow the data”.

This analogy can be likened to the message behind “When the seagull follows the trawler,” where seagulls benefited from following fishermen, just as we can benefit from prioritizing data in our approach to cybersecurity. Supply chain importance in assurance and resiliency has become evident in recent years, and finding a common point where cybersecurity requirements and solutions converge, irrespective of industry trends and technical challenges, is crucial. With data being compared to the new oil, “follow the data” becomes the natural quintessential common success factor in achieving common goals in protecting assets and lives.

## Data Security Governance

In modern governance, risk, and governance (GRC) practice, the main output is the outcome and value derived from considering various factors driven by risk assessment, accountability, legality, ethicality, and cost. It already has most of the critical success factors for GRC to become a common language for communication among all the different stakeholders of the business. However, it is lacking some major components:

- A life-cycle process with a maturity model enabling traceability, facilitating the creation of a comprehensive, multilevel, and multidimensional supply chain security system capable of tracking any data’s stage.
- An outcome that is grounded not only in the business context but, more importantly, in business success, that can be broken down into further subcomponents addressing an adaptive cybersecurity needs for building trust, ensuring data protection and data privacy, providing safety, reliability and resiliency in the midst of an open, transparent and collaborative digital ecosystem.
- As such, it is imperative to develop a continuous, quantifiable trust and

resiliency level based not only on the outcome but also on a basket of continuously evolving drivers covering different aspects from business processes to technology to the ecosystem (environmental), with weightage that can be tweaked instantly for a different perspective of the trust and resiliency outcome. This falls short of achieving formal specifications requirements but is sufficient to establish authority, management, and decision-making parameters for the CISO to present to the rest of the executive management team and/or the board.

## Evolution to Organizations with the Capability of Building Data Security Governance: Key to Success in the New Digital Realm – The Case for Data Security Governance

Firstly, just like XML brought simplicity over HTML, the advantages of Data Security Governance go beyond automation; it enhances clarity and comprehensibility even for beginners. Moreover, it doesn’t replace human involvement; rather, it makes humans an integral part of the process as the system continues to learn, adapt, and organically expand. Its flexibility allows for abstraction building, leveraging data security governance across various applications and scenarios, such as AI or Blockchain, for example.

Secondly, Data Security Governance should be recognized as a multidisciplinary capability. By leveraging on data security governance, we can expand the scope of cybersecurity and establish it as a key discipline that all management must understand. Given the ease of use and self-describing nature of Data Security Governance, as it is now positioned as the core nucleus in a cybersecurity DNA that should be baked into the very fabric of any business, and that it will naturally embed itself into any business process, functioning like a utility model.

Thirdly, Data Security Governance will play a pivotal role in building proactive defense capabilities, serving as an important piece in the puzzle of our approach during GISEC 2023, where we propose “attack is the best defense”. With Data Security Governance, we can develop a proactive defense shield system, allowing different levels of defense in various parts of our business based on

needs and business conditions. Moreover, we can not only share information but also proactive defense mechanisms as part of a larger defense ecosystem.

Last but most importantly, Data Security Governance should be platform-independent and discourage platform lock-in. As a basic component, it enables architecture to be built using any kind of platform, whether hardware or software. This approach promotes interoperability, information sharing, and the proliferation of a cyber incident response platform with varying functionalities based on access rights or capabilities. This, in turn, helps build communities with minimum efforts, managing some of the snags and tangles that data governance faces, such as national security issues (especially those related to security intelligence sharing), data laws, and legislation issues (particularly cross-border roadblocks) and concerns regarding corporations and nations that may be both friends (if they belong to the same international grouping or working group) and enemies (i.e., competitors in the same space). Information is power, and the first to access “structured” data (not just any information!) will always have an advantage over others and win the race.

To sum up, the next phase of evolution is centered on reevaluating Data Security Governance. It is not merely a subset of data governance; rather, it could be the nucleus defining the DNA of cybersecurity as we evolve the role of the CISO and bring cybersecurity to the boardroom as a prominent topic. While we still need to strengthen our fundamentals, the future undoubtedly lies in Data Security Governance. We must pivot and focus our efforts on building Data Security Governance and adopting the “follow the data” model as an abstraction to address any new technology that comes our way, whether it be cloud or AI. We do not need to reinvent the wheel, but our wheels can vary in size and thickness, with different rims to serve different driving purposes (family car vs. F1 car) for various applications. Data Security Governance serves as the elixir of life for the next generation of cybersecurity, and we are proud to spearhead this piece of work here in the UAE and the Middle East, for the world! 🌍



**YOUR CYBER SECURITY IS  
NOT JUST YOUR BUSINESS,  
IT'S OUR RESPONSIBILITY**

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SECURITY, **NO COMPROMISE**



# TECHNOLOGY NEWS

## Brazil to Collaborate with Japan on Open RAN

Brazilian regulator Anatel has signed an agreement with the Japanese government focused on open RAN, with the goal of increasing deployments of the technology in Brazil and developing new business opportunities between the countries. The deal will see the partners share knowledge relating to open RAN such as spectrum policies, carry out tests, and collaborate with other countries. Japan's general director for international affairs Nomura Eigo noted that the partners would also strengthen their cooperation on 5G as the technology continues to gain traction in Brazil. Anatel chief Carlos Baigorri described open RAN as an "opportunity for Brazilian industry" as the increased range



of suppliers and disaggregation of network equipment would make the market more competitive. The partners noted that the

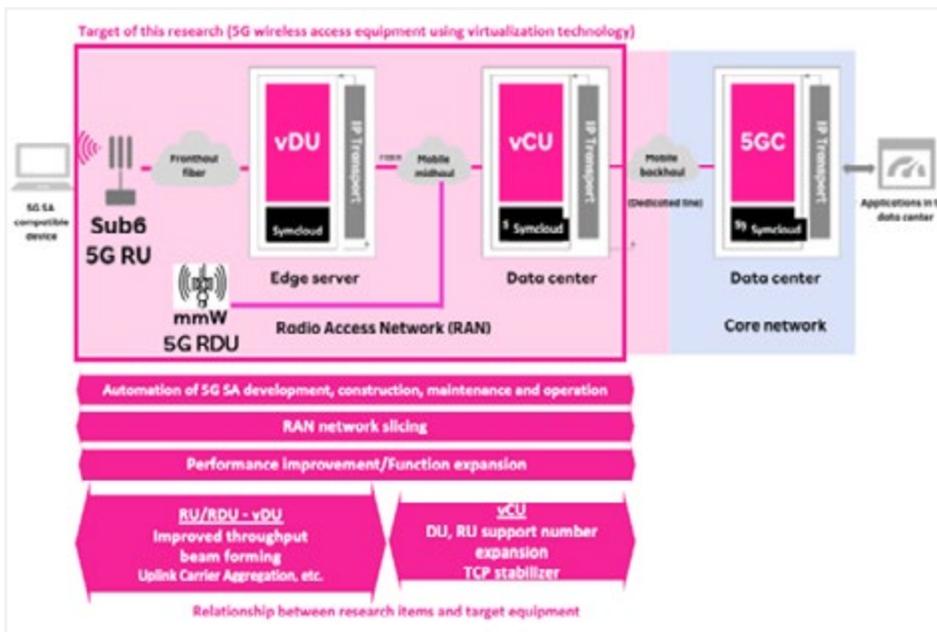
deal came about as a result of their aligned interests in developing competition-friendly regulation.

## Rakuten Mobile and NEDO Complete Successful R&D Tests Of 5G SA Virtualization Technology

Rakuten Mobile, working with Japan's New Energy and Industrial Technology Development Organization (NEDO), announced the completion of an R&D project aimed at the commercial deployment of a

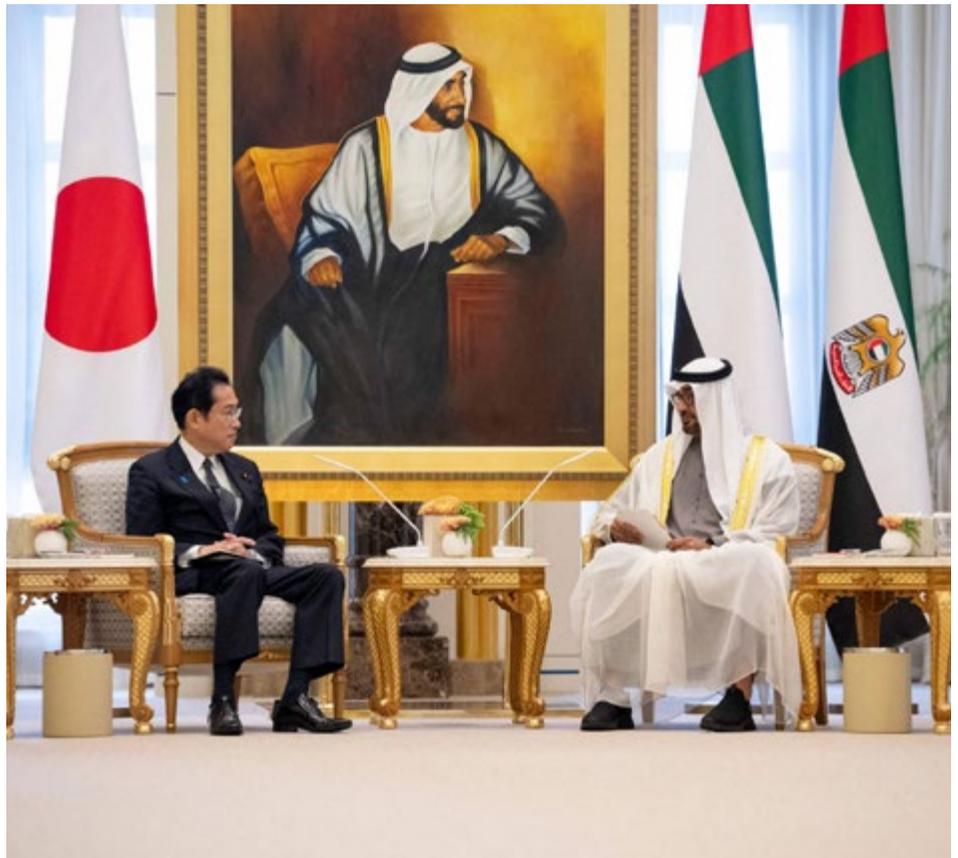
fully virtualized 5G Standalone (SA) mobile network using general-purpose hardware and cloud technology. The project reportedly forms part of NEDO's 'Research and Development Project of Enhanced

Infrastructures for Post-5G Information and Communication Systems', which seeks to utilize virtualization technology to deploy 5G SA and radio access network (RAN) slicing, as well as performance improvement and extension of network functionality. The tests concluded the potential of reducing CAPEX and OPEX costs by as much as 30% compared to conventional mobile networks requiring dedicated hardware and software. Rakuten Mobile plans to introduce 5G virtualization technology for commercial launch of 5G SA mobile networks in the future, and through its subsidiary company Rakuten Symphony, the Japanese MNO aims 'to further accelerate the global deployment of advanced, fully virtualized 5G Standalone mobile network platforms developed in Japan'. For its part, NEDO says it aims to build and strengthen the manufacturing of post-5G information and communication systems in Japan by developing technologies that will form a core part of post-5G networks.



## Japan Secures UAE Backing for Key Technologies

Japan and the UAE agreed to expand the scope of an existing partnership in technology, which will put the focus on investment in semiconductors and batteries. A statement issued by Japan's foreign ministry revealed the nations addressed five areas of cooperation during a visit by Prime Minister Fumio Kishida's to the UAE. The areas cover: green economy; trade; diplomacy and security; culture, education, science and technology; and international and regional affairs. In technology, the UAE made a commitment to invest in Japan's chip economy, enforced through two frameworks, a move which expands on a scheme centered on advanced technology signed by the pair earlier this year. In addition, the countries agreed for the UAE to provide financial backing to Japan to advance its battery ecosystem. There is a plan for the two nations to also strengthen dialogue in space technology, AI and the circular economy. Japan further highlighted the pair's objective to lead climate action in the international community, ahead of the UN's COP28, to be held at the end of this year.



## Telia Launches VoWiFi

Telia Lietuva has announced the launch of voice-over-Wi-Fi (VoWiFi), enabling customers to make calls in places where the mobile signal is unavailable or weak.

The service is available at no additional charge, although customers require a smartphone that supports VoWiFi, including numerous handsets from Samsung, Nokia,

OnePlus, Xiaomi, Pixel, Asus and Sony, with Apple devices set to follow in the near future. As VoWiFi has made it possible to make regular voice calls and send SMS over the more developed fixed broadband infrastructure, the calls tend to be much better call quality and also use less energy, resulting in a longer-lasting phone battery life. 'VoWiFi continues the work that VoLTE technology started on our network seven years ago, bringing traditional voice calls even closer to Messenger, Viber, WhatsApp and other digital communication platforms,' stated Telia technology manager Andrius Semeskevicius, adding: 'The new service will allow you to call any phone number in the world, just by connecting to one of the Wi-Fi networks densely surrounding us. VoWiFi will also finally put an end to missed and interrupted calls in places where mobile communication waves do not reach – in basements or behind the thick walls of the old town.'



## Ooredoo Qatar, Nokia Trial 5G SA Data Service, Enable VoNR-Capable Devices



Ooredoo Qatar and technology partner Nokia have announced the Qatari operator's first data call in 5G Standalone (SA) mode as part of ongoing 5G SA services trials, alongside the enabling of Voice over

New Radio (VoNR)-capable 5G devices. The eventual commercialization of 5G SA will enable Ooredoo to partner enterprises and developers to deliver new use cases in domains such as Industry 4.0, massive

IoT device connectivity, VR and Augmented Reality (AR), demanding faster throughput and lower latency, and will also open up the core network with open APIs (Application Programming Interfaces) where third parties can co-create new services with customers and partners. Time to market for the launch of new services will be reduced, and 5G SA will also enable private secured virtual networks for enterprise customers, opening up additional revenue streams for Ooredoo via network slicing to ensure differentiated enterprise services. Following the 'national first' enabling of VoNR devices, supported by Nokia 5G SA Core technology, Ooredoo's customers will subsequently be able to make and receive 'supreme quality' voice and video calls over a 'pure dedicated' 5G SA network, the cellco declared. Nokia's solution enables faster call setup, faster simultaneous data services and enhanced network reliability compared to Voice over LTE (VoLTE).

## Open RAN Backed for Major Role at Dawn of 6G

VP of semiconductor company Analog Devices Joe Barry touted 6G as using open RAN from day one during an interview with Mobile World Live, as the company showcased work taking place with partners at its Republic of Ireland research Centre. Barry, VP of marketing, systems and technology for Analog Devices' communications business unit, believes everything will be open RAN at the point where 6G is deployed, noting the architecture was actually ahead of where he expected. "If you ignore the hype that was there in the early days we're now starting to get into the real practical deployment of it." "There was a lot of hype it would get to a majority proportion [of the overall market] in a few years. It's not going to be that fast, it's going to be slow, steady and obviously we see operators doing greenfield able to deploy very quickly, but brownfield is going to take a little longer." Barry noted open RAN, which Analog Devices is a prominent backer of, is "starting to mature",

with most standards solidified with the expectation of greater scale leading up to it being everywhere at the start of the 6G era. Sensing an opportunity Analog Devices was earlier this month announced as one of the companies involved in projects set to receive a total of €8.1 billion in funding from European Union member states, as the region's authorities press on with attempts to boost local manufacturing and R&D. It has also pumped cash into its R&D in the region, with its ADI Catalyst in the Republic of Ireland, which carried an

initial budget of €100 million. At the site it works with industrial partners on various technologies including use of sensors for smart industrial applications. Barry noted he expected early adopters of cutting-edge intelligent industrial systems at so-called dark factories where there were practically only machines working on the floors. He added private networks, 5G and low latency could serve a whole range of business needs, many of which are being tested and developed with partners at its facility.



## IEEE Debuts Li-Fi Standard

A standard for Li-Fi was released by the Institute of Electronic and Electronics Engineers (IEEE) to provide a globally recognized framework for the mass deployment of the wireless technology. Specialist companies pureLiFi and Fraunhofer HHI were involved in the Light Communications 802.11bb Task Group which developed the standard, stating their goal was to accelerate the adoption and interoperability between Li-Fi vendors and

broader Wi-Fi specifications. Richard Webb, director of network infrastructure with CCS Insight, noted the 802.11bb standard is an important milestone for Li-Fi, placing it as a complementary and integrated technology alongside Wi-Fi. Nikola Serafimovski, VP of standardization at pureLiFi and chair of the 802.11bb task group, stated Li-Fi had attracted interest from some of the largest industry players, ranging from semiconductor companies to leading

mobile phone manufacturers. He noted the task group worked with key stakeholders to create a standard which would drive wide-scale adoption of Li-Fi. Li-Fi uses light instead of radio frequencies to transmit data. PureLiFi stated it has the potential to unleash faster, more reliable wireless communications with better security than conventional technologies including Wi-Fi and 5G.

## Globe Claims a 'First' with Launch of 5G Network Slicing

Globe Telecom has launched End-to-End (E2E) network slicing functionality in its 5G Standalone (SA) mobile network, the first such company to do so in the Philippines. The technology enhancement allows for the development and delivery of unique services and innovative applications, and also accommodates customers' growing data needs, whilst ensuring low-latency services. 'Network slicing stands out in delivering a tailored service experience for our customers based on the applications in use within the network,' said Gerhard Tan, Globe's Director and Head of Technology Strategy and Innovations, adding 'As ever, we are at the forefront, pioneering digital technology innovation'. E2E network slicing can be used for a wide range of applications, from connecting Internet of Things (IoT) devices to supporting high-bandwidth activities such as streaming videos and virtual reality. It facilitates Enhanced Mobile

Broadband (EMBB), Ultra-Reliable Low Latency (URLLC), and Massive Machine

Type communication (mMTC) applications.



## ARTICLE

## Institutionalizing Digital Education Ecosystem Development in Developing Countries

How Uzbekistan has created new possibilities for schools, students, parents, and government authorities in this digital era



**Gabriel Levi**  
Founder and CEO  
Kundalik International



In the Republic of Uzbekistan, in order to digitalize the school education process, improve the computer competence of teachers, eliminate the digital inequality and improve the quality of education in general, in August, 2018 the Ministry of Public Education announced the selection of companies for cooperation in the form of a public and private partnership. From among 20 applications, the experts selected the Kundalik solution. With over 15 years of experience in digital transformation of education and government institutions, Kundalik International is the operator and private partner for digitalization of education in several CIS countries with more than 59 thousand schools connected and 30 million users registered.

As a result, a public and private partnership agreement was signed between the Ministry of Public Education of the Republic of Uzbekistan and Kundalik in order to develop a state digital educational ecosystem. The public and private partnership is an equal cooperation between the state and private business as a part of which the state saves budgetary funds and implements various projects that could not be implemented without any private investments.

*The experience of countries that demonstrate the highest results in the field of school education shows that, at present, it is impossible to prepare children for modern life according to the high standards without the use of technology.*

The developed ecosystem provides digital tools for all members of the educational process. For teachers, this is an electronic journal and a homework diary for keeping records relating to the attendance/academic progress and other reports in digital format, distance learning tools, communication services with the students and parents. The parents can get quick access to the important information about the academic process and success of their children. The students, regardless of their location, can obtain

equal access to the educational content that contributes to the digital equality and increase in the academic level in the country. The government authorities have quick access to up-to-date information relating to the education system condition,

To work with the platform, the person can use any device with an Internet connection, such as a computer, laptop, tablet, or mobile phone. The Kundalik.com website is located in the TAS-IX zone, and Internet traffic (including with the help of mobile

during the lesson in a couple of minutes. It is also possible to write messages to the parents relating to the student's behavior. There is no need to take a roll call, carry around heavy paper class-books or wait for another teacher to return the class-book.



*"One of the main objectives of the Ministry of Public Education is to develop comfortable work conditions for the teachers. While using up-to-date technologies, we want to significantly reduce the paperwork in schools and the related burden on the teachers. Moreover, we will create a tool for managing the educational process and generating objective reports relating to the students' attendance and academic performance"*

**- H.E. Mr. Sarvar Babakhodzhaev, then Deputy Minister of Public Education of Uzbekistan.**

required reporting and analytics for informed management.

The first platform implementation was commenced in the schools in Tashkent. Currently, Kundalik has been implemented in all regions of Uzbekistan. In total, the platform is used by more than 10 thousand schools in the country. In 2022/2023 academic year, 244 million lessons have been conducted in the schools in Uzbekistan with the help of Kundalik, 2 billion grades have been issued.

operators) is not consumed during the platform operation time.

A mobile application has also been developed for the teachers. This app allows to work without an Internet connection. Kundalik facilitates the work process and saves time of the teachers that can be usefully spent on the creative or additional development of students, or personal professional development. The reports are generated in an automatic mode, the grades are entered into the class-book

*With over 15 years of experience in digital transformation of education and government institutions, Kundalik International is the operator and private partner for digitalization of education in several CIS countries with more than 59 thousand schools connected & 30 million users registered.*

*"When I completed the online training conducted by the Kundalik supervisors, the platform operating principle became clear, and I decided to help all teachers, show them how to develop and import the lesson plans, issue the grades for school terms and examinations, indicate the class attendance and absenteeism for no reason. Based on the work experience as an administrator, I can say that Kundalik improves the quality of educational process, saves time that has been previously spent on paperwork, helps the teacher prepare video lessons, and also makes the student assessment system transparent"*

**- Mr. Zhasurbek Makhmudov, a teacher of mathematics at the State Specialized Boarding School No. 7 of the Chustskiy district in the Namangan region.**

In April 2021, Kundalik together with a partner launched a project to develop a multi-service online platform for supplementary mastering of disciplines as a part of the school curriculum. The project includes a design tool, a catalogue of academic applications that are grouped by the disciplines, classes or contents of textbooks included in the republican list. Moreover, the platform provides the distance learning services, motivation and gamification tools. The digital profile of a student demonstrates information relating to the diplomas, medals, or achievements. At present, the teacher can develop own

digital lesson, complete it with video or audio materials, test assignments and provide it as a homework through the Lessons Planning section in Kundalik. If necessary, the lesson can be bound to a textbook or an official syllabus for the discipline. When submitting a lesson as a homework, the teacher can set up the competition parameters and choose the presentation form. Thus, the senior classes can take a lesson in the messenger format, and the younger students can study in the form of an interactive game.

A mobile application Kundalik.Family has been developed for the parents and students. In addition to the standard options of a digital diary and a learning platform, the application provides very useful additional tools: a GPS tracker that helps determine the child's location, a rating in a class and detailed analysis of performance for various disciplines, an average grade, etc.

The application helps the students to use all the diary options, send their homework and files with completed creative tasks, view the curriculum, and schedule their day independently. It is also possible to send the homework in the application through the parent's profile that is especially useful for those families that have one smartphone to work with the platform. A motivational tracker in the Diary tab will inspire and encourage the students to complete their tasks and assignments faster.



*"Despite the fact that the children are at home, we must start the 4th academic term at schools"*  
**- H.E. Mr. Sherzod Shermatov, then Minister of Public Education of Uzbekistan.**

The project is completely funded by Kundalik's own resources. The state does not spend the budget for software development, operation and maintenance, introduction of the system into the schools. Transition to the digital document management in the schools allows the state to save on purchase of paper class-books, since there is no need for them.

Moreover, the saved public funds can be

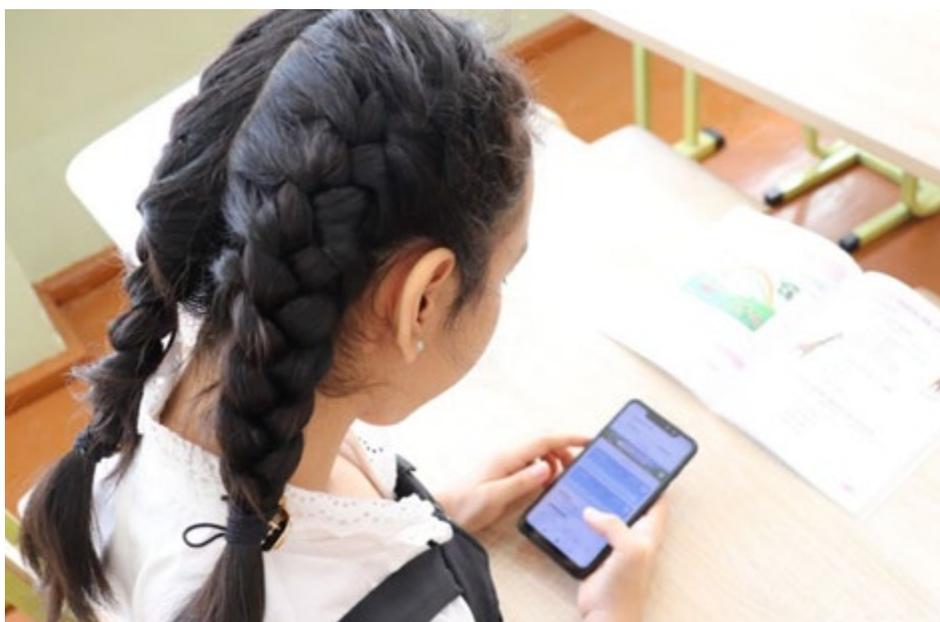
used to equip the schools with computers and the Internet. Thus, on April 28, 2020, a decree of the President of Uzbekistan was signed, according to which all healthcare institutions, schools, preschool educational institutions should be connected to the high-speed Internet network in 2020-2021. In February 2020, to solve issues with the technical equipment of schools, a pilot project of the Ministry of Public Education of Uzbekistan was also launched to provide the tablets and laptops to the teachers by installments on preferential terms.

The project demonstrated its particular efficiency during the pandemic.

The Ministry of Public Education, together with the National Television and Radio Company of Uzbekistan, arranged the broadcasting of video lessons on the TV channels in accordance with the curriculum. The video lessons were also posted on the website of the Kundalik digital academic platform.

During this period that was so difficult for the country and the entire world, the Kundalik platform helped to provide the

*Benefits of digitalization of the education system are clear: it helps to prepare a unified standard in all schools in the country, eliminate the digital inequality and find an individual approach to each child. The state can obtain the necessary data for analytics and management, provide the children with useful content for their development, and provide the parents with convenient services and involve them in the education process of their children. It also instills digital literacy in the citizens.*



distance learning services. This system allowed the teachers to issue homework and learning materials, and the students could send their completed works for check and verification. As a result, the teachers issued grades in the digital class-book or gave comments on finalizing the answers.

It is noteworthy that due to the technology introduction in the field of education this industry has recovered faster than others after the pandemic in Uzbekistan. In January-May 2021, the growth rate of academic services in Uzbekistan turned out to be the highest and amounted to 145.2%. The rental and leasing services only were ahead of this indicator - 146.9%. Moreover, the level of educational services has recovered most quickly after the strict quarantine measures in 2020.

According to the research results, the children successfully studied, demonstrated more motivation and independence when doing their homework and classwork using the digital diary, even during the pandemic. Kundalik contributes to the improvement of school performance and attendance rates. The children are more actively involved in the educational process.

10, 000 parents of Uzbek schoolchildren took part in a survey where they told about their attitude toward academic digitalization and to the Kundalik digital homework diary. More than 67% interviewees responded that they had positive emotions about the

*In April 2021, Kundalik together with a partner launched a project to develop a multi-service online platform for supplementary mastering of disciplines as a part of the school curriculum. The project includes a design tool, a catalogue of academic applications that are grouped by the disciplines, classes or contents of textbooks included in the republican list. Moreover, the platform provides the distance learning services, motivation and gamification tools.*

abolition of paper homework diaries and transition to the digital ones, 22% persons were against such an innovation and 12% responders still found it difficult to give an answer.

According to 86% of parents, the most convenient thing in a digital homework diary is that at any time and in any place the parents can have a look at the exact schedule, grades, tasks and attendance of the child. All parents believe that such approach increases the interest of children in learning.

The majority of parents (61%) look through the grades in the digital homework diary together with their children. They believe that the child feels more attention from the parents and strives for the better results.

Benefits of digitalization of the education system are clear: it helps to prepare a

unified standard in all schools in the country, eliminate the digital inequality and find an individual approach to each child. The state can obtain the necessary data for analytics and management, provide the children with useful content for their development, and provide the parents with convenient services and involve them in the education process of their children. It also instills digital literacy in the citizens.

No digital transformation of the economy is possible without the digitalization of education. Our kids today are the future of every country, they are the force that will be driving our countries forward. That's why school education should be digitized so that hundreds of millions of people could get all the benefits that come with technology. 📱

## REGULATORY NEWS

## TDRA Supports FedNet with AI Services

Conforming to the rapid technological transformation in today's world, the Telecommunications and Digital Government Regulatory Authority (TDRA) has launched an initiative to support the Federal Digital Network (FedNet) with artificial intelligence (AI) services, in a major development that enhances the digital transformation journey in the UAE. This development is considered a paradigm shift in the main services provided by FedNet to government entities, based on leveraging the enormous potential of AI. Commenting on this development, H.E. Eng. Majed Sultan Al Mesmar, TDRA Director General, said: "Digital transformations today are characterized by rapid acceleration, and what we are witnessing in 2023 indicates that keeping pace with the current era requires an unprecedented pace and a high ability to adapt and absorb new technologies. AI services on AI-supported FedNet are a great step in the digital transformation process, and an important element in enhancing the ability of government entities to provide easy and fast services to all customers, which reflects TDRA's role as an enabler of digital transformation." Through cooperation with Microsoft and Kagool, "a Microsoft advanced solutions partner in Data and AI", FedNet, in its new version, will provide a set of services that fall under three pillars: Applied AI that contributes to enhancing productivity and efficiency by reducing the time needed by developers to update procedures and processes, analyzing conversations to improve customer experiences, as well as automating document processing to speed up work mechanisms. Cognitive AI, which refers to simulating human behavior and thinking to solve complex problems; It intelligently deals with complex problems, leading to more accurate results. And machine learning, which uses algorithms that allow computers to self-learn by



analyzing big data, extracting results from it and converting it into value. FedNet is one of the key digital government enablers in the UAE, and it receives special attention due to its strategic importance and role in the digital transformation process. FedNet supports more than 35 federal entities and more than 5,000 virtual servers. In 2023, FedNet achieved the VMware Cloud Verified certificate for the sovereign cloud category. The importance of this certificate stems from the fact that FedNet takes into account the highest standards of cybersecurity and national privacy, and that all the data is stored and processed in accordance with the relevant UAE laws. Thanks to these developments, in

addition to the infrastructure supported by high-speed Graphics Processing Units (GPUs), FedNet has become an advanced AI platform, providing government entities with agility to build and deploy high-quality AI solutions and models in the visual, audio and linguistic fields. It allows big data analysis and machine learning to enable administrators to make proper decisions, all through application programming interfaces (APIs). Kagool is a leading global Data and AI System Integrator specializing in advanced Data and AI solutions, helping customers embrace cloud adoption at pace and scale leveraging proprietary Cloud accelerator products.

## ITU Statement on the Closing of the 2023 AI for Good Global Summit

For two days, governments, policy-makers, industry leaders, academics, scientists, technology innovators, civil society and the UN community met at ITU's AI for Good Global Summit in Geneva, Switzerland. As the convenor of the event, ITU is pleased to have been able to bring these parties together to find practical applications of artificial intelligence to advance the UN Sustainable Development Goals. Recognizing the urgency brought on by the emergence of generative AI and the challenges posed by AI, participants also discussed the need for guardrails and global AI governance frameworks. A variety of ideas related to the future of AI were presented at the AI for Good Global Summit. These include setting up a registry of new or anticipated AI applications, a global observatory on AI and new institutional bodies, as well as proposals to empower existing organizations that may already have the expertise and structures to tackle challenges brought on by AI. It is important to analyses what's feasible, what's already available and what can be done so that a roadmap is created for the short, medium



and long terms. Leveraging its expertise, the UN group on AI led by ITU and UNESCO is geared up to help move forward efforts on these. ITU is committed to AI standards development and capacity building, supporting responsible AI development and deployment, and driving strong collaboration with all stakeholders. We need to show the world what an inclusive, safe and responsible AI can do for humanity. Together with our UN partners, ITU will work to integrate AI capacity support into

our digital transformation offerings, and we will undertake sector-focused AI readiness work in critical areas such as health, smart mobility and smart cities, and advance universal health. From here on, our work on AI at ITU, the UN system and society as a whole should only grow in intensity. While ITU focuses on ensuring that the 2.7 billion people that are offline around the world get connected to digital technologies, we are also committed to ensuring that AI serves everyone, everywhere for the greater good.

## Bahrain's TRA Signs MoU to Strengthen Cooperation with the US Federal Communications Commission

The Telecommunications Regulatory Authority (TRA) represented the Kingdom of Bahrain at the ITU Global Symposium for Regulators (GSR-23). Participating in the Head of Regulators roundtable discussion the TRA's General Director, Philip Marnick showcased Bahrain's leading position in

telecommunications. The TRA held bilateral meetings with a number of international telecommunications regulators and ITU officials. On the side-lines of the 2023 ITU GSR-23, during the Bahrain's signed a Memorandum of Understanding (MoU) with the United States Federal Communications

Commission (FCC) to formalize bilateral relations between the two organizations. The agreement was signed by and FCC's Chairwoman Jessica Rosenworcel and the TRA's General Director Philip Marnick. The MoU will increase coordination between the TRA and FCC, enabling discussions and the exchange of best practices on issues such as fifth generation technologies (5G), spectrum licensing, broadband deployment, accessible and inclusive communications, robocalls, and secure networks. General Director of TRA, Philip Marnick stated: "In our ever increasingly interconnected world it is important for regulators to collaborate, to share ideas and best practice and work together to enhance protection for consumers. The collaboration will also support our efforts to further enhance services in Bahrain.



## TRA Bahrain Holds Its Second Open Forum to Review 2022-2023 Work Plan

The Telecommunications Regulatory Authority (TRA) invited local operators and licensees to its second Open Forum to discuss updates to its 2022-2023 work plan with the progress made to date. In attendance were representatives from the telecommunications industry and consumer advocacy organizations. Through this work plan, the TRA aims to create an environment that supports innovation, make Bahrain one of the worlds most advanced telecommunications markets with secure and resilient network, reliable broadband service for all, as well as ensuring consumers are empowered and protection. TRA's General Director, Philip Marnick stated: "These forums bring together stakeholders to share their expertise and discuss the telecommunications industry's most pressing issues and opportunities. The

TRA remains committed to supporting and encouraging innovation, developing a vibrant and healthy digital ecosystem, and ensuring transparency in everything we do." He added: "Working alongside

our stakeholders, we continue to make progress towards our strategic goals. We look forward to holding more Open Forums so that we can continue to engage with all stakeholders."



## RRT Opens Consultation on 1452MHz-1492MHz 5G Auction Plans

Lithuania's Communications Regulatory Authority (RRT) has launched a public consultation on plans for the development of mobile communications services in the 1452MHz-1492MHz frequency band. The regulator notes that the band is suitable for data transmission services, including 5G communication. Interested parties have until 18 September to submit comments on the plans, following which the RRT said it will seek to allocate the frequencies through a

spectrum auction procedure. Under current auction plans, each winning bidder will be granted the right to use spectrum in only one of the following ranges: 1452MHz-1472MHz or 1472MHz-1492MHz. 'Radio frequencies are a resource of our country – we strive to use them efficiently and create value for Lithuanian users. Having assessed that the 1452MHz-1492MHz radio frequency band can be used for the development of mobile communication, we

plan to announce an auction,' said Darius Kuliesius, deputy chairman of the RRT Council, adding: 'Mobile operators will be able to participate in it and, on the basis of acquired frequencies, further increase the development of electronic communication networks and services. The more spectrum operators have, the higher the quality of connection they can provide to users.'

## Germany Sets \$1B AI Research Budget

Germany reportedly outlined plans to spend almost €1 billion on AI research over the next two years through public funding in an attempt to step up competition with the US, which has established a lead in the sector. Reuters reported Minister of Education and Research Bettina Stark-Watzinger set the target, which is almost double what it spent on research in the field previously. As part of the plan, the country aims to create 150 new university laboratories for AI research,

expand data centers and make public data sets more accessible to generate new insights. Stark-Watzinger apparently believes Europe could hold the edge over nations like the US and China due to the continent's regulatory framework and the potential to work with other countries in the European Union. She further claimed Europe has more of a focus on privacy and personal safety when it comes to AI development and could therefore attract

more private investment. "We have AI that is explainable, trustworthy and transparent," she said. "That's a competitive advantage." The country, however, has a long way to go to match the outlay by the US. Citing a Stanford University report, Reuters placed US government spending on AI at \$3.3 billion in 2022, when the sector also attracted \$47.4 billion in private spending.

# Telecommunications and Information Technology Act Brings Change in Saudi Arabia

The Telecommunications and Information Technology Act was published on 10 June last year and came into effect on 8 December 2022. The new Act replaced previous Saudi telecoms legislation that had been in place since 2001 and, among other things, aims to support the development of the Saudi telecoms and IT sector and encourage digital transformation in the country. Under the new Act, a greater range of services are potentially subject to telecoms licensing and regulatory requirements than was the case before. For example, while the Act lists certain services that were already subject to licensing – like providing telecoms services to the public, providing infrastructure service for public telecommunications networks, using numbering resources or radio frequency spectrum, – it also requires obtaining a license for providing Saudi domain name registration services. Further, it gives the board of the Communications, Space & Technology Commission (the CST) discretion to require businesses to obtain a license or register with it in some circumstances. This includes if the business:

- provides certain services related to telecommunications or information technology, including digital content platforms – the CST held a public consultation regarding draft Digital Content Platform Regulations previously;
- acquires or uses telecommunications or IT-related devices; or
- establishes a private telecommunications network – the CST has adopted the Regulations for the Provision of Specialized Wireless Telecommunication Networks Services to this effect in April.

At a time of increased digital connectivity across the economy, this power could potentially be used to bring businesses across sectors into scope of telecoms regulation in Saudi – the CST board is empowered to set the necessary controls for obtaining a license, registration or permit, and implementing regulations that supplement the Act provide the board with further scope to cap the number of licenses, registrations or permits issued for various activities. Telecoms licenses in Saudi obtained prior to the new Act taking effect remain valid, although such licensees must ensure compliance with any new requirements and bridge any regulatory gaps by 8 December 2023. Significantly, many of the core telecoms aspects remain the same. Issues such as frequencies, numbering, interconnection, use of real estate, competition and M&A, as well as violations and penalties are dealt with in a manner similar under the Act to the old law. However, in addition to the expanded scope of the Act referenced above, there are a few other important changes. For example, fixed and mobile telecommunication services no longer need to be provided through joint stock companies that place their stock for public subscription. This may be welcomed as a positive development by businesses interested in offering fixed and mobile services in Saudi as it reduces market entry barriers. In addition, service providers are now required to obtain the CST's approval before making any "substantial change" in ownership. This is without prejudice to notification duties under the competition and merger telecoms regime. The implementing regulations provide further detail on what constitutes a "substantial change" – examples include where the provider wishes to amend "any of the essential clauses in the memorandum of association or the articles of association"



or where there is "any legal action resulting in another person owning a stake equal to 5% or more of the licensee's capital". Similarly, service providers are now also required to obtain a non-objection certificate from the CST for making any substantial changes in its senior management. The implementing regulations provide further detail on this aspect. Another notable issue dealt with by the new Act pertains to internet filtering. While historically and in practice, the CST has been responsible for internet filtering in the Kingdom, this was never expressly set out in the old telecoms law. The new Act specifically empowers the CST, after coordinating with other competent authorities, to filter the internet and limit access to specific content online, and to prevent or restrict access to internet services on the gateways. By-passing or circumventing the Kingdom's internet filtering system is also prohibited. The new Act has also introduced new obligations in relation to user data confidentiality and protection, supplementing the new Saudi Personal Data Protection Law that will take effect in September. Allied to this, the royal decision approving the Act stressed the importance of the National Cybersecurity Authority (NCA) and compliance with its cybersecurity considerations – for service providers considered as critical national infrastructure, in particular. The NCA is empowered to require service providers subject to the new Act to conclude mutual agreements to realize cybersecurity objectives, in accordance with NCA's controls and guidelines, for example. The NCA can also follow up and verify the cybersecurity compliance level of service providers, in accordance with those controls and guidelines, and impose the cost of that follow-up on the providers if they are found negligent. Perhaps most notably, the NCA can also impose penalties provided for in the Act on service providers for violating cybersecurity obligations. Once the NCA coordinates with the CST on a compliance program, such powers may be revoked. Against the backdrop of new data protection and cybersecurity obligations, it is as yet unclear how potentially overlapping obligations under the Act to communicate details of data breach incidents to the CST, and to affected users, immediately, will interplay in practice.

## CST: Mobile Phone Caller's Name and ID Will Be Displayed from Oct. 1

The Communications, Space and Technology Commission (CST), the Saudi digital regulator, has presented a draft technical specification for displaying the name and identity of the mobile phone caller, effective from Oct. 1, 2023. The caller's name and number must be displayed in the call log, and the device must be able to receive and display the caller's name and number for all types of technologies, including 2G, 3G, 4G, and 5G. This specification aims to employ modern technologies to raise the efficiency of services provided to the end user. It also aims to ensure compatibility of terminal devices with networks operating in the Kingdom, and educate users about the feature concerned with displaying the name of the connected party. The scope of this specification focuses on enabling the feature of displaying the name of the party to which it is connected in terminal devices operating on mobile networks in Saudi Arabia. It is an additional feature that enables the receiver of the call to know the identity of the caller by including the name of the party from which the call is coming. The service providers can use this feature in their networks to determine the name of the caller, without the need for action on the

part of the connected parties to activate this feature. The general requirements of the specification included urging service providers of mobile and land phones to implement the required solutions to facilitate the availability of the feature in their networks according to the specifications. The manufacturers are also required to conduct tests, issue an acknowledgment to support the caller's name display feature, and obtain the approval of all mobile network operators in the Kingdom in order to ensure the compatibility of the devices with the networks of service providers in the Kingdom. The CST specified that mobile network operators in the Kingdom must conduct the required tests and issue approval in accordance with the technical specification (GEN002), and to prove compliance with any of the additional requirements cited in the relevant technical specifications. This may require providing the authority with specific test results, standardization charts, technical interpretations, or declarations issued by the applicant himself in accordance with these requirements. Mobile and fixed service providers must also take the necessary security measures in networks to ensure that the source of the caller's name is the

original source. More information about the characteristics and specifications of telecommunications networks can be obtained through coordination with service providers in the Kingdom. Manufacturers of peripheral devices must activate this feature on all concerned devices, and commit to support the identification of the device to receive the name and number of the caller through the network and display it on the screen of the device.



## Kazakhtelecom to Sell One of Its Mobile Subsidiaries This Year, Says Minister



Kazakhstan's Minister of Digital Development Bagdat Musin announced following a Cabinet meeting that state-backed fixed network provider Kazakhtelecom (KT) is expected to sell one of its mobile operator subsidiaries – either Kcell or Mobile Telecom Service (Tele2-Altel) – by the end of this year, reports Profit.kz. The Minister also disclosed that two unnamed interested parties are currently conducting due diligence on the potential mobile assets up for sale. Musin added: 'So far, Samruk-Kazyna [the state-held Sovereign Wealth Fund with a controlling stake in KT] is working on due diligence – checking by an interested player for compliance with the price and the asset

being purchased. We set a deadline, as from the government, to withdraw one of the operators from Kazakhtelecom by the end of the year.' In June 2019 Kazakhstan's mobile sector was effectively reduced to a duopoly when KT completed a 100% takeover of its existing associate Tele2-Altel – having already acquired Kcell in December 2018 – leaving KaR-Tel (Beeline) as the sole rival to the KT group, albeit merger conditions obliged KT to keep the formerly Swedish/Turkish-owned Kcell and former Swedish-Kazakh joint venture Tele2-Altel separate, while also retaining each operator's dual ('Kcell'/'Activ' and 'Tele2'/'Altel') brands. In October 2021 KT reduced its Kcell stake from 75% to 51%.

## TRAI to Use AI to Monitor, Measure Network Quality

The Telecom Regulatory Authority of India (TRAI) proposes to use Artificial Intelligence (AI) to measure and monitor network quality in its new draft regulation for Quality of Service Standards. TRAI proposes utilizing AI technology for QoS management and monitoring. “Near real-time, rather than monthly QoS performance monitoring may be achieved by collection, processing, and correlation of performance data. AI can play an important role in effectively managing end-to-end QoS in network,” TRAI said. TRAI released a consultation paper reviewing Quality of Service Standards for access service providers on Friday. In the paper, TRAI proposes to measure Quality of Service Standards across all segments of the telecommunications network. Segments of a telecommunication network include access, backhaul, core and transport components. The segmented approach to Quality of Service management could lead to unpredictable user experience, as each and every segment of a network is integral in delivering seamless telecommunications to the end user, TRAI said. In the draft regulation, TRAI has proposed to merge three regulations to measure network quality for wireless and wireline services into one. According to TRAI Act, 1997, it is mandated to ensure the QoS to protect the interest of the consumers of telecommunication services. Accordingly, it notified three QoS standards for telecom services – The standards of QoS of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009; QoS of Broadband Service Regulations 2006 and; The Standards of QoS for Wireless Data Services Regulations 2012. These regulations have been amended from time to time based

on the induction of new technologies like 4G. TRAI said it has been receiving a number of complaints from subscribers regarding call drops and other network-related issues, especially after the rollout of 5G services. “To simplify regulatory framework for QoS, it is proposed to have single regulation dealing with QoS standards for all voice and data services irrespective of their access medium i.e., for both wireline and wireless services. Accordingly, present three regulations are proposed to be merged into single regulation,” it said.



## Ofcom Explores Hybrid Sharing Approach in 6GHz Spectrum Band

Ofcom, the UK's communications regulator, is considering a new approach to meet the growing demand for data by exploring the possibility of making additional capacity available in the upper 6 GHz spectrum band. The move aims to alleviate the pressure on radio spectrum, driven by the increasing use of both Wi-Fi and mobile networks. Currently, there is considerable industry interest in utilizing the upper 6 GHz spectrum band to support the continuous growth in data traffic. This is divided between dedicating the band exclusively for licensed mobile use or utilizing it for low-power license-exempt applications like Wi-Fi. However, instead of choosing one exclusive use over the other, Ofcom is

exploring an alternative approach called “hybrid sharing.” This approach aims to enable simultaneous use of the spectrum band for both Wi-Fi and mobile services. Ofcom is actively investigating two potential methods for achieving this: Indoor-outdoor split: As Wi-Fi routers primarily operate indoors, catering to localized broadband traffic, and mobile transmitters predominantly function outdoors, providing wider coverage, Ofcom is exploring the feasibility of allowing indoor Wi-Fi use while permitting licensed mobile use outdoors. Geographical sharing: Recognizing that data traffic across mobile networks is concentrated in specific high-traffic areas, Ofcom is considering the possibility of enabling licensed mobile use in those locations while allowing Wi-Fi use in other areas. Additionally, they are exploring the option of prioritizing Wi-Fi use in high-demand regions while permitting mobile use elsewhere. Ofcom aims to identify suitable hybrid sharing mechanisms that foster coexistence between licensed mobile and Wi-Fi services in the upper 6 GHz spectrum band. They are also advocating for international harmonization of hybrid sharing in this band to facilitate economies of scale for equipment. Stakeholders and industry participants are invited to provide their comments on this approach by September 15, 2023.



## UK Commits Another £40M To 5G

The UK government launched a new funding initiative worth £40 million to accelerate 5G deployments by local and regional authorities, targeting connectivity advancements in transportation, smart infrastructure, manufacturing, agriculture and public services.



Announcement of the new funding comes a few months after the government outlined a digital connectivity strategy including a £100 million investment pot for 6G research and £8 million aid to roll out satellite networks in remote areas. Applications for the £40 million funding scheme are now open, the government said in a statement, and there are expectations this will also attract commercial opportunities. It explained the funding will be awarded to local authorities who can demonstrate 5G use cases in public sector, highlighting improvements to air quality through traffic control, collect environmental data and drones as examples. Further, the government announced a plan by the UK Telecoms Innovation Network to launch a nationwide campaign aimed at helping businesses work together with major operators and vendors to deliver 5G services. The project and funding will complement existing 5G initiatives, including Project Gigabit. Applications for the funding will close on September, with winners to be announced in due course.

## Spectrum Outlook 2023-2027 Released, ahead of 3800MHz Auction in October

Innovation, Science & Economic Development Canada (ISED) has released the Spectrum Outlook 2023 to 2027, outlining the government's plans to use spectrum to deliver affordable and high-quality telecom services, support faster deployment of 5G, improve rural connectivity, promote the use of wireless technologies that will help address climate change, and advance reconciliation with Indigenous Peoples. The Spectrum Outlook 2023 to 2027 lays out the government's spectrum release plans for the coming years, aiming to ensure that enough spectrum is available for services Canadians depend on. Building on a number of accomplishments since the release of Spectrum Outlook 2018

to 2022, the government will also continue to advance its 'use it or lose it' approach to spectrum so that it is put to use promptly. The upcoming 3800MHz band spectrum auction is scheduled to begin on 24 October 2023, and will be the third major auction to make spectrum available for 5G, following the 600MHz auction in 2019 and the 3500MHz auction in 2021. The publication of the final list of qualified bidders for the 3800MHz auction is scheduled for 16 August 2023. Furthermore, ISED will make more 5G spectrum available in the future, including through non-competitive local licensing and an upcoming auction for millimeter wave (mmWave) spectrum.

## EC to Investigate Qualcomm, Autotalks Tie-Up

The European Commission (EC) outlined intentions to examine a proposed acquisition of Israel-based automotive chip company Autotalks by Qualcomm, following requests by 15 member states. Countries including France, Italy, Spain and the Netherlands asked the EC to investigate the deal under EU Merger Regulations laws, meaning Qualcomm will now have to secure approval before it is able to close the tie-up. Qualcomm struck a deal to acquire Autotalks in May for an undisclosed sum. The Israeli company makes chips which help prevent vehicle crashes. The US chip giant intends to integrate Autotalks' vehicle to everything (V2X) technology into the Qualcomm Technologies' Snapdragon Digital Chassis portfolio, as it targets growth in the electric vehicle and autonomous driving sectors. In a statement, the EC explained the transaction would combine the two main suppliers of V2X semiconductors in the European Economic Area, with the technology key to improving road safety, traffic management and reducing CO2 emissions. "It



is therefore important to ensure that customers such as original equipment manufacturers or infrastructure managers retain access to V2X technology at competitive prices and conditions."

## 22 Bidders Qualified for Canadian 3800MHz 5G Auction

Innovation, Science and Economic Development Canada (ISED) has published the final list of 22 qualified applicants for an upcoming 5G license auction in the 3800MHz spectrum band. The prospective bidders include: Rogers, Telus, Bell, Videotron, Eastlink, SaskTel, Tbaytel, Sogetel, Brooke Telecom, Bruce Telecom, CityWest, ABC

Internet, Cooptel, Ecotel, Elite General Partnership, HuronTel, Indigital, MPVWIFI, NE&W SPC, Novus, NWIC and Kingston Online Services. Bidding in the 3800MHz band auction is scheduled to begin on 24 October 2023.

## DISH Seeks Extension to Buy 800MHz Spectrum from T-Mobile



DISH Network has reiterated its intention to acquire hundreds of 800MHz licenses from T-Mobile US – but has requested a ten-month grace period to allow it to meet the long-standing USD3.6 billion asking price. The two parties – which have been negotiating the spectrum deal for several months – have filed a joint application with the US District Court for the District of Columbia. As per a Federal Communications Commission (FCC) filing unearthed by Light Reading, the deal involves a total of 156 2x15MHz licenses in the 806MHz-821MHz/851MHz-866MHz band. The licenses are currently held by Nextel South Corp and have been used by Nextel and Sprint over the years. The concessions have been under T-Mobile's control since the conclusion of its merger with Sprint on 1 April 2020. The regulatory approval for that deal was reliant on DISH's willingness to buy a USD5 billion combination of 800MHz spectrum assets and pre-paid sub-brands from Sprint Corp. The USD1.4 billion sale of Boost Mobile went on to close on 1 July 2020, but the spectrum deal has never come to fruition. If DISH backs out of the 800MHz acquisition it will be forced to pay T-Mobile a USD72 million break-up fee.

## Competition Commission Blocks Vodacom's Proposed Merger with MAZIV

South Africa's Competition Commission has recommended the prohibition of the proposed merger between Vodacom South Africa and MAZIV. MAZIV is a wholly owned subsidiary of Community Investment Ventures Holdings (CIVH), which owns and controls domestic fiber operators Vumatel and Dark Fibre Africa (DFA). The Competition Commission notes that the entity – formerly known as NewCo – was renamed MAZIV during the course of its investigation. In a media statement the competition watchdog stated: 'The Commission is of the view that the proposed transaction is likely to substantially prevent or lessen competition in several markets and that the conditions offered do not fully address the resultant harm to competition. Further, the public interest commitments provided by the merger parties do not outweigh the competition concerns.' The Commission elaborated: 'Importantly, there are no significant benefits arising from the proposed merger that are not already independently planned prior to the merger or not already in place. Moreover, the supposed benefits of MAZIV's open access regime have not been universally confirmed by the investigation; instead, evidence and allegations



of self-preferencing behavior and discriminatory pricing have arisen. The merger is likely to further reinforce the incentives for self-preferencing and discriminatory behavior.' As per the terms of the merger agreement, Vodacom sought to acquire 40% of the ordinary shares of MAZIV in exchange for a combination of ZAR6 billion (USD313.4 million) in cash and ZAR4.2 billion in assets.

## Mob Telecom Returns 2.5GHz Licenses

Brazil's National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) has rubberstamped the return of a pair of 2.5GHz spectrum licenses held by regional ISP Mob Telecom. Mob acquired the concessions in December 2015, during a multi-band auction of 'leftover' spectrum. The spectrum blocks in question comprise a 1x35MHz block at 2585MHz-2620MHz and a 1x15MHz block in the 2570MHz-2585MHz range. As part of the December 2015 auction Anatel received a total of 5,479 'Lot C' bids from 324 different companies, totaling BRL89.9 million.

This spectrum was divided into roughly 9,000 regional parcels and distributed on a municipality-by-municipality basis. TeleSintese notes that a number of Mob Telecom's fellow participants have already returned spectrum acquired in the same auction, including the likes of XP Servicos de Comunicacao, Heptanet Consultoria e Internet, Interpira Telecom, Infoby, Horizons Telecomunicacoes, Infoway, Unifique, Adyl Net Acesso a Internet, MKM Internet and MHNNet Telecomunicacoes.

## CST Launches 4G, Covers 90% of Sao Tome and Principe

Companhia Santomense de Telecomunicacoes (CST), the incumbent provider of fixed, mobile and data services in Sao Tome and Principe, has announced the commercial launch of 4G services nationwide. According to a press release from the operator, LTE coverage is available in all districts via a network of 102 antennas in 34 different locations, covering more than 90% of the population. Around USD2.3 million has been invested in the new network, which supports maximum download speeds of 150Mbps and offers improved service quality and stability for end users with a 4G compatible smartphone and SIM card. Following the launch of its LTE service, CST has lowered the cost of its 'Netfone Daily' 100MB mobile data package from STN27.5 (USD1.2) to STN10, while the price of its monthly data tariff has fallen from STN110 to STN80 and has seen the allowance rise from 900MB to 1GB. CST also revealed that by the end of this month a 1.5Gbps link will be installed between the two islands of Sao Tome and Principe, tripling the current bandwidth capacity.



## Ericsson Sued for Withholding Iraq Report

Ericsson shareholders sued the vendor seeking \$175 million to \$300 million in damages over an investigation into its business practices in Iraq, claiming certain actions taken by the company depressed its share price. A statement revealed a total of 37 shareholders had filed a claim against the vendor and more were expected to follow. The shareholders state they are seeking damages over pecuniary losses linked to the company's decision to withhold information about an internal investigation into its business practices in Iraq,

including a report outlining the results. In February 2022, the group of shareholders claim, Ericsson was forced to admit and provide brief information on the existence and contents of the report, after key elements were leaked to the media. The admission of the report's existence and contents, which came more than two years after the completion of an internal investigation, caused its share price to tank more than 25 per cent. At the crux of the complaint, shareholders argue Ericsson failed to comply with the European Union's Market Abuse Regulations, which obligates companies to release inside information as soon as possible. Instead, the complainants argue Ericsson had kept it "secret" for more than two years. Ericsson has already been forced to pay the US Securities and Exchange Commission (SEC) \$1.1 billion, after reaching a settlement in 2019 following a corruption probe. It then faced a fine of \$207 million in March 2023 for failing to properly disclose information relating to the SEC probe. However, the shareholders stated the fine issued earlier this year did not cover Ericsson's actions in Iraq.



## EU Progresses Device Security Regulation

A committee of Members of the European Parliament (MEPs) approved a draft of new regulation designed to bolster the security of consumer devices, while outlining the next steps to develop standard requirements for connected products sold in the bloc. In a statement, the parliament noted the Cyber Resilience Act will establish a uniform set of requirements for products with digital features and manufacturers will be required to provide details on their security properties. Under the new regulation,

consumer devices will be categorized into different lists based on “criticality” and level of cybersecurity risks. MEPs suggested an expansion of the list to include software products such as password managers, biometric readers, identity management software and smart assistants, smart watches and security cameras. MEPs also require devices to have security updates installed automatically and separately from functional ones, while stressing the importance of talent and skills training

in cybersecurity to combat cyber threats. “Impact of cyber-attacks through digital products has increased dramatically in recent years,” the parliament claimed, with many consumers falling victim to vulnerabilities in smart home products including robot-vacuum cleaners and alarm systems. The draft is backed by the majority of MEPs and they will now open negotiations about the proposal with the European Council.

## World Mobile Secures US Spectrum; Awaiting FCC Approval to Become the Country's 52nd MNO

Decentralized network infrastructure provider World Mobile has announced that it has secured up to 20MHz of spectrum in markets within California, New Mexico, Nevada and Utah. The frequencies will pave the way for World Mobile to deploy decentralized network infrastructure (AirNodes) within these states, with a focus on underserved communities. Going forward, World Mobile says it is poised to become a full member of the GSMA and be officially recognized as the 52nd mobile network operator (MNO) in the United States, pending approval by the Federal Communications Commission (FCC). According to its

website, World Mobile has been testing its network technologies ‘across quaint towns and open spaces in New Hampshire’. The website explains: ‘World Mobile utilizes both aerial and terrestrial infrastructure, blockchain technology, and hybrid connectivity to create an unstoppable people-run mobile network. Offering affordable ubiquitous coverage in extremely expensive coverage areas.’ World Mobile utilizes aerostats – unpowered balloons – that can provide connectivity over a 75km radius. The typical payload on each aerostat includes an LTE module that delivers 4G cellular connectivity over licensed spectrum, an LTE-U



module that enables backhaul over unlicensed spectrum and Sigfox and LoRaWAN modules. Last-mile connectivity is provided via AirNodes, which are hybrid mesh devices that are owned by communities or local entrepreneurs.

## U.S. is 32nd Worldwide on Broadband Affordability

The United States ranks thirty-second in the world on internet affordability, according to new research from Broadband Genie, a provider of data about broadband services. Broadband affordability is defined by the percentage of a country's average salary that would need to be spent to cover the average cost of internet connectivity. Broadband Genie estimates that the average monthly U.S. broadband bill is \$72.20 and the average monthly salary is \$4,083.26. That means U.S. residents spend just under 1.8% of their monthly salaries on broadband. Worldwide, subscribers spend 3.8% of their monthly salary on broadband. In

North America overall, high speed Internet consumes 3.04% of users' salaries. Canada is 41st on Broadband Genie's internet affordability rankings. Regionally, Europe had the most affordable broadband. The Americas were third. Africa had the least affordable broadband. “The United States and Canada both have one of the highest internet costs,” Alex Tofts, the Broadband Expert for Broadband Genie, said in a summary. “It's driven by a lack of competition and bigger distances to connect, with lower population density than other developed countries. However, both have average wages in the top fifteen in the world, com-

pensating for the high cost of internet.” The five countries with the most affordable broadband were Hong Kong, Singapore, Denmark, and Finland. In all of those countries, broadband costs less than 1% of the average salary. The countries with the least affordable internet are Turkmenistan, Equatorial Guinea, Papua New Guinea. Broadband costs more than 80% of the average monthly salary in all three countries. A study conducted by NTIA last year found that three in four U.S. households that do not have home internet would use it only if the service were free.

## Ofcom Investigating Virgin Media's Compliance with Contract Termination Rules

UK telecoms regulator Ofcom has opened an 'own-initiative' investigation into Virgin Media's compliance with contract termination and complaints handling rules. This development comes following complaints from the latter's customers, with claims that the operator had made it difficult to cancel services. In a press release regarding the matter, Ofcom said it was concerned about the number of complaints it had received from Virgin Media customers who had tried to leave the operator but had difficulties in doing so. According to the watchdog, some users reported difficulties in getting through to an agent on the phone to cancel, while others reportedly found their call was dropped midway through or they were put on hold for long periods. In addition, many end users claimed that they had to make lengthy and repeated requests to cancel, as their initial instruction was not actioned. Ofcom has said its investigation will examine whether there are reasonable grounds for believing that Virgin Media has

failed to comply with its obligations related to contract termination and complaints handling. Should the regulator find Virgin Media has breached the rules, Ofcom notes It has the power to issue a fine and direct the company to take remedial action or change its procedures, where appropriate.



## EU Countries Set to Turn New Telecom Law a Directive in All but Name

"Everyone at the Transport, Telecommunications and Energy (TTE) Council was quite happy to the direction suggested by the Spanish presidency of the GIA" told an EU diplomat to EURACTIV on cover of anonymity. Discussions among member states on the EU's new telecom law point to providing countries with extensive flexibility, thus turning the regulation into a text reading more like a directive, but the main point of contention remains the 'tacit approval' principle. The Gigabit Infrastructure Act (GIA) is a legislative proposal that aims to fast-track high-capacity network deployment across the EU, notably 5G and fiber. The file landed on Tuesday (11 July) on the table of the Telecom Working Party, a technical body of the EU Council of Ministers. On 11 July, National representatives discussed the first compromise text on a telecom draft law that the Spanish presidency put forth earlier this month. While EU countries' reservations towards a regulation seem to fade away, thanks to "minimum harmonization" provisions, debates mainly revolve around the "tacit approval" principle, according to EU diplomats who talked to EURACTIV. "Everyone at the Transport, Telecommunications and Energy (TTE) Council was quite happy with the direction suggested by the Spanish presidency of the GIA," an EU

diplomat told EURACTIV under the condition of anonymity. Regarding the legislative instrument, two EU diplomats told EURACTIV that around 10 European governments voiced their willingness to change it to a directive, with some more vocal than others. Only three member states openly favored a regulation. Yet the Spanish presidency suggested keeping it as a regulation in its first compromise text, an approach Madrid does not want to backtrack on. A second EU diplomat concluded that the legal instrument was "kept as a regulation, but it reads like a directive" because of the minimum harmonization provisions of the compromise text.

### Minimum harmonization

National delegations welcomed the Spanish presidency compromise text regarding the increased flexibility introduced in the legislation, the condition for accessing physical infrastructures and the single information point. Within the Telecommunication Working Party meeting, four EU countries reportedly suggested moving the date for entry into the application further. Originally set at 12 months, the presidency offered 18 months, with these four countries calling for 24 months. This debate should come back to the table after the summer. Some questions and debates revolved around definitions, with member states not agreeing on the correct terms. The European Commission suggested "fibre-ready", and some European governments would like to see labels be more technology neutral and use a wider term, like "gigabit-ready". Eventually, some telecom attachés suggested even more flexibility regarding the setting up certification schemes. Madrid watered down these certifications, which were previously mandatory to a voluntary commitment. Yet, it was still provisioned that member states were obliged to issue building permits upon compliance of certification schemes, which would make certification schemes de facto mandatory. A change is expected in the next iteration of the text.



## JCRA Indicates It Will Block Airtel-Sure Merger on Competition Grounds

Following a secondary review of the proposed merger of Channel Islands mobile operators Sure and Airtel-Vodafone, the Jersey Competition and Regulatory Authority (JCRA) has said it will not approve the transaction. In an Information Note regarding the matter, the JCRA said that having considered responses received to a consultation on proposed commitments made by Sure that it launched. In May 2023 it had determined the proposed merger

'was likely to give rise to substantial lessening of competition. As such, the regulator said it 'is minded to exercise its power under Article 22(1) of the Competition Law by refusing to approve the proposed transaction'. According to the JCRA, in line with local merger guidelines, it intends to publish its provisional findings regarding the matter on 12 July, when feedback will then be sought from any interested parties.

## TRAI Issues Show-Cause Notice to BSNL For Breaking Interconnection Rules

Sector watchdog the Telecom Regulatory Authority of India (TRAI) has issued a show-cause notice to state-owned operator Bharat Sanchar Nigam Limited (BSNL) for failing to comply with interconnection rules, the Financial Express writes, citing people aware of the matter. According to the sources, BSNL has failed to provide bank guarantees to Bharti Airtel, Reliance Jio Infocomm (Jio) and Vodafone Idea (Vi) for the circles where it is net payable (i.e., the interconnection charges that BSNL must pay to another telco exceeds the amount it would receive) and it has not provided sufficient points of interconnection (Pols) for the outgoing traffic of those operators. An unnamed executive was cited by the paper as saying that although the issue does not have a significant impact on the other providers – due to the diminishing market share of BSNL – it has affected service quality, and: 'it is more of a level-playing field between the telcos. BSNL has not complied with the regulations from the day they were notified.' Airtel and Vi were issued with fines totaling INR30.5 billion (USD370.6 million) for failing to provide sufficient Pols to Jio following the latter's launch



in September 2016. Regulations regarding interconnection have been changed substantially since then – including the introduction of a Bill-and-Keep (BAK) regime from 1 January 2021, which reduced most termination fees to zero – but penalties remain in place for violating regulations.

## KKR Snaps Up Telefonica, Entel Fiber to Create OnNet Unit in Peru



US investment firm KKR has announced that it has signed agreements with Telefonica Hispanoamerica and Entel under which it acquires fiber assets from both firms to establish a Peru's first nationwide open access wholesale fiber company. The deal

will combine the existing fiber networks of PangeaCo, Telefonica del Peru (TdP) and Entel Peru into an independent company controlled by KKR. KKR plans to invest a further USD200 million to more than double the new company's footprint to reach 5.2 million homes across 86 provinces by the end of 2026. The agreement will see KKR acquire a controlling interest in PangeaCo – a unit established by Telefonica in 2020 to accelerate fiber construction – which will then acquire the existing fiber optic networks of TdP and Entel Peru. KKR will combine the networks to establish a new entity, OnNet Fibra de Peru. Telefonica Hispanoamerica and Entel will hold stakes in the provider totaling 36% and 10%, respectively. Whilst TdP and Entel will be anchor tenants on the network, the OnNet system will be open to use by all ISPs. The value of the transaction was not disclosed and the agreement is subject to regulatory approvals. KKR notes that its OnNet divisions in Chile and Colombia have greatly expanded fibre coverage in their respective markets, with the former increasing its footprint to 3.7 million homes from 2.4 million in February 2021 whilst the latter doubled coverage to 2.4 million homes since July 2021.

## Ergen Considering DISH-EchoStar Merger

US businessman Charlie Ergen is considering merging the two halves of his communications empire, DISH Network and EchoStar Corp, US publication Semafor has reported, citing people familiar



with the matter. As per the article, the companies have engaged advisors, but the timeline and structure of the proposed deal remain unclear. EchoStar Communications, which was founded by Ergen as a satellite television equipment distributor in 1980, changed its name to DISH Network in January 2008 and spun off its technology arm as a new company, named EchoStar Corp. EchoStar is financially stronger than DISH, which has weathered heavy subscriber losses in the pay-TV sector in recent years, and is investing substantially in the deployment of a nationwide 5G network.

## ATH Group Completes Leveraged Buyout of ICT Businesses Via Vodafone Fiji

Fiji-based telecommunications holding company Amalgamated Telecom Holdings (ATH) has purchased the remaining 49% stakes it did not already own in Digitec ICT (based in Papua New Guinea), ETech ICT in Singapore and ETech ICT in Australia. The transaction was carried out through its 51%-owned Vodafone Fiji mobile subsidiary in the form of a 100% leveraged buyout, funded through a structured debt financing arrangement with Bank of South Pacific, PNG. In a brief announcement on the South Pacific Stock Exchange (SPX), ATH noted the three ICT firms 'have

a strong track record of delivering cutting-edge solutions to a diverse clientele in the Pacific' and the acquisition would allow it to capitalise on those skills, tap into new market segments and drive revenue growth. 'This strategic acquisition aligns with ATH Group's long-term vision of providing end-to-end telecommunications and ICT solutions that empower businesses, government agencies, institutions, individuals, etc. and accelerate economic growth and social development in the Pacific region,' ATH stated.

## CPC Approves Vivacom's Acquisition of Seven Operators; NetWorx Seeks Renegotiation of Deal

Bulgaria's Commission for the Protection of Competition (CPC) has approved Vivacom's acquisition of seven fixed broadband and TV operators. The list of operators includes Ruse-based NetWorx Group – comprising Networks-Bulgaria, Online Direct, TVN Distribution Bulgaria and Telko Infrastructures – and Veliko Turnovo-based TELNET Group, which comprises TELNET, TELNET Securities and STV. The CPC controversially approved the deals despite Vivacom becoming the largest fixed broadband/TV provider on a national level and in the Veliko Turnovo, Gabrovo and Ruse regions. In December 2022 the Supreme Administrative Court (SAC) annulled the antimonopoly regulator's previous approval of Vivacom's acquisition of NetWorx Bulgaria due to concentration concerns, and in February 2023 the Communications Regulation Commission (CRC) launched an in-depth investigation into several deals via which Vivacom secured direct sole control over NetWorx, TVN Distribution Bulgaria, Telko Infrastructures and indirect control over Online Direct. A1 and Yettel have voiced their concerns over the latest decision, with both operators disclosing that the approval 'shows blatant disregard for recent European rulings' and will lead to 'a huge concentration of market share and power in the hands of Vivacom and its owner United Group'. Yettel's owner PPF Telecom said in a press release: 'CPC decision-making has raised our concerns with regard to its forthcoming review of the

proposed acquisition of Bulsatcom's infrastructure by Slovenia Broadband, which is 100% owned by United Group. If this proposed acquisition is approved, it would lead to a total concentration of the whole national market and infrastructure power far exceeding the normal thresholds acknowledged in all other EU markets.' PPF Telecom concludes by urging all relevant authorities to review the proposed transactions. It also says it intends to raise these matters with the EC. Elsewhere, the owner of NetWorx, Svilen Maksimov, has disclosed to local news source Ruse News that the binding terms of the contract with Vivacom have expired, so in order for the acquisition to go through, the terms and conditions need to be renegotiated. Maksimov said: 'The deal needs to be renegotiated for several reasons. First, more than two years have passed. Second, inflation. Third, the increased EBITDA of the company.'



## Vyve Agrees 'Tuck-In Acquisition' of Community Cable & Broadband



Vyve Broadband has sealed a takeover agreement for Community Cable &

Broadband (CCB), which is headquartered in Skiatook, Oklahoma. Billed as a 'tuck-in acquisition', the deal will help to enhance and expand Vyve's presence in Oklahoma. Post-closing, Vyve has committed to upgrading CCB's network to support gigabit transmission speeds. Mega Broadband Investments united its portfolio of rural broadband companies – Vyve Broadband, Eagle Broadband and Northland Communications – under the

Vyve Broadband name in the Spring of 2020. Subsequently, US cableco Cable ONE (Sparklight) agreed to acquire a 45% stake in Mega Broadband Investments from affiliates of private equity firm GTCR, for approximately USD574.1 million. The latter transaction was completed during the fourth quarter of 2020. Vyve is understood to serve over 240,000 residential customers and around 18,000 B2B customers across its 16-state footprint.

## MyRepublic Scores USD133m Loan to Develop Indonesian Internet Coverage

Fiber broadband provider MyRepublic (Indonesia), an affiliate of Sinar Mas Group, has secured a syndicated loan worth IDR2 trillion (USD133 million) from four lenders – Bank Central Asia, Bank Mandiri, Bank Syariah Indonesia (BSI) and financing firm Sarana Multi Infrastruktur (SMI) – to help

drive the expansion of its networks and services. It notes that the loan also includes a provision enabling it to access additional funds if needed. MyRepublic (Indonesia) recently added nine cities to its service coverage, bringing the number of cities using its service to 30, and its CEO Timotius Max

Sulaiman said the fresh loan will allow the company to further expand its coverage across the country and enhance the quality of its services. 'This [expansion] aligns with the government's vision of achieving equal distribution of internet access and digitalization throughout Indonesia,' he said.

## MTN and Airtel Bag 5G Spectrum in Uganda; Three Firms Miss Out

The Uganda Communication Commission (UCC) has awarded 5G-capable spectrum to the country's two main mobile network operators (MNOs), MTN and Airtel. MTN won frequencies in the 700MHz, 2.3GHz, 2.6GHz and E-band (71GHz-76GHz/81GHz-86GHz) ranges, while Airtel was successful in the 800MHz, 3.5GHz and E-band ranges. The licences come with a number of coverage and data rate targets. Both MTN and Airtel have already stated that their networks are 5G-ready, and a commercial

launch can be expected as soon as licences become valid. The regulator had been expected to name the winning bidders next month but has fast-tracked the process. Three other firms applied for frequencies but were unsuccessful, namely Uganda Telecom Limited (UTL), Lyca Mobile and Ala Technology (trading as Intracom). The process, based on operators' five-year investment plans, allocated 68% of the spectrum that was initially made available (excluding the E-band), with blocks left

unawarded in the 700MHz and 3.5GHz bands.



## State Development Bank Intends to Buy MEGA Via Auction

Kyrgyzstan's State Development Bank plans to acquire mobile operator MEGA via participation in the upcoming 100% share auction scheduled for this October, the bank's press secretary Erbol Sultanbaev stated on his Facebook page, as reported

by Akipress. The post reiterated previously aired proposals to retain state ownership of MEGA (registered as Alfa Telecom) whilst transferring its shares from the current holder, the Ministry of Digital Development. Sultanbaev stated: 'This way the company

will remain in ownership of the state and will keep making contribution into economic development of the country.' The starting bid price for the auction set for 2 October 2023 is KGS14.6 billion (USD167 million).

## EC Targets Tougher GDPR Enforcement

The European Commission (EC) outlined new rules to help domestic regulators ensure stronger enforcement of General Data Protection Regulation (GDPR), following reported criticism of the handling of privacy breaches by technology



companies. Reuters reported the EC's move came in response to criticism about fines being too low and investigations taking too long to deter the likes of Google, Amazon and Meta Platforms from breaching GDPR laws. To address the situation, the EC published new guidelines it stated will streamline cooperation between Data Protection Authorities (DPA) when enforcing GDPR across borders, while harmonizing the process in numerous areas. The changes will require the lead DPA to send a summary of key issues to its peers to allow for feedback at an early stage in any investigation, contribute to reducing last-minute disagreements and

promote a consensus among authorities. Companies under investigation will have the right to be heard at key stages of the investigation process, as will complainants. "The harmonization of these procedural aspects will support the timely completion of investigations" and, in turn "delivery of a swift remedies for individuals," the EC stated. Despite the changes, the EC was keen to point out GDPR is working, citing 711 final decisions made with "fines of hundreds of millions of euros" imposed in some cases. Meta Platforms was recently hit with a €1.2 billion fine over data protection breaches, reportedly the bloc's highest such penalty to-date.

## India Targets 6G Lead with New Alliance

India's Department of Telecommunications (DoT) launched a 6G alliance designed to drive the country's next-generation ambitions, a project which will include involvement from the private sector, academics, research institutions and standards organizations. The DoT stated the Bharat 6G Alliance (B6GA) will involve 75 companies and is backed by two government grants to create technology testbeds, as part of the state's vision boost the country's telecoms sector. B6GA will primarily work to understand the business and societal needs of 6G beyond technology requirements, promote open R&D initiatives and accelerate standards-related patent creation. It is also pledged to bring together start-ups, corporations and the manufacturing sector "to drive the design, development and deployment of 6G" in India. The DoT wants B6GA to "forge coalitions and synergies with other 6G alliances, fostering international

collaboration and knowledge exchange". India's push follows the creation of initiatives including the Next G Alliance in the US, the EU 6G alliance and state-backed initiatives in China, as governments and corporations target a lead on developing a technology heavily touted to launch in 2030. Notably, India was comparatively

late to the 5G party, with operators in the country launching services in October 2022. However, Minister for Communications, Railways, Electronics and IT Ashwini Vaishnaw pointed to a series of reforms over the last nine years, which he claims left India well placed to take a key role in the development of 6G.



## Colombia Updates MNP Regulations

Colombia's Communications Regulatory Commission (Comision de Regulacion de Comunicaciones, CRC) has updated its mobile number portability (MNP) regulations with Resolution CRC 7151 of 2023. The new resolution amends the grounds for

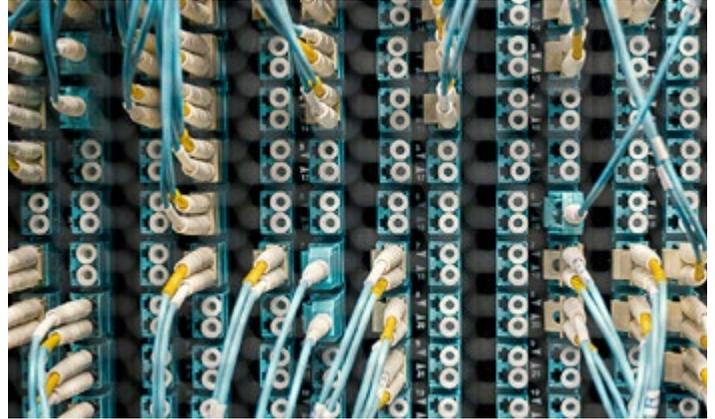
rejection and strengthens the mechanisms that are in place to reduce identity theft fraud. Previously, in 2020 the watchdog introduced Resolution CRC 5929 of 2020, cutting the timeframe in which domestic cellcos must process MNP requests from

three days down to one. That rule took effect on 1 July 2020. As of 31 March 2023, a total of 43.2 million mobile numbers had been ported in Colombia.

## Ofcom Says Openreach's Independence is Now 'Well-Established'

British telecoms regulator Ofcom has said that the independence of Openreach, the network unit of BT Group, is now 'well-established' although warned against complacency, following the publication of the latest report examining the status of the unit. Annual reports have been published by Ofcom's Openreach Monitoring Unit (OMU) ever since the establishment of the network unit as a distinct company within BT Group with its own staff, management, strategy and purpose, back in 2018. In its latest report, the OMU said that the arrangements under which Openreach operates are now 'well-embedded' across it and its parent company. However, the report did note that there had been examples where changes in staff and the introduction of new systems have led to occasional issues arising and although these were said to have been 'swiftly addressed', Ofcom noted that it remained important that BT and Openreach 'take all necessary steps to ensure complacency does not set in'. Ofcom also monitors Openreach's compliance with the regulator's Wholesale Fixed Telecoms Market rules, which are designed to support competition and investment in gigabit-capable networks. Under these rules, Openreach must meet specified quality of service (QoS) performance standards, to

ensure it provides an appropriate level of service to its customers. Separately to the OMU's report, Ofcom noted that it had been recently informed by Openreach that for the 2022/23 financial year it did not achieve some of the QoS standards set by the regulator. As a result, Ofcom confirmed it has now opened an investigation into the unit's performance and will publish updates in due course.



## US Plans to Spend \$42B to Boost Internet Coverage

The US government outlined a plan to invest \$42 billion into delivering universal broadband access by 2030, seeking to address coverage gaps identified by the Federal Communications Commission. In a statement, the Department of Commerce's National Telecommunications and Information Administration (NTIA) revealed plans to fund deployment of high-speed internet infrastructure in each state, territory and the District of Columbia through the Broadband Equity Access and Deployment (BEAD) program, part of a \$1 trillion infrastructure bill passed by congress in 2021. Allocations will range from \$27 million to more than \$3.3 billion, with each state receiving a minimum of \$107 million. A total of 19 states will receive more than \$1 billion when funds are doled out on 30 June. Government information identified

Alabama, California, Georgia, Louisiana, Michigan, Missouri, North Carolina, Texas, Virginia and Washington as the top-ten areas in terms of the sums due. Reuters reported US President Joe Biden ranked broadband internet access alongside utilities including electricity and water in terms of importance, telling the news agency the planned investment was the "biggest" in US history. CTIA president and CEO Meredith Attwell Baker separately noted wireless is the fastest-growing home broadband technology in the nation and the industry will partner with states "to maximize the use of their BEAD funds and close the digital divide". Rhona Johnson, EVP of regulatory relations for AT&T, told Mobile World Live the announcement is "a momentous next step to ensure every American has access to high-speed internet".



## EU Starts Consultations on 6G Spectrum Needs, Sub-700 MHz Band

The EU's Radio Spectrum Policy Group has started two public consultations, following approval of the draft documents at the advisory group's latest meeting. The first consultation takes a first look at the expected spectrum requirements for 6G networks. The second consultation considers the future of the 470-694 MHz frequency band after 2030 in the EU, and the potential for harmonization of new uses in the band beyond broadcasting and PMSE. 

## A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION



The Ministry of Communications and Information Technology (MCIT) has signed contracts with cellcos MTN Afghanistan and Afghan Wireless Communication Company (AWCC) to extend coverage to unserved communities. The contracts are worth a

total of AFN365 million (USD4.2 million) and cover the deployment of mobile networks in 33 remote areas of the Kandahar, Nuristan, Badakhshan, Uruzgan, Zabul, Kunar, Nangarhar and Kabul provinces. (June 23, 2023) [www.commsupdate.com](http://www.commsupdate.com)

### Afghanistan



Algeria's Minister of Post and Telecommunications Karim Bibi-Triki has announced details of government objectives to improve telecoms network coverage in border areas and ten administrative districts in the south of the country which were recently given the status of provinces (wilayas). Mr. Bibi-Triki highlighted that a survey carried out in the second half of 2022 identified 1,400 settlements or geographical areas – each with less than 2,000

population – lacking telecoms network coverage, prompting a call for service provider tenders and the signing of a ministerial decree related to the planned connection of these sites under a universal service program. The Minister has this week visited several border locations where new 4G mobile base stations have been commissioned, including new network sites provided by state-backed Algerie Telecom Mobile (Mobilis). (June 27, 2023) [www.arpt.dz](http://www.arpt.dz)

### Algeria



The Telecommunications Regulatory Authority (TRA) Bahrain is working to raise awareness among young people, their parents, and teachers of potential online dangers, including cyberbullying, and ways they can minimize risk. The TRA's Online Safety Initiative builds on the successful Cyber Safety program conducted in November 2022 to further encourage responsible ICT usage. The TRA, in collaboration with the International Telecommunication Union's (ITU) Global Program on Child Online Protection, has worked closely to highlight the importance of this key issue. The Child Online Protection training sessions, aimed at enlightening educators and youth organizations on how to safeguard children and educate them about their online rights, were held with the participation of over 300 educators across the Kingdom of Bahrain from both private and public schools. The program gave educators deeper insight into online risks and how to create a safer online school experience for students. Moreover, it assisted educators in identifying the types of threats that children encounter when exploring the digital world, such as cyberbullying, misinformation, and inappropriate content. Educators also discovered preventive measures to mitigate potential online threats and built on their knowledge of how to respond to and disclose an issue if students are harmed online. Acting Manager of Online Safety, May Alghatam,

stated "Young people are more vulnerable to online threats during the summer vacation. It is crucial for us to safeguard users' security and online privacy, especially considering the growing use of smartphones and social media amongst young people. Educational institutions play a significant role in raising student awareness about the potential threats and risks associated with the use of the Internet. Developing a cyberbullying prevention program, in accordance with society's cultural characteristics and education system, is an influential factor in the effectiveness of the program. Students, administrations, parents, and community members must be aware of and educated about cyberbullying to curb this pressing issue." She added "As part of the Cyber Safety Program, additional training sessions targeting youths of different age groups will be conducted in the new academic year to continually raise awareness of online safety."

(August 7, 2023) [www.tra.org.bh](http://www.tra.org.bh)

The Telecommunications Regulatory Authority (TRA), in collaboration with the Réseaux IP Européens Network Coordination Centre (RIP E NCC), held a three-day capacity-building workshop in the Kingdom of Bahrain on the Internet Protocol version 6 (IPv6) and BGP "Border gateway protocol" operations and security. The

### Bahrain

event was attended by representatives of leading Internet service providers, telecom operators, and RIPE NCC members. The workshops delved into a range of topics, including IPv6 addressing plans, route reflectors, policy, filtering, route selection, and the crucial security aspects of the protocol. Interactive exercises were presented at the workshops to further develop participants' expertise in these critical areas. IPv6 is essential to the future scalability and growth of the Internet, whereas secure and stable Internet routing (BGP) is necessary to facilitate smooth Internet operations. Philip Marnick, General Director of TRA Bahrain, said, "Workshops help collaboration between network operators and other industry stakeholders, allowing everyone to share best practices and develop new ways of working. Additionally, they provide an opportunity to share knowledge and experience, which is invaluable in improving the quality and reliability of networks. Sharing experiences enables, network operators to ensure that their networks are secure, reliable, and efficient, whilst also helping to drive innovation and economic growth within the Kingdom." Mohamed Alnoaimi, Director of Technology & Networks Security at TRA Bahrain, emphasized the significance of the workshops in enhancing the skills and knowledge of operators. He stated, "The capacity-building workshops conducted by RIPE NCC in collaboration with TRA Bahrain have been instrumental in equipping operators with the expertise needed to thrive in the

ever-evolving Internet and its security landscape." Chafic Chaya, RIPE NCC Regional Communications Manager, highlighted their commitment to facilitating the sustainable development of the Internet and providing technical expertise on critical issues. Chaya thanked TRA Bahrain for their unwavering support, remarking, "We are grateful to TRA Bahrain for their continued support for the development and resilient growth of Bahrain's Internet and digital infrastructure." (July 17, 2023) [www.tra.org.bh](http://www.tra.org.bh)

The Bahraini government is planning to award spectrum in the 700MHz, 1400MHz, 2.3GHz, 2.6GHz and 3.8GHz bands via an auction. Philip Marnick, General Director of the Telecommunications Regulatory Authority (TRA), was cited as saying: 'The spectrum will enable the industry to provide services with greater capacity and wider coverage and to support new wireless technologies. We're going to start the auction process this year as we think there will be demand and an auction is the best way of ensuring people get what they want and are ready to pay for it.' The executive also added that spectrum in the 3.8GHz-4.2GHz band (C-Band spectrum) will be made available to organizations or industries on a licensed basis: 'Bahrain's got 100% 5G coverage but there's more to be done for the industrial sector and by providing private 5G network spectrum, we enable some of the things like digitizing the ports and other sectors of the economy.' (June 20, 2023) [GDNonline](http://GDNonline)



The number of internet subscribers in Bangladesh rose by about 12 lakh in May from a month earlier thanks to an increase in the country's mobile subscriber base. With this, the total number of internet subscribers has risen to 12.76 crore, according to data of the Bangladesh Telecommunication Regulatory Commission (BTRC). This is the fourth consecutive month since February that the internet subscriber base has grown. Earlier in February, the number of internet subscribers saw its first rebound after six months thanks to a jump in mobile internet users. Then in March, broadband user numbers also underwent growth. But in May, the increase in mobile internet subscribers solely contributed to the growth. With the 12 lakh new customers, the total number of mobile internet subscribers stands at 11.55 crore. Officials of mobile network operators said the subscriber numbers for mobile internet have surged due to the growing popularity of diverse digital services beyond social media. The increasing presence of various digital platforms has led to a significant rise in mobile subscriptions, reflecting an evolving scene in the market, they said. "We are now observing a new trend among customers," said Shahed Alam, chief corporate and regulatory officer at Robi Axiata Ltd. "They are now using the internet for different types of digital services, such as over-the-top media, gaming etc. This is giving a boost to the subscriber base," he said. "Earlier, mobile internet subscribers generally used our service for social media and YouTube," Alam added. Meanwhile, broadband internet subscribers remained unchanged at 1.20 crore in May. It cannot be ascertained if the subscribers increased or decreased as the BTRC provides broadband internet subscriber

information on a quarterly basis. The BTRC calculates broadband subscriber information through market analysis, consultation and data collection from almost all internet service providers (ISPs). However, the ISPs said they saw a positive trend in May. "Customer acquisition was positive in May and June," said Md Aminul Hakim, chief executive officer at Amber IT, a top broadband internet service provider. However, it cannot be determined how many individuals use the internet with the BTRC's data since many people use multiple SIMs. According to Bangladesh Sample Vital Statistics, a project run by the Bangladesh Bureau of Statistics, 41 per cent of people in the country aged above five use the internet. The survey pointed out the digital divide continues to exist in Bangladesh, underscoring disparities in internet access between rural and urban areas, while the gender digital divide is also palpable. Of the users, only 37.1 per cent are from villages, highlighting the persistence of the digital divide among rural villages compared to urban cities. While urban areas enjoy better infrastructure and connectivity, rural villages face infrastructural constraints, including inadequate broadband coverage, and a lack of technological resources, according to experts. Industry people and experts say women face additional challenges in accessing the internet compared to their male counterparts, resulting in a gender gap in internet usage and digital skills. Due to some cultural and traditional beliefs or norms, a gender gap in internet access persists, they said. Of the internet users in Bangladesh, 47 per cent are men and 34 per cent are women, according to the Bangladesh Sample Vital Statistics published last month. (July 6, 2023) [www.thedailystar.net](http://www.thedailystar.net)

## Bangladesh



## Egypt

The Egyptian National Telecommunications Regulatory Authority is considering licensing mobile operators to launch the eSIM service in the near future. This step comes after all telecom companies have finished preparing their networks and conducting operational tests, to ensure that the service is fully provided to customers in the local market. The National Telecommunications Regulatory Authority is scheduled to announce, soon, the details of the regulatory determinants and technical requirements for launching the service in Egypt, to provide the latest technical and advanced solutions to improve the services provided to mobile users in Egypt. The eSIM service allows customers to keep the line without the need to put the traditional physical chip in their mobile devices, which contributes to saving the cost incurred by the customer to obtain services, and improves the customer's experience in using more than one line on the same mobile device. It also allows users to store multiple profiles on one device, with two or more numbers, and switch between them without any hassle. According to data from the Ministry of Communications and Information Technology, the number of mobile subscribers reached 102.9 million by the end of April 2023, compared to 96.27 million subscribers during the same month last year, with an annual growth rate of 6.78%, and compared to 102.77 million subscribers in March of this year, with a monthly growth rate of 0.13 %. (August 16, 2023) [www.egypttoday.com](http://www.egypttoday.com)

Amr Talaat, Egypt's Minister of Information and Communications Technology (ICT), attended the closing ceremony of the Artificial Intelligence (AI) Capacity Building Initiative round one. The initiative was held on at Giza CREATIVA Innovation Hub, in collaboration with the ICT Ministry and Dell Technologies – Egypt, according to a press release. Batch one included 500 students from Cairo University, Ain Shams University, the American University in Cairo (AUC), the German University in Cairo (GUC), as well as the Arab Academy for Science, Technology, and Maritime Transport (AASTMT). During his speech, Talaat noted that the initiative focuses on the ICT field, particularly AI. He indicated that Egypt held the seventh position on the Global AI Index by Tortoise Media. The country also climbed 17 spots on the AI skills index. Talaat highlighted the Arab Republic's efforts to promote the deployment of AI. The country plans to establish a national council that brings together key players in the AI industry. The Minister also underlined that the key to success in the ICT field is harnessing technology to make an impact and tackle society's challenges in different sectors. Talaat pointed out that the Ministry develops CREATIVA Innovation Hubs to boost the ICT sector, adding that six hubs were initially established, and in two years, there were 12 hubs. By the end of 2023, there will be 20 hubs across 20 governorates in the African country, according to the Minister. (July 26, 2023) [www.zawya.com](http://www.zawya.com)



## Iraq

The Minister of Telecommunications and representatives from SpaceX met to discuss the introduction of the latter's Starlink satellite-based communications services in Iraq. The parties discussed the technical, legal and security elements of such a

product, with the minister highlighting the government's goal of improving service quality and offering services at the lowest possible prices. (July 17, 2023) [Shafaq News](http://Shafaq News)



## Jordan

Jordan celebrated "Jordan IPv6 National Day", a stepping stone towards its digital future. Co-hosted by the RIPE Network Coordination Centre (RIPE NCC) and Jordan's Telecommunications Regulatory Commission (TRC), the event marks an emblematic achievement in implementing the Internet Protocol version 6 (IPv6) countrywide. The National IPv6 Day equips mobile operators, Internet Service Providers (ISPs), and a broad spectrum of Internet stakeholders with the technical acumen necessary for a seamless IPv6 deployment. This initiative by TRC and RIPE NCC aims at highlighting the significance of IPv6 for bolstering Internet security and economic growth. Jordan is currently leading in IPv6 connectivity in the region with exceptional speed and performance

that surpasses other countries. This achievement was made possible by the close cooperation between the RIPE NCC, TRC, and mobile operators in Jordan. At the inaugural ceremony, Dr. Nael Adwan, TRC vice chairman of the board of commissioners, stated, "Today, we announce Jordan as an IPv6-enabled country. While we are at the onset, we are relentless in our pursuit to ensure future readiness." He further assured the audience of TRC's commitment to fulfilling Jordan's digital aspirations by facilitating the transition to a robust digital economy equipped with advanced network technologies such as IPv6. In his opening address, Dr. Chafic Chaya, Public Policy and Government Affairs Regional Manager at the RIPE NCC, applauded Jordan's progressive initiatives

towards IPv6 deployment. "The RIPE NCC remains steadfast in its commitment to supporting the Internet landscape in Jordan and the Arab region. We are dedicated to fostering an environment of knowledge sharing and collaborative learning," Chaya said. The morning session of the National IPv6 Day gave insights into coming Jordan's comprehensive IPv6 strategy and roadmap. It was marked by vibrant panel discussions led by Engineer Jad Elcham, Regional Program Manager at the RIPE NCC, which saw the active participation of the CEOs and decision-makers from various mobile operators and ISPs. The exchange was centered on best practices, shared experiences, challenges, opportunities, and strategic measures to keep pace with the IPv6 deployment at local and global levels. In the afternoon's General Meeting, Jordan ISPs, mobile operators, technical communities, and related stakeholders delved into critical topics like defining the fundamentals of IPv6, network

security and manageability and addressing the growing demand for Internet access. The discussions particularly emphasized the era of mass connectivity marked by the deployment of 5G, the rise of mobile phone users, the Internet of Things (IoT), and Smart Cities. The accelerating pace of digital technology and the escalating demand for Internet services worldwide are critical drivers for economic growth and entrepreneurship. The events like National IPv6 Day, and the vital collaboration between TRC and the RIPE NCC play a pivotal role in promoting sustainable development and driving economic growth and the internet ecosystem. By sharing experiences with network operators, the RIPE NCC empowers them to navigate rapid technological shifts and prepare for future requirements, effectively contributing to developing a resilient, globally connected digital Jordan.

(July 10, 2023) [www.zawya.com](http://www.zawya.com)



Lebanon's Council of Ministers has ratified a decree ordering fixed internet and fixed telephony tariffs to be raised by 7% for residential services and 5.6% in the corporate services sector. The state-owned fixed line incumbent Ogero's services will be charged at higher rates including one-off connection fees, fixed voice call packages and all types of fixed internet access tariffs (including xDSL, fiber, dedicated lines and others). It is expected that the tariff rises will take effect before the end of the year, with Ogero in dire need of extra funds to cover operating costs. More than 70% of Ogero's purchasing requirements – including international

bandwidth, imports of spare parts and licenses to support contracts – are paid in US dollars, causing major problems due to Lebanon's devalued currency. Furthermore, an anonymous source in the Ministry of Telecommunications told Al Arabiya that the latest price rises will be insufficient to cover all of Ogero's operating deficits. Previous telecoms service fee increases made in July 2022 were defended by Mr. Corm as a vital measure to return the sector to profitability and prevent networks from shutting down.

(August 7, 2023) [Al Arabiya](http://Al Arabiya)

## Lebanon



The government has extended the time to register mobile phones in the Mobile Device Management System (MDMS) till mid-August. According to the Ministry of Finance, it has been decided to extend the deadline set by the Finance Act 2080 BS to mid-August. Nepal Telecommunication Authority has implemented such a system. It is mentioned in the notice of the ministry that cellular mobiles which could not be registered in this system due to various

reasons can now be registered within this extended period. The government has implemented this system to integrate the mobile phones brought to Nepal from abroad as gifts or brought by individuals without paying custom duties. Mobile phones will not operate unless they are registered within this system.

(August 8, 2023) [www.myrepublica.nagariknetwork.com](http://www.myrepublica.nagariknetwork.com)

## Nepal



The Telecommunications Regulations Authority (TRA) will conduct a limited trial to stop the third-generation services as part of the plans to identify the challenges ahead of the gradual suspension

of all 3G services in the country by the third quarter of the year 2024. As part of the efforts to upgrade the telecom services to meet the needs of the future, TRA had earlier announced that it

## Oman

will stop providing third-generation (3G) mobile services gradually, starting in the third quarter of 2024. With this move, mobile devices limited to 3G and 2G capabilities will have to be phased out, and their users will be forced to upgrade their gadgets in line with the needs of telecommunication services. Speaking to the Observer, a top TRA official had said that there is a program in place to close 3G networks so that service providers can use 3G spectrum capacities for new technologies such as 4G and 5G. The suspension of 3G services will take place gradually starting with the least populated areas. The Telecommunications Regulatory Authority (TRA) said that it will stop approving and importing communication devices that do not support the minimum of a 4G network. TRA said that (VoLTE) or Voice over 4G LTE network must be enabled in all mobile devices. The decision also reflects the rapid development of the telecommunications sector in the world, which necessitates investment in modern technologies, which results in shutting down the least effective networks to allow the use of more effective networks, allowing subscribers better quality services and enhancing the experience of using the latest and most advanced networks. With efforts made to speed up the Internet in the country with the number of 5G stations going up

by 2,600 stations. According to GSMA Intelligence, by 2025, there will be around 50 million 5G connections, with around 20 million in the GCC States. The report added that 5G will also add pressure to phase out previous generation networks in markets where 5G network rollout has been quick. The timeline for such phasing out 2G or 3G will depend on various spectrum factors as well as the number of devices used on 2G/3G networks.

(August 16, 2023) [www.omanobserver.com](http://www.omanobserver.com)

By the end of May 2023, active mobile broadband Internet subscriptions in Oman increased 9% to 5,851,173 compared to the same period last year. The total number of Internet protocol-connected fixed line telephone subscriptions also grew – rising 6.1% to 275,607 subscriptions – according to National Centre for Statistics and Information's latest data. The figures highlight an upsurge in mobile phone subscriptions. By the end of May 2023, the figure stood at 6,953,100, up 12.4%. Within mobile phone subscriptions, the prepaid category emerged as the most populous – 5,229,350, a growth of 9.5%. But there was a noticeable drop – 13.1% – in the number of analogue fixed line subscriptions.

(July 16, 2023) [www.muscatdaily.com](http://www.muscatdaily.com)



Qatar, represented by the Ministry of Communications and Information Technology (MCIT), participated in the 51st meeting of the Permanent Arab Committee for Communications and Information Technology, which was held in Oman over a period of three days. The delegation of Qatar was headed by Adviser to the Minister of Communications and Information Technology Hassan Jassim Al Sayed. The meeting brought together representatives of Arab countries and delegates of regional organizations with the goal of fostering joint collaboration and discussing advancements in the telecommunications and information sector within the Arab region. The meeting revolved around multiple subjects, which encompassed the Arab strategy for communications and information, Arab collaboration with regional groups and organizations, satellite communications technology, and the Arab initiative for internet governance and cybersecurity. The agenda also included matters aimed at advancing mutual Arab interests in the realm of communications and information. In a speech on this occasion, Hassan Jassim Al Sayed emphasized that this meeting presents an opportunity for collective efforts in addressing the challenges faced by the telecommunications and information technology sector in the Arab region. He highlighted the significance of embracing and implementing modern digital advancements across various sectors and institutions. He underscored Qatar's commitment to sharing its digital vision and experiences while also learning from the experiences of other nations. This exchange of knowledge aims to yield positive outcomes that will profoundly impact the communications and information landscape in the Arab region. (August 6, 2023) [www.thepeninsulaqatar.com](http://www.thepeninsulaqatar.com)

Ooredoo, Qatar's telecommunications service provider, has registered solid results in the recent Consumer Satisfaction Survey 2022 conducted by the Communications Regulatory Authority (CRA), demonstrating the company's strong performance in levels of customer satisfaction. The survey, which included feedback from over 2,500 individuals across various segments of Qatar's population, evaluated customer satisfaction with telecom services provided in the country. Recognizing the invaluable role played by CRA, Ooredoo praised the regulator's unwavering commitment to ensuring customer satisfaction, resolving complaints, and fostering sustainable and fair competition. The findings of the survey demonstrate Ooredoo's accomplishment across various customer experience parameters, notably in network voice services and customer service. Customers highly appreciate Ooredoo's commitment to delivering reliable network coverage and exceptional customer support. Ooredoo Qatar has scored 81% in the overall satisfaction with telecommunications services. Furthermore, the importance of Ooredoo's mobile voice services was highlighted by 72% of respondents, while 70% recognized the significance of its mobile internet services. The survey also revealed that customers expressed satisfaction with Ooredoo's services, including mobile voice, fixed voice, internet speed, and billing accuracy. Sheikh Ali added: "We are immensely proud of our standing in CRA's Consumer Satisfaction Survey results. In increasingly competitive markets, our aim is to create outstanding customer experiences and inspiring moments for our customers.

(July 30, 2023) [www.thepeninsulaqatar.com](http://www.thepeninsulaqatar.com)

## Qatar



## Saudi Arabia

The Communications, Space, and Technology Commission (CST) invites the public to submit their input on the "Space Data Regulations Platform and Application Document for Obtaining a Permit to provide a Space Data Platform Services", which aims to establish the regulatory environment of Space sector, and attract investments to contribute in GDP growth, as well as increase the effectiveness of space data governance. CST stated that through the publication of these two documents, it aims to license an entity that undertakes the establishment of a platform that acts as a marketplace for space data, to collect and process the space data received from satellite operators. such as satellite images, remote sensing data, orbital data, weather data, and astronomy data. Moreover, the platform connects satellite operators, developers of technical solutions and applications, researchers, and entities wishing to obtain solutions based on space data. CST also outlined that the "Application Document for Obtaining a Permit to provide a Space Data Platform Services" includes guidelines and requirements for entities interested to acquire the license, as well as obligations of relevant parties to ensure user rights and data security. CST calls on all relevant parties and stakeholders to provide their comments, observations and suggestions on the documents, emphasizing its commitment to transparency and clarity in engaging all relevant entities. (August 27, 2023) [www.cst.gov.sa](http://www.cst.gov.sa)

The Communications, Space and Technology Commission (CST) invites the public to submit their input on the "Space Radiocommunication Services Outlook", which aims to enable space radio services and study the key trends and needs of manufacturers, operators, and users. Moreover, it aims to ensure optimal utilization of spectrum and meet the requirements of innovative space technologies. The CST indicates that the outlook includes an analysis of the current situation of space radio services in the Kingdom, the most prominent global trends in the field of space services, and the challenges faced by spectrum

regulators. It also highlights future opportunities and technologies contributing to the development of radiocommunication and space services. Additionally, the plan includes a roadmap for the planned regulatory documents CST aims to release in order to enable space radio services. CST emphasizes that the outlook is driven by its mandate in regulating space radio services and its future vision regarding the trends in the market for radiocommunication services in the kingdom. (August 17, 2023) [www.cst.gov.sa](http://www.cst.gov.sa)

In pursuit of Saudi Arabia's 2030 Vision which puts sustainability as one of its pillars in elevating the Kingdom's future, The Communications, Space and Technology Commission (CST) published the 2nd edition of the "ICT and Space Sustainability in Saudi Arabia" Report in collaboration with the Ministry of Communications and Information Technology (MCIT) and the International Telecommunication Union (ITU). The digital infrastructure, ICT and Space sector plays an essential role in enabling other sectors, hence the report features CST's endeavors in achieving collaborative digital regulation, and a sustainable digital economy. By adopting the (C.I.R.C.L.E.) roadmap the report reflects CST efforts in bridging the digital divide, providing ICT services in remote areas, increasing reliance on renewable energy sources, and raising recycling rates. In addition to supporting R&D and investment in emerging technologies, enabling smart cities and innovative solutions, as well as diversifying job opportunities. The report shed light on 12 interesting success stories from over 34 entities adopted digital solutions to support the Sustainable Development Goals (SDGs). The report also emphasized the most notable achievements in digital sustainability for 2022, such as the first global successful trail of 5G technology using HAPS networks, the launch of the Emerging Technologies Sandbox, the launch of the "Recycle Your Device" initiative to recycle e-waste. As well as increasing women's participation in the ICT sector, and investment in space sector. (July 31, 2023) [www.cst.gov.sa](http://www.cst.gov.sa)



## Tunisia

The telecoms watchdog the National Telecommunications Authority (Instance Nationale des Telecommunications, INT) has published for consultation a draft decision on guidelines for the deployment of fiber infrastructure. The decision highlights the importance of fiber networks in achieving the government's targets of narrowing the digital divide and improving access to high quality broadband services. The new rules aim to encourage efficient investment in fiber networks in part by encouraging shared usage of such infrastructure. As such, the decision sets

out rules for sharing access to infrastructure, which would also be made mandatory by the regulations. The draft decision also includes proposed economic conditions, including requirements to provide prices for three categories of service: fiber optic access services; access to civil engineering facilities; and mobile backhaul services. The INT's view is that there should be pricing differentiation between active and passive access tariffs, but that pricing should not be a significant economic hinderance to operators. (August 24, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## United Arab Emirates

The Telecommunications and Digital Government Regulatory Authority (TDRA) has launched the generative AI-supported version of UAE Government's Unified Digital Platform u.ae. This is considered the interface of the government's digital presence and the access channel to the services provided by the federal and local government entities in the UAE. This step comes in the context of an ambitious plan that includes a package of AI services that was launched by Talal Belhoul Al Falasi, Chairman of TDRA Board of Directors, and is being implemented successively to keep pace with technological developments and enhance the customer experience. The generative AI-supported version of UAE Government's Unified Digital Platform (u.ae) provides an interactive environment that allows users to obtain information and government services in an interesting and interactive way around the clock. Anyone can access all the information and services available in the platform, using UAE Pass to switch to the website of another government entity.

**Smooth browsing:** Using UAE Pass will ensure that users will not need to repeat the registration process in more than one entity, nor will they need to memorize many passwords to shift between government websites, but rather browse smoothly and easily from one website to another. In this context, TDRA's specialized teams have re-presented the content in a way that facilitates the customer journey and shortens the time for obtaining information and services, which enhances customer happiness. The upgraded version of u.ae leverages generative AI algorithms to achieve live interaction between the user and the platform, while ensuring privacy by using UAE Pass to log in the platform.

**Digital presence:** Eng Majed Sultan Al Mesmar, TDRA Director General, said: "The UAE Government's Unified Digital Platform, u.ae, represents the UAE's digital presence. It is the most visited website in the country, as 20 million people use it annually to search for information and services that they need in their daily lives." He added: "With this vitality, the portal reflects the digital lifestyle in the UAE, where customers can obtain their services through digital channels, and access the information they want through a one-stop shop linked to the websites of all federal and local government entities." Al Mesmar added: "By introducing AI into the mechanisms of u.ae, we have taken another important step towards the digital future, through embracing the latest technologies to facilitate the lives of customers and enhance the concept of interactive government that puts the customer at the top of its priorities and provides an easy and fast user experience. Online Service Index "u.ae is a key element in the UAE digital leadership, as it is included in international organizations assessments of digital government development level, including the UN E-Government Survey in which the UAE ranked first the Arab region and the 13th globally in the development of digital government. It also ranked first in the Arab region and 12th globally in the Online Service Index." u.ae is an embodiment of the Whole-of-Government Approach, as it provides access to nearly 3,000 services provided by all federal and local government entities, and contains thousands of information pages that cover all the

customers' needs, including citizens, residents, and visitors, as well as the business sector. The portal is connected and linked with all federal and local government websites, which facilitates visitors' access to the information and services they need. u.ae a single letter domain name, which makes it simple and easy to memorize. The domain name reflects the UAE's unique characteristics. The letter U stands for the United Arab Emirates (UAE). It also refers to the pronoun "you", which reflects the focus of the UAE Government and its keenness to communicate with customers and listen to their needs. (July 13, 2023) [www.tradearabia.com](http://www.tradearabia.com)

The Telecommunications and Digital Government Regulatory Authority (TDRA) has launched a centralized interface to support government entities in their endeavors to leverage generative AI, which enhances their ability to provide services that meet the customers' aspirations in the era of speed and artificial intelligence. This platform is part of the ambitious plan that includes a package of AI services launched by Talal Belhoul Al Falasi, Chairman of TDRA's Board of Directors, and it included the upgraded version of the UAE Government's unified digital portal u.ae, as well as the AI-supported FedNet. Moreover, this platform comes at a time of increasing demand for the use of ChatGPT and other areas of generative AI to enhance productivity and efficiency in government work. The centralized interface for generative AI services offers several advantages to government entities, most importantly; it provides an approved mechanism for obtaining generative AI services, technical support related to the use of APIs to benefit from generative AI solutions, as well as technical advice related to various use cases in line with regulations and policies. This would support government entities' endeavors in using such means to their greatest advantage, which would ultimately reflect on the happiness of customers and the development of government performance. Commenting on this interface, Majed Sultan Al Mesmar, TDRA Director-General, said, "In light of the rapid technological transformations, being proactive and innovative is key to enhance efficiency and provide proactive solutions that contribute to enhancing the UAE's leadership in applying the concepts of the Fourth Industrial Revolution, foremost of which is AI. We have developed this centralized interface as part of our strategy aimed at the implementation of 'We the UAE 2031' vision, to develop the digital infrastructure according to the latest technological methods, establish a Forward Ecosystem, and provide the best government services and the best agile business models to achieve results and efficiency. Al Mesmar stated that TDRA has a comprehensive plan in place for the government use of AI technologies in general, and generative AI in particular, which includes several stages, starting from the official UAE Government portal, followed by FedNet and others. The plan is open to all innovative ideas that serve the higher goals of the country, including enhancing economic dynamics, facilitating customers' lives, increasing happiness, and enhancing the UAE global competitiveness. (July 6, 2023) [www.zawya.com](http://www.zawya.com)

## REGULATORY ACTIVITIES BEYOND THE SAMENA REGION



### Argentina

The government is running a public consultation on a multi-faceted project aimed at reducing the digital divide by strengthening broadband infrastructure through the installation of open fiber-optics, mobile/wireless and satellite networks for localities not yet connected, the installation of four data centers for state-owned operator Arsat, and the promotion of digital skills, via a USD200 million World Bank loan. The consultation, which is open to submissions until 14 September,

seeks input on the components of the initiative, the project's beneficiaries, the environmental and social management framework, the participation of interested parties, and the mechanisms for handling claims and complaints that may arise via the project. The program is the responsibility of the Directorate of Sectoral and Special Programs and Projects (DIPROSE).

(August 2, 2023) BN Americas



### Australia

Following the announcement last week that NBN Co had submitted a revised variation proposal related to its Special Access Undertaking, the Australian Competition and Consumer Commission (ACCC) has now launched a consultation on the matter. In announcing the start of the consultation, ACCC Commissioner Anna Brakey said: 'Our preliminary view is that NBN Co's revised variation is a material improvement on its previous proposal ... The revised variation appears to address the concerns that led us to make a draft decision to reject the previous proposal. It also appears to respond appropriately to the further issues that have arisen in recent months.' Before issuing a final decision, however, the ACCC has said it intends to assess the revised variation against the statutory criteria and consider whether it is likely to promote the long-term interests of Australian consumers and businesses. Of further note, the regulator has also stated that in its final assessment on the matter it will consider submissions made in response to NBN Co's two previous SAU proposals, alongside feedback gained in this most recent consultation paper.

(August 23, 2023) [www.commsupdate.com](http://www.commsupdate.com)

Plans to allocate a number of new area-wide licenses (AWLs) which would accommodate more local area mobile broadband services in metropolitan, regional

and remote areas have been announced by the Australian Communications and Media Authority (ACMA). In launching a consultation on its plans, the regulator revealed it is proposing to carry out two spectrum allocation processes: one in the 3.4GHz-4.0GHz band in remote areas; and one in the 3.8GHz band in metro and regional areas. The ACMA has suggested that spectrum in the aforementioned bands is considered ideal for the delivery of mobile broadband services including 5G, private networks and 'other technologies' with the available AWLs reportedly allowing for area-specific use. As such, the watchdog has said it expects the licenses will be taken up by 'providers of wireless internet services, or for private networks run by organizations such as tertiary institutions, hospitals, mining operators or public transport hubs. Applications from any party interested in applying for an AWL in remote areas in the 3.4GHz-4.0GHz band to support the deployment of services are already being accepted by the ACMA. Meanwhile, for accessing area wide licenses in metropolitan and regional areas, the regulator has said it will initially consult on the proposed allocation arrangements for the 3.8GHz band, looking at issues such as pricing, license tenure and renewal, technical requirements and allocation limits.

(July 6, 2023) [www.commsupdate.com](http://www.commsupdate.com)



### Austria

The Regulatory Authority for Broadcasting & Telecoms (RTR) has extended the public consultation on the terms and conditions for its planned auction of nationwide frequency usage rights in the 26GHz band and regional usage rights in the previously unassigned 3410MHz-3470MHz range, which went unsold for seven regions in 2019. Interested parties were originally given until 8 August to submit comments on the auction procedure documents, ahead of their formal publication, but this

has now been extended to 31 August. The RTR then expects to hold the auction for the 5G-suitable spectrum in December at the earliest. Under the terms and conditions, the 26GHz spectrum will be divided up into five 1x200MHz blocks, ranging from 26.5GHz-27.5GHz, and one block of 1x400MHz (25.5GHz-25.9GHz), while the 3.6GHz spectrum is to be divided into seven regional blocks, including two of 1x10MHz, one of 1x40MHz and four of 1x60MHz. (July 28, 2023) [www.commsupdate.com](http://www.commsupdate.com)

Regulatory Authority for Broadcasting & Telecoms (RTR) has published for public consultation the terms and conditions for its planned auction of nationwide frequency usage rights in the 26GHz band and regional usage rights in the previously unassigned 3410MHz-3470MHz range, which went unsold for seven regions in 2019. The 26GHz spectrum is divided up into five

1×200MHz blocks, ranging from 26.5GHz-27.5GHz, and one block of 1×400MHz (25.5GHz-25.9GHz), while the 3.6GHz spectrum is divided into seven regional blocks, including two of 1×10MHz, one of 1×40MHz and four of 1×60MHz. The RTR then expects to hold the auction for the 5G-suitable spectrum in December at the earliest.

(July 5, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Belgium

Following extensive consultations, telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has assigned spectrum in the 28GHz and 70GHz/80GHz bands to the country's mobile network operators (MNOs) for the use of radio relay links. Citymesh Mobile has been allocated frequencies in the 28GHz band, while 70GHz/80GHz spectrum was awarded to Proximus, Orange Belgium, Telenet, Citymesh Mobile and Network Research Belgium (NRB). The operators are expected to use the frequencies for 5G backhaul.

(July 3, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The Belgian Competition Authority (BCA) has imposed provisional measures to ensure the operational and commercial autonomy of edpnet during the watchdog's ex officio investigation into the ISP's acquisition by full-service operator Proximus. In its decision announced last Thursday, the BCA said the review opened on 21

March had 'proven the prima facie existence of an abuse of dominance by Proximus resulting from the takeover of edpnet'. As a result, it believes that interim measures are urgently required 'so as to avoid a situation which could harm the general economic interest, should the acquisition of edpnet by Proximus become irreversible'. Proximus's EUR20.5 million (USD22.3 million) offer to buy edpnet was sanctioned by the Enterprise Court of Dendermonde in March, after the independent ISP had filed for bankruptcy protection the previous October. The interim measures require Proximus to maintain the viability and competitiveness of edpnet; to segregate the activities of the two companies under the supervision of a manager designed by Proximus amongst the staff of edpnet; and to ensure that Proximus does not obtain any confidential information pertaining to edpnet. The measures will be applicable for a period of at least 15 months, with compliance to be monitored by an independent trustee. (June 26, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Bolivia

The Ministry of Public Works, Services and Housing (Ministerio de Obras Publicas, Servicios y Vivienda, MOPSV) has reportedly suspended a resolution designed to assign spectrum in the 3.5GHz band for 5G mobile use. Media refers to the intervention as a 'temporary cessation' and explains that the tender was expected to issue three spectrum blocks for mobile use, with a further two blocks set aside for the creation of a telecoms operator with majority state participation. The price for each 50MHz block was established at

BOB112 million (USD15.8 million). As per Resolucion Ministerial No. 174, dated 9 September 2022, the Bolivian government modified the National Frequency Plan by designating the 3.3GHz-3.6GHz band for 5G mobile use. The spectrum was divided up as follows: 3300MHz-3350MHz (A1), 3350MHz-3400MHz (A2), 3400MHz-3450MHz (B1), 3450MHz-3500MHz (B2), 3500MHz-3550MHz (C1) and 3550MHz-3600MHz (C2).

(August 2, 2023) [BN Americas](http://BN Americas)



## Brazil

The General Superintendence of the Administrative Council for Economic Defence (Conselho Administrativo de Defesa Economica, CADE) has approved the proposed merger between Brazilian ISPs Vero and AmericaNet 'without restrictions. The decision was published in the Official Gazette on 4 August. If there are no objections/appeals within the next 15 days, the approval will be maintained. Going forward, the merger now needs to be approved by the National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel). The regulatory review was opened on 18 July, one week after

the deal was announced. The Vero and AmericaNet agreed to merge their respective operations on 11 July 2023. Vero will absorb AmericaNet by acquiring the entire shareholding of the latter's direct parent company, Meppel. In return, Meppel will be granted a 44% stake in the enlarged entity. As per 2Q23 data, Vero ranks as the seventh-largest ISP in Brazil (817,395 subscriptions), while AmericaNet is eleventh (611,053 subscriptions). The enlarged entity will jump to fifth place in the fixed broadband market.

(August 7, 2023) [TeleSintese](http://TeleSintese)

The National Telecommunications Agency (Anatel) has readjusted the values of the country's fixed switched telephone services (servicos de telefonia fixa comutada, STFC) concessions. The value of Oi's STFC concession has increased from BRL12.1 billion (USD2.5 billion) to BRL19.9 billion, with the new price split between legacy concessionaires Telemar (BRL13.4 billion) and Brasil Telecom (BRL6.5 billion). The value of Vivo's concession has increased from BRL7.7 billion to BRL8.7 billion, while Claro's has climbed from BRL2.2 billion to BRL4.1 billion and Algar Telecom's has jumped from BRL275 million to BRL579 million. Finally, the value of Sercomtel's concession has been readjusted

from BRL167 million to BRL227 million. The new values represent the price that an operator must pay if it wishes to leave the concession regime and migrate to an authorization model. The companies will not disburse the money to the government, but will assume network investment commitments equivalent to the given amount. The concessionaires now have 120 days within which to notify Anatel of their final decisions. All concessions are currently scheduled to run until 2025; if a telco switches to the authorization model, a new concessionaire will be sought for its operating region.

(July 25, 2023) TeleSintese



## Burundi

The Telecommunications Regulation and Control Agency (ARCT) has published its roadmap for the deployment of 5G services in the country, setting out a target of July 2024 for the introduction of commercial services. The ARCT notes that the availability of frequencies is a major issue for the development of 5G and that the successful deployment of 5G requires the timely availability of sufficient spectrum under appropriate conditions. It plans to assign a continuous band of 60MHz-100MHz in the sub-6GHz bands along with at least 800MHz of millimeter wave (mmWave) spectrum above 6GHz. In December 2023 the regulator

plans to release spectrum in the 700MHz, 2.3GHz, 2.5GHz, 3.5GHz and 26GHz bands, with the granting of authorizations to test 5G scheduled to take place in January 2024. Whilst the details are still to be decided, the roadmap notes that 'Depending on the availability of the spectrum and the needs of the market, the ARCT may set up a mechanism [e.g. auction] for selecting candidates for the use of the spectrum predefined in advance.' Backed by a public awareness program outlining the benefits of 5G (which is slated to begin in August 2023), commercial services are expected to launch in July 2024. (July 4, 2023) www.commsupdate.com



## Chad

The telecoms watchdog the Regulatory Authority for Electronic Communications and Post (L'Autorite de Regulation des Communications Electroniques et des Postes, ARCEP) has ordered Airtel Chad to pay a fine of XAF5 billion (USD8.3 million) for failing to meet quality of service (QoS) standards. ARCEP had conducted an audit on the QoS of the mobile networks of cellcos Airtel Chad and Moov Africa Chad and found a 'noticeable deterioration in quality' for Airtel's services, whilst Moov's network had seen a 'marked improvement' in cities but coverage of main roads remained 'mediocre'. The audit was conducted in line with a memorandum

of understanding (MoU) signed between the regulator and the providers in July 2021. The pair agreed to invest XAF29 billion (Airtel) and XAF27 billion (Moov) in network development over the subsequent three years, following complaints from customers regarding the poor service quality from the operators. As part of the MoU, ARCEP established a new committee to monitor the investments and the impact on service quality. After the first year, the regulator found that the results were below expectations and urged the cellcos to comply with their commitments and improve QoS.

(August 21, 2023) www.commsupdate.com



## China

Chinese industry watchdog the Ministry of Industry and Information Technology (MIIT) has issued new regulations on radio frequency allocation, which will take effect from 1 July 2023. The rules update China's national frequency plan, designating spectrum in the 6GHz, 26GHz, 40GHz and 70GHz bands for International Mobile Telecommunications (IMT) services, including 5G and 6G technologies. The MIIT claims that the move makes China the first country in the world to allocate the 6GHz band for IMT systems, adding that it promotes the consistent regional and global frequency allocation in that band, and provides sufficient mid-band spectrum resources for the development of 5G and 6G. The up-

dated framework also include additional regulatory support for satellite communications, with the addition of rules for maritime mobile satellite services and mobile satellite services on the 150MHz and 400MHz bands, and the 17.7GHz-19.7GHz and 27.5GHz-29.5GHz ranges for satellite earth stations. In addition, the MIIT notes that the regulations ensure the safety of frequency use for major aerospace projects, by providing clarity on interference protection for certain radio services including earth exploration satellite services, space research and radio astronomy.

(June 28, 2023) www.commsupdate.com



## Colombia

The Ministry of Information Technologies and Communications (Ministerio de Tecnologías de la Información y las Comunicaciones, MinTIC) has published a draft resolution of its 5G auction terms. As per the document, the watchdog will distribute spectrum in the following bands: 700MHz (10MHz block), 1900MHz (10MHz), Extended AWS (30MHz), 2500MHz (30MHz) and 3500MHz (320MHz). Interested parties are invited to submit their comments by 15 August. Going forward, MinTIC says it will also carry out 'an objective selection process' to regionally assign an additional 80MHz in the 3500MHz band at a local level from 2024, while the 26GHz band will also see similar assignments. As per a previously announced timetable, the multi-band spectrum auction is earmarked to commence on 20 December 2023.

(August 3, 2023) [www.commsupdate.com](http://www.commsupdate.com)

Colombia is expected to auction 5G frequencies in December, according to the country's Ministry of Information Technologies and Communications (MinTIC). The ministry reported that the 5G auction is expected to begin on December 20. In August, the ministry will publish the planned mechanism for the auction process, along with technical conditions and entry requirements for operators. Meanwhile, the reserve price of the frequencies as well as the obligations and guarantees required for the process will be announced in September. MinTIC also expects to publish the final version of the resolution for the

spectrum auction in October and estimates that it will begin accepting applications from bidders on November 10. The Government of Colombia had previously said that it plans to make frequencies in the 700 MHz, 1,900 MHz, 2.5 GHz, 3.5 GHz and 26 GHz bands available for bidding. According to previous press reports, nine telecommunications firms in Colombia had initially expressed their interest in acquiring frequencies for the provision of 5G services in the country. Claro, Tigo, Telefónica, WOM, ETB, OSC Top Solutions Group, Colombia WB Hots, Global Play and EGC Colombia will potentially participate in the 5G spectrum auction. Claro has expressed interest in acquiring frequencies in all available bands with a national coverage area, using 3.5 GHz and 26 GHz spectrum for 5G. At the end of last year, MinTIC began works to identify the spectrum bands and the amount of spectrum required for the launch of 5G in the South American country. Claro has expressed interest in acquiring frequencies in all available bands with a national coverage area, using 3.5 GHz and 26 GHz spectrum for 5G. Latin America and the Caribbean had a total of 12 million 5G connections by end-2022 and the region is expected to have 400 million 5G customers by 2027, according to a previous report by 5G Americas. The report stated that 4G LTE is expected to remain strong in Latin America and the Caribbean through the end of 2023. In Q4 2022, there were 537 million 4G LTE connections, representing 9.3% annual growth with the addition of 46 million new LTE subscriptions.

(June 21, 2023) [www.rcrwireless.com](http://www.rcrwireless.com)



## Costa Rica

Costa Rica has confirmed that it plans to commence its multi-band 5G auction on 23rd October 2023. TeleSemana reports that regulator Sutel (Superintendencia de Telecomunicaciones) will hold a consultation on the tender over the next few weeks to finalize the specifications, and will publish the final details by 25th September. Sutel's Director General of Quality of Service and Spectrum Glenn Fallas Fallas confirmed that the various 5G concessions available would be associated with specific coverage obligations. Within the first 12 months of receiving their permits, 700MHz licensees will be required to cover 60% of the specified 134 'priority districts'. The remaining 40% must be covered by

the end of 24 months. By contrast, 2.3GHz and 3.5GHz licensees will be required to focus their efforts on areas that currently receive limited or no coverage. Accordingly, the obligations are not so steep, with 20% coverage required after one year, 50% after two years and 100% after three years of receiving the license. The mmWave spectrum available in the 26GHz and 28GHz bands will not have any coverage obligations. In addition to the aforementioned bands, further spectrum may be made available in the 2.6GHz and 3.5GHz bands ahead of the auction. Following the bidding process, Sutel expects to confirm the auction results on 19th December 2023.

(July 20, 2023) [www.developingtelecoms.com](http://www.developingtelecoms.com)



## Cote d'Ivoire

The Regulatory Authority for Telecommunications in Cote d'Ivoire (Autorite de Regulation des Telecommunications de Cote d'Ivoire, ARTCI) is looking to implement network sharing to speed up the rollout of 5G networks by the country's mobile operators. A report from Ecofin says the watchdog is looking for a contractor to manage the network sharing process.

The Cote d'Ivoire government is hoping to see the commercial launch of 5G services by the start of the African Cup of Nations (CAN) football tournament in January. Earlier this year MTN Cote d'Ivoire said it had already installed a number of 5G test sites in the capital Abidjan and the interior of the country.

(August 23, 2023) [www.commsupdate.com](http://www.commsupdate.com)

There are rumors that Cote d'Ivoire could get a new mobile operator, possibly in the form of the country's first MVNO, under the name CI-DATA. A launch had been planned for earlier this month, with the necessary approvals already obtained, but a delay has been caused due to an issue with its proposed tariffs. For mobile data services, the Regulatory Authority for Telecommunications in Cote d'Ivoire (Autorite de Regulation des Telecommunications de Cote d'Ivoire,

ARTCI) has imposed a minimum price per MB of XOF0.80 (USD0.001), but CI-DATA is looking to provide data connectivity at prices which are well below this rate. According to the report, the telco is working with authorities to resolve the issue to enable it to launch services, initially in the former capital and largest city Abidjan before expanding to other areas.

(June 28, 2023) Linfodrome



## Croatia

The Croatian Regulatory Agency for Network Operations (Hrvatska regulatorna agencija za mrežne djelatnosti, HAKOM) has approved the deregulation of fixed broadband services in 72 markets where it has been deemed that there is sufficient competition to incumbent operator Hrvatski Telekom (HT) and its ISP subsidiary Iskon. The HT and Iskon will no longer be subject to price regulation and will have the same status as rivals such as A1 and Telemach. The 72 markets are in urban areas where alternative fixed broadband providers have deployed their own infrastructure. They include 14 of the 17 operating areas in the capital Zagreb; the entire territory of Croatia has been divided into 572 separate markets. Operators have been given 120 days to prepare for the change, meaning the current regulatory obligations will be in place until early December.

(August 1, 2023) Poslovni Dnevnik

Alternative operators in Croatia are reportedly unhappy with a decision to deregulate 72 local markets for fixed broadband access. A report from Broadband TV News says that the Croatian Regulatory Agency for Network Operations (Hrvatska regulatorna agencija za mrežne djelatnosti, HAKOM) wants to remove the significant market player (SMP) designation for incumbent

operator Hrvatski Telekom (HT) in the specified markets, effectively removing price controls on its retail and wholesale services. HAKOM has recently notified the European Commission of its intentions. HT's rivals say that this will hamper competition by reinforcing its dominant position; Deutsche Telekom subsidiary HT currently controls 59% of Croatia's market for retail fixed broadband subscriptions. Adrian Jezina, CEO of alternative operator Telemach Croatia, said: 'HAKOM's decision to deregulate now will entrench the position of the dominant market player for another generation, benefiting Deutsche Telekom at the expense of Croatian consumers. Our entry into the market as a third player has already stimulated competition and led to greater investment. Now is the time to be encouraging competition to invest further in infrastructure to create a more competitive environment. Croatia needs an encouraging and stable regulatory framework, which will boost investments by all operators without favoritism. We hope that the European Commission carefully reviews HAKOM's proposal to ensure that it is harmonized with the practices of the European Union, and in the best long-term interest of consumers in Croatia.'

(July 13, 2023) Broadband TV News



## Ecuador

The government has announced it will temporarily extend America Movil's mobile operating concession beyond its expiry on 26 August. The group's Ecuadorian subsidiary Conecel, which trades under the brand Claro, will pay USD3.366 million per month during the extension period. 'The extension will be valid until the newly renegotiated contract is signed, which is estimated to take approximately six months,' Telecommunications Minister Vianna Maino revealed at a news conference. The new contract will run for 15 years, Maino said, adding the parties are evaluating the final value and new conditions. Claro had some 9.29 million mobile subscriptions on its books at 30 June 2023, equivalent to a 52% share of the market. The government is also considering a possible extension for Telefonica's Otecel subsidiary (owner of the Movistar and Tuenti brands), the minister added. That contract is

due to expire in November 2023. Ecuador's Agency for Regulation & Control of Telecommunications (Agencia de Regulacion y Control de las Telecomunicaciones, ARCOTEL) had earlier sought to allay fears of potential service disruption following the suspension of concession renewal negotiations last May. (August 23, 2023)

[www.commsupdate.com](http://www.commsupdate.com)

The Agency for Regulation & Control of Telecommunications (Agencia de Regulacion y Control de las Telecomunicaciones, ARCOTEL) has stressed that there will be no disruption to services following the suspension of negotiations to renew the mobile concessions of Conecel (which operates under the Claro brand) and Otecel (owner of the Movistar and Tuenti brands), which are set to expire in August and November 2023 respectively. In a statement the

regulator informed the public that services 'will remain in operation, uninterrupted and without prejudice to the contractual terms with telephone operators while the renegotiation process progresses. The announcement follows Arcotel Resolution 2023-0097 of 25 May, which suspended the negotiations for 120 days to enable the regulator to complete various procedures, most notably a valuation of spectrum bands in partnership with the ITU. In January 2021 the government confirmed that it had received the ITU's technical assessment of the 2.5GHz and 700MHz bands, enabling Arcotel to begin negotiation with Otecel and Conecel the following August. However, it revealed at the time that a similar valuation of the 3.5GHz, 850MHz, 900MHz AWS and 1900MHz spectrum was still pending. Patricia Falconi,

director of telecoms industry body Asetel (Asociacion de Empresas de Telecomunicaciones de Ecuador), has recommended that the operators' concessions should be extended pending the conclusion of the negotiations. 'Every day that passes without the State speeding up the process for negotiations the renewal of mobile concession, the country and Ecuadorians lose,' she said, adding: 'Companies need legal certainty, this is not a good sign for foreign investment.' According to ARCOTEL's latest market report, Conecel had 9.16 million mobile subscriptions at 31 March 2023, equivalent to a 51.9% share of the market, while second-placed Otecel claimed 5.20 million subscriptions (30.7%).

(July 7, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## El Salvador

The Electricity and Telecommunications Superintendency (Superintendencia General de Electricidad y Telecom, SIGET) has officially awarded mobile spectrum in the 1755MHz-1770MHz/2155MHz-2170MHz (Extended AWS) frequency range to Telefonica Moviles El Salvador (Movistar). A total of 30MHz was put up for auction in February, divided up into three blocks of 2x5MHz: 1755MHz-1760MHz/2155MHz-2160MHz, 1760MHz-1765MHz/2160MHz-2165MHz, and 1765MHz-1770MHz/2165MHz-2170MHz, following a request from Movistar, although it is understood that the mobile network operator (MNO) was the only company to submit an application to participate in the spectrum allocation process. The minimum bid price for the frequencies, which are valid for 20 years, was USD21.66 million. (July 27, 2023) [www.commsupdate.com](http://www.commsupdate.com)

SIGET, the telecommunications regulating agency in El Salvador, has issued a new resolution which aligns it with the growing number of countries that have completely freed up the 6GHz band for use in WiFi 6E networks. The resolution classifies the entire 6GHz band (5.925 to 7.125 MHz) as free use, a boost for Wi-Fi in the country. However, the resolution also establishes the

maximum operating limits of the devices, limiting their use to indoors, while prohibiting their implementation in vehicles such as cars, trains, ships and aircraft. Elsewhere in Latin America, things aren't quite as upbeat for Wi-Fi proponents. Honduran telecommunications regulator Conatel has launched a public consultation on a draft resolution to modify the national frequency plan in relation to the 6GHz band. In 2021 1200MHz of spectrum between 5925MHz and 7125MHz was provisioned for local area networking using Wi-Fi 6E standards. Now the regulator seems inclined to change the allocation of the entire 6GHz band to only the 5925MHz-6425MHz range. The document, available on the regulator's website, has been made available for public consultation until 12 July. Allocation of 6GHz spectrum has been a major talking point in many countries in recent months. We reported in February that Brazilian regulator Anatel had enabled broadband providers to tap into the 6GHz spectrum band unlicensed for the next decade, boosting Wi-Fi in that country. Also in February we took a look at the ongoing tussle between Wi-Fi and cellular in a number of countries for use of 6GHz spectrum.

(July 13, 2023) [www.developingtelecoms.com](http://www.developingtelecoms.com)



## Estonia

The Consumer Protection and Technical Regulatory Authority (Tarbijakaitse ja Tehnilise Järelevalve Amet, TTJA) has allocated funding of EUR800,000 (USD884,000) for the rollout of rural fixed broadband infrastructure. A total of eight applications were received, of which five received funding, with an average

grant of EUR160,000. Around 100 new high-speed connections will be deployed in villages in unserved areas, the regulator says, with network construction to be completed by mid-2025 at the latest.

(July 28, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Ethiopia

The Ethiopian Communications Authority (ECA) has launched a Request for Qualifications (RFQ) for Ethiopia's second new nationwide full-service telecommunications license, known as 'License B'. Announcing the development, the regulator said it was inviting 'world-class' telecommunications operators to take part in what it called an 'exciting opportunity to operate within Ethiopia's rapidly growing economy'. With the license issuance process for License B having resumed in November 2022, at that date the ECA invited

feedback to a stakeholder consultation related to the concession. In launching the RFQ, the watchdog noted that it has given 'due consideration' to the outcome of its public consultations, while also claiming to have adopted 'several value-creation measures to enhance the attractiveness of the opportunity'. Parties interested in receiving the RFQ have been advised to send a written request to the ECA, while the watchdog has confirmed a deadline of 15 September 2023 for applications for the concession. (July 3, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## France

The telecom regulator Arcep has authorized an amendment to the existing network sharing agreement between Bouygues Telecom and SFR to include 5G technology. The duo submitted the contractual amendments to the regulator in January 2023 and following a public discussion on the topic, Arcep disclosed that it does not appear necessary to request that Bouygues Telecom and SFR modify their agreement: 'In particular, the addition of 5G technology and the reassessment of deployment objectives for new cell sites on the shared network help to satisfy the quality of service requirements fueled by ongoing advances in mobile services and new generation network coverage needs.' The sharing agreement between the two operators was signed in 2014 for a period of 20 years. It initially included the sharing of

2G/3G/4G networks over a large portion of metropolitan France, with a temporary 4G roaming solution. In 2016, in an amendment to this contract, Bouygues Telecom and SFR agreed upon a trajectory for the gradual end of SFR roaming on the Bouygues Telecom network by the end of 2018. In February 2020 a new amendment to the contract was sent to Arcep which covered the future deployment of new 2G, 3G and 4G cell sites. SFR initially launched its 5G commercial network in Nice in November 2020, with Bouygues Telecom following suit in December 2020; SFR currently provides 5G coverage in 7,000 municipalities, while Bouygues claims 5G coverage in nearly 12,400 towns and municipalities.

(July 28, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Georgia

Georgian mobile operator Cellfie Mobile, which was known as VEON (Beeline) until April 2023, was the only participant in the country's 5G spectrum auction, after larger competitors MagtiCom and SilkNet opted not to participate in the process. According to telecoms regulator the Communications Commission, Cellfie Mobile secured spectrum in the 1800MHz band (2x5MHz) for GEL1.386 million and the 2600MHz range (two lots for GEL226,000 apiece), as well as frequencies in the 700MHz (2x5MHz) and 3500MHz (1x50MHz) bands for a combined GEL2.657 million. It is required to pay 30% of the total cost of GEL4.497 million within one month. Spectrum licenses for the 1800MHz and 2600MHz carry an obligation to allow network access to MVNOs on fair and non-discriminatory terms. According to the regulator, MagtiCom and SilkNet objected to this obligation, while in turn the duo accused the Communications Commission of 'deliberately spreading misinformation' and 'misleading the public', adding that the regulator did not take their comments and suggestions on the planned auction into consideration. Furthermore, the pair reiterated that they welcome the introduction of MVNOs, but on a commercially negotiated basis, taking into account

mutual interests, rather than being forced and coerced into doing so. (August 25, 2023) [www.commsupdate.com](http://www.commsupdate.com)

Georgia is set to commence 5G auctions next month after the country's Communications Commission approved the sale of airwaves in the 700MHz, 800MHz, 1800MHz, 2600MHz and 3.5GHz bands. The regulator confirmed that 24 lots will be made available across four auctions, to be conducted between 16th and 23rd August 2023. The holdings will be combined into four abstract lots, with varying prices and coverage obligations, with the first having a reserve price of GEL6.23 million (US\$2.37 million), the second GEL2.53 million, the third GEL2.59 million and the fourth GEL2.65 million. For three of the combined lots, winning bidders will be obliged to provide fair and non-discriminatory network access to MVNOs – one lot is exempt from this requirement. The build-out requirements focus on the most populous areas of the country as well as key infrastructure such as ports, airports, railways and highways, although companies can expand coverage gradually over the next three to seven years.

(July 11, 2023) [www.developingtelecoms.com](http://www.developingtelecoms.com)



## Germany

Germany's Federal Network Agency (FNA, Bundesnetzagentur) has initiated a study on the competitive situation in mobile market, ahead of allocating spectrum in the 800MHz, 1800MHz and 2600MHz bands. The regulator has commissioned consulting firms WIK-Consult and Ernst & Young to examine whether measures are required to maintain or achieve effective competition in the German mobile sector. 'Promoting competition is an important goal of spectrum regulation. That's why we carry out an objective and forward-looking assessment of the competitive situation before the spectrum is made available,' said Klaus Muller, President of the FNA. The

results of the report will be submitted to the watchdog in autumn of this year. (July 6, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The Advisory Board of the German Federal Network Agency, Bundesnetzagentur, has unanimously voted in favour of a resolution on spectrum awards, supporting incentives for mobile network expansion. Incentives should be created through reverse auctions, or auctions split into phases offering discounts or bonuses to reward companies that overfulfill their requirements. The advisory board urges a closer look at the topic of infrastructure sharing. (June 23, 2023) [www.telecompaper.com](http://www.telecompaper.com)



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(June 23, 2023) [www.telecompaper.com](http://www.telecompaper.com)



## Guatemala

The Superintendence of Telecommunications (Superintendencia de Telecomunicaciones, SIT) is reportedly evaluating requests for a number of spectrum licences in the 700MHz band. Claro has requested six blocks in the 718MHz-803MHz range, while Tigo has expressed an interest in the following blocks: 733MHz-748MHz, 773MHz-788MHz, 788MHz-803MHz and 718MHz-733MHz. An additional company, manufacturing firm Fabrigas, has requested six blocks in the 700MHz band. A separate report from Prensa Libre quotes SIT boss Marco Antonio Baten Ruiz as saying that an auction is likely to be scheduled, given the demand in the 4G/5G-suitable 700MHz band.

Additional parties are invited to submit expressions of interest (EoI) by 21 July, with an auction earmarked for September or October. Mr. Ruiz expects the process to generate between USD110 million and USD120 million. A 700MHz auction has been on the cards since at least 2016, only to be delayed due to regulatory reshuffles and changes in government. If it comes to fruition, the 700MHz auction will represent Guatemala's second spectrum sale of 2023. On 2 June an auction of 2.5GHz-2.6GHz frequencies generated a total of USD48.947 million, of which Tigo paid a total of USD32.236 million and Claro bid USD16.711 million.

(June 22, 2023) [BNAmericas](http://BNAmericas)



## Hong Kong

The Communications Authority (CA) has opened a consultation on the potential award of 400MHz of spectrum in the 6GHz band (6570MHz-6770MHz and 6925MHz-7125MHz) for the provision of public mobile services, with a particular focus on 5G. The Authority is also proposing changes to the territory's Table of Frequency Allocations to include the 6GHz band for mobile services. Parts of the band are currently used for fixed service and fixed satellite service (earth-to-space). 'Being the mid-band frequency blocks with

the largest amount of spectrum available for mobile services, the 6GHz band would enable the deployment of fifth-generation (5G) mobile networks and services with speeds and capacity vital to the future sustainable development of digital economy and mobile broadband connectivity in Hong Kong,' a spokesman for the CA said. As there are likely to be competing demands for the spectrum, the CA proposes to assign it by way of auction, with spectrum utilization fees (SUFs) to be agreed nearer the time. (July 19, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## India

The government has implemented new reforms designed to protect mobile customers from fraud and cybercrime, the Economic Times writes. The reforms include mandatory police verification of SIM dealers and the discontinuation of bulk SIM sales. In a press briefing on the matter Communications and IT Minister Ashwini Vaishnaw explained the need for the reforms, noting that since the introduction of the Sanchar Saathi portal in May the Department of Telecommunications (DoT) has detected and blocked 5.2 million connections that had been opened using fraudulent documents. The Sanchar Saathi portal enables customers to check mobile subscriptions established in their name and deactivate any that were set up fraudulently, and to trace or block lost devices. The minister added that 67,000 SIM dealers had been blacklisted and 17,000 stolen or fraudulently obtained handsets were blocked, whilst 300,000 handsets were returned to their rightful owners. The reforms will require SIM dealers to be registered and verified with the authorities whilst biometric verification of the sellers will be mandatory, with the minister adding that 'with these measures the dealers who sell SIMs can be held accountable'. Secondly, the bulk purchase of SIMs will no longer be permitted, and replaced with a new 'business connection' system that will require the buyer to register with the authorities. (August 18, 2023) The Economic Times

The government pushed back a deadline requiring overseas device makers to obtain a license to import products, after Apple, Samsung and HP halted shipments to the country, Bloomberg reported. A day after introducing the measure, aimed at encouraging local production, India's Directorate General of Foreign Trade gave companies until the end of October to secure permits to import tablets, laptops and PCs, the news outlet stated. The surprise directive forced major device manufacturers to start talks with the government about how to obtain licenses. Despite the trade regulator's backtracking, the move prompted 44 hardware manufacturers to register to manufacture devices locally, Business Standard reported, citing official sources. One official told the newspaper the government aims to repeat the success achieved under a production linked incentive scheme across other electronics categories. In October 2020, the government handed out INR450 billion (\$5.5 billion) in incentives to 16 domestic and international electronics companies to boost smartphone production over

the next five years. (August 7, 2023) [www.mobileworldlive.com](http://www.mobileworldlive.com)

Telecom Regulatory Authority of India (TRAI) issued Telecom Regulatory Authority of India Repealing Regulations, 2023 (02 of 2023) dated 25.07.2023 to repeal the Regulation on quality of service of dial-up and leased line internet access service, 2001 (4 of 2001) with effect from date of its notification in Official Gazette. 2. TRAI notified the Regulation on quality of service of dial-up and leased line internet access service, 2001 (4 of 2001) on 10th December 2001. This regulation was applicable to all the Basic Service Operators and Internet Service Providers including the incumbent operators viz. BSNL, MTNL and VSNL. The purpose of laying down Quality of Service Parameters was to ensure customer satisfaction by laying down norms of network performance, which the service provider is required to achieve by proper dimensioning of his network; measure the Quality of Service from time to time and to compare that with the specified norms so as to monitor the level of performance, provided by various service providers and to protect the interests of subscribers of the Internet services. 3. These regulations were issued when the dial up service was the only service available for accessing low speed internet. With the passage of time, the telecommunication networks, both wireline as well as wireless, have evolved to offer high speed broadband service on xDSL, FTT'H, LTE and 5G etc, technologies. Whereas the leased line access services are generally offered by Internet Gateway Service Providers (IGSPs) holding an ISP license to enterprises, is a Service Level Agreement (SLA) based service. Being SLA based service, the agreement among the contracting parties has sufficient provisions to safeguard concerns regarding service quality, Hence, the regulation on quality of service of dial-up and leased line internet access service, 2001, appears to be no more relevant in the present context. 4. In view of the above, earlier the Authority issued draft Telecom Regulatory Authority of India Repealing Regulations, 2023 on 03.04.2023 inviting comments of the stakeholders up to 17th April 2023. Based on the comments of the stakeholders and considering the aspect of Ease of Doing Business (EoDB), Authority has decided to repeal the Regulation on quality of service of dial-up and leased line internet access service, 2001 (4 of 2001) with effect from date of Telecom Regulatory Authority of India Repealing Regulations, 2023 (02 of 2023) in Official Gazette. (July 26, 2023) [www.traai.gov.in](http://www.traai.gov.in)



## Ireland

Ireland's Commission for Communications Regulation (ComReg) has begun a further round of consultation regarding its proposals related to the universal service obligation (USO) for voice-only connections and voice communications services at a fixed location ('VFL services'). With the watchdog having launched an initial

consultation on the matter back in January 2023, it said that after considering feedback it was now revising its preliminary views and draft decision instrument. ComReg is now seeking comments on its revised preliminary views, which include that fixed line incumbent eir should be designated as a universal service provider (USP) for

existing USO VFL end-users, while it has recommended that Pure Telecom be designated as the USP for new USO VFL services end-users. Meanwhile, ComReg has proposed that the maximum period of the proposed USP designations should be until 30 June 2027, though in Pure Telecom's case it noted that the provider would

be subject to a specific qualification, that being that 'in the event that Pure Telecom is no longer party to a contract enabling it to provide VFL services, its designation as USP will immediately cease and it will no longer be subject to the universal service obligations'.

(June 22, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Italy

The government has confirmed a preliminary agreement with US investment company KKR under which it will take a stake of up to 20% in Telecom Italia's (TIM's) fixed networks business NetCo as part of KKR's planned binding offer. The Italian state-backed infrastructure investment fund F2i could also become part of the deal, giving the government a combined interest in NetCo of up to 30%, with KKR holding the remainder. In a statement, Italy's Ministry of Economy and Finance (Ministero dell'Economia e delle Finanze, MEF) said: 'The terms

of the offer, from the point of view of the relations between the parties, foresee a decisive role of the government in defining the strategic choices.' KKR has until 30 September to submit a binding offer, which it is thought will be valued at around EUR23 billion (USD25.3 billion). One potential hurdle could be the opposition of TIM's largest shareholder, Vivendi, which has previously said that the NetCo assets are worth closer to EUR30 billion.

(August 11, 2023) [www.reuters.com](http://www.reuters.com)



## Kyrgyzstan

An auction for 100% of shares in state-owned Kyrgyz mobile operator MEGA has been scheduled for October this year by the Fund for State Property Management, reports Akipress. The starting price for the share auction is set at KGS14.60 billion (USD167 million), with bidding increments of KGS200 million. Auction applications are being accepted from today, with a closing date of 2 October 2023, and the electronic auction itself will begin later that day. A 'guarantee' of 10% of the starting

price is required to enter, while the winning bidder must transfer a 7% fee to the Fund for State Property Management. 2G/3G/4G network operator MEGA (formerly branded MegaCom, and registered as Alfa Telecom) currently competes closely for first place in Kyrgyzstan's mobile market with rival Nur Telecom (O!) in terms of subscriptions, while according to the latest announcement the cellco's assets include 5,500 base stations. (July 4, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Liberia

The government working in partnership with the telecoms industry regulator, the Liberia Telecommunications Authority (LTA), is readying the launch of a national digital transformation project aimed at increasing investments in digital infrastructure to make it easier for the population to access and use services such as e-commerce solutions and smart technologies. LTA President Edwina Crump Zackpah is cited by local press

as saying the digital transformation project will center on improving citizens' technical skills in key technology areas, while simultaneously looking to provide seed funds to 'support sustainable technology solutions that address local challenges'. This initiative forms a key part of the Liberian government's vision to make digital technology one of the pillars of the country's socio-economic development. (July 17, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Lithuania

The Communications Regulatory Authority (RRT) has revealed that it is conducting a survey to assess the geographic scope of fixed broadband networks in the country. Data collection has already begun, following the approval of the research methodology after a public market consultation. The study is scheduled to be completed in December; the aggregated assessment of network coverage will be available to the public, businesses and decision makers, and network coverage maps will be accessible on the RRT website. The regulator added that the study will determine areas currently unserved by high speed fixed broadband services, in order to supply these locations with speeds of up to

100Mbps within the next three years. Furthermore, the information will be used by state and municipal institutions when making decisions on allocating funds for the deployment of telecoms networks, and in the preparation of national plans for the development of broadband infrastructure. The data will also be used by the RRT when it is necessary to carry out other studies or analyses, determining the coverage requirements associated with the allocation of radio frequencies and the conditions of their use, and the obligations of universal electronic communication services. 'RRT constantly conducts market research and network coverage assessments, and measures connection

speed. However, this broadband coverage assessment study is the first of its kind,' said Marijus Balnys, chief advisor of the RRT's electronic communications regulatory group, adding: 'We chose a methodology that would allow us to implement the research objectives. Interested persons can familiarize themselves with the objectives of the study, the principles, the nature of the

information collected in advance, and find out what can be expected from this study. Through our research, we aim to determine the extent of existing electronic communications networks that can support broadband services, including high-bandwidth networks.'

(August 16, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Malaysia

Malaysian communications minister Fahmi Fadzil has announced that the Malaysian Communications and Multimedia Commission's '5G Task Force' has successfully reached an agreement regarding equity participation in wholesale 5G operator Digital Nasional Berhad (DNB) with five of the country's major telecoms operators. In a press release issued by the Minister and published on several social media channels, it was noted that CelcomDigi, Maxis, Telekom Malaysia,

U Mobile and YTL Communications are all now in the process of finalizing their respective shareholdings in DNB. However, the release stopped short of confirming exactly what stakes each operator will take. Following confirmation that the Malaysian government is to permit the rollout of a second 5G network in the country from 2024, a number of companies had withdrawn from previously agreed deals to acquire a stake in DNB.

(July 21, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Mexico

ALTAN Redes (Red Compartida), the Mexican mobile operator that offers open access connectivity using the 700MHz band, is considering acquiring 2.5GHz spectrum to respond to growing network capacity demands. The possibility was floated by Carlos Lerma Cotera, a former Ministry of Finance official who was placed in charge of the celco after its government bailout in 2022. Mr. Lerma Cotera told: 'Eventually, there will be the need for us to have another capacity band, which would be 2.3GHz or 2.5GHz or 2.7GHz or 3.5GHz.' The Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) is hoping to stage a multi-band spectrum auction this year. The main 5G spectrum bands scheduled for inclusion are a 70MHz block in the 614MHz-698MHz (600MHz) band, a 50MHz block at 3300MHz-3350MHz, and 90MHz in the L-band (1427MHz-1518MHz). The IFT is also weighing up the potential inclusion of unused spectrum in a number of other bands, including 800MHz, 850MHz, 1900MHz, AWS, and 2.5GHz frequencies – some of which were

relinquished by Movistar in 2020. (July 7, 2023) [El Economista](http://ElEconomista)

The Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) has pre-emptively extended the validity of the license held by Grupo Televisa-backed Cablevision (Izzi) from 2029 until 2059. The terms of the license renewal allow the cableco to extend its coverage to new locations beyond those included in the original concession. Izzi's current license, the report notes, was granted on 23 May 1999. Mexican media conglomerate Grupo Televisa owns majority stakes in five cable companies, which together form its 'Televisa Cable' division. The cablecos in question are Cablevision, Cablemas, Television Internacional (TVI), Grupo Cable TV (Cablecom) and Cablevision Red (Telecable). In total, Televisa's networks pass more than 19 million homes in 110 municipalities across the country. End-user services are branded Izzi, Wizz or Wizzplus, depending on location.

(June 23, 2023) [Daily Expansion](http://DailyExpansion)



## Namibia

The Communications Regulatory Authority of Namibia (CRAN) has confirmed that it will end its year-long moratorium on issuing new telecom and broadcast licenses on 1st October 2023. The regulator chose to suspend issuing new licenses in October last year to facilitate a sector-wide study examining the state of competition, the level of market saturation and barriers to entry for newcomers to the market. Katrina Siken, CRAN's Executive of Communication and Consumer

Relations, said that it was necessary that the regulator "continuously studies market dynamics to align the regulatory framework to best practices and emerging trends in regulation to ensure fair competition and facilitate investments into the sector." While CRAN has not accepted applications for new licenses since last year, it has upheld requests to transfer, update, or revoke licenses already in use.

(July 21, 2023) [www.developingtelecoms.com](http://www.developingtelecoms.com)



## The Netherlands

In a briefing to parliament, the Netherlands' Ministry of Economic Affairs & Climate Policy has warned that the planned national 5G 3.5GHz mobile frequency license auction could see further delays into 2024. The government intends to make the spectrum available for 5G mobile services from December, but a court hearing of multiple appeals against the proposed licensing framework is scheduled for mid-October, while the government is yet to finalize an agreement with satellite operator Inmarsat necessary to vacate the 3.5GHz band. In April 2023 Amsterdam's Schiphol Airport and the Port of Rotterdam Authority filed legal actions against the government's 5G 3.5GHz spectrum policy. Furthermore, the national licensing plan involves relocation of Inmarsat's international emergency/safety shipping/aviation communication operations from the Netherlands to Greece, which the Dutch government hopes will occur by 1 January 2024, but if Inmarsat's new Greek facilities are not

operational by that date the satellite company will retain access to an 80MHz block in the 3.5GHz range.

(July 12, 2023) [Telecompaper](#)

A Dutch industry consortium has been awarded an initial subsidy of EUR61 million (USD66 million) for 6G research and development. The 6G Future Network Services (FNS) Project, supported by the Ministry of Economic Affairs and Climate Policy, has been selected as one of 18 projects to receive backing under the third round of the Dutch National Growth Fund. The six-year government funding consists of a conditional award of EUR61 million plus a reserve of EUR142 million. The 6G FNS consortium is led by Netherlands Organization for Applied Scientific Research and has 60 members, including academic institutions, telcos, ICT companies and semiconductor manufacturers.

(July 6, 2023) [www.commsupdate.com](#)



## New Zealand

Following a consultation in 2021, New Zealand's government has made a broad decision regarding the long-term allocation of the 24GHz-30GHz spectrum range. The move is intended to provide the mobile and satellite industries with certainty as the authorities work towards making the spectrum available for long-term use in 2026. In the 26GHz band, the government has allocated the 24.25GHz-27.5GHz spectrum range primarily for mobile use, with the option to include some satellite services in certain areas under technical conditions. The 28GHz band, meanwhile, will be split into two portions: the 27.5GHz-38.35GHz range will follow a sharing model between mobile and satellite

services; and the 28.35GHz-29.5GHz range will be primarily allocated for satellite services, with the option to include some mobile use under technical conditions. A work program including technical work, industry consultation, engagement with the Interim Maori Spectrum Commission, and assignment processes, regulatory design and further decision making, will occur between now and 2026, the Ministry of Business, Innovation and Employment (MBIE) explained in a statement. Satellite service providers who hold current licenses will be allowed to apply for extensions until May 2026. (August 10, 2023) [www.commsupdate.com](#)



## Nicaragua

The Nicaraguan Institute for Telecommunications and Posts (Instituto Nicaraguense de Telecomunicaciones y Correos, Telcor) has issued Administrative Agreement 001-2023, confirming that its clearance of the 900MHz band (894MHz-960MHz) drew to a close on 31 July 2023. Going forward, the vacated frequencies will be used to support mobile broadband services. Telcor says it will now determine the economic conditions and allocation mechanisms for the spectrum; this will be based on market demand, relevance of the services and the current regulatory framework. Of the 900MHz band, the 915MHz-928MHz range has been ratified for dynamic channel allocation (DCA) and low-power wide-area network (LPWAN) devices, as long as they do not cause interference with other authorized telecommunications services. In May 2022 Telcor confirmed that work was underway to vacate the 900MHz band airwaves that were being used by the country's FM radio operators. The decision was rubber-stamped by Administrative Agreement No. 005-2021, which was published on 1

December 2021. FM broadcasters were originally given twelve months to comply with the decision, but the process seemingly overran.

(August 8, 2023) [www.commsupdate.com](#)

The National Assembly (Asamblea Nacional), which is controlled by President Daniel Ortega's Sandinista National Liberation Front (Frente Sandinista de Liberacion Nacional, FSLN), has approved an overhaul of the Nicaraguan Institute for Telecommunications and Posts (Instituto Nicaraguense de Telecomunicaciones y Correos, Telcor) with the aim of expanding the regulatory power of the telecoms watchdog. As per local press reports, the initiative was presented to the National Assembly on 2 June and ratified on 13 June. The Ortega-Murillo regime has stated that the reform of Organic Law No. 1053 'is intended to provide clarity and explicitness in relation to Telcor's powers and attributions in terms of regulation, control of the sector, as well as the promotion of innovation and investments.

Opponents, meanwhile, have suggested that the reforms will make it easier for the state to practice 'espionage and repression'. Nahima Diaz Flores – whose sister is married to one of Ortega's sons – was placed in charge of running Telcor after Orlando Castillo passed away

in June 2020. Diaz's father, Francisco Diaz, is the Chief of the National Police and a key ally of Ortega in his continued censorship of independent media outlets.

(June 21, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Niger

Regulatory Authority for Electronic Communications and Post (ARCEP) has fined four mobile operators a combined XOF4.32 billion (USD7.3 million) for failing to meet quality of service (QoS) standards. According to the regulator's decisions, Airtel Niger and Zamani Telecom have both been fined XOF1.36 billion (equating

to 1.33% and 2.33% of their annual turnover for 2022, respectively) and Niger Telecoms must pay XOF1.19 million (2.38% of its 2022 revenue). Moov Africa Niger, meanwhile, was handed a penalty of 1.17% of its 2022 annual turnover, equating to XOF402.5 million.

(July 26, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Nigeria

The Nigerian Communications Commission (NCC) is set to showcase achievements so far recorded in the promotion of indigenous content in the telecommunications sector. This would be at the second edition of the Nigerian Telecommunications Indigenous Content Expo (NTICE 2023), which holds in Lagos from August 22-24, 2023, at Landmark Centre, Victoria Island, Lagos. Themed: "Harnessing Indigenous Content for Economic Growth: Networking to Boost Investment", the Commission said it is mobilizing stakeholders for a remarkable outing, following a very impressive showing at the maiden edition of the event last year. A statement signed by the Director, Public Affairs, NCC, Reuben Muoka noted, "The NTICE is being coordinated by the Commission's Nigeria Office for Developing the Indigenous Telecom Sector (NODITS), which superintends over efforts for effective implementation of the National Policy on the Promotion and Implementation of Indigenous Contents in the Telecommunications Sector, (NPPIC). "The

Expo is open to multisectoral participants, including indigenous telecom operators, manufacturers, regulators, government agencies, policymakers, innovators, industry leaders, startups, other actors in the telecom ecosystem, academia and global experts to showcase their products and services, innovative solutions and new technologies. "The Nigerian Communications Act (NCA) 2003 empowers the NCC to encourage local and foreign investments in the Nigerian communications industry, introduce innovative services and practices as well as promote the participation of Nigerians in the ownership, control and management of communications companies and development of communications manufacturing and supply sectors. He said the 2023 Expo is billed to project the achievements of indigenous content by the government for the sector and afford participants the platform to showcase their products and services, innovative solutions and new technologies.

(August 17, 2023) [www.newsdiaryonline.com](http://www.newsdiaryonline.com)



## Norway

The National Communications Authority (Nkom) has issued a decision under which updated price ceilings for copper-based services are to be adopted. As per the regulator's plans, the new price caps will apply from 1 October 2023, with further rate updates scheduled to take effect from 1 January 2024 and 1 January 2025, respectively. Nkom notes that local fixed line incumbent Telenor Norge is obliged to maintain access to its copper infrastructure for wholesale customers until September 2025, despite it having ceased offering copper-based connectivity on a retail basis. Given this situation, and with the watchdog's previous price caps having been set for 2021, it said it now updated its cost model for

the fixed network to include inflation trends, among other things, as part of its decision to implement new price ceilings. As per the Nkom's plans, for Market 3a (wholesale local access provided at a fixed location) a price cap of NOK94 per month for local loop unbundling (LLU) will apply from 1 October, with this rising to NOK98 from the start of 2024 before increasing again, to NOK102, a year later. Meanwhile, for Market 3b (wholesale central access provided at a fixed location for mass-market products), a range of price ceilings will be set for ADSL, VDSL and SHDSL services, with these dependent on service speed.

(July 27, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Philippines

According to the latest data from the Philippines' National Telecommunications Commission (NTC), the total number of registered mobile SIMs reached almost 100 million – or 59% of the country total – as of 15 June 2023, broadly within the Department of Information and Communications Technology's (DICT) target of registering between 100 million and 110 million SIMs

nationwide by the end of the 90-day extension on 25 July 2023. Broken down, PLDT (including Smart Communications) had registered approximately 47 million SIMs (or 71% of its total base) by that date, followed by Globe Telecom with 45.6 million (52.6%) and DITO Telecommunity with 6.8 million (45.7%).

(June 19, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Poland

All four of Poland's mobile network operators (MNOs) have applied to take part in the forthcoming auction of 3.5GHz 5G licenses. Although official confirmation of qualified bidders is still awaited from the regulator, Orange, Play and Plus (Polkomtel) applied well before the 8 August deadline, while T-Mobile has also confirmed that it has submitted its application. Authorities are hoping to complete the auction of four 15-year licenses in the fourth quarter of 2023. (August 9, 2023) Parkiet

The government has finally kicked off its long-awaited auction of 5G-capable 3.5GHz spectrum, calling for

applications to take part in the sale process by 8 August. The entire process is expected to take around 150 days, which should see winning bidders announced in November. Authorities do not expect bids to rise much above the reserve price of PLN450 million (USD111 million) per 100MHz block, with four blocks available and the country being home to four mobile network operators (MNOs). The main point of contention will be that one of the four blocks has a number of local exclusions due to reservations for civil and military purposes, so bidders will favor one of the other licenses.

(June 23, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Romania

The telecoms watchdog the National Authority for Management & Regulation in Communications (ANCOM) has reached an agreement with the telecoms industry to modify the procedure for granting spectrum usage rights. The main changes agreed at the Advisory Council meeting on 18 August concern certain aspects relating to the regulation of the shared use of licensed frequency resources, the possibility to lease and transfer spectrum usage rights, and the simplification of the authorization procedure for base stations forming part of public mobile and fixed electronic communications networks. Shared use of spectrum will only be authorized in bands where no additional frequencies are available at the time of the request, on condition that competition is not restricted, impeded or distorted, ANCOM explained in a press release. Licensees will need to secure permission from ANCOM to share the spectrum, based on a written agreement between the two parties, with each licensee required to fulfil the individual coverage and/or rollout obligations included in their permits, while taking all necessary measures to avoid harmful interference to legally authorized electronic communications networks. In the case of leasing or assigning spectrum user rights secured following payment of a license fee, the regulator can only approve the transfer request after determining it will not impede competition or prevent the market from functioning normally. In order to simplify authorization procedures, licensed operators of public mobile and fixed electronic communications networks will be required to provide ANCOM with a monthly update

regarding the current frequency allocations for each of their base stations, as well as the technical and operational parameters. (August 22, 2023) [www.commsupdate.com](http://www.commsupdate.com)

Fixed broadband connections recorded average download speeds of 331Mbps in Romania in 2022, an increase of approximate 27% compared to 2021, and average upload speeds jumped by 56% to 280Mbps, according to speed tests performed on the Netograf website developed by the National Authority for Management and Regulation in Communications (ANCOM). Over the same period, average mobile internet downlink speeds rose to 38Mbps, a 26% increase on the previous year, while uplinks were 46% higher year-on-year, at 15Mbps. Based on 133,641 tests performed during the year, the country's leading mobile network operators (MNOs) were shown to provide the following average download speeds: Orange Romania 57Mbps (an increase from 48Mbps in 2021), Vodafone Romania 32Mbps (up from 29Mbps), Telekom Romania Mobile Communications 24Mbps (previously 18Mbps) and RCS&RDS (DIGI) 15Mbps (unchanged year-on-year). Average fixed broadband speeds were as follows: Orange Romania 803Mbps (down from 854Mbps in 2021), RCS&RDS 434Mbps (398Mbps), Orange Romania Communications (formerly Telekom Romania Communications) 379Mbps (324Mbps), Nextgen Communications 322Mbps (306Mbps), and Vodafone Romania 307Mbps (243Mbps).

(July 7, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Russia

The Federal Service for Supervision of Communications, IT & Mass Media (Roskomnadzor) of Russia has indicated that approximately 9.5 million mobile SIM cards in the country are currently liable to have services blocked unless their owners update their personal registry information this month. Mobile network operators (MNOs) are mandated to block all SIMs of incorrectly registered/unidentified users under tightened-up legal measures effective from the start of August, or else face liability under the Administrative Code (Article 13.29). Within three days of receiving a list of offending mobile phone numbers from Roskomnadzor, MNOs must notify the SIM user who has 15 days to update personal information via either the State Services online portal, the MNO's app, or in person at a service/sales outlet, otherwise the number will be blocked in accordance with the provisions of the Law on Communications. The Law No. 533 of 30 December 2020 – which entered force on 1 June 2021 – made amendments to the Law on Communications introducing more stringent procedures for telecoms service subscriptions and consequently in late 2022 the Ministry of Digital Development, Communications & Mass Media stated that in 18 months since Law No. 533 entered force a total of 'over 3.5 million' SIMs 'mainly in the corporate segment' had been blocked.

(August 9, 2023) Kommersant

The Ministry of Digital Development, Communications & Mass Media has aired a proposal to issue 5G mobile frequencies in the coveted 3.4GHz-3.8GHz range free-of-charge to a 'single operator with state participation' in a 'compatibility mode with special services' by enabling security forces to directly access networks and switch off base stations if deemed necessary. The proposal was put forward on 20 June at a session held by Prime Minister Mikhail Mishustin on draft strategy for development of the communications industry up to 2035. Under the Ministry's scheme, a single recipient would

be issued multi-band 5G spectrum valid up to that date, including frequencies within the 694MHz-790MHz band previously issued to broadcasters, the 4.8GHz-4.99GHz range (already prioritized by the Ministry as a key 5G resource) and the thus-far withheld 3.4GHz-3.8GHz band 'in intelligence compatibility mode'. The sole 5G licensee would be required to implement a 'frequency sharing system' allowing law enforcement agencies to shut down network signals in any given location. Kommersant's report indicated the 'single' 5G operator is likely to be a consortium of market participants involving state-owned Rostelecom. National fixed operator Rostelecom – the parent of cellco Tele2 Russia – is part of 5G development joint venture New Digital Solutions, also including MegaFon, Beeline and Mobile TeleSystems (MTS), the quartet having finalized their 25% stakes in July 2022, with an initial focus on R&D and measures to release spectrum from existing usage, prioritizing the 694MHz-790MHz, 3.4GHz-3.8GHz, 4.4GHz-4.99GHz and 24.25GHz-29.5GHz ranges. The key 3.4GHz-3.8GHz range is partly utilized by Roscosmos and others for satellite communications for government/military/intelligence agencies and has been repeatedly blocked for commercial mobile usage by state bodies including the Ministry of Defence and the Federal Security Service, whilst remaining Russian fixed wireless access (FWA) 3.5GHz licenses were extended for a period which expired in July 2022. Regarding the 694MHz-790MHz band, MTS, MegaFon, Tele2 Russia/Rostelecom and Beeline currently hold in-principle rights to this spectrum via their federal LTE licenses but in practice can only utilize this resource once relinquished by the broadcasting sector; most recently, on 23 December 2022 the State Commission for Radio Frequencies (SCRF) stated simply that the four licensees would retain their existing rights to 694MHz-790MHz spectrum with a view to being permitted to utilize it 'in the future'.

(June 29, 2023) Kommersant



## Senegal

The Regulation Authority for Telecommunications and Posts (L'Autorite de Regulation des Telecommunications et des Postes, ARTP) announced that it had 'provisionally' awarded Sonatel (Orange Senegal) a 5G license, following the conclusion of a call for tenders to extend the scope of existing operating concessions. The regulator revealed at a press conference that Sonatel had bid XOF34.5 billion (USD59.1 million) for the authorization, while its rivals Free and Expresso had submitted significantly lower bids of XAF3 billion and XAF2 billion respectively – far below the reserve price of XAF19.5 billion established by the ARTP. Speaking at a press conference, ARTP Director General Abdou Karim

Sall explained the main objective of the call for tenders was to select an operator capable of providing reliable and efficient 5G infrastructure as soon as possible, in order to meet growing demand for connectivity and communication in Senegal. 'Following the examination of the submitted offers, the committee for the evaluation of technical and financial offers proposed to the Selection Committee to retain Sonatel, which was the only candidate to have fulfilled the conditions set by the regulations,' he confirmed. The amendment to Sonatel's concession agreement and specifications, including new 5G coverage obligations, will be signed in the coming days. (July 18, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## South Africa

In what could prove to be a highly significant development for mobile operators, a number of South Africa's broadcasters have agreed to the newest deadline to vacate the so-called 'digital dividend' bands. Communications Minister Mondli Gungubele has said that the date to complete the migration from analogue to digital terrestrial television is now 31 December 2024. Two previous deadlines were not met by his predecessor, Khumbudzo Ntshavheni. As the TechCentral website points out, this time the minister has the backing of a number of broadcasters. Gungubele published a notice in the Government Gazette this week saying all analogue broadcasters using bands above 694MHz must vacate those frequencies by no later than 31 July. This is important for mobile operators which, in theory, were given access to those frequency bands during last year's spectrum auctions but still can't make full use of the spectrum. Those broadcasters

occupying the bands above 694MHz must move to lower frequencies at the end of July. All remaining analogue broadcasting services should temporarily be accommodated in lower frequencies, which seems to be acceptable to big broadcasters SABC and e.tv. Digital broadcasting services operating above 694MHz must go to frequencies below 694MHz to free up the 694-862Mhz frequency bands. All analogue signals are to be switched off no later than 31 December 2024, by which time, it is hoped, the millions of households now relying on analogue broadcasts will have converted to digital services. As we mentioned in February 2021, like a number of countries in Africa, South Africa missed the original deadline set by the International Telecommunication Union for completion of the switchover process, which was meant to happen in June 2015.

(June 18, 2023) [www.developingtelecoms.com](http://www.developingtelecoms.com)



## South Korea

The Ministry of Science and ICT (MSIT) has unveiled plans to allocate spectrum in the 700MHz (738MHz-748MHz/793MHz-803MHz) and 28GHz (26.5GHz-27.3GHz) bands, noting that the frequencies will be available to new operators as part of efforts to enhance competition in the country's mobile sector, with the nation's incumbent cellcos barred from bidding. According to the MSIT, it will offer the spectrum via an auction process and is hopeful of selling the frequencies as a nationwide allocation. However, the regulator notes that it will also open applications for the frequencies on a regional basis (across a total of seven regions) and proceed to allocate spectrum in that fashion should a nationwide operator not be found. In terms of pricing, the MSIT has set a KRW74.2 billion (USD58 million)

minimum for the national concession, with regional pricing ranging from KRW1.8 billion to KRW33.7 billion, dependent on the region. Further, the regulator has confirmed that a national concession will include an obligation related to base station construction; a total of 6,000 28GHz base stations must be built within three years of spectrum allocation for a national licensee, while separate per-region construction requirements have also been set should the spectrum be allocated regionally. Keen to offer would-be bidders plenty of time to consider participating in the sale process, the MSIT has revealed that it will open applications for the spectrum from 20 November 2023, with the application period to last until 19 December 2023.

(July 21, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Switzerland

The Federal Council has approved a new 'Federal Broadband Strategy' that aims to provide 1Gbps broadband coverage 'as comprehensively as possible' by 2033. Under the new strategy the government will provide funding to support the deployment of fiber infrastructure in areas where expansion by private operators would be unprofitable. The government's estimates that it would cost around CHF4 billion (USD4.5billion) to achieve the target of providing 1Gbps

connectivity to 100% of buildings within five years, although only a portion of that total – around CHF1.4 billion, or CHF280 million per year – would need to be provided via government subsidy. The government's report on the subject also notes that other measures can be implemented to support fixed broadband expansion, including enshrining rights of joint use of suitable infrastructure and cross-industry coordination in construction projects. (June 29, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Thailand

The board of Thai state-owned fixed and mobile operator National Telecom (NT) has approved the first phase of investment in a 26GHz 5G network rollout project, with an initial outlay of THB800 million (USD22.6 million). NT was formed by the merger of state-owned sister telcos TOT and CAT Telecom in

January 2021. In Thailand's February 2020 multi-band 5G spectrum auction, TOT bid THB1.8 billion for four 100MHz blocks of 26GHz frequencies while CAT paid THB34.3 billion for two 2x5MHz blocks in the 700MHz range, and in February 2023 the government approved NT's 5G business project and operational expenditure

of THB6.7 billion to capitalize on the 26GHz spectrum range during the period until license expiry in 2036. NT previously indicated aims of introducing 5G services in both the 700MHz and 26GHz bands by around Q4 2023, although the latest board announcement sets a target of March 2024 for completing the first phase of 26GHz network deployment. NT's President Sanphachai Huvanandana said that management will

start drafting terms of reference for the 26GHz network procurement this month, with the procurement process expected to finish 'by early next year' ahead of expected readiness to provide services by March 2024. The telco has highlighted a focus on using the spectrum for fixed wireless services and private 5G campus networks for manufacturers, ports, logistics operators, airports and other enterprises. (August 16, 2023) [The Bangkok Post](#)



## Togo

Kadiri Ouro-Agoro, the Legal and Consumer Protection Director of Togo's Regulatory Authority for Electronic Communications and Posts (ARCEP), has said that the launch of mobile number portability (MNP) will take place before the end of the year, adding that 'technical arrangements' were being put in place to ensure a quick and uninterrupted transition. ARCEP launched a public consultation on plans to introduce MNP in the country in October 2021 as part of preparations to increase competition in the mobile market. In a statement at the time the regulator confirmed: 'Portability will offer consumers the possibility of changing operator, while keeping their number with their original operator, in the event of dissatisfaction with the quality of service or to benefit from better offers and prices available from the competitor. In this sense, it constitutes a real lever of

competition to boost the market.' The regulator issued an Invitation to Tender (AAO) for 'the acquisition of a portability solution for mobile communications services' in July 2022 (AOO No. 002/ARCEP/PRMP/2022). In confirming it has the budget to finance the scheme, ARCEP solicited bids from companies wishing to set up its MNP regime. More recently, In April 2023 ARCEP selected Dutch solution provider Porting XS to implement MNP in the western African nation. The decision was made public at an event in Lome on 7 April and, according to the schedule agreed with Togolese mobile duo Togocom and Moov Togo, MNP should go live in Togo by the fourth quarter of 2023. Kadiri Ouro-Agoro has now reiterated that ARCEP is on track to keep with its deadline.

(July 19, 2023) [www.commsupdate.com](#)



## Uganda

The Uganda Communications Commission (UCC) has announced its first 5G spectrum awards. Reports suggest that a little over 68% of available 5G spectrum has gone to market leaders MTN Uganda and Airtel Uganda. It was in late May that the UCC published an invitation to interested parties to apply for radio spectrum under a competitive multi-band award process for the deployment of broadband services in Uganda. The operators involved had to pay an initial commitment fee of up to US\$1.5 million if they planned 5G deployment using more than one frequency band. Submissions were received and evaluated, after which Airtel Uganda and MTN Uganda won an amount of spectrum that corresponds to 25 out of 37 available blocks. MTN won frequencies in the 700MHz, 2.3GHz, 2.6GHz and E-band (71GHz-76GHz/81GHz-86GHz)

ranges, while Airtel was successful in the 800MHz, 3.5GHz and E-band ranges. The licenses come with a number of coverage and data rate targets. Bids from Uganda Telecom, Lyca Mobile and Intracom seem to have failed. A number of blocks – in the 700MHz and 3.5GHz bands – were not awarded. In May we reported that the UCC was looking to complete the spectrum allocation process by mid-August this year – based on the reservation process being over by 21 July – but the UCC seems to have completed the process over a month ahead of schedule. Airtel confirmed back in February that its network was fully 5G-ready. MTN is involved in a five-year strategic partnership with Huawei to carry out a 5G-capable core network modernization project.

(July 6, 2023) [www.developingtelecoms.com](#)



## United Kingdom

The telecoms regulator Ofcom has begun consulting on a new approach under which both Wi-Fi and mobile internet users could access spectrum in the 6GHz band. According to the watchdog, its 'hybrid sharing' approach has the potential to help support growing demand for mobile broadband connectivity.

With regards to achieving its objectives, Ofcom has said it proposes to: identify appropriate hybrid sharing mechanisms to facilitate coexistence between licensed mobile, Wi-Fi and, where appropriate, existing users of the band; encourage the development of technology-based coexistence solutions such as managed databases and enhanced dynamic sensing; and continue

pressing for international harmonization of hybrid sharing of the band to enable economies of scale for equipment. Comments have been invited by a deadline of 15 September 2023, with Ofcom saying it expects to publish a summary of responses ‘in the autumn of 2023’, ahead of following up with a further consultation on specific proposals for the implementation of hybrid sharing in the upper 6GHz band in 2024.

(July 7, 2023) [www.commsupdate.com](http://www.commsupdate.com)

British telecoms regulator Ofcom has called for views on five potential candidate spectrum bands it believes could be suitable to support the future operational communications needs of the utilities sector. In its consultation, Ofcom said it is considering the use of the following bands: 400MHz (Northern Ireland only); 450MHz; 700MHz; 800MHz/900MHz (again in Northern Ireland only); and 1900MHz. The watchdog notes that

the UK’s utilities sector communication needs are growing and suggests that the biggest changes are being driven by the electricity sector transforming to support net zero, which is seeing fundamental shifts in how power is generated and used. According to Ofcom, although there are various options for meeting these communication needs, a private wide area network might require access to additional spectrum. At this stage Ofcom said it is not making any specific proposals to change the use of any of these bands, but instead is seeking to improve understanding of the advantages and disadvantages of the potential candidate bands across stakeholders. As such, it noted that if in future it needs to develop specific proposals it will consult further on those, while it expects response received to its current call of input – which are requested by a 7 September 2023 deadline – to help inform its development of any such proposals. (June 30, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## United States

Verizon Wireless has announced that it now has access to the total amount of 5G C-band spectrum awarded at auction in March 2021 – four months ahead of schedule. Specifically, Verizon has access to a minimum of 140MHz of C-band spectrum in the contiguous US and an average of 161MHz nationwide, meaning it has bandwidth in 406 markets. In addition, Verizon has 200MHz of C-band spectrum in 158 mostly rural markets covering nearly 40 million people. Verizon began deploying 5G technology using its initial 60MHz allocation of C-band spectrum in 46 locations in 2022. C-band 5G has since been extended to more than 222 million people in 359 markets, with 40 million households now able to access to Verizon’s Home Internet FWA service. (August 16, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The US Federal Communications Commission (FCC) began a technical investigation into spectrum usage data, as chair Jessica Rosenworcel cited the potential of artificial intelligence for improving management of the resource. In a statement following its August meeting, the FCC announced the approval of a “technical inquiry into spectrum usage data” which aims to explore the feasibility of various techniques to understand use of airwaves in the country. The study is limited to non-Federal spectrum, which excludes allocations for agencies such as the armed forces and the FBI. From the study the regulator aims to gain an understanding of the feasibility, benefit and limits of various techniques to understand spectrum usage, with comments sought on best practices, operational considerations, and

technical parameters. Citing the potential of AI and machine learning, FCC chair Jessica Rosenworcel said: “with demands on our airwaves growing with the Internet of Things, we want to better understand spectrum utilization in geography, frequency, and time. This is the kind of data that could help make our policies smarter and more effective.” She noted in the future wireless devices could utilize AI to manage transmissions and avoid interference on their own, working with other devices “without a central authority dictating the best of use of spectrum in every environment.”

(August 4, 2023) [www.mobileworldlive.com](http://www.mobileworldlive.com)

As per Federal Communications Commission (FCC) documentation, the Wireline Competition Bureau seeks comment from interested parties on the proposed takeover of Winn Telephone Company (Winn Telecom) by Peninsula Fiber Network (PFN). Both companies are based in and operate in Michigan. Winn Telecom provides services as an incumbent local exchange carrier (LEC) in the Winn Exchange, and as a competitive LEC to residential and business customers in rural areas of 67 exchanges in the Lower Peninsula of Michigan. PFN is a 50/50 JV between Baraga Telephone Company and Hiawatha Communications. The proposed transaction will be structured as a ‘reverse triangular merger’ in which PFN Sub, an acquisition subsidiary of PFN, will merge into Winn Comm and then cease its existence. The deal was first submitted for FCC approval on 6 February.

(June 19, 2023) [www.fcc.gov](http://www.fcc.gov)



## Uruguay

The Regulatory Unit of Communications Services (Unidad Reguladora de Servicios de Comunicaciones, URSEC) has authorized a further four regional cable operators to offer fixed broadband services. Pafinol, Canelones Cablevision Color, Teveca and Yatek have all been granted Class B telecoms licenses to provide data transmission services in the geographical area where they are currently permitted to operate through their Class D licenses. The quartet join Sergio Eduardo Moreira Rosso, which was also authorized to provide fixed broadband services a few weeks ago. Late last year, President Luis Lacalle Pou signed Law 20,075, effectively allowing cable TV operators to apply for a license to provide fixed broadband services from 1

January 2023. The legislation amended Article 56 of the Law on Audiovisual Communication Services which barred cablecos from providing internet, phone and data transmission services to prevent cross-ownership. The development came after URSEC authorized five cable operators to offer broadband internet services in June 2022. Cable Montevideo (Montecable), Tractoral (TCC), Korfield, Preamar and Riselco (Nuevo Siglo) were permitted to offer fixed broadband to consumers after filing a legal action challenging the constitutionality of Article 56. In 2016 the Supreme Court of Justice ruled in their favor but the article remained in place due to lack of political support for its elimination.

(July 27, 2023) DPL News



## Uruguay

The Authority of Radio Frequency Management (RFD) is completing preparations for an auction of mobile spectrum in the 700MHz band. The frequencies, which were freed up through the switchover from analogue to digital TV, will be used by mobile operators for the provision of 4G and 5G services. In preparation for this, in December 2019 the Ministry of Information and

Communications (MIC) published Circular No. 19/2019/TT BTTTT on plans for the use of the 694MHz-806MHz frequency band for mobile services; it came into effect on 16 February 2020. The development follows an unsuccessful auction of 2300MHz spectrum licenses earlier this year which failed to attract any bidders.

(August 11, 2023) VietNamNet

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