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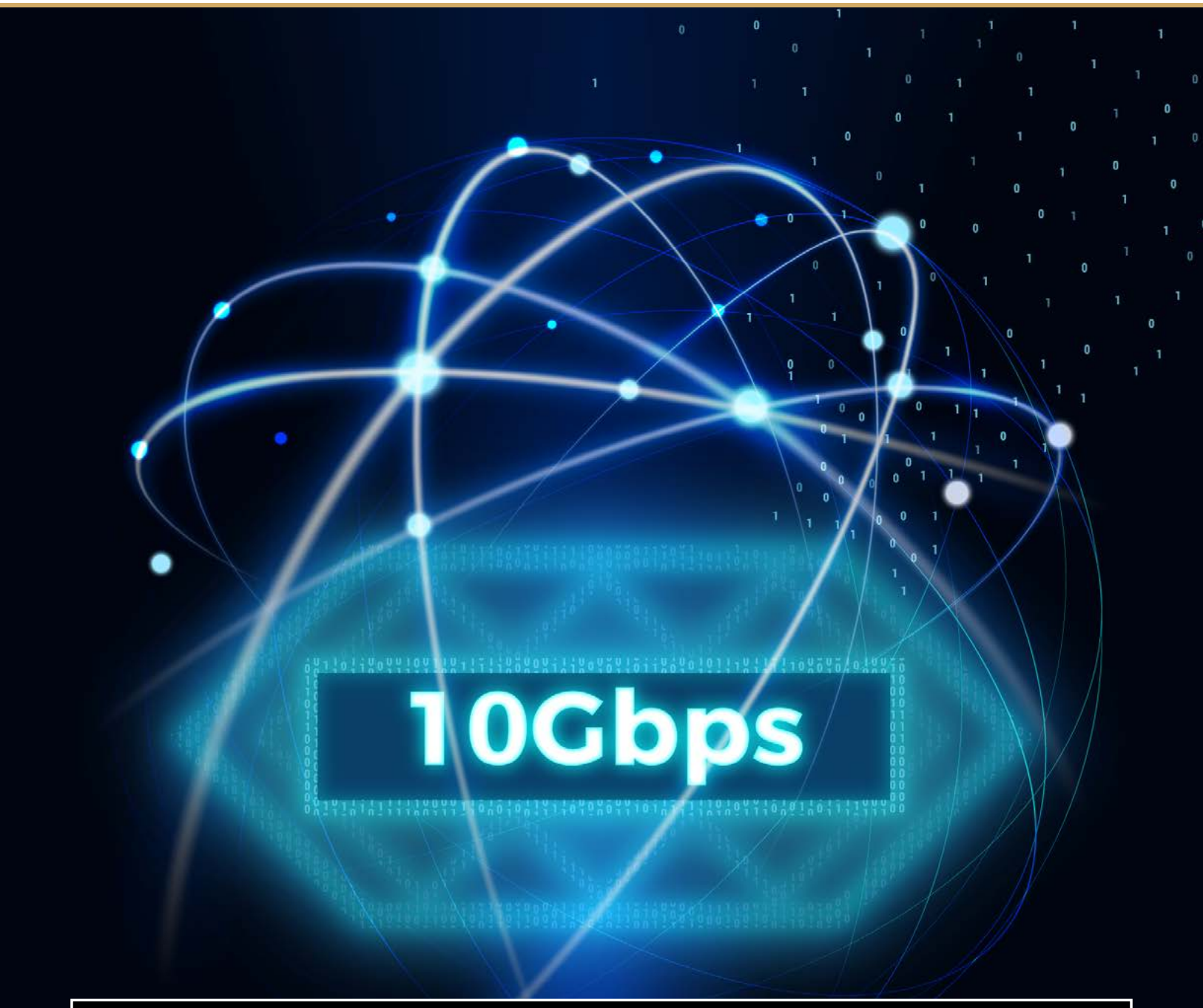
SAMENA TRENDS

FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

BUILDING DIGITAL ECONOMIES



THIS MONTH

NETWORKS & TECHNOLOGIES FOR GLOBAL DEVELOPMENT

SAMENA
TRENDS

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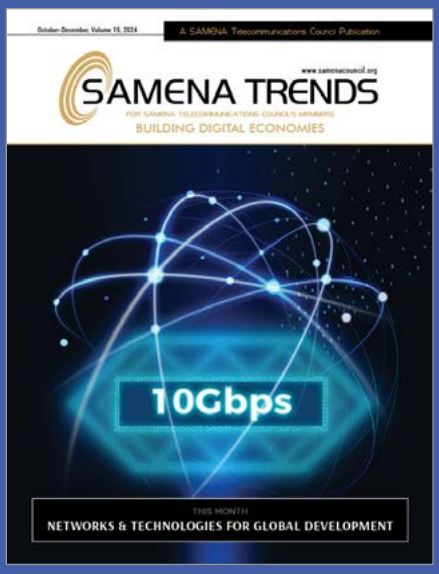

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Networks & Technologies for Global Development

Digital transformation, technology integration, and economic diversification are some of the key drivers of new investments in advanced mobile networks. Around the world, with a combination of almost 350 commercially active as well as planned rollouts, we are fast-moving toward advanced mobile technology coverage around the planet.

Maximizing the true potential of 5G and implementing real-life use-cases through sustainable advancements, is now a top priority. Ranging from millions of jobs, enhancing productivity, driving network and shareholder value, to meeting global connectivity goals…there is a lot at stake here linked directly to 5G. Moreover, materialization of these goals and investment monetization are a direct function of the capabilities afforded by true 5G and Gigabit technologies; technologies that will be integral to global development.

Over the last two years, significant efforts have been made by SAMENA Council to highlight and press upon the need to identify and reach out to new stakeholders, especially the digital-economy players, to contribute toward building broadband infrastructure. New methods and new financial instruments have been brought to surface, and SAMENA Council is actively pursuing realization of its proposition on this frontier with relevant stakeholders, including with renowned financial institutions and investment groups. Already, we have created a universal financing framework, with its pilot implementation already in progress in Africa. In some ways, this framework would also impact the speed of rolling out 5G networks evolution of 5G to 5G-Advanced, and in gaining momentum of 10Gigabit network deployment in those markets.

It is critical to create a progressive digital-sector regulatory environment that incentivizes required infrastructure investments through procedural agility, timely allocation of resources, eradicating unpredictability, enabling cost-cutting through reduced licensing fees and reduced taxation or levies, aligning better with global efforts and trends, by fostering equality and by banking on each other's strengths.

As the year 2024 closes and the sun rises on 2025, we must not lose sight of key priorities for our Industry's sustainability and for digital-led development around the world:

- Economic and service diversification
- Making use of 5G and its evolved version, 5G-Advanced, and monetizing these investments
- Enhancing Cloudification
- Creating new digital service possibilities and integration of AI, IoT, FWA
- Fulfilling expectations of a very large young, digital-savvy population
- Accelerating progress-making on the SDGs (less than 15% of the SDGs are on track, which is a major concern)
- And, ultimately, building a sustainable digital economy

Best wishes to you all for a happy and prosperous 2025.

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

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

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Ecosystem Development

Achieving Digital Maturity and Growth in a Sustainable Digital Ecosystem Requires Innovating with 5G and Transitioning to IPV6, Says SAMENA Council

During the recently held Abu Dhabi Business Week, SAMENA Council, represented by CEO & Board Member, Bocar BA, drew attention to four key contexts and where the Industry currently is with respect to 5G, and why it is imperative that innovation is fostered within the 5G ecosystem as a way to ensure digital inclusion, hence manifesting ICT maturity. Investment, Incentivization, Inclusion, and Progress are integral aspects of value-addition created by 5G. 5G has created a foundation for a very large ecosystem of human and machine connections, and digital development that is linked to such connections. Multiple SDGs are linked to digital development, digital transformation, new opportunities, and efficient, connectivity-based models and solutions that are becoming a reality with 5G. This process needs to continue over the next five years until 2030. Sustainable, reliable, affordable, and all-inclusive connectivity is among the greatest considerations, and innovation with 5G can help open new avenues for socio-economic growth and new use-cases for an all-inclusive connectivity. Where 5G really matters is the prospects it carries for fostering ICT maturity and the potential to help accelerate transition to Internet Protocol version 6. Earlier, SAMENA Council contributed insights and made recommendations on transitioning from IPv4 to IPv6 at the Joint Forum on IPv6, organized by the Kazakhstan Telecommunications Committee and Huawei in Almaty, Kazakhstan. At the Forum, SAMENA Council remarked on the progress made in Kazakhstan with respect to the national "Digital Kazakhstan" vision, and aspirations set forth by the Kazakhstan government to achieve universal high-quality internet access by 2025. Bocar BA, in a keynote speech during the IPv6 forum, stated: "SAMENA Council observes that Kazakhstan's commitment to ensuring 100% population coverage and fostering growth in a thriving digital ecosystem is a top priority for the policymakers, keen to address needs of their millions of citizens and businesses. This clearly means that the right direction for Kazakhstan's digital transformation has already been set. However, following this direction requires investment, financial and strategic resources, infrastructure, continuation of the right policy and regulatory approaches, and access to digital space resources, that is, more IP addresses." Sustainable digital transformation in the 5G era requires strategic investments, and alignment with global standards, and a large digital address space for ubiquitous connectivity to materialize. This large address space inevitably necessitates transitioning from IPV4 to IPv6. A robust, IPv6-enabled digital infrastructure will help ignite more innovation and reduce inefficiencies for enterprises and governments alike. As the ecosystem develops at an accelerated pace, and as innovation in the 5G era becomes necessary to help monetize investments, it is critical for nations and enterprises to prepare in a timely manner to leverage IPv6 capabilities. IPv6 offers vastly more address space, which is crucial as the number of connected devices continues to grow globally. By transitioning to IPv6, internet infrastructure can be made future-proof, supporting a growing number of human users and devices across industries and key economic sectors. IPv6-enabled IoT devices can help optimize economic sector productivity, for example, in farming and food security. IPv6 can also accelerate FinTech coverage and innovation. Moreover, greater inclusion and innovation can be achieved in the e-commerce space, directly helping in diversifying economies of the developing countries as well as improving cross-border trade, and empowering local entrepreneurs in accessing global markets through innovative services and ideas. SAMENA Council believes that achieving ICT maturity should be a top priority for all countries, especially within the SA-ME-NA, Central Asia, ASEAN, and Africa nations. Benefits of digitalization are felt by all—governments, enterprises, and individuals. In this regard, it is important that all those who benefit from broadband must, in their own ways and capacities, also contribute to the financial mechanisms that enable its development, and guarantee its financial sustainability. Fifth-generation networks, greater address space, and financing and funding solutions will have a direct impact on the scale and pace of innovation across all regions in the coming years.

GSMA's M360 MENA 2024 in Doha, Qatar: SAMENA Council CEO Leads Thought-Provoking Session on Super-bundling, Monetization, Smart-City Projects, and Unique Opportunities for 5G & IoT Growth

During the GSMA's Mobile 360 MENA 2024, held on November 18-19 in Doha, SAMENA Council's CEO, Bocar BA, led a key fire-side chat and panel discussion session, drawing expert insights on super-bundling, monetization strategies in the 5G environment, smart-city projects, and unique opportunities that await to be harnessed through 5G and IoT. Bocar BA steered the conversation around key trends that are poised to shape the region's digital landscape. The session delved into the role of Telecom Operators and Technology Providers in creating and sustaining digital ecosystems that drive innovation and economic growth, with particular emphasis on digital services and technology applications in smart-city environments. Titled, Smart Projects driven by Digital Innovations, the discussion session delved into how show Telecom Operators are evolving beyond traditional mobile plans to offer "super-bundles" — comprehensive packages that combine tens of services together, including internet access, entertainment, finance, content, and IoT, and other digital services of interest. Experts highlighted how this model is reshaping the telecom business, providing operators with new revenue streams while offering consumers greater value, thus boosting customer confidence and retention. The role of innovators, such as Bango, which enables content providers to reach more paying customers through global partnerships, having revolutionized the monetization of digital content and services through online payments, was clearly highlighted. In addition to insights exchanged on Qatar's broader goals of sustainability, efficiency, and economic diversification, the discussion focused on the collaboration between government agencies, telecom operators, and technology providers to deploy advanced infrastructure that supports smart city applications — from autonomous transport to intelligent energy grids and enhanced

public services. A key point of discussion was the MENA region's unique position in terms of 5G and IoT deployment. Unlike other global markets, the MENA region, particularly the GCC region, is experiencing accelerated adoption of these technologies due to a combination of well-defined digital transformation visions, favorable regulatory frameworks, strategic government investments, and growing demand for high-speed, low-latency connectivity. Panelists pointed out that MENA's young, tech-savvy population, along with the region's increasing focus on digital transformation, positions it as a prime market for innovation in 5G and IoT. The session highlighted specific opportunities in sectors such as healthcare, agriculture, and urban mobility, where 5G and IoT could radically improve efficiencies and create new economic opportunities, and where AI, cloud computing, and IoT will have a direct impact on the pace of the region's digital transformation. Panelists shared insights on the importance of a holistic approach to innovation, stressing the need for businesses to integrate these technologies across their operations to drive efficiency, enhance customer experiences, and open up new business models. After the successful discussion, Bocar BA stated: "Current times are critical as we launch new technologies, recalibrate approaches on how 5G, 5G-Advanced, Fixed 5G-Advanced, IoT, Cloud computing, AI, should be best deployed, and how their role in socio-economic and business transformation and both end-user level and enterprise-level expectations can be enhanced. Our goals are to increase productivity, reduce costs, generate capital, and redirect it where it is most needed. However, our larger goal, at least for the next few years remain our main target: meet the objectives set forth under the 17 Sustainable Development Goals despite numerous digital challenges and risks lurking all around us. It was a pleasure to steer this discussion on digital innovations, especially including super-bundling, and to re-align on service delivery choices, end-user expectations, and government enablement of innovations – all of which require collaboration between governments, private-sector players, and technology providers to create robust digital infrastructure, which will support innovation and create new opportunities."

SAMENA Council Demonstrates Commitment to Industry Goals & Global Digital Transformation Priorities through its Participation in Key Global Forums, Advocating on Cybersecurity, Broadband Development, and Innovation

During the past several weeks, the global ICT community has met and agreed to accelerate collaborative efforts relating to the security of Cyberspace, empowerment of Citizens, protection of Children, fostering Innovation & 5G Advancements, unlocking New Investment Capital, accelerating Digital Literacy, and making progress on Sustainable Economic Growth. SAMENA Council's participation in three of the world's leading global forums has added to the Industry's strong voice, reaffirming the Council's commitment to representing the Private Sector across the ICT arena and to support worldwide efforts on digital transformation. During the Global Cybersecurity Forum (GCF), held in Saudi Arabia, SAMENA Council, represented by CEO & Board Member, Bocar BA, chaired a high-level roundtable on Advancing Collective Action in Cyberspace. He also participated in a panel discussion, centered on Safeguarding Future Networks, and was among key leaders participating in the Annual Meeting of the Forum. SAMENA Council's contributions in the GCF focused on aligning strategies and accelerating collaboration for enhanced digital safety, and on coordinating harmonized stakeholder actions for securing networks and making networks resilient. Established as an independent, non-profit organization in 2023, GCF announced numerous projects and partnerships at this year's GCF Annual Meeting. "A range of new projects will be launched under GCF's umbrella, addressing some of the key issues and opportunities in Cyberspace, from cyber economics, to closing the cybersecurity workforce and skills gap, and ensuring that Cyberspace is safe and secure for children," stated HE Majed bin Mohammed Al-Mazyed, NCA Governor. BA, in a recent media engagement held after GCF also stated: "Cybersecurity is among the key areas of the Council's involvement in Saudi Arabia. We work with the NCA, National Cybersecurity Authority through the Global Cybersecurity Forum (GCF), where we are addressing cybersecurity issues and contributing the global dialogue on securing the cyberspace, ensuring overall cyber safety for both digital systems as well as children. The successful GCF witnessed great openness among industry stakeholders on cybersecurity issues, and how widely this dialogue needs to be maintained." Following the GCF, during the Global Mobile Broadband Forum (MBBF), held recently in Turkey, SAMENA Council voiced the need to accelerate Fixed Wireless Access (FWA) growth, 5G investment monetization, as well as adoption of 5G-Advanced. BA emphasized that "Operators in the SA-ME-NA region and in the neighboring regions, including Central Asia, have invested heavily in 5G networks. However, satisfactorily monetizing these investments remains a critical challenge. This requires being innovative and collaboration-oriented in order to meet connectivity and digital transformation goals. Through cross-sharing of deployment experiences, challenges, methodologies, and other useful information, new approaches can be adopted in deploying FWA more speedily, and more efficiently. "At the recently-held Global Innovation Forum (GIF) in Malta, organized by the ITU, SAMENA Telecommunications Council brought valuable insights to discussions on the global digital transformation landscape. Bocar BA highlighted the central role of innovation in driving digital transformation, urging stakeholders to foster environments conducive to rapid technological growth. He emphasized that private sector engagement and sovereign wealth funds are essential for resource accessibility, reinforcing the need for collaboration to scale digital infrastructure. BA also advocated policy experimentation, such as regulatory sandboxing, to safely explore emerging solutions, while stressing the importance of job creation and digital literacy—two areas essential to the long-term success of digital economies. "It was a privilege to be a part of ITU's flagship event, the Global Innovation Forum (GIF), and contribute to the dialogue. Digital transformation processes crucially require innovation, and need investment & access to capital, as well as policy experimentation. We must accelerate digital literacy and create more jobs. This is possible with Private Sector, Governments, and Sovereign Wealth Funds working closely together in creating access to required resources.", stated BA. The Global Innovation Forum has identified key ways to help close the "digital innovation gap." The suggested approaches, focusing on critical factors that include expanding collaboration, attracting investment, spurring sustainable economic growth, and finding solutions to pressing societal challenges through accelerated, localized technology innovation.

SAMENA Council on the Future of 5G, Fixed Wireless Access, and Digital Transformation

In an interview, Bocar A. BA, CEO of SAMENA Telecommunications Council delved into the transformative potential of fixed wireless access (FWA) and 5G-Advanced (5G-A), particularly in driving connectivity across underserved regions and supporting global sustainability goals. As digital transformation accelerates across the Indian Subcontinent, Asia, Middle East and North Africa (SA-ME-NA) region, SAMENA Council CEO discussed how SAMENA Council's strategic initiatives align with the United Nations' Connect 2030 agenda and sustainable development objectives.

He also shared insights on the region's readiness for 5G-A and the collaborative efforts needed to address cybersecurity challenges, support economic diversification, and foster digital inclusion for lasting impact. Here are excerpts from the discussion.

In consideration of the global ICT development agenda, especially the Sustainable Development Goals (SDGs), and given the SAMENA Council's active involvement in the international ICT arena, how do you view the importance of fixed wireless access and the role it could play for the industry?

Across all geographies, including the SA-ME-NA and Central Asia regions, based on the observations of the FWA Elite Club members and predictions from the Industry, 5G FWA will continue to grow. This is so not only because of the much higher speeds afforded by 5G FWA, but due to the end-to-end experience and choice that can be offered with FWA. So, we have a technology that carries tremendous potential.

FWA can help focus the Industry's efforts on digital inclusion, and in making our goals of "connecting the unconnected" more cost-effective, and more achievable. Various SDGs demand innovation. In this regard, if we look at FWA purely as an innovation, we can see that its impact is far-reaching. At both the ITU and the UN Broadband Commission, SAMENA Council is strongly contributing to broadband development strategies and innovative ways for engaging potential contributors, especially through new approaches to funding broadband infrastructure development. I see FWA as a great option for expanding advanced broadband connectivity infrastructure.

I had the privilege to be a part of ITU's flagship event, the Global Innovation Forum (GIF), and contribute to the dialogue. I strongly view digital transformation processes require innovation, new wireless technology adoption, as well as investment and access to capital. We must accelerate digital literacy and create more jobs. I see FWA as a viable option for meeting these objectives.

How do you see 5G-A playing a role given the Connect 2030 agenda and various use cases that the latest telecom technologies are expected to bring forth?

Advancements in 5G have a direct correlation with enhancing purposeful and sustainable connectivity. Use cases such as in the education sector (for example, in the shape of virtual classrooms for impoverished areas, where education infrastructure is insufficient), or in healthcare (especially to connect ambulances, conduct remote patient monitoring or surgeries, etc.) are central to fulfilling objectives of the UN Connect 2030 agenda.

Moreover, 5G-A adds greater intelligence and security updates and machine learning (ML) capabilities, which support applications such as extended reality (XR), industrial IoT (IIoT), and smart cross-industry applications. Thus, all of these facets of technology deployment and technological evolution in 5G systems and infrastructure have a direct role in the fulfilment of the SDGs.

Multiple types of digital divides can also be overcome through 5G-A, and I view eradication of digital divides to be among the greatest use cases that applied mobile technologies, such as FWA, can help us achieve.

As 5G-A continues to evolve globally, how do you foresee its future in the Middle East? Especially, as we talk about sustainability and digital transformation – where do you foresee 5G-A fit into this narrative?

I am very optimistic about the prospects of 5G-A– both globally and in the Middle East. This is supported by the fact that this region has led on 5G adoption, and thus it is well-positioned to lead on 5G-Advanced fronts as well. According to the latest GDI index issued by Huawei, whereby ICT maturity is assessed across almost the whole of the SA-ME-NA region, many leading countries of the Middle East are in the "frontrunner" category. This means, many markets are ready or are readying for 5G-A deployment.

However, for telecom operators, the benefits are obvious. 5G-A offers a significant opportunity to expand service offerings and generate new revenue streams – allowing for innovative solutions to be provided to a wide range of customers, including enterprises and industries. Moreover, from an economic perspective, 5G-A will play a crucial role in driving digital transformation and fostering economic growth in the region.

By enabling the deployment of advanced technologies such as IoT, AI, cyber-security, and automation, 5G-A will create new industries, new synergies, and opportunities for businesses and citizens alike.

As I see it, 5G-A will contribute to sustainable development, in particular, in the Arab States, by enabling energy-efficient solutions, supporting environmental monitoring initiatives, and enabling circular economy models through IoT and AI, all of which can facilitate the development of smart municipalities and sustainable infrastructure.

How are the Sustainable Development Agenda and digital transformation interlinked, and what may be a great challenge associated with the latter?

To answer this, we need to first fully understand that digital transformation and digitally-powered socio-economic development are two pillars on which multiple plans for the future rest – for example, economic sector diversification, increasing productivity, or fulfilling specific ambitions and national plans.

Digital transformation, however, requires predictable and sustainable investments and partnerships, fit-for-purpose collaborative policies and just-the-right regulation, and targeted demand-side approaches. With digital transformation, many SDGs can be met, directly: for example, human capacity-building and advancement through education and better healthcare; responsible production and efficient consumption; controlling and reducing carbonisation; food and livelihood from agriculture; quality and sustainability-conscious urban living; democratisation and improved participation in and benefit from digitally-inclusive government services.

With digital transformation arrives a need to revisit and revive enabling regulatory frameworks, which must be adjusted to stimulate investment while maintaining a healthy level of innovation, competition, and market resilience. There is no true digital transformation if these factors are not in play.

How do you envision the role of the SAMENA Council evolving in the coming years to address emerging challenges and opportunities in the rapidly evolving digital landscape of the region?

The SAMENA Telecommunications Council is poised to play an increasingly significant role in the evolving digital landscape of the SA-ME-NA region and, to some extent, in Central Asia as well. Central to the SAMENA Council's mission is ensuring the sustainability of the telecommunications industry and the expanding 5G/5G-A digital ecosystem.

This endeavor involves a concerted effort from telecommunications service providers and various stakeholders along the digital value chain to assess how rapid technological changes are impacting, or need to impact, business transformation.

Besides telecom operators and tech providers, regulatory authorities and governments are key players in this dynamic landscape, striving to recalibrate regulatory and economic frameworks to align with new technological advancements and evolving market realities. This recalibration involves addressing critical and very complex issues, such as cross-border data transmissions, taxation, spectrum allocations, and the deployment and use of enhanced broadband 5G and beyond for digital services, to name a few. The disruption caused by these developments necessitates a thorough examination of how policies and regulations can be adapted to support growth and innovation while defending the interests of all stakeholders.

To bridge the gaps in understanding among various stakeholders and to align policy, regulatory, and private-sector priorities, the SAMENA Council plays a pivotal role. Its reach extends beyond regional boundaries, making it a globally active telecommunications and ICT advocacy and regulatory body.

As the SAMENA Council advances its efforts in representing the private sector and advocating in support of industry interests, it seeks to cultivate an environment characterized by sustainability, predictability, and collaborative reforms. The council's platforms are ever ready to provide the necessary foundation and support to make progress on relevant areas, important for the Industry, for its leaders, and the society, at large.

Given the evolution of connectivity and inter-connectedness, one of the consequences both businesses and citizens have to deal with includes threats to cyber systems and digital users. Which market in the SA-ME-NA region, do you opine, is doing significant work on this front to engage stakeholders from all over the world?

Cybersecurity is an imperative across all markets and no country is exempted from facing this issue. However, it is true that larger markets, such as Saudi Arabia, may face bigger challenges relating to security of the cyberspace and digital systems and end-users. In this regard, platforms such as the Global Cybersecurity Forum (GCF), created in Saudi Arabia for the world's digital stakeholders, are playing a highly active role in bringing about cooperation, collaboration, and tangible progress.

Earlier in October, policymakers and experts at the Global Cybersecurity Forum (GCF) Annual Meeting, held in Riyadh, Saudi Arabia, convened on the cybersecurity front and emphasized the need for educational systems to focus more on cybersecurity and for the cyber workforce to become more inclusive, to overcome one of the greatest digital gaps we face: ICT and cybersecurity talent.

Created by Saudi Arabia's National Cybersecurity Authority (NCA), GCF focuses on the geostrategic, economic, social and behavioral dimensions of cybersecurity, and is working highly actively to action cybersecurity practices, to ensure that Cyberspace remains sustainable, and secure, and continues to serve as an enabler of socio-economic transformation.

SAMENA Council Leads Space Sustainability Dialogue and Contextualizes Sustainability in View of WRC-27

SAMENA Telecommunications Council, at the Mohammed Bin Rashid Space Centre (MBRSC) headquarter, led a dialogue last week on space sustainability, organized by the World Space Sustainability Association (WSSA). Held as Space Sustainability Leaders Forum, the roundtable discussion led by SAMENA Council focused on Accelerating Global Coordination on Space Sustainability; setting Priorities for Collaboration and Progress for the Space Ecosystem; and identifying Opportunities and Imperatives for Space Stakeholders. The space-sustainability dialogue held at the MBRSC headquarter aligned well with new expectations set forth by the United Nations" recently adopted Pact for the Future, with sustainable development, among other focus areas, at its heart. international peace and security; science and technology; youth and future generations and transforming global governance. SAMENA Council highlighted that with rapid advancements, emerging commercial interests, and increasing global recognition of space as an essential domain for security, economic growth, and sustainability, a set of differing, and, at times, conflicting priorities have emerged. Nonetheless, these differing priorities give room to a diverse set of opportunities as well, especially for innovation and new collaborations in digital economy and space economy. Such opportunities need to be explored and for making collective progress in the complex space landscape. SAMENA Council, with its membership comprising both Terrestrial and Space segments, observes that space economy, driven by both space-exploration initiatives, cost-effective satellite production and launching, and constellation-based business models, will face a dramatic increase in the next decade. during this time frame, several critical challenges will surface, ranging from signal interference to orbital slot allocations; fuel and light pollution to debris management; and from solar flares to in-space collisions. "One of the key areas to address within the larger space sustainability area, is collaboration among all stakeholders and to streamline better international governance approaches to ensure space and human activities in space remain sustainable. This is one of the reasons why this dialogue organized by WSSA and hosted by MBRSC was very important. A diverse group of space-sector stakeholders not only delved into space sustainability issues of importance specifically to space ecosystem players, but also issues and matters pertaining to WRC-27, such as those relating to spectrum, fixed-satellite and broadcasting-satellites, space-to-Earth and Earth-to-space communication", stated Bocar BA, CEO & Board Member of SAMENA Council, who steered the discussions at the WSSA Forum. For WRC-27, new studies for mobile in the bands 4400-4800 MHz; 7125-8400 MHz and 14.8-15.35 GHz, among other areas, are deemed important agenda items. The Industry, over the next five years, requires more harmonized capacity for mobile services and the identification of these bands for International Mobile Telecommunication (IMT) by WRC-27 would provide an important resource for mobile connectivity and service evolution. Having timely discussions relating to predictable access to spectrum, such as during the WSSA Forum led by SAMENA Council, is expected to help Operators and Technology Providers the attain visibility and facilitate informed decision-making regarding investment, spectrum utilization, digital experience, and innovation in digital services and applications. "Emerging Space Economy has intricate dimensions, and it is imperative to account for them. At the WSSA's Space Sustainability Leaders Forum 2024, held at the MBRSC HQ, it was a pleasure to moderate the discussion, centered on understanding rapid advancements, emerging commercial interests, and increasing global recognition of space as an essential domain for security, economic growth, terrestrial and space sector collaboration, and sustainability, at large", added BA.

SAMENA Council's Leadership & Excellence Awards in Digital-development Concluded with 34 Recognitions Given Across 4 Regions

SAMENA Telecommunications Council successfully held its second edition of the SAMENA Leadership and Excellence Awards in Digital-development ("SAMENA LEADs") on October 15th at the One&Only Royal Mirage, Dubai, UAE. SAMENA LEADs recognized telecom operators and regulators across South Asia, the Middle East, North Africa, and Central Asia in the categories of Innovation Excellence, Business Leadership, User Experience Delivery, Fixed Wireless Access Success, and Regulatory Enablement.

The 2024 edition of the SAMENA LEAD awards highlighted and recognized advanced ICT success in the region, including but not limited to 5G&5G-Advanced development, optical fiber broadband, datacom, cloud-based transformation, and mobile finance. LEADs also recognized and promoted development and success achieved in monetizing 5G&5G-Advanced investments through the adoption of Fixed Wireless Access technology. Various technologies, including cloud transformation, IPv6-Enhanced implementation; regulatory enablement, as regards, for example, networks for industries and child online protection; and business milestones, such as business acquisition strategies and mobile finance solutions were identified with accolades.

SAMENA LEADs serve as a platform to recognize regulatory achievements, actions and approaches that are supporting the private sector and enabling sustainable investment avenues. Moreover, SAMENA LEAD awards help foster and propagate new best practices and inspire similar successes in neighboring regions while enabling both businesses and regulators to create new cross-border synergies and opportunities for growth. In the words of Bocar BA, CEO & Board Member of SAMENA Council, "SAMENA Leadership & Excellence Awards in Digital-development are designed to identify key strengths, and how every company-level greatness can be harnessed to achieve equally great milestones at the ecosystem level".

Since 2018, there has been much progress made on fifth-generation mobile network deployment in the region, with Operators having achieved significant milestones and Regulatory Authorities having supported market and technology development as well as customer-centric service offerings through impressive new initiatives that support the market and the end-user.

The following entities were awarded SAMENA LEAD awards in 34 unique strength areas, carefully assessed by SAMENA Council across the LEAD award categories:

- TDRA UAE
- TRA Bahrain
- CMC Iraq
- TRA Oman
- CRA Qatar
- NTRA Egypt
- PTA Pakistan
- CST Saudi Arabia
- Zain Group
- e& UAE
- Kazakhtelecom JSC
- Mobily
- stc KSA
- Zain Kuwait
- Beeline Uzbekistan
- Vodafone Qatar
- PTCL
- du Pay
- Omantel
- stc Bahrain
- du
- stc Kuwait
- stc Group
- Mobily
- Omantel
- e& UAE
- Uztelecom JSC
- Ooredoo Kuwait
- stc KSA
- CMPak (Zong)
- Zain Group
- PMCL (Jazz)
- Zain Jordan
- Zain KSA

10 Gigabit Transformation

SAMENA ACCELERATOR on F5G-A Helps Accelerate 10Gigabit Society into Reality across the Middle East and Central Asia

SAMENA (South Asia-Middle East-North Africa) Telecommunications Council held its SAMENA ACCELERATOR on **10 Gigabit digital infrastructure** on October 17th at the One & Only Royal Mirage, Dubai, UAE. Held in collaboration with Huawei Technologies, the Council organized the 2024 edition of its SAMENA ACCELERATOR to continue the dialogue initialized in the 2023 edition of the 10 Gigabit ACCELERATOR, which established a compelling case for ultra-broadband or "10Giga" network development by utilizing advancements in Fiber and IPv6 innovations. The 2024 edition delved into deepening consensus on accelerating 10 Giga network development and exploring future-oriented broadband infrastructure upgrades, enhancing user experiences, enabling digitalization of various industries, and, as an ultimate goal, accelerating the development of the digital economy in the Middle East and Central Asia.

The SAMENA ACCELERATOR 2024 was organized into four sub-segments: In the Regional Visions segment, the audience was debriefed about ICT visions and national ICT development plans from the UAE, Bahrain, Azerbaijan, and Kazakhstan. Experience-Sharing from du and Omantel provided perspectives on how optical networks serve at the core of digital foundation as seen from Operators" eyes. Technology Readiness segment provided perspectives from the World WLAN Applications Alliance (WAA) - China, ETSI Industry Specification Group (ISG) for Fixed 5G, and Huawei Technologies, demonstrated advancements in F5G-A to achieve new service delivery and user experience milestones, technologically speaking. In the last half, a discussion, focusing on key drivers of advanced infrastructure development, enablers and impediments in network implementation, and new approaches required on the policy, regulatory, and sustainability fronts, were discussed.

> *Bocar BA, CEO & Board Member of SAMENA Telecommunications Council, in his opening keynote stated that "Observations and advancements necessitate that both Government sector and the Private sector work closely together and exchange priorities and capabilities on the fixed network fronts, more closely, and be empowered by each other."*

Bocar BA, CEO & Board Member of SAMENA Telecommunications Council, in his opening keynote stated that "Observations and advancements necessitate that both Government sector and the Private sector work closely together and exchange priorities and capabilities on the fixed network fronts, more closely, and be empowered by each other."

BA, in the opening of the SAMENA ACCELERATOR, also received recognition from Director General of TDRA, HE Engr. Majed Al Mesmar, for his contributions to the Industry and for his relentless efforts in bringing industry leaders together, fostering impactful cooperation, and for catalyzing industry initiatives locally, regionally, and internationally.

During the SAMENA Accelerator, a meaningful 10Giga Acceleration Ceremony was also held, with its distinct symbolism to mark continuity of dialogue on developing optical networks and to harness the power of fiber, to accelerate 10Gigabit Society into Reality. "For ICT maturity to manifest, for societies and economies to thrive, Gigabit capabilities must be attained", read the backdrop.

In his closing remarks, BA emphasized on policy requirements: "We need to advance the necessary fixed-line infrastructure, unlock new capital, and new ways of sharing responsibilities to develop that infrastructure, and develop human capital for the digital age, and make broadband connectivity and quality-of-service affordable, with bare minimum speeds set as benchmarks." BA further remarked that "I would like to

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In 2023, during the SAMENA Accelerator, SAMENA Council launched the 10Gigabit Society Initiative to accelerate digital economic development in the Middle East, with participation of World Broadband Association (WBBA), IPv6 Forum, Arab ICT Organization (AICTO), Omdia, Huawei, and various ministries and regulatory authorities.

SAMENA Council has been of the view that, over the next few years, as nations strive to achieve the "Giga" milestone, a key objective is to create impact beyond just simple Internet. Fixed-line networks, which literally are the backbone of national digital transformation, and are key to sustainable digital development, are the most important infrastructure for communities and businesses, for resilient communication, and for fulfilling national digital visions. Moreover, emerging technological capabilities are playing important role to support the end-to-end network quality for 10Giga Society.

congratulate Huawei for drawing attention to various aspects of digital transformation as assessed through the Huawei Global Digitalization Index (GDI) – which is an excellent way forward to measure and help accelerate ICT maturity in and across our region."

> *SAMENA Council observes that the region, particularly, and neighboring regions, generally, need to come at par with more digitally advanced economies. However, to achieve this, drastic steps are necessary to further broadband development, in particular, through optical networks, using latest technologies, such as F5G-A. Moving towards "gigabit" infrastructure is an essential element in such steps, and it is critical that regional economies achieve ICT maturity in order to thrive in the age of gigabit connectivity.*

SAMENA Council recognizes that with advancements in fifth-generation fixed networks, and integration of AI and emerging technologies, Gigabit networks can significantly accelerate digital economic development, fulfil ambitious national ICT visions, and drive industrial and societal transformation, particularly in the GCC markets, where there is a need to enhance broadband speeds and accelerate optical-fiber coverage.

"SAMENA Council's partnership with Huawei is a strategic step towards fostering digital innovation in the region", BA had remarked earlier.

Mobile & Fixed-line 10Giga Trends

10 Gigabit per second capabilities and use-case scenarios are ready to be exploited:

- The experience of people and home connections is being upgraded.
- Consumer mobile services have become increasingly immersive and interactive, while home large-screen services are transiting to 3D and HD formats.
- Such service changes require an upgrade of network experience from 1.0 marked by ubiquitous gigabit to 2.0 marked by 5.5G's 10 Gbit/s downlink, Gbit/s uplink, and deterministic experience.
- 10 Gbit/s ultra-large bandwidth spectrum and chipsets are ready.
- The existing sub-6GHz spectrum is starting to be re-farmed to achieve ultra-large bandwidth.
- Millimeter Wave spectrum (EHF), covering 3-30 GHz range, has been allocated in 40 countries for commercial access, which ensures that 10 Gbit/s capability can be implemented.
- With 5.5G chipsets that support 10 Gbit/s services have been released to enable 10 component carriers on mmWave and 5 component carriers on sub-6GHz. The cornerstone of 10 Gbit/s experience in mobile networks has been set.
- Wi-Fi 6/6E: Complementing fixed-line speeds, Wi-Fi 6 (and Wi-Fi 6E) provides faster wireless throughput and improved capacity, supporting multi-Gigabit speeds.
- Fiber-to-the-Home (FTTH): Deployment of full-fiber connections directly to homes, providing ultra-fast 10G speeds with minimal latency.
- XGS-PON (10G PON): A next-generation Passive Optical Network (PON) that supports up to 10 Gbps downstream, offering faster and more reliable fiber internet connections.
- DOCSIS 4.0: The latest Cable Broadband standard, enabling 10 Gbps speeds over existing coaxial cable networks with Full Duplex technology for symmetrical speeds.
- XG-FAST: A high-speed DSL technology that offers speeds approaching 10 Gbps over copper lines, enabling high-speed internet without full fiber deployment.
- Multi-Gigabit Ethernet: Increasing the availability of 10G Ethernet for residential and business networks, offering seamless connectivity for ultra-high-speed applications.
- Network Slicing: In 5G and fiber networks, slicing allows operators to dedicate parts of the network for specific use cases, such as 10 Gigabit broadband service, ensuring optimal performance.
- Optical Wavelength Division Multiplexing (WDM): Increasing the capacity of fiber networks by transmitting multiple wavelengths of light, allowing networks to support 10G+ speeds.
- Cloud Gaming and High-Definition Streaming: The rise of these services pushes for 10G networks, offering the bandwidth necessary for 4K/8K streaming and cloud gaming with minimal latency.
- Passive IoT is enabling all-scenario connections, and is rapidly developing, with terminal tag prototypes already available for use, and spectrum, product forms, and business models actively being defined in different markets.
- Smart Cities and IoT: The deployment of 10G fixed-line infrastructure supports smart city applications, including IoT, autonomous vehicles, and real-time data analysis with high bandwidth and low latency

F5.5G All-Optical 10Gbps and Premium Transmission Have Arrived

The commercial construction of F5.5G gears up to embrace the imminent intelligent world. In November 2023, the European Telecommunications Standards Institute (ETSI) released the F5.5G standard. Innovative technologies like 50G PON, Wi-Fi 7, FTTR+X, 400G, all-optical cross-connect (OXC), and Hybrid ASON have rapidly matured, showing that F5.5G is in extensive commercial use.

The Industry is at a stage where accelerating the commercial use of F5.5G achieves experience enhancement to stimulate intelligent applications through all-optical 10Gbps; breaking connectivity boundaries to expand new services for homes and enterprises; and transcending geographical limitations to connect and collaborate immense intelligent computing power.

Li Peng, Huawei's Senior Vice President and President of ICT Sales & Service, delivering a speech Promoting Fast Network Evolution Towards F5.5G to Fully Embrace the Intelligent Era

Bob Chen, President of Huawei Optical Business Product Line, has elaborated on the F5.5G target network and key product solutions, and shared successful F5.5G practices used by global carriers. He said: "Facing the intelligent era, carriers need an "All-Optical 10Giga + Premium Transmission for Intelligence" network that supports ubiquitous 10Gbps, 1 ms latency, and 99.9999% availability to meet the intelligent application access and computing power interconnection requirements of individuals, homes, and enterprises." In terms of architecture, networks can be built from three aspects:

First, the 3D-mesh backbone computing network. The 400G ultra-high speed and 3D mesh architecture achieves non-blocking bandwidth, and Hybrid ASON enables 99.9999% availability. Second, the one-hop metro computing network. E2E OXC builds a 1 ms city latency circle to achieve low-latency computing access, and Alps-WDM and metro 100G continuously reduce computing costs. Third, the 10Gbps intelligent access network. 50G PON supports 10Gbps access in all scenarios and ensures deterministic experiences through E2E slicing and intelligent traffic distribution.

Bob Chen, President of Huawei Optical Business Product Line, delivering a keynote speech

> *Based on F5.5G all-optical 10Gbps and premium transmission products and solutions, Huawei has worked with global carriers to carry out innovative commercial practices and deployed 166 commercial sites.*

Based on F5.5G all-optical 10Gbps and premium transmission products and solutions, Huawei has worked with global carriers to carry out innovative commercial practices and deployed 166 commercial sites. New services bring with them new revenue growth opportunities for carriers.

2024 has been the first year of commercial 5.5G, and F5.5G gigabit optical network deployment has already begun. Synergies across networks, cloud, and intelligence are set to give rise to pervasive intelligent applications and increasingly diverse user experiences.

Value-Creation and New Growth Increasingly Require Operators to Build AI-centric F5.5G All-Optical Networks

As ultra-broadband (UBB) and AI industries go from strength to strength, the number of gigabit fiber broadband users worldwide has exceeded 300 million, and the average speed of home broadband packages has reached 570 Mbit/s. There are over 1,300 AI foundation models and more than 30,000 AI-related enterprises globally. The UBB industry and AI industry are mutually reinforcing, driving the wide adoption of gigabit broadband.

For Operators using the network+AI, Huawei believes that the "Four New" strategy, encompassing New Hub, New Services, New Experience, and New Operation, is key to unleashing more business value-creation.

At the 10th Ultra-Broadband Forum (UBBF 2024), Bob Chen, President of Huawei Optical Business Product Line, delivered a keynote speech that focused on AI-Centric F5.5G All-Optical networks for achieving new growth. Bob Chen noted that in the AI era, some carriers will transform into AI all-service providers, and some carriers will cooperate with third parties to provide services such as AI computing and AI applications. For carriers, building robust infrastructure networks and "enhancing computing with networks" will be the key to business success in the AI era. AI device-cloud synergy and intelligent computing training require high network bandwidth, low latency, and high reliability. Huawei is continuously innovating F5.5G in optical transmission, optical access, and management and control platform, helping carriers build AI-centric all-optical networks.

"The next decade will witness the fast popularization of AI," Bob Chen stated. "Huawei hopes to work with industry partners to build an AI-centric F5.5G all-optical network, extending optical switching to data centers and metro edges, building premium networks for optical access by monetizing coverage, bandwidth, and experience, and fully injecting AI capabilities to the management and control platform. In this way, we can accelerate AI popularization and achieve new business growth together in the intelligent era!"

In the optical transmission field, Huawei's leading optical switching technology is extended to data centers (DCs) and metro edges. First, with optical switching, DCs support the scale and efficiency improvement of AI computing. Huawei's DC optical switching solution supports the expansion of intelligent computing from 1000 cards to millions of cards based on ultra-dense ports and ultra-low power consumption. Compared with traditional solutions, the optical module-free deployment mode reduces the failure rate by about 20%. In addition, with all-optical switching at metro edges, Huawei helps carriers build 1 ms, 5 ms, and 10 ms latency circles through mesh networking, and all-optical one-hop connection for end-to-end all-optical switching from the backbone to the metro, ensuring ultimate AI experiences. Up to now, more than 50 carriers around the world have extended optical switching to metro edges and built 1 ms metro networks.

For Operators using the network+AI, Huawei believes that the "Four New" strategy, encompassing New Hub, New Services, New Experience, and New Operation, is key to unleashing more business value-creation.

Fixed broadband must provide premium services. Based on optical fiber connections, fixed broadband provides deterministic and guaranteed service experiences for every user. Globally, there are three monetization modes for fixed broadband: coverage monetization, bandwidth monetization, and experience monetization.

1. First, coverage monetization. Currently, no fiber connection is available to more than 28% of global users. Therefore, fiber coverage needs to be accelerated to seize the demographic dividend. Huawei solutions including QuickConnect ODN and all-scenario AirPON can help carriers achieve fast and low-cost network construction.
2. Second, bandwidth monetization. First, some carriers have deployed fiber broadband, but their package rates are only dozens of Mbps. As a result, the value of optical fibers is not unleashed. Therefore, we recommend that packages be gradually upgraded to provide more competitive broadband services. Second, some carriers have offered gigabit packages, but the experience is poor and video freezing often occurs. The root cause is that GPON is used to provide gigabit packages. Therefore, GPON should be upgraded to 10G PON as soon as possible to provide better network experiences.
3. The last is to monetize experience. Now, the industry has a consensus on the evolution from FTTH using one fiber to FTTR using one network. FTTR networking can ensure optimal experience for everyone anytime and anywhere. So far, the number of global FTTR users has exceeded 30 million. In addition, Huawei is accelerating the innovation and upgrade of FTTR+X to help carriers innovate AI applications, including AI plus storage, home guard, and healthcare. Our ultimate goal is to support one smart home based on one FTTR network.

Huawei uses digital twin and AI foundation models to improve user experience and O&M efficiency in premium broadband and premium transmission solution scenarios. Huawei's Premium Broadband solution uses automatic fault locating to implement minute-level network fault diagnosis and proactive poor-QoE rectification, slashing user complaints by 30%. Its Premium Transmission solution uses automatic online planning to shorten the new service TTM from months to hours.

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MEMBERS NEWS

stc Group Named Best Middle Eastern Connectivity Provider at Capacity Europe 2024

stc Group has concluded its participation as a Digital Enabler at Capacity Europe 2024, held in London from October 15-17. The Group's participation emphasized its commitment to pioneering global connectivity and in telecommunications innovation. During the event, stc Group was recognized with two prestigious Global Carrier Awards: Best Sales Team Globally and Best Middle Eastern Connectivity Provider. These accolades reflect the Group's excellence in delivering cutting-edge solutions and reaffirm its position as a leader in the telecom industry. These awards are a testament to stc Group's commitment to excellence in global connectivity and innovation, further highlighting its role as a key digital enabler across the region. At the event, and in line with its commitment to drive digital transformation, stc Group forged a number of new agreements which included an agreement with Cubic Telecom, aiming to enhance connectivity through stc's IoT platforms, APIs, and GSM services. Another Memorandum of Understanding was forged with China Unicom, aimed at bolstering regional connectivity and driving IoT innovation. Furthermore, stc Group earned the GLF Code of Conduct anti-fraud certification for 2024. This achievement underscores stc Group's standards of transparency and integrity in the international carrier industry. Throughout the event, stc Group showcased its wide array of digital services, including IoT, as well as its international voice service capabilities. The Group highlighted its role as a gateway for international data traffic, leveraging Saudi Arabia's strategic position at the crossroads of Asia, Africa, and Europe.

stc Group's “tali Ventures” Leads US$10 million Investment in Series B Funding for NorthLadder

tali ventures, stc Group's corporate venture capital arm, and NorthLadder, a leading device trade-in platform in over 10 countries, has announced the successful completion of a US$10 million Series B investment round. Series B funding is a stage in the funding process and typically occurs after a company has successfully proven its business model and growth potential. The investment was led by stc Group's corporate venture capital arm, tali ventures, with additional funds from Dutch Founders Fund and Crescent Ventures. stc Group is a leading digital enabler and this investment demonstrates the Group's commitment to fostering a vibrant entrepreneurial ecosystem across its operating markets and supporting a more sustainable future. Over the past 18 months, NorthLadder has emerged as the leading trade-in player in over 10 countries, serving major telecom companies, retailers, e-commerce players, and Original Equipment Manufacturers (OEMs). The company has introduced a variety of service offerings, including some industry firsts, delivering exceptional value to both customers and retail partners. The funding will primarily fuel NorthLadder's global expansion efforts and the continued development of its state-of-the-art trade-in platform. NorthLadder has recently established its European operations in

Amsterdam and is poised to launch trade-ins with key partners further across Europe. tali ventures, the corporate venture capital arm of stc Group, focuses on strategic investments in high-growth companies from early to late-stage. The launch of tali ventures earlier this year was another milestone in the Group's commitment to driving digital transformation and sustainable growth. NorthLadder has been instrumental in stc Group's trade-in journey, rapidly evolving to becoming the region's leading trade-in player within just 18 months. NorthLadder boasts an exceptional management team, cutting-edge technology, and an innovative business model. Majed I. Aljarboua, Corporate Fund and Entrepreneurship GM at stc, said "This investment aligns with tali ventures and stc Group's shared goal of propelling technological advancement, and nurturing start-ups to shape the future of technology and society. NorthLadder's commitment to circularity perfectly complements our vision of a more sustainable world, where the protection of both community and planet is not a byproduct but a core mission." Laurens Groenendijk, Founding Partner of Dutch Founder's Fund, and the entrepreneur behind successful ventures such as Just-Eat, Treatwell, Miinto, and nano-satellite challenger Hiber, commented: "NorthLadder represents a game-changing approach to the resale of pre-owned electronics, combining innovation with a deep understanding of customer needs. As an investor, I see NorthLadder as a company poised for remarkable growth, with its commitment to transparency, trust, and sustainability at the core of its success. By providing a secure platform that maximizes value for users, NorthLadder is not only transforming the resale market but also playing a critical role in the shift towards a more circular economy.". NorthLadder co-founder and CEO, Sandeep Shetty, who previously served as the Managing Director of Careem's Ride-Hailing business (acquired by Uber in 2019 for $3.1 billion), is optimistic about the impact of the latest funding round for NorthLadder. He stated "We are excited to bring a disruptive, world-class product that supports the circularity goals of our partners. Device trade-ins is a global business, and our objective is to provide a world-class platform offering the best residual values worldwide through our unique auction system." Mihin Shah, co-founder and COO of NorthLadder commented on the recent investment, "This investment is a testament to the confidence in our advanced technology and operational capabilities for preowned electronic devices, paving the way for our global expansion. We have a truly outstanding team ready to support our partners across multiple regions in mobile and other electronic device trade-ins." Over the next five years, the pre-owned smartphone market is expected to grow three times faster than the new smartphone market. With its comprehensive and unique offerings, NorthLadder is well-positioned to meet this demand. The new investment underscores the company's potential to expand its business model on a global scale.

Spain Approves stc Stake Buy in Telefonica

stc Group got a green light from the Spanish government to complete a purchase of an almost 10 per cent stake in Telefonica and name a member to the operator's board, with approval coming more than a year after the €2.1 billion deal was struck. Spain's Minister of Economy, Trade and Business Carlos Cuerpo announced its Council of Ministers signed-off the investment for 9.9 per cent, with undisclosed conditions attached to protect national interests which have been agreed to by the Saudi operator. Cuerpo stated authorities conducted an exhaustive analysis on grounds of compliance with current laws and elements including protecting national interests. In its own announcement, stc confirmed it received approval to increase its voting rights from 4.97 per cent to 9.97 per cent and the right to appoint a board member to Telefonica. The Saudi operator struck the deal in September 2023 as part of a wider strategy to increase investments outside its home market. It stated at the time it had no intention to attempt to acquire a majority stake in the Spain-based operator group. To balance stc's holding, Spanish investment company Society of Industrial Participations (SEPI) set a goal of holding a 10 per cent stake in Telefonica, which it hit in May. The move was to ensure the nation's investment vies with stc as Telefonica's largest shareholder.

stc Group Continues Expansion in Data Centers and Submarine Cables, Strengthening Its Position as a Digital Hub

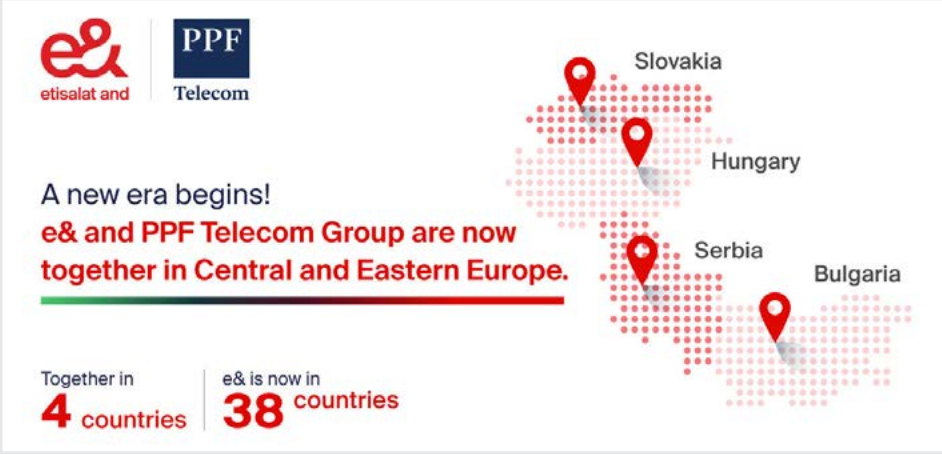
stc Group, a leading digital enabler, continues to implement its expansion in the development of data centers and submarine cables, strengthening the kingdom's position as a digital hub in the Middle East. Two strategic projects have catapulted this effort: stc group's subsidiaries stc Bahrain and center3, have built a state-of-the-art Data Center Park in Bahrain, as part of one of the world's largest submarine cable systems connecting Europe, the Middle East, and Africa. This project, known as "Africa 2 Pearls", will extend over 45,000 kilometers, totaling $300 million in investment. These projects complement the Group's investments through its subsidiary, center3 - the leading provider of international data centers and communications services via submarine cables. center3 now operates 25 data centers and has expanded its submarine cables network to include 16 cables connecting three continents. The network includes the "Saudi Vision Cable" wholly owned by the Group via center3 and equipped with three landing stations that ensure continuous and reliable data transfer services. This represents a fundamental pillar in the Group's long-term strategy. The "Africa 2 Pearls" cable is an important achievement in this context, as it connects 33 countries in Asia, Africa and Europe, which supports stc Group's vision for global expansion, data flow and communications, and enhances its position as a major driver of digital transformation across various sectors at the international level.

stc, Huawei to Enhance 5G Connectivity in Saudi Arabia

Saudi telco stc and Huawei have announced the commercial rollout of SuperLink, a digital solution designed to enhance 5G connectivity across remote areas in Saudi Arabia. SuperLink is a multi-band wireless transmission solution developed by Huawei, which combines several frequency bands into a single high-capacity and long-distance link, overcoming deployment challenges associated with traditional 5G E-band tower models. stc noted that this solution boosts operational speed by 200% compared to earlier models and significantly extends 5G reach without requiring extensive infrastructure, making it ideal for connecting remote regions efficiently. The solution also improves deployment efficiency by reducing antenna requirements by 67% compared to traditional single-band parallel link methods, lowering tower rental costs. Abdullateef Alsenan, infrastructure design general manager at stc Group, said: "SuperLink addresses challenges in long-haul and large-capacity microwave hardware stacking. It simplifies deployments, expands bandwidth, and delivers reliable 5G connectivity to remote areas. This innovation allows stc Group to bring advanced broadband services to underserved regions of the kingdom in a more cost-effective and efficient manner." During MWC Barcelona 2024, stc Kuwait and Huawei had signed an MoU on deepening 5.5G strategic cooperation and business monetization. Based on 5.5G joint innovation, the two companies will work together to build 5.5G-based intelligent wireless networks, and incubate 5.5G-related new services for consumers, homes and businesses, growing the maturity of the 5.5G industry and ecosystem. According to the MoU, stc and Huawei will deepen strategic cooperation on 5.5G technology innovation and business monetization to build intelligent wireless networks and integrate cross-domain data. To monetize 5.5G, stc and Huawei will further explore and incubate new consumer and home applications, and launch new services based on network capabilities to drive 5G user growth. In terms of business applications, the two companies will launch customized smart office solutions for SMEs, and incubate vertical applications in the oil and gas industry. They will also conduct proof of concept testing and iteratively translate the concept into commercial products to steer market development.

e& and PPF Close €2.15 Billion Deal

Czech telco group PPF has completed the sale of a 50% plus one share stake in its telecom assets in Bulgaria, Hungary, Serbia, and Slovakia to Emirati-based telco e&. In doing so, the companies have formed a new joint venture called e& PPF Telecom Group. The deal is valued at €2.15 billion, with a potential earn-out of up to €350 million. The joint venture combines PPF's telecom experience in Central and Eastern Europe with e&'s global tech resources to boost telecom services in the region. PPF will retain full ownership of its telecom assets in the Czech Republic, including O2 Czech Republic and CETIN Czech, which are outside the partnership's scope. Additionally, PPF is set to acquire a 30% stake in CETIN Group from Roanoke Investment, making PPF the sole owner of CETIN Czech. "Together, we have created a platform to drive value creation in fast-developing telecommunications markets," said PPF CEO Jiří Šmejc in a press release. "Our partnership with e& testifies to the quality of PPF's industry expertise and local knowledge. In return, PPF's telco teams will benefit from the global scale and technology know-how of e&, enabling us to meet our ambitions for further growth," he continued. Earlier this year, the European Commission (EC) opened an investigation into the deal, over concerns that it has been "granted foreign subsidies that could distort the EU internal market". Concerns stemmed from discussions that e& may have received financial support from UAE banks and the national government, which would have given PPF an unfair edge in the EU market according to newly introduced competition rules that came into effect in July last year. Earlier this month, the EC unanimously approved the deal.



e& UAE Claims World's Fastest Aggregated 5G-A Speed of 62 Gbps

e& UAE aggregated multiple carriers across high-band and low-band over simplified architecture, reaching a new record speed of 62 Gbps. The telco said it used "cutting-edge" hardware and "sophisticated" algorithms like MU-MIMO (multi-user, multiple input, multiple output) to achieve this record speed. Khalid Murshed, chief technology and information officer (CTIO) at e& UAE, said: "We are thrilled to announce e& UAE's achievement of the world's fastest 5G-Advanced (5G-A) network speed. With the target of 10Giga nation, we are poised to unleash the boundless potential of technology, empower innovative services and applications that will transform the fabric of society and the economy." e& UAE also noted it is "harnessing the power of artificial intelligence (AI)" to deliver personalized experiences to customers and to "spearhead" intelligent energy-saving initiatives. "By adopting the latest 5G-Advanced solutions, we are not only delivering unparalleled experiences to individuals and organizations today but also paving the way for ultra-high download speeds in the future, amplifying their overall experience," Murshed added. In a separate announcement, Ericsson and e& UAE claimed the successful implementation of Low Latency, Low Loss, Scalable Throughput (L4S), a time-critical communication technology, in a 5G commercial network for the first time in the Middle East and Africa. The technology was demonstrated through a cloud gaming showcase conducted on e& UAE's 5G Standalone commercial network on the sidelines of GITEX Global 2024, where L4S resulted in reducing the latency to less than half and perfectly maintaining it within a predefined range, Ericsson said.

e& UAE Showcases the World's First Wi-Fi 8 Prototype, Targeting Ultra-High Speeds Using the New mmWave Frequency Band

e& UAE, the telecommunications arm of e&, is pioneering the future of wireless technology and high-speed connectivity with the world's first Wi-Fi 8 prototype, showcased at GITEX GLOBAL, the world's largest technology exhibition. The Wi-Fi 8 prototype aims to deliver data rates of up to 100 Gbps, making it ideal for high-bandwidth applications such as 4K and 8K video streaming, and low-latency applications such as virtual and augmented reality. Marwan Bin Shakar, Senior Vice President, Access Network Development, e& UAE, said: "The Wi-Fi 8 prototype at GITEX represents a leap forward in connectivity, offering ultra-fast speeds that unlock a world of possibilities. This prototype demonstrates our commitment to providing exceptional value to our customers and driving meaningful change in the digital era. We are dedicated to deliver innovative solutions that empower our clients and foster the adoption of advanced technologies throughout the UAE and beyond." Wi-Fi 8 is set to revolutionize the realm of wireless technology, outperforming its forerunners in numerous ways. Among its anticipated advancements is a remarkable increase in data transmission rates. Built on the achievements of earlier versions, Wi-Fi 8 aims to provide ultra-high throughput, advanced modulation techniques, and expanded spectrum usage. The new mm Wave frequency band enhances Wi-Fi 8 by providing access to a larger spectrum of frequencies, facilitating increased bandwidth, and enabling data transfer speeds of up to 100 Gbps. To ensure the security of enhanced connectivity, Wi-Fi 8 will incorporate cutting-edge protective measures, including next-generation encryption standards, quantum-resistant security, and enhanced authentication methods. As a major milestone in wireless communications, Wi-Fi 8 delivers speeds, robust security measures, and cutting-edge features. This Wi-Fi technology is projected to be available by 2030, potentially reshaping the digital landscape.

e& and AWS Enter into a $1bln-Plus Agreement as Part of New Strategic Alliance

e&, the global technology group which serves more than 175 million subscribers in 34 countries, announced a strategic partnership with Amazon Web Services (AWS), the world's most comprehensive cloud provider. This follows AWS's launch of its second Middle East cloud region in the UAE in 2022, with a planned US$5 billion (AED 20 billion) investment in the local economy through to 2036. The new alliance combines AWS's cloud infrastructure and solutions, which are sovereign by design, with e&'s network capabilities to address the most stringent customer requirements across the public sector and regulated industries including healthcare, finance, and oil and gas in the Middle East. Together, the companies will provide cloud solutions that align with industry regulations, meeting the growing demand for secure and scalable infrastructure. By aligning with AWS, e& solidifies its role as a key enabler of the UAE's digital economy, unlocking new growth opportunities for businesses of all sizes. As part of the collaboration, AWS and e& signed a US$1 billion-plus (AED3.7 billion) agreement over the next six years to accelerate the impact of cloud-driven innovation and digital transformation across the region. The alliance will focus on delivering core cloud services like storage, computing, networking, cybersecurity, as well as artificial intelligence (AI) and machine learning (ML). The agreement enables e& to leverage AWS's 200-plus fully featured services to modernize platforms such as Starzplay Arabia, a TV streaming service of which e& has a majority stake; and Careem, the Middle East "everything app" offering millions of customers easy access to food, mobility, digital payments, and more. e& will also deploy Amazon's technologies to expand its AI capabilities and to advance its Smart Home services, while e&'s Smiles points can be earned when shopping on Amazon. AWS will enable hundreds of small-medium-sized businesses, supported by e&, to access the AWS Marketplace. This will help these businesses discover,

deploy, and manage software which runs on AWS, democratizing access to the cloud. Just like how AWS democratized access to cloud computing services, it is transforming access to building and using generative AI technology so that companies of all sizes, across all industries, with developers of all skillsets, can take part in this transformation and grow their businesses. The two companies will also leverage AWS's unique Amazon Bedrock generative AI solutions to empower e&'s Middle East customers, large and small, with advanced AI to drive productivity and improve customer experiences. Amazon Bedrock provides foundation model choice from leading AI providers via a single Application Programming Interface (API) for companies to build and scale generative AI applications. The AWS and e& collaboration arrives at an integral time as cloud adoption continues to transform both public sector services and enterprises. According to PwC, nearly 70 percent of Middle East companies plan to migrate most of their operations to the cloud within the next two years, while a 2023 report by Telecom Advisory Services predicts public cloud adoption to unlock

US$733 billion in economic value by 2033 across the Middle East and North Africa. Hatem Dowidar, Group CEO of e&, said: "This agreement with AWS demonstrates our shared long-term strategic goal to create an ecosystem that supports today's digital needs and lays the foundation for future growth. We are enabling businesses across the region to lead in an AI-powered, data-driven economy. By investing in both critical infrastructure and talent development, we're again supporting the region's economy, digital resilience, and, most importantly, its people, who will be instrumental in realizing the UAE's vision of becoming a world-leading digital powerhouse."

e& UAE and Dubai Airports Team Up to Explore Enhancement of Airport Operations with 5G

e& UAE, the telecommunications arm of e&, has signed a Memorandum of Understanding (MoU) with Dubai Airports, exploring opportunities to bring 5G Private Network connectivity to optimize airport operations. The collaboration aims to identify areas where 5G could be implemented in the future becoming the first private 5G deployment in an airport in the region. The 5G Private Network Technology will enhance the guest experience through optimized journey management and improved luggage handling efficiency, further reducing delays and losses. Travelers will also enjoy uninterrupted shopping experiences. In addition, digitized passenger management systems will ease congestion at boarding gates and runways, streamlining operational flow. Furthermore, 5G-powered ground services will help reduce operational and maintenance costs. Fadi Shannah, Vice President, Enterprise Sales, e& UAE, said: "This partnership with Dubai Airports marks a significant step forward in enhancing the overall operational efficiency at the world's busiest international hub, Dubai International (DXB) and the airport of the future, Dubai World Central – Al Maktoum International (DWC). By leveraging the power of 5G private network technology, we aim to deliver seamless connectivity

that will revolutionize key processes, from guest experience to ground services. As the demand for advanced network capabilities continues to surge, e& UAE is leading the way in driving 5G adoption across industries in the UAE, emphasizing our commitment to providing solutions that transform operations and set new benchmarks in excellence." 5G private networks bring a host of enhancements over traditional Wi-Fi, particularly in large environments such as airports. A private 5G network as a service is a great alternative to buying, building, and managing a private mobile network. For businesses across the aviation industry, this model can significantly lower the barriers to entry by reducing upfront costs and alleviating the burden of infrastructure development and day-to-day management. e& UAE's 5G private network is expected to ensure seamless connectivity across all areas, including indoors, outdoors, and tunnels, providing uninterrupted service throughout Dubai's airports. The integration of SIM-based authentication adds an extra layer of security, enabling remote management while also safeguarding the network's integrity. Omar Binadai, Chief Technology and Infrastructure Officer, Dubai Airports said: "This MoU with e& UAE opens up an exciting opportunity for us to explore how 5G could enhance airport operations in the future. While we are at the early stages, we see great potential in the technology to streamline processes, improve connectivity, and elevate the overall guest experience. We're eager to see how this collaboration could shape the next chapter of innovation at Dubai Airports." Once initial exploration of Private 5G use cases, deployment and business models are finalized, Dubai Airports and e& will work on an implementation plan. Building on its successful 5G private network deployment in the oil and gas sector with ADNOC, e& UAE is now exploring the possibilities of replicating this success in the aviation industry. The 5G private network technology's ability to deliver high-bandwidth connectivity across operations will drive automation while improving efficiency and enhancing safety across critical sectors.

e& UAE, Ericsson Expand 5G Network with Dual-Band Radio

Ericsson noted that its AIR 3229 dual-band radio enables e& UAE to deliver 5G services simultaneously on both the 2.6 GHz and 3.5 GHz spectrum layers using a single unit Ericsson and Emirati-based operator e& UAE have completed what it claims to be one of the world's first deployments of Ericsson's dual-band Massive MIMO radio, AIR 3229, on e& UAE's network. In a release, the Swedish vendor noted that this new deployment aims to boost network performance, increase network capacity and reduce carbon footprint. Ericsson noted that its AIR 3229 dual-band radio enables e& UAE to deliver 5G services simultaneously on both the 2.6 GHz and 3.5 GHz spectrum layers using a single unit. This makes it possible to double the number of time division duplex (TDD) carrier components from two to four in high-capacity 5G sites, Ericsson added. The vendor also highlighted that this solution enhances network performance while addressing challenges related to site acquisition, installation complexity and tower load management. Ericsson's solution reduces power consumption by 20% and minimizes the tower load by 25%. Ericsson's AIR 3229, which is part of the Ericsson Radio System portfolio, is powered by the latest generation of Ericsson Silicon. Marwan Bin Shakar, SVP of access network development at e& UAE, said: "At e& UAE, we are always looking to adopt solutions that contribute to the evolution of our network while maintaining our sustainability objectives. The introduction of Ericsson's dual-band Massive MIMO radio supports our efforts to deliver world-class connectivity and enhanced 5G experiences while optimizing energy efficiency and reducing our environmental impact." Ekow Nelson, VP and head of Global Customer Unit for e& at Ericsson Middle East and Africa, said: "By integrating advanced technologies into its 5G network, e& UAE is better positioned to meet the growing demand for high-performance, reliable connectivity across the UAE."

e& UAE and EMSTEEL Partner to Transform Manufacturing with 5G Private Virtual Network

e& UAE, the telecommunications arm of global technology group e&, and EMSTEEL Group, the UAE's largest steel and building materials manufacturer have come together for a first of a kind collaboration in the manufacturing sector to design & deploy the next generation of advanced 5G network. e& UAE's 5G private virtual network significantly reduces operational expenses and improves worker health, safety, and environment (HSE). This network will set to enable the Industry 4.0 advanced digital use cases which will significantly reduce operational cost increase productivity and enhance ensure Health & safety of workers. EMSTEEL will be the first to utilize the power of the 5G Slicing of the UAE. Under the agreement, e& UAE's industrial connectivity proposition will also feature customizable 5G slicing, enabling EMSTEEL to cost-effectively tailor network resources for specific applications and optimize performance across various manufacturing processes. Masood M. Sharif Mahmood, Chief Executive Officer, e& UAE, said: "This partnership with EMSTEEL marks a significant milestone in our journey to redefine the boundaries of industrial connectivity. By expanding the reach of 5G private virtual networks into the manufacturing sector, we're empowering businesses to unlock unprecedented levels of efficiency, safety, and sustainability." Eng. Saeed Ghumran Al Remeithi, Group CEO, EMSTEEL, said: "Partnering with e& UAE is a defining step in EMSTEEL's journey toward a future of advanced, connected manufacturing. This collaboration enables us to pioneer Industry 4.0 capabilities that enhance operational efficiencies and drive sustainability. By integrating real-time communication and predictive automation, we are setting new benchmarks in productivity and environmental stewardship, aligning with our commitment to innovative and sustainable growth for the UAE's industrial sector" By harnessing the power of a dedicated 5G private virtual network and advanced 5G slicing, EMSTEEL can revolutionize its manufacturing operations. Real-time communication and automation across production processes become a reality, significantly enhancing safety through immediate monitoring of equipment health and worker conditions, allowing for timely interventions. 5G's ultra-low latency and high bandwidth facilitate seamless integration of AI-driven machinery and predictive maintenance, optimizing efficiency and minimizing downtime. Furthermore, the integration of IoT sensors and smart analytics enables EMSTEEL to monitor and reduce energy consumption and emissions, aligning with its sustainability objectives. In essence, 5G private networks and slicing empower EMSTEEL to create a more connected, intelligent, and sustainable manufacturing environment. Building upon the successful partnership with ADNOC to create the energy industry's largest 5G private network, the MoU with EMSTEEL further expands e&'s commitment to leveraging 5G technology across various sectors, including manufacturing.

e& Taps Huawei, Ericsson, Nokia, and Intel for Level 4 Autonomy by 2030

e& International has signed an MoU with Huawei, Ericsson, Nokia, and Intel to achieve Level 4 autonomy in all of its mobile networks by 2030, with backing from TM Forum. Under the MoU, the companies will work together to help e& achieve Level 4 autonomy by evaluating its current capabilities, identifying challenges, and planning the steps needed to enhance network autonomy. All of this will also be detailed in a white paper that will outline e&'s current network capabilities and its plans for the future, which include leveraging AI to accelerate 5G rollouts in key markets, and exploring AI-driven solutions to reduce carbon emissions. The MoU also calls for e&, Huawei, Ericsson, Nokia, and Intel to test real-world AI use cases that can improve customer experiences, boost efficiency, and support sustainability. e& International's MoU with Huawei, Ericsson, Nokia, and Intel comes a week after Ericsson announced separately that it had signed an MoU with the telco to explore the potential for developing AI-powered autonomous networks over the next three years. Under TM Forum's vision of autonomous networks, a network uses AI and other advanced technologies to manage, optimize, and repair itself with minimal human intervention. It can automatically adjust settings for optimal performance, detect and fix issues to minimize disruptions, adapt to new devices or updates, and predict maintenance needs before problems

arise. TM Forum's AN Levels Evaluation Methodology document defines five levels of network autonomy, from Level 0 (where all dynamic tasks are done manually) to Level 5 (cognitive self-adaptation that enables closed loop automation across multiple services and domains, including partner domains, for the entire lifecycle). Level 4 autonomy means e&'s networks will largely run themselves, handling most operational tasks automatically, with human oversight for only the most complex or strategic situations. According to e&, this will enable it to deliver more efficient, reliable, and responsive services to its customers. e& International CTO Sabri Yehya said the partnership with Huawei, Ericsson, Nokia, and Intel is a "game changer" that will enable its networks to think, adapt, and evolve in real-time. "e&'s goal to achieving Level 4 autonomy is not just about staying competitive. It's about leveraging the transformative power of AI to deliver frictionless, intuitive experiences for our customers as we set new industry standards for how we connect, communicate, and create," he said. "This is not just a technological milestone," added TM Forum CTO George Glass in a statement. "It represents a fundamental shift towards AI-first operations that empowers telcos to unlock efficiency and growth." Glass also said TM Forum is "committed to supporting the global telco industry on this journey by providing the frameworks, tools, and guidance needed to build an end-to-end, AI-first operational model that will unlock new growth opportunities."

e& UAE Launches Next Generation Connectivity platform to Connect Public, Private & Hybrid Networks

e& UAE announced the launch of next generation enterprise connectivity platform designed to enable businesses to build secure, scalable, and efficient hybrid or multi-cloud architectures over public, private and hybrid networks. The platform comprises of TrustNet, 5G and AI Net to provide seamless network connectivity, connecting corporate branches, data centers, and third-party locations with leading cloud providers, such as AWS, Microsoft Azure, Oracle Cloud Infrastructure (OCI) and others. This fully managed private and public network service ensures reliability, robust security, and 24/7 comprehensive support, making it ideal for organizations aiming to optimize performance and business continuity. "The launch of this platform will undoubtedly transform the way enterprises operate," said Haitham Abdulrazzak, Chief Business Officer, e& UAE. "The growing demand for secure, high-speed connectivity is a priority for us. Our new services, particularly the expansion and integration of private, public and hybrid network capabilities with multi-cloud connectivity, led by API integration and automation ensure ultra-fast, reliable, and secure connections for our clients, even in the most demanding multi-cloud environments. "This is particularly relevant and will provide a robust connectivity backbone to UAE government initiatives towards building smart cities incorporating IoT and AI enabling innovation and growth across industries from finance to healthcare." In today's digital landscape, businesses are adopting hybrid and multi-cloud strategies to drive innovation and stay competitive. However, these strategies bring challenges like security risks and performance bottlenecks. TrustNet addresses these challenges head-on, offering private and public and secure connectivity with built-in AI that ensures optimal performance, predicts traffic surges, and automates adjustments for maximum efficiency. The integration of 5G and AI into the platform also supports in future proofing the platform allowing enterprises to experience the future of enterprise connectivity with private mobile edge and 5G slicing. With AI revolutionizing industries ranging from real-time analytics to automation and machine learning, the full capabilities can only be realized with appropriate network infrastructure. The combination of AI and private & public connectivity opens doors to new capabilities like advanced data analysis, predictive insights, and automation, while private & public connectivity ensures that these AI models can be trained, accessed, and scaled securely and efficiently.

e& and Nokia Bell Labs Wins MEA Business Technology Achievement Award

e& and Nokia Bell Labs were recognized in the MEA Business Technology Achievement under the "Innovative Collaborations and Partnerships" award category for its contribution towards the innovative advancements in AI and R&D across industries. MEA Business awards celebrate a diverse range of technology achievements from a range of sectors including telecommunications, AI and machine learning, Cyber Security, cloud computing satellite technology, robotics, e-commerce and many more. This award is a testimony to e&'s continuous efforts and achievements in the field of AI, specifically the recent partnership with Nokia's research arm "Nokia Bell Labs'. This partnership brings together the advanced industrial research and innovation of Nokia Bell Labs, with e&'s deep understanding of the market and industry sector. Most recently e& announced the launch of the #AI4SD platform developed by e& in collaboration with UNDP & MBZUAI, an #AI powered solution to help countries and NGOs better predict and respond to natural disasters. Nokia Bell Labs is an industry leader in Responsible AI and has defined six principles to guide AI research in the future along the lines of fairness, reliability, privacy, transparency, sustainability and accountability. SAMENA Council serves as a unified voice for telecom operators and a platform for industry decision makers to help bring about a consensus-driven policy and required regulatory change for enabling digital transformation in the SA-ME-NA (Subcontinent, Asia, Middle East and North Africa) region.

e& UAE and Huawei Collaborate on Innovative New Calling Solutions to Transform Communication Landscape

e& UAE, the telecommunication arm of e&, and Huawei, a global technology leader, are excited to announce a strategic collaboration focused on revolutionizing voice network innovation through convergence and Voice over New Radio (VoNR). This partnership aims to promote a greener, more efficient, and intelligent voice network. With a strong commitment to implementing the latest technologies, the company has significantly enhanced its voice services over the years, achieving an impressive VoLTE traffic ratio in its mobile network. The evolving market demands and growing technologies are driving the transformation of voice services. e& UAE and Huawei recognize the importance of this shift from traditional voice to video and immersive communications. Together, they will leverage advanced technologies, including the IMS Data Channel, AI, and Augmented Reality (AR), to enhance calling services. "Together with Huawei, we are poised to redefine how users experience calling services," said Khaled Al Suwaidi, Senior Vice President of Core Networks and Platforms at e& UAE. "Our focus on New Calling will not only enhance the user experience but also create a more efficient and integrated communication ecosystem." Wang Lei, President of Huawei's Global Key Account, stated that through collaborative efforts to introduce new calling services, they are transforming

how users perceive traditional carrier calling services. The aim is to provide voice communication and a comprehensive suite of interactive calling solutions that improve the overall service experience. The New Calling initiative aims to introduce several innovative services, including:

- Visualized Voice Calling: Users can display customized avatars during calls to convey emotions and express their personalities.
- Enterprise Visible Hotline: Enhancing business communications with accessible and efficient hotline services.
- Remote Assistance: Providing users with real-time support through innovative calling solutions.
- AIGC Avatar: Leveraging AI to create interactive and engaging user experiences.
- Real-Time Translation: Breaking language barriers to facilitate seamless communication.

These innovative solutions aim to provide users with an enriched communication experience characterized by ultra-high-definition, intelligent, and interactive capabilities. As part of this collaboration, e& UAE and Huawei will utilize the commercial project to establish a close partnership, focusing on developing New Calling services that enhance user experience and drive efficiency in both B2C and B2B interactions. The implementation of the New Calling framework aligns with e& UAE's commitment to maintaining its position as a leader in telecommunications.

e& Enterprise and Smart Salem Partner to Deploy Region's First Locally-Hosted Cloud-Based (PACS)

e& enterprise, the digital transformation arm of e& group, and Smart Salem, the UAE's premium visa medical and health and wellness screening center, have announced a three-year partnership to implement the nation's first state-of-the-art cloud-based Picture Archiving and Communication System (PACS). This innovative project for Smart Salem's network of digital healthcare clinics marks a first-of-its-kind end-to-end service model in the UAE, set to revolutionize the landscape of medical imaging and healthcare services in the region. The cloud-based PACS platform is designed to deliver secure storage, retrieval, and sharing of medical images, providing healthcare providers with cost-efficient, scalable, and accessible solutions while adhering to regulatory compliance requirements. Traditional on-site PACS take up valuable healthcare real estate and require on-site interventions for challenges faced with hosting hardware. The solution will give Smart Salem access to guaranteed future-proof technology that enhances operational effectiveness, improves care management, and maximizes return on investment (ROI) but also serves as a model for future healthcare innovations. The platform will integrate seamlessly with Smart Salem's existing Hospital Information Systems (HIS) and offer comprehensive support services. Deploying this cloud technology is a critical first step in the project, leading to the later adoption of AI technology in early identification of diseases based on imaging data. Salvador Anglada, Chief Executive Officer, e& enterprise, said: "Joining forces with

Smart Salem on this pioneering project underscores e& enterprise's commitment to disrupting the digital healthcare sector and transforming traditional healthcare operations. By delivering the first solution in the region, the cloud-based PACS platform is expected to set a precedent for future healthcare projects, opening up new opportunities for scalable growth and value-added services." Amanda Gravitis, Chief Executive Officer, Smart Salem, said: "At Smart Salem we are committed to staying at the forefront of healthcare innovation so we are excited to be implementing the UAE's first locally hosted cloud based PACS, in collaboration with e& enterprise. The solution will improve imaging accessibility, efficiency and data security across our network, ensuring we continue to provide the UAE's most premium, technology-enabled medical, visa and healthcare services." This project positions e& enterprise and Smart Salem as early movers in the medical imaging sector, creating a robust foundation for growth and expansion into other healthcare services. It also contributes to broader societal and environmental goals by reducing the carbon footprint associated with IT infrastructure and minimizing the need for patient and staff commuting, supporting a more sustainable healthcare ecosystem. The cloud-based PACS solution offers numerous benefits to healthcare providers and stakeholders alike, starting with cost efficiency by significantly reducing the infrastructure costs typically associated with traditional on-premises medical imaging systems. It delivers unmatched scalability and data accessibility, allowing healthcare professionals to scale operations effortlessly and securely access patient data remotely. With built-in disaster recovery and robust data security measures, the system ensures compliance with strict data protection regulations, safeguarding patient information at all times. This innovative platform is also designed to support long-term IT management with advanced storage capabilities and analytics, empowering healthcare providers to make data-driven decisions that improve patient outcomes.

Mobily and Sparkle Join Forces to Enhance Connectivity Via Submarine Cable Systems

During its participation as a Digital Infrastructure Founding Partner of the first edition of the Connected World KSA conference hosted in Riyadh, Mobily, a leading innovator in the Telecommunications, Media, and Technology (TMT) sector in the Kingdom of Saudi Arabia, signed a Memorandum of Understanding (MoU) with Sparkle, the first international service provider in Italy and among the top global operators. The partnership will enhance connectivity solutions through Sparkle's state-of-the-art new submarine cable systems and advanced undersea telecommunications infrastructure, which seamlessly links key regions between Europe and the Middle East. This collaboration leverages Saudi Arabia's strategic position to offer low-latency connectivity between Asia and Europe, improving global connectivity. Under the MoU, Mobily and Sparkle have outlined a strategic agreement under which Mobily is finalizing the acquisition of dark fiber from Sparkle's advanced submarine cable systems, which will enable seamless connectivity with strategic drop points in Chania, Palermo, Milan, and Marseille, further enhancing Mobily's international network capabilities. The project is expected to be fully completed in 2025. Building on this MoU and the new digital path announced in October 2024 by Mobily and Sparkle, network providers, ISPs, OTTs, content and application providers, and enterprises will benefit from highly reliable, low-latency routes with scalable capacity options. Clients will also gain access to the expansive networks of both Mobily and its partner, leveraging a rich portfolio of services including Layer-1, Layer-2, and IP solutions. These offerings provide virtual access to major Internet Exchange Points (IXPs), ensuring seamless global connectivity. Additionally, customers will benefit from Mobily's extensive services within the Kingdom of Saudi Arabia and Sparkle's comprehensive services across Italy and Europe. “Our collaboration with Sparkle strengthens the resilience of global network connectivity between the East, the Middle East, and Europe. This partnership supports the expansion of data centers and fosters content diversification for OTT platforms and hyperscalers in the region, enabling robust digital growth and innovation," said Thamer A. Alfadda, SVP Wholesale of Mobily. “We are delighted to collaborate with Sparkle on this significant and impactful project, marking an important milestone in our partnership." “We are pleased to cooperate with Mobily to strengthen Saudi Arabia's primary and pivotal role in the digitalization of the region and reinforce the Kingdom as a strategic digital hub enabling better communication between Europe, the Middle East, and beyond," said Enrico Bagnasco, CEO of Sparkle.

Mobily Concludes Participation in Connected World KSA, Announcing Partnerships to Enhance Digital Solutions and Carrier Services

Etihad Etisalat (Mobily), Saudi Arabia's leading technology, media, and telecommunications (TMT) company, has successfully concluded its participation As a founding partner of Digital Infrastructure at Connected World KSA conference and exhibition, held in Riyadh on November 19-20, 2024. As part of its commitment to advancing digital connectivity and fostering innovation, Mobily signed a MoU with IQNET, an Iraqi leader in connectivity and wholesale solutions in order response to the growing demand for international connectivity, the MoU focuses on collaboration to enhance global connectivity options and carrier solutions and explore opportunities for developing data center and Co-Location, and deliver cutting-edge digital solutions across the region. During the event, Mobily also signed a Memorandum of Understanding (MoU) and partnership with China Telecom Middle East. The MoU outlines collaboration on communication services and offer integrated solutions for customers both within and beyond Saudi Arabia. This initiative aligns with Mobily's strategy to deliver an exceptional customer experience and offer innovative services and products. Mobily also signed a Memorandum of Understanding (MoU) with Supercell Iraq to collaborate in the field of connectivity and operator solutions. This partnership aims to explore strengthen ties in developing the next generation of regional digital solutions, and develop a new products and services to address connectivity needs between Asia and Europe. During the event, Mobily showcased its substantial investments in submarine cables, local terrestrial networks, data centers, and

Internet exchanges, while also exploring new opportunities to expand its presence both locally and internationally. Mobily's participation in the event aligns with the objectives of Saudi Arabia's 2030, which seeks to position the Kingdom as a global digital hub by advancing digital infrastructure and enhancing international connectivity. This involvement also underscores Mobily's role as a leading provider of telecommunications and networking solutions, showcasing its ability to meet the evolving needs of Customers and partner carriers, operators cloud service providers. Mobily holds a strong position in the technology, media and telecommunications industry, supported by its advanced digital infrastructure and extensive network that bridges the Kingdom with neighboring countries through submarine cables and landing stations and its integrated solutions using advance technologies to connect different locations through international interconnection stations and data centers, ensuring reliable, high-speed communication services.

Mobily Wins the Best Subsea Innovation Award During Its Participation at Capacity Europe 2024

Etihad Etisalat "Mobily" the leading technology,media,andtelecommunications company in Saudi Arabia won The Best Subsea Innovation Award, during its participation in the Capacity Europe 2024 conference held in London from October 14 to 17. Mobily received the award at the Global Connectivity Awards ceremony, coinciding with the Capacity Europe 2024 conference, in recognition of its innovative cables landings and Hybrid Connectivity solutions that link Saudi Arabia to Asia, Africa, and Europe, boosting routes diversity and supporting the Kingdom's digital hub vision. Commenting on this, Thamer Al Fadda, Senior Vice President Wholesale & Carrier Services at Mobily, said: "Receiving this Global Recognition from the GCA's confirms our commitment to achieving the highest quality standards in providing our services to customers. It is also an appreciation of our continuous efforts in developing and enhancing our infrastructure to ensure the delivery of the latest digital solutions. This makes Mobily a leading telecommunications provider whose services are not limited to the local, regional, and international levels but also reach a wide range of players in the digital ecosystem." He added: "Our participation in Capacity Europe 2024 reaffirms our role as a trusted digital

enabler regionally and globally, and as one of the best providers of carrier and operator services in the Middle East. It underscores our commitment to offering innovative communication services and solutions on a global scale, along with our significant contributions to developing the digital infrastructure in the region and our ability to anticipate and meet market needs". During the conference, Mobily showcased its investments in submarine cables, terrestrial networks, data centers and internet exchange, as well as explored new opportunities for growing its global infrastructure and expanding partnerships to meet the increasing demand and rapid changes in the telecommunications sector. It is worth noting that Etihad Etisalat Company "Mobily" received the award for "Best Carrier in the Middle East" during its participation in last year's conference, which serves as an important platform for discussing the latest developments in the telecommunications industry and enhancing cooperation among service providers. Mobily will continue to strengthen its innovative capabilities and expand its strategic partnerships, reflecting its ongoing commitment to delivering high-quality services that meet the evolving market needs.

Etihad Etisalat Co. (Mobily) Announces Its Acquisition of an Additional 120 MHz of Frequency Spectrum to Provide the Best Services to Its Customers

Etihad Etisalat Co. (Mobily) announces its participation in the spectrum auction held by the Communications, Space & Technology Commission (CST) in the frequency bands (600, 700, 3800) MHz for mobile telecommunications networks. On November 11, 2024, the Company successfully obtained a 15-year license to use 120 MHz of spectrum for a total value of SAR 2,485,003,000. This spectrum will be available for use starting from January 1, 2025. Mobily has acquired 20 MHz in the 700 MHz band, and an additional 100 MHz in the 3800 MHz band. These frequency bands offer several advantages; the 700 MHz band, characterized by its mature ecosystem and widespread device support, enables broad geographic coverage and high-quality service, including advanced 5G capabilities. Meanwhile, the 3800 MHz band offers Mobily with the capacity to enhance its ability to deliver high-speed services to both Consumer and Business customers amid the growing demand for ultra-fast data services. The synergy between these two bands creates a comprehensive spectrum that will enable Mobily to offer innovative services that meet the needs of its customers, reflecting the Company's commitment to rapid adoption of the latest technologies and its position as a leading industry player. With the addition of this new (120 MHz) spectrum to the Company's existing holdings of 320 MHz in the (800, 900, 1800, 2100, 2600, and 3700 MHz) bands, Mobily currently owns a total of 440 MHz of spectrum for mobile networks. Given the Kingdom's advancements in the telecommunications sector and mobile networks, and the increasing demand for advanced services, Mobily has been keen to invest in the necessary new spectrum, reaffirming its commitment to providing a state-of-the-art infrastructure that supports the latest technologies to meet the aspirations of its customers and contribute to achieving the Kingdom's digital transformation goals.

Omantel and Equinix Open Data Center in Salalah

Digital infrastructure company Equinix has officially opened what it describes as its state-of-the-art data center in Salalah, Oman, built in cooperation with integrated telecommunications services provider Omantel. The facility, called SN1, is commercially and operationally managed in full by Equinix as a carrier neutral and open access Equinix International Business Exchange (IBX) data center. This is the second Equinix carrier-neutral data center to be built in Oman, following MC1 in Muscat, and Equinix's sixth facility in the Middle East, complementing its existing operations in Dubai and Abu Dhabi. SN1's location in the coastal city of Salalah optimizes the routes of several highly strategic connections, offering a more direct and cost-effective reachability for businesses and service providers across four continents. Indeed, Equinix claims that SN1 will "significantly reshape traffic flows across the Middle East and beyond", reducing latency and improving the resilience of global networks. The facility will also feature direct fiber connectivity to Equinix's MC1 data center in Muscat, providing carriers, hyperscalers, content providers and cloud service providers the ability to co-locate their critical infrastructure and further enhance regional operations. As Talal Al Mamari, CEO of Omantel, explains: "The launch of the SN1 data center is a cornerstone of our strategy to create a global connectivity hub in Salalah. We are committed to attracting the world's leading content providers and hyperscalers to the region, and this state-of-the-art data center is a key part of this vision. By next year, we plan to land multiple subsea cables in Salalah, solidifying its status as one of the most connected hubs in the region due to its location at the crossroads of major international routes between Asia, Europe, Africa and all the way to Australia."

Omantel Wins Two Awards at Effies Awards 2024 for Best Marketing Campaigns

Marking a new achievement, Omantel won two prestigious Awards at the Effies MENA Awards 2024, held recently in Dubai, attended by marketing and media experts from the region. The Awards came in recognition of the company's innovative initiatives in the field of marketing and digital media. Omantel won the Gold Award for its WhatsApp Oman campaign in the Internet and Telecommunications category, as well as the Bronze Award for "Maqroo" campaign in the same category. WhatsApp Oman and Maqroo were distinguished by their creative and effective content, which attracted the attention of the jury and confirmed Omantel's position as a leader in providing innovative digital solutions. These campaigns were conceptualized and executed in collaboration with Leo Burnett Middle East, Omantel's creative agency, whose strategic insight and innovative storytelling played a pivotal role in their success. The Effie Awards are known by advertisers and agencies globally as the pre-eminent award in the industry, and recognize any and all forms of marketing that contribute to a brand's success. Winning an Effie is now a global symbol of achievement. The Awards now honor all forms of effective marketing and the companies and individuals creating effective work across the globe.

WhatsApp Oman Campaign

Omantel has launched the WhatsApp Oman campaign as part of its efforts to enhance communication with customers, as it relied on sending morning messages that include stunning landscapes from across the Sultanate. The campaign used artificial intelligence technology to collect and categorize millions of messages, which added a unique touch to its customers experience.

"Maqroo" font

The second Award came in recognition of the "Maqroo" initiative, the first Arabic font designed specifically to help individuals with the dyslexia. Omantel developed this font after thorough study and analysis of hundreds of Arabic fonts, to develop an innovative solution that facilitates reading and writing and contributes to improving the quality of life for individual suffering from dyslexia. Commenting on the win, Saba Said Al Busaidi, Senior Manager of Corporate Communications at Omantel, said: "We are proud to have won these prestigious Awards, which recognize the company's outstanding efforts in implementing innovative and effective marketing campaigns". "Such campaigns not only contribute to the marketing of the company's services and solutions, but also contribute to solidifying our brand presence in the region", praising the great role played by Leo Burnett, Omantel creative agency in the success of these campaigns. Adding to this, Kalpesh Patankar, Chief Creative Officer, Leo Burnett Middle East, stated, "We are honored to collaborate with Omantel on campaigns that go beyond traditional marketing to create real impact. These accolades reflect the synergy between Omantel's forward-thinking vision and our commitment to delivering compelling, culturally relevant storytelling." Omantel has also won a number of other awards including Dubai lynx gold award for brand experience and activation "Use of Social & Digital Platforms" category, Dubai lynx gold award for PR "social engagement" category, Dubai lynx bronze award for PR "Breakthrough on a Budget" category, Dubai lynx bronze award for media "use of social platforms" category, MMA Smarties – Gold Winner for Media "social messaging /chatapps/text messaging" category & for real time marketing category, MMA smarties- Silver Winner for marketing "small budget/big impact "category for WhatsApp Oman's campaign, as well as Dubai lynx grand prix award for industry craft "Typography: Brand & Communications Design" category, Dubai lynx silver award for health care "Brand-led Education & Awareness" category, Dubai lynx bronze award for design "Design & interactive design" category, D & AD Wood pencil award for "health & wellbeing "category for "Maqroo". Omantel has succeeded, through the integration of its operations, processes, and extensive expertise in the field of communications and digital technology, in establishing its position as a leading telecommunications company within the Sultanate of Oman and beyond. The company's innovative approaches have contributed to providing state-of-the-art solutions to different consumer and business sectors. The company aims to deliver an unparalleled, exceptional experience to its customers and strives to always exceed their expectations. To achieve the objectives of Oman Vision 2040, Omantel invests in emerging technologies and provides cutting-edge ICT solutions, such as cloud solutions, AI, Smart solutions, cybersecurity, and much more, in addition to harnessing its technological capabilities to enhance innovation and leadership in new and advanced technologies.

Omantel Wins CX Leader Award at CX Connect in Dubai

Omantel has been honored with the prestigious CX Leader Award at the CX Connect event, hosted by Sprinklr and featuring AWS along with other renowned organizations. The event recently took place in Dubai and recognized Omantel's outstanding commitment to revolutionizing customer experience (CX) through innovative strategies and cutting-edge solutions. This award highlights Omantel's continuous investment in enhancing customer experience by adopting world-class CX tools and demonstrates its leadership in customer-centric innovation. It is also a testament to the Company's efforts in implementing a robust CX strategy as part of its broader Shift Gear initiative, which is nearing successful completion. Salma Al Masrouri, Senior Manager of Customer Experience at Omantel, expressed her excitement: "We are thrilled to receive the CX Leader Award. This recognition reflects our relentless dedication to elevating customer experience through groundbreaking strategies and technologies. It is an affirmation of our team's commitment to ensuring that every customer interaction with Omantel is meaningful, impactful, and seamless." Omantel has succeeded, through the integration of its operations, processes, and extensive expertise in the field of communications and digital technology, in establishing its position as a leading telecommunications company within the Sultanate of Oman and beyond. The company's innovative approaches have contributed to providing state-of-the-art solutions to different consumer and business sectors. The company aims to deliver an unparalleled, exceptional experience to its customers and strives to always exceed their expectations. To achieve the objectives of Oman Vision 2040, Omantel invests in emerging technologies and provides cutting-edge ICT solutions, such as cloud solutions, AI, Smart solutions, cybersecurity, and much more, in addition to harnessing its technological capabilities to enhance innovation and leadership in new and advanced technologies.

Omantel and Optiva Complete Digital Transformation Project

Omantel and Optiva have upgraded and migrated over 200 Omantel products and services across all business lines to Optiva's convergent charging engine, hosted on Omantel's private cloud. This upgrade enables the implementation of innovative use cases for both consumer and enterprise segments, powered by GenAI and 5G technologies. Optiva's cloud-native convergent charging solution, which includes real-time rating, charging and payment capabilities, plays a key role in Omantel's strategy to deliver innovative services to more than three million customers, while enhancing the overall digital customer experience. By transitioning from a bare-metal deployment to Omantel's cloud infrastructure, the company can now leverage CI/CD (continuous integration/continuous delivery) pipelines and automation, ensuring rapid access to new features and capabilities. With Optiva's Charging Engine, Omantel will also streamline the integration of new digital partners into its service portfolio, boosting customer satisfaction and driving revenue growth. "Through this cloud transformation, both Omantel and its customers will benefit from cloud-native architecture, GenAI capabilities and enhanced 5G capacity," said Robert Stabile, CEO of Optiva.

Zain Group Enters Agreement to Acquire Remaining 70% of IHS Kuwait Limited

Zain Group has entered a definitive agreement to acquire IHS Holding Limited's (NYSE: IHS) 70% interest in IHS Kuwait Limited, an independent licensed Tower Company that owns 1,675 sites and manages an additional approximate 700 sites in Kuwait. Under the terms of the transaction, Zain has agreed to increase its 30% ownership of IHS Kuwait Limited to 100%, at an equity value for the remaining 70% stake of US$134 million. IHS Kuwait Limited will continue to provide independent tower infrastructure services within the Kuwait market. The transaction is subject to customary closing conditions, including government and regulatory approvals. Commenting on the transaction, Bader Al Kharafi, Zain Vice-Chairman and Group CEO said, "This agreement will enhance Zain's Digital Infrastructure regional expansion strategy in creating capital efficiencies and driving shareholder value. It will also complement our ground-breaking deal with Ooredoo to acquire and merge approximately 30,000 towers. The aim of our sustainable and independent operating model is to provide passive infrastructure as a service, supporting the reduction of MENA's carbon footprint and empowering the region's digital future."

For Zain Group, FTI Capital Advisors acted as exclusive financial advisors; PwC as M&A advisors; DLA Piper as international legal counsel and GLA & Company as local legal counsel.

Zain Group's Ground-Breaking Efforts in ICT, Fintech and Digital Services Earn Three Awards at the SAMENA Council Endorsed MEA Business Achievement Awards

Zain Group was recently presented with three distinguished awards at the prestigious SAMENA Council-endorsed MEA Business Magazine Technology Achievement Awards 2024, as part of a multi-sector recognition awards program aimed at highlighting significant technology achievements in the ICT industry held during GITEX GLOBAL 2024. The first award was in the category of "Innovative Collaborations and Partnerships" in acknowledgement of the launch of the strategic go-to-market agreement ZainTECH and Datanuum, a comprehensive customer data enrichment, engagement and retention platform for retailers and healthcare businesses. This collaboration aims to provide innovative solutions that enhance customer data driven growth and retention capabilities for businesses across the Middle East and beyond. This partnership leverages ZainTECH's extensive regional expertise in implementing compliant cloud infrastructures with DATANUUM's cutting-edge platform, to address the growing need for data privacy and regulatory compliance in the region. This will appeal to businesses looking for robust solutions to handle data securely while optimizing customer relationships, engagement and marketing spend. The second award was in the "Financial Technology" category saw TAMAM, Zain's fintech in Saudi Arabia recognized for "Outstanding Sector Leadership and Growth Achievements". Tamam is revolutionizing the consumer finance landscape in the Kingdom, providing personalized, data-driven financial solutions that cater to the evolving needs of Saudi customers. Tamam provides individuals with the opportunity to receive Shariah 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. Loans are provided to Saudi nationals and residents, without the requirement of a salary transfer or guarantor. The third award was in the category of "Data Platforms" recognized Zain's groupwide API platform DIZLEE for "Exceptional Products and Services'. As a dynamic API Platform and digital monetization ecosystem, DIZLEE offers innovative entertainment and gaming solutions, direct operator billing, messaging, digital authentication. By exposing its APIs through the Dizlee

platform, Zain removes a significant barrier to the development of profitable digital partnerships from across the globe, enhancing the time-to-market rollout of appealing entertainment and gaming services to our customers. Currently, Dizlee has partnership agreements with more than 42 global OTT and solutions providers offering 213 different digital innovations and processing over 200 million payment transactions that has generated over USD 340 million in gross revenues since launching mid-2018. SAMENA Telecommunications Council is a tri-regional, non-profit telecoms association that embodies a community of South Asian and MENA regional telcos, manufacturers, regulatory authorities, and academia that focuses on issues pertinent to operators and providing advocacy. MEA Business is the region's first augmented reality business publication committed to reporting positive business developments in the Middle East and Africa with focus

areas that include Training and Education, Aviation, Travel, Energy, Hospitality, Travel and Technology. These three prestigious accolades underscore Zain Group's ambitions to expand the range and quality of business and consumer services made available to its individual, enterprise and government customers across the region.

Zain Group Q3 and 9M 2024 Revenue Reaches 15-Year High

Zain Group, a leading provider of innovative technologies and digital lifestyle communications operating in eight markets across the Middle East and Africa, announced its consolidated financial results for the third quarter (Q3) and nine-month (9M) periods ended September 30, 2024, serving 47.2 million customers. For 9M 2024, Zain generated a 15-year high consolidated revenue of KD 1.45 billion ($4.71 billion), up 2 percent YoY. Consolidated EBITDA for the period reached KD 505 million ($1.65 billion), with normalized EBITDA growth (excluding number range claim) remaining stable YoY, reflecting an EBITDA margin of 35 percent. Net income for the 9-month period reached KD 136 million ($442 million) representing normalized net income growth of 6 percent, adjusted for number range claim and Tower transaction gain during nine-

month period of 2023. Earnings per share amounted to 31 fils ($0.10) for the nine-month period. In Q3 2024, Zain generated a 15-year high consolidated revenue of KD 501 million ($1.64 billion), up 4 percent YoY. EBITDA for the quarter reached KD 180 million ($589 million), reflecting a 36 percent EBITDA margin. Net income for the three months amounted to KD 54 million ($177 million), an increase of 1 percent YoY. Earnings per share for Q3 amounted to 13 fils ($0.04).

AT&T CEO Foresees Ubiquitous Fiber Future

AT&T CEO John Stankey told investors he expects the US operator to reach more than 50 million fiber locations by the end of 2029, part of his belief it would be nearly ubiquitous by the end of the decade. Stankey and other AT&T executives provided insight into the operator's fiber plans during an investor event. About 45 million of those fiber passings will come from "organic deployments", with more than 5 million through its Gigapower joint venture with private equity company BlackRock Alternatives along with agreements with commercial open-access providers. He said AT&T is on track to pass 29 million fiber locations by year-end. It began deployments in the mid-1980s. Stankey noted the drive for more fiber is based on several factors, including a 70 per cent rise in mobile bandwidth since 2020. "If we look at data consumption over the next five years, we expect that's going to increase about 80 per cent." Technologies including AI, 4K streaming, user generated content and AR/VR are also driving the need for more bandwidth and fiber. "The economics and the business model of getting fiber all the way to the end user started to make sense, and we began the final stages of this race," he explained. "Our belief is that by about 2030, we'll be done with that. It'll have been about 45 years from the start to the finish." He noted while 45 years may seem like a long time, it's about half the time it took copper to move to the same level of distribution and pick up a similar number of customers. Fiber is also a key element for retiring all the operator's copper assets. "RF technology is great. We've done remarkable things with it. Satellites are going to play a role. But at the end of the day, fiber has better performance upstream, downstream, latency, resiliency, scalability and marginal cost, and it will win." He said over the next decade, networks will not be fixed or mobile but rather fiber with "different access technologies hanging on the outside of it". "That's the fundamental direction of converging our networks and our approach to the markets that we believe is taking shape as we move through the balance of this decade." The operator plans to expand its 5G network to cover more than 300 million PoPs by the end of 2025, while most of the rest of the nation will be covered by satellite. It plans to return more than $40 million to shareholders over the next three years through share repurchases and stock dividends. Yearly capital investment is set to remain in the range of $22 billion over the same timeframe. It plans to keep about $10 billion on hand for incremental financial flexibility for potential strategic growth investments, debt repayment or additional dividends or share repurchases.

AT&T to Buy $1 billion in Spectrum from UScellular

UScellular will sell a chunk of its remaining spectrum assets to AT&T for a little more than $1 billion in cash, including 1,250 million MHz-POPs of 3.45 GHz and 331 million MHz-POPs of 700 MHz B/C block licenses. "We are pleased with the significant value that will be realized in the various transactions recently announced," said UScellular President and CEO Laurent Therivel. "This agreement adds a fourth mobile network operator, in addition to T-Mobile, to the list of those whose subscribers will benefit from the sale of our spectrum licenses. As with the other mobile network operators, we are confident that AT&T can put it to productive use in communities throughout the U.S. Furthermore, the terms of the agreement will ensure that there will be continued, uninterrupted service for UScellular customers in the interim." UScellular said that the transactions it has announced thus far with AT&T, Verizon and two other operators, account for about 55% of its spectrum holdings on a per megahertz-POP basis—excluding its millimeter-wave spectrum. That, plus

UScellular's pending transaction to sell its wireless operations to T-Mobile US, means that the company has approximately 30% of its holdings, minus mmWave, left. "After our proposed sales, we will be left with 1.86 billion MHz-Pops of low and mid-band spectrum, as well as 17.2 billion MHz-Pops of mmWave spectrum, with the substantial majority of retained value in the C-band spectrum," added Therivel. "The C-band licenses have a number of attributes that we believe are favorable to their long-term value," he continued. "First, our C-band licenses are positioned in an attractive mid-band frequency that can deliver outstanding speed and capacity. Second, there is a substantial 5G ecosystem of equipment vendors and existing infrastructure that uses C-band. Finally, they have a lengthy build-out timeline, with first and second build-out dates of 2029 and 2033, respectively. This provides ample time and optionality for us to either monetize or deploy the spectrum in the future. We will continue to look for ways to opportunistically monetize the C-band, as well as the other remaining spectrum." UScellular's majority shareholder, TDS, has already consented to the AT&T spectrum transaction. Like the other spectrum transactions, this one is contingent upon the successful closing of T-Mobile US" acquisition of UScellular's wireless operations.

AT&T Launches Integrated 5G/Fiber Gateway for Business Customers

AT&T announced that starting early next year, an integrated fiber and 5G gateway will be available nationwide to select new AT&T Business Fiber customers who order speeds of 1 Gbps or higher. The gateway is AT&T's first converged device designed for business customers, who are expected to benefit from seamless connectivity of the wireless network and fiber broadband speeds. Customers also receive the assurance of staying connected in the event of a fiber outage, the company added. If the fiber network goes out, the gateway automatically switches to AT&T's 5G network, then reverts to fiber once service is restored. Another key feature is Wi-Fi 6E technology, "providing faster speeds, lower latencies and more reliable connections across a broader range of compatible devices," the company said. Unlike other products offering a cellular failover for fiber, the integrated gateway for business customers is the first to do so in a single device, according to AT&T. AT&T has already rolled out the product in Arkansas, California, Kansas, Missouri, Nevada, Oklahoma, and Texas. "The introduction of our first-ever integrated device marks a transformative step in defining the future of connectivity," said AT&T Business Senior Vice President, Business Products Mike Troiano, in a prepared statement. "As technology evolves and digital transformation accelerates, the need for convergence is more critical than ever. We are leading the way with the infrastructure across fiber broadband and wireless to keep our small, medium and large business customers seamlessly connected. "AT&T's integrated gateway exemplifies our commitment to innovation, enhancing our connectivity portfolio to meet their current and future business needs, empowering them to grow, scale and thrive in an ever-evolving landscape."

AT&T Signs $1bn Fiber Supply Deal with Corning

AT&T has signed a multi-year deal with glass specialist Corning to supply the fibre optics and related technology to help expand its high-speed broadband network to more communities across the US. Financial details of the deal were not disclosed, but it is estimated to be worth in excess of $1 billion. As Corning's biggest customer, AT&T will have priority access to Corning's products. The move also aligns with federal initiatives like the Broadband Equity, Access, and Deployment (BEAD) program, which require the use of locally sourced technology. "As data and bandwidth requirements continue to grow, Corning is committed to the work of ensuring all Americans have access to reliable, high-speed fiber connections," said Wendell P. Weeks, chairman and CEO of Corning in a press release. "By extending our longtime relationship with AT&T, we're helping bring the transformational benefits of fiber to more people and communities. We share a fundamental belief that the more people you connect, the more value you create. And optical fiber is bringing people together at an unprecedented

scale," he continued. The BEAD program is a US federal initiative to expand high-speed internet access across underserved and rural areas of the country. Part of the 2021 Infrastructure Investment and Jobs Act, it provides $42.5 billion to help states build broadband infrastructure and improve internet affordability. A key part of BEAD is the requirement to use mostly US made materials, boosting local manufacturing and jobs. The program aims to bridge the digital divide, making reliable internet accessible to all communities. Last week, AT&T reported its Q3 annual results, which showed that operating revenues were down 0.5% to $30.2 billion. Over 403,000 monthly bill-paying wireless phone subscribers were added in the quarter, above industry estimations, and 226,000 fibre business customers. Despite being held back by the two hurricanes that hit the US last month, AT&T still managed to pass 200,000 new customers for its 19th consecutive quarter.

AT&T Continues Its Fiber + 5G Focus and is Considering Adding Another 10-15 million Passings to Its Goal of 30 million

AT&T and fiber provider Corning have expanded their ongoing relationship with a multi-year purchasing deal for fiber products, which Corning said is valued at more than $1 billion. AT&T is already Corning's largest customer with preferential volume status for Corning products, the fiber provider added. Corning also noted that the products which AT&T will be buying, including Corning Evolv FlexNAP multi-fiber product, are compliant with the Broadband Equity, Access, and Deployment program (BEAD) program requirements around products being made in America. Corning has been in the midst of a $139 million expansion of its operations at multiple locations in Monroe County, New York over the past two years, in order to help meet anticipated fiber demand. John Stankey, CEO of AT&T, said in a statement that the new, multi-year agreement with Corning "helps us to connect more households, communities, and businesses with the high-speed, reliable internet they need to thrive in a digital world." "As data and bandwidth requirements continue to grow, Corning is committed to the work of ensuring all Americans have access to reliable, high-speed fiber connections," said Corning Chairman and CEO Wendell Weeks. "By extending our longtime relationship with AT&T, we're helping bring the transformational benefits of fiber to more people and communities. We share a fundamental belief that the more people you connect, the more value you create. And optical fiber is bringing people together at an unprecedented scale." AT&T executives, including Stankey, extolled the role of fiber in AT&T's strategy during the company's third quarter call with investors last week. Stankey said during the call that AT&T continues to see "strong underlying customer demand for fiber," and noted that the company has seen more than 200,000 consumer fiber net additions for 19 consecutive quarters. "These consistent results make it clear that our fiber investment is generating attractive returns with improved operating leverage as we transition from legacy networks," Stankey said, later adding: "While our 5G and fiber businesses are performing well on their own, it's increasingly clear that customers prefer to purchase mobility and broadband together as a converged service. Only AT&T can offer this at scale with benefits from owners" economics. This is driving a reinforcing cycle, where the success of our fiber business drives growth in mobility, and vice versa." Stankey laid out a number of other supporting points for AT&T's fiber investments as part of its wireless strategy and as a product that "elevates the AT&T brand." Stankey pointed out that about four of every 10 AT&T Fiber households also use AT&T for wireless, and he said that the company's share of postpaid phone subscribers within its fiber footprint is significantly higher than its national average. "This highlights the true benefit of owning and operating both 5G and fiber networks at scale, which is the ability to drive higher share in both mobility and broadband through converged service penetration," he explained. "Over time, we expect this should drive higher returns on our invested capital in both our mobility and broadband businesses than either could achieve as a standalone operation." AT&T is both offering its owned fiber, and expanding its fiber offerings outside of its owned-fiber footprint through agreements with other fiber providers, such as its Gigapower joint venture BlackRock. AT&T CFO Pascal Desroches said in his remarks on the quarterly call that: "The sustainable strength of fiber is driving consumer wireline growth and yielding strong returns. … It is clear that where we do have AT&T Fiber, we win."

China Mobile International and SATMENA Sign MoU to Boost Global and Satellite Connectivity at GITEX 2024

During GITEX 2024, the region's most prominent technology event, China Mobile International (CMI) and SATMENA announced the signing of a Memorandum of Understanding (MoU) aimed at enhancing collaboration in global connectivity, satellite connectivity, and the development of innovative next-generation solutions. The partnership was formalized by Alex Lee, Managing Director of CMI Middle East, and Dr. Ziad AL Jamal, Group CTO & Acting CEO for SATMENA Oman, on 15 October 2024. This collaboration represents a significant step forward in delivering advanced, seamless connectivity solutions to the region and beyond. Under this agreement, CMI and SATMENA will join forces to leverage their combined expertise and resources to accelerate the innovation and promotion of cutting-edge connectivity technologies. "We are excited to embark on this partnership with SATMENA," said Alex Lee, Managing Director of CMI Middle East. "By combining our strengths, we are poised to transform the connectivity landscape and bring innovative solutions to the market that meet the evolving demands of customers worldwide." Dr. Ziad AL Jamal of SATMENA added, "This MoU marks a new era of cooperation between SATMENA and CMI. Together, we will drive innovation in satellite and global connectivity, delivering unmatched solutions to support the region's growing digital transformation." CMI has continuously strengthened its international operations in recent years and developed large-scale consumers, carrier and enterprise businesses. With more than 90 submarine and terrestrial cable system resources, connecting 78 countries, total international transmission bandwidth exceeding 150T, 310 overseas PoPs, and self-owned data centers, CMI provides all-round support for global partners. SatMENA, formerly known as Space Technology for Smart Solutions LLC, is a leading provider of innovative satellite communication solutions, serving a wide range of industries. With a focus on delivering reliable, high-speed connectivity in even the most challenging environments, SatMENA specializes in VSAT services and custom solutions tailored to businesses operating in remote areas or those requiring uninterrupted connectivity. With the signing of MoU, both companies look forward to working closely to explore and develop new solutions that will enhance the region's connectivity infrastructure and push the boundaries of technology.

Cisco's Inaugural State of Industrial Networking Report Highlights OT Security as a Key Focus for Global Organizations

Cisco announced new additions to its data center infrastructure portfolio: an AI server family purpose-built for GPU-intensive AI workloads with NVIDIA accelerated computing, and AI PODs to simplify and de-risk AI infrastructure investment. They give organizations an adaptable and scalable path to AI, supported by Cisco's industry-leading networking capabilities. "Enterprise customers are under pressure to deploy AI workloads, especially as we move toward agentic workflows and AI begins solving problems on its own," said Jeetu Patel, Chief Product Officer, Cisco. "Cisco innovations like AI PODs and the GPU server strengthen the security, compliance, and processing power of those workloads as customers navigate their AI journeys from inferencing to training." The exponential growth of AI is transforming data center requirements, driving demand for scalable, sustainable, programmable and secure networks. According to McKinsey, generative AI will add $2.6T to $4.4T per year to global economic output with enterprises at the forefront of value creation. But according to the Cisco AI Readiness Index, 89% of IT professionals plan to deploy AI workloads within the next two years but just 14% of organizations report their infrastructure is ready for AI today.

Cisco Named a Leader in the 2024 Gartner® Magic Quadrant™ for Unified Communications as a Service (UCaaS)

Cisco has been recognized Cisco as a Leader in the 2024 Gartner Magic Quadrant for the Unified Communications as a Service (UCaaS) offerings for the 6th consecutive year. Cisco has been ahead of the curve at investing in AI, tightly integrating collaboration hardware and software, and building a breadth of Unified Communications as a Service (UCaaS), Contact Center as a Service (CCaaS), and Communications Platform as a Service (CPaaS) capabilities. This has led to Cisco being one of the only two vendors recognized in three Magic Quadrant reports for CCaaS, CPaaS, and UCaaS. The company was named a Visionary in the 2024 Gartner Magic Quadrant™ for Communications Platform as a Service (CPaaS), and a Niche Player for Webex Contact Center in the 2023 Gartner Magic Quadrant™ for Contact Center as a Service (CCaaS).

Three areas that are core to the company's continued acknowledgement:

- Significant AI investments across the entire UCaaS portfolio are a testament to Cisco's commitment to innovation. These investments are not just about increasing employee productivity within Meetings, Messaging, Calling, Devices, and the Webex Suite, but also about delivering significant efficiency in Contact Center. They are a key factor in Cisco's continued success.
- Introducing the latest generation of hardware endpoints. The 9800 series desk phones, headsets, cameras, meeting room kits, and collaboration boards make in-person and virtual collaboration feel like everyone is in the same room. The desk phones include a new design, AI features, power management, and a programmable action button for emergencies.
- The unified communications capabilities include back-end calling, messaging, meetings, contact center, CPaaS, observability services, hardware endpoints, room meeting systems, and gateways.

Cisco has purposefully built and invested in AI to deploy it across their entire portfolio, enabling unparalleled ease of use and effectiveness across Webex Contact Center, Webex Meetings, Messaging, Calling, Devices, and administrative portals in Control Hub. Doing so has redefined what's possible by delivering more innovative, faster, and more intuitive employee and customer experiences. From automating complex processes and enhancing customer journeys to providing actionable intelligence about Devices or office spaces, Cisco AI Assistant works effortlessly across hardware and software to deliver seamless experiences that don't just help customers innovate but make their lives and work easier.

In the last year, Cisco has delivered incredible AI momentum, including:

- 40 new AI capabilities, including the flagship Cisco AI Assistant for Webex that helps employees, contact center agents, IT, and developers be more productive, proactive, and focused.
- Best Collaboration Display – UC Today
- The new Webex AI Codec, an industry-first application of advanced neural networks and machine learning to speech that significantly improves the hybrid work experience in lossy network situations, is generally available.
- The TMC 2023 Generative AI Product of the Year award for the Cisco AI Assistant for Webex Contact Center

Cisco and MGM Resorts International Sign Multi-Year Agreement

Cisco and MGM Resorts International today announce that the companies have signed a Whole Portfolio Agreement (WPA), empowering MGM Resorts with the majority of Cisco's software portfolio. This includes cybersecurity, software defined networking, software defined-WAN, digital experience assurance, full-stack observability, data center and services. This agreement spans 5.5 years, benefiting guests and employees across all of MGM Resorts" properties. Recognized as one of FORTUNE® Magazine's World's Most Admired Companies®, MGM Resorts operates some of the most famous resorts and casinos in the world. It prides itself on delivering a winning combination of quality entertainment, luxurious destinations and exceptional guest experience. The agreement will enable the automation of

MGM Resort's network. This will pave the way for future location services and next-generation machine learning applications in the gaming and hospitality industry, unlocking new channels of guest engagement. Additionally, Cisco technology will ensure uptime and security—essential for the delivery of exceptional guest experiences in its 24/7 operations. "Guests expect world-class hospitality from MGM Resorts, and technology helps us deliver," said Branden Newman, Chief Technology Officer, MGM Resorts International. "The new agreement with Cisco will give our employees the technology, speed and agility they need as we continue to deliver amazing guest experiences at all MGM Resorts" destinations." Cisco and MGM Resorts" relationship dates back many years, with Cisco technology playing an integral role in MGM Resorts" operations. The WPA strengthens this relationship. Together, the companies will ensure MGM Resorts" employees have secure access to all applications so they can continue to transform the business. Additionally, the deployment supports MGM Resorts" sustainability goals as Cisco's portfolio can be used to reduce emissions, improve resource efficiency and enable more circular business models. "At Cisco, we securely connect everything to make anything possible," said Scott Herren, Executive Vice President and Chief Financial Officer, Cisco. "We are excited to continue our partnership with MGM Resorts in this next phase of their digital transformation. With decades of technology and expertise, Cisco aims to help MGM Resorts navigate into the future and simplify processes to drive innovation at scale." "As the lead Cisco partner on this WPA, we look forward to delivering the outcomes expected by MGM Resorts as part of its digital transformation plans," added Marco Mohajer, President, Technologent. "Equipped with data from across the business, we can predict and proactively address MGM Resorts" technology and communication needs to deliver an exceptional customer experience."

Cisco Launches Line of Wi-Fi 7 Access Points

Cisco introduces new intelligent, secure and assured wireless innovations, with smart Wi-Fi 7 access points and unified subscription licensing that can enable smart spaces out-of-the-box. These innovations empower customers to solve for their connectivity, security and assurance challenges, while also providing a flexible foundation to future-proof their workplaces. Wireless technologies have reshaped the world, from how and where work gets done, to how people shop and learn. The wireless innovations continue to blur the lines between physical and digital spaces, enabling organizations to transform their workspaces and create new digital experiences for an AI-driven era. While Wi-Fi 7 unlocks essential performance upgrades, a retailer reimagining the shopping experience, a manufacturer optimizing operations with precision asset tracking, or a hospital enhancing patient care all need more than just connectivity. They need an intelligent, secure and assured platform. The new Cisco Wireless Wi-Fi 7 access points bring the latest wireless standard to customers everywhere. Cisco's new smart access points are manageable on-premises or through the cloud, with the ability to switch seamlessly between both. This flexibility is enabled through Cisco's unified networking

subscription – a single license that covers Cisco's entire Wi-Fi 7 solution. This new Cisco Networking Subscription simplifies how customers do business with Cisco and allows organizations to confidently invest in wireless networks that can grow and evolve with their business.

Cisco to Establish a Point of Presence (PoP) for Cloud Security Services in the United Arab Emirates

Ahead of GITEX Global 2024, Cisco announces plans to establish a Point of Presence (PoP) for cloud-delivered security in the United Arab Emirates (UAE). This initiative aims to help customers protect their users, infrastructure, and investments against threat actors. The announcement is part of Cisco's continued effort to empower organizations locally and regionally with flexible security services and data loss protection for devices, remote users and distributed locations. Cisco targets service availability by end of 2024 for the Secure Service Edge (SSE) PoP. "Today's announcement reaffirms Cisco's commitment to rapidly extend its global reach for customers and provide advanced cloud security protection and services to the UAE and surrounding region," said Abdelilah Nejjari, Managing Director for Cisco in the Gulf and Levant region. "Our goal is to help companies in the UAE accelerate the deployment of cybersecurity capabilities by adopting a platform approach. This will enable the seamless integration of various solutions within their stack, allowing them to maximize their potential." The new PoP will play an important role in delivering agile, highly resilient, high-capacity secure access closer to users in the UAE. It will support Cisco's cloud services including its Secure Service Edge (SSE) solution, Cisco Secure Access. This cloud-delivered platform helps organizations solve a variety of security challenges. Users can now safely and seamlessly access the resources and apps they need, regardless of protocol, port or level

of customization. As a result, customers can move away from the complex web of point products that weren't designed to support today's highly distributed environment. With Cisco Secure Access, decisions about how users connect to the Internet, Software-as-a-Service (SaaS) and private applications are automated, removing complexity and helping to increase productivity. "This initiative marks a new milestone in Cisco's commitment to help strengthen the region's cybersecurity efforts," Fady Younes, Managing Director, Cybersecurity, Middle East, Africa and Romania, commented. "In February, we announced a local data center for our Duo multifactor authentication (MFA) offering and I am pleased to say that this is already up and running, in line with our original schedule. As a next step, with the new PoP for the converged cloud security SSE solution, grounded in zero trust, to provide our customers with seamless, transparent, and secure access from anything to anywhere." In the UAE, organizations will experience the benefits of Cisco's SSE PoP with the scalability of public cloud. The PoP will be carrier-neutral and available on any Internet Service Provider (ISP) in UAE. Findings of the Cisco Cybersecurity Readiness Index underscore the importance of

security resilience. The study revealed that in the UAE, only 2% of organizations are at the Mature stage of readiness, 33% are at the Progressive stage, 54% are Formative and 11% are Beginners. It also found that 73% of companies expect a cybersecurity incident to disrupt their business in the next 12-24 months.

Eutelsat Hurls Another 20 Satellites into Orbit

Eutelsat Group has announced the launch and deployment of 20 satellites into low Earth orbit (LEO), bolstering the OneWeb constellation. The satellites, which were built by Airbus US Space & Defense, hitched a ride on SpaceX's Falcon 9 which lifted off last week from Vandenberg Space Force Base in California. For those interested in the logistics of LEO launches, we're told the satellites separated successfully from the vehicle and were dispensed in 10 batches over a period of 20 minutes, and signal acquisition was confirmed on all 20 of them. "We are delighted to see the successful launch and deployment of new OneWeb satellites," said Eva Berneke, CEO of Eutelsat Group. "These satellites will strengthen our network services, improving overall performance for our customers. As we celebrate the anniversary of the merger with Eutelsat and OneWeb, we are excited by the growing demand for our multi-orbit services and we remain committed to delivering value for our customers and shareholders. I want to thank and congratulate the teams at Eutelsat Group and SpaceX for their hard work to facilitate this launch." As the above quote mentions this latest launch occurs roughly a year on from the merger between Eutelsat and OneWeb, which created a combined geostationary orbit (GEO) and LEO operation. Eutelsat Group says it is "uniquely positioned" to offer high-throughput capacity via GEO alongside the "low-latency, high-speed global connectivity provided by LEO satellites." Since the merger, Eutelsat says it has seen a "significant increase in demand" for such multi-orbit services, and that it is collaborating with other players in the satellite game such as Intelsat, Inmarsat Maritime, and Hughes to deliver space-based connectivity in various settings. The merger closed in September last year, somewhat later than the date they seemed to be initially gunning for when the plans to do so were announced the previous July. At the time the firms listed areas they intend to go after with the combined service as fixed connectivity, including backhaul and corporate networks, government services, and mobile connectivity, like maritime and in-flight comms. It was also stated that Eutelsat's core broadcast and video services presence would be retained, and hinted at the possibility for new IP native video services.

Eutelsat Group Exercises Its Put Option and Signs Share Purchase Agreement with EQT Infrastructure

Eutelsat Group has exercised the put option signed with EQT Infrastructure VI fund ("EQT") on 9th August 2024 regarding a majority stake in a newly created entity that will hold Eutelsat's passive ground infrastructure assets. This decision follows the completion of the consultation processes with relevant employee representative bodies of Eutelsat. The exercise of the put option led to the signing of a binding Share Purchase Agreement (SPA) between Eutelsat and EQT. As announced on 9 August 2024 upon signing of the Put Option Agreement, the transaction consists in the carve-out of the Eutelsat's passive ground infrastructure assets (land, buildings, support infrastructure, antennas and connectivity circuits for the combined portfolio of teleports and SNPs) to form a new company to be incorporated as a standalone legal entity. Under the terms of the agreement, EQT will acquire an 80% stake in this new entity, while Eutelsat Group will remain committed as long-term shareholder, anchor tenant and partner of the new company with a 20% holding alongside EQT. The transaction values the new entity at an enterprise value of €790m. It remains subject to customary conditions precedent, and closing of the deal is expected in the first quarter of calendar year 2026.

Eutelsat and Q-KON Strengthen Partnership to Expand LEO Services Across Sub-Saharan Africa

Eutelsat Group has signed a new multi-year agreement with Q-KON, a prominent satellite solutions provider, to expand Low-Earth Orbit (LEO) satellite connectivity across Sub-Saharan Africa. This agreement builds upon successful collaborations and targets accelerating high-speed, low-latency internet services for underserved regions and specialized businesses, particularly in Southern Africa. The new agreement reinforces the integration of Eutelsat's OneWeb LEO network with Q-KON's Twoobii Smart Satellite Services. This collaboration began in 2023 when Eutelsat's OneWeb LEO services were incorporated into Q-KON's Twoobii platform. It has since enabled projects such as digital banking services launched in early 2024. The new terms will further increase the OneWeb network capacity available to Q-KON, enabling the company to scale its Twoobii-LEO broadband offerings and meet the region's rising demand for dependable, high-speed internet. This partnership has a broad impact on sectors in Sub-Saharan Africa, spanning urban to remote regions where terrestrial internet access is still limited or absent. By merging Eutelsat's advanced satellite infrastructure with Q-KON's local technical expertise, the partnership aims to make quality connectivity accessible to a broader audience, supporting applications in e-learning, remote healthcare, fintech, and enterprise solutions. With its low latency and high availability, the LEO-based connectivity service is poised to support growing digital demands across business and community needs. Cyril Dujardin, President of the Connectivity Business Unit at Eutelsat Group, expressed enthusiasm for the strengthened collaboration, stating, "We are delighted to step up our relationship with Q-KON and honored by the trust Q-KON has placed in us. Together, we are committed to delivering high-availability, low-cost connectivity solutions that meet Africa's unique needs." Dr Dawie de Wet, Group CEO of Q-KON, echoed this sentiment, highlighting LEO services" increased flexibility and scalability, stating, "This agreement brings us the flexibility to enhance and differentiate our service offerings. We are excited to expand our reach in Southern Africa, enabling more reliable and faster connectivity to empower businesses and support digital transformation across the region." Through this expanded partnership, Eutelsat and Q-KON are well-positioned to address the connectivity gap in Sub-Saharan Africa, enhancing digital access to contribute to economic and social development.

Eutelsat Partners with Clear Blue Technologies for Innovative Smart Energy Solutions Supporting Connectivity Access Across Africa

Eutelsat Group has entered a partnership with Clear Blue Technologies, the industry frontrunner in smart energy solutions. This collaboration will expand and improve connectivity solutions across Africa by launching state-of-the-art, power-efficient broadband services to support businesses, community WiFi networks, even in the most energy-constrained environments. In regions where access to stable electricity is a hurdle, the convergence of intelligent power management with world-class IP connectivity is paramount. Eutelsat will integrate Clear Blue's energy technology capabilities into its GEO Konnect and LEO OneWeb platforms. The new solutions will offer reliable, sustainable, and scalable connectivity solutions that empower enterprises and transform communities across the continent.

The new offer will feature:

Smart Load Shedding: Ensuring consistent and high-speed critical connectivity, even in scenarios with limited power availability, to keep essential services operational.

Adaptive Broadband Quality: Adaptability that intelligently modulates broadband service in real-time based on power levels, maximizing performance and user experience.

Intelligent Power Monitoring and Savings: Advanced systems that not only prevent power abuse but also drive energy efficiency, resulting in significant cost reductions for end users.

Cyril Dujardin, President of the Connectivity Business Unit at Eutelsat, said: "Our strategic partnership with Clear Blue marks a significant leap forward in our mission to expand digital inclusion across Africa. Eutelsat's expertise in power optimization, combined

with Clear Blue's smart energy management technologies, enables us to deliver new, sustainable connectivity solutions. This collaboration will empower communities, bridge digital divides, and ensure access to critical broadband services, regardless of local power infrastructure." Miriam Tuerk, CEO of Clear Blue Technologies said: "Connecting the unconnected across Africa represents that largest global growth potential for connectivity services. Power and connectivity together have been shown to be critical to successful roll outs, and more importantly, ongoing service quality and reliability. Eutelsat's innovative approach to combining Smart Power technology with energy management of its communications technology will deliver unparalleled service at a compelling price point within the market."

Huawei and du Commercially Deploy the First Indoor 5G-Advanced Network in the Middle East

Huawei, in partnership with du, from the Emirates Integrated Telecommunications Company (EITC), have deployed the first indoor 5G-Advanced Network in the Middle East. Making use of Three Carrier Aggregation (3CC) technology, the network relies on Huawei's LampSite X "Digital Indoor Solution." Delivering a peak data rate of 5.1Gb/s, this network further strengthens du's leading position in the 5G user experience market. This joint innovation aims to significantly enhance the capabilities of mobile networks by improving connectivity in indoor spaces such as shopping malls, hotels, airports, and residential buildings. It builds on the previous 5G collaborations between Huawei and du. In 2021, du and Huawei had pioneered the first ubiquitous indoor gigabit-per-second network in the Middle East. As a leading player in the 5G market, du has seen remarkable results from its commitment to innovation. 5G user traffic now accounts for over 60% of total mobile traffic, surpassing the combined traffic of 4G and 3G networks. The widespread adoption of 5G services demonstrates the success of du's network, and the deployment of three TDD large-bandwidth carriers with aggregation promises users an unmatched network experience. A technology in use since the

LTE era, carrier aggregation lets network operators combine multiple frequencies to boost the data rate. In the 5G era, 3CC can be harnessed to deliver 5G-Advanced. Saleem AlBlooshi, Chief Technology Officer at du, stated: "We are committed to providing a high-quality user experience to our customers. Since the introduction of 5G in 2019, we have launched numerous innovative services. Among these, 5G home wireless services have been widely welcomed, and our market share in this area is far ahead. Introducing 5G Three Carrier Aggregation in our In-Building Solution (IBS) Network is a crucial step in ensuring a leading 5G user experience. It has enabled us to enhance our network's capabilities and quality, greatly improving customer satisfaction." Eric Bao, President of Huawei's Wireless Digital Indoor System Product Line, commented, "With the rapid development of 5G networks, user experience is greatly improved, and applications based on functions such as low latency and indoor precise positioning are rapidly developing. The era of innovation represented by smart electric vehicles, humanoid robots, cloud mobile phones, and glass free 3D has arrived. It is a must for operators to provide indoor networks with higher capacity, higher performance, and higher energy-saving efficiency. As an industry-leading indoor solution, LampSite X assists operators in building indoor networks that offer both intelligence and extraordinary performance to meet the explosive growth in service demand."

Huawei and the University of Hong Kong Build a Next-Generation Smart Campus, Accelerating Digital Transformation of Education

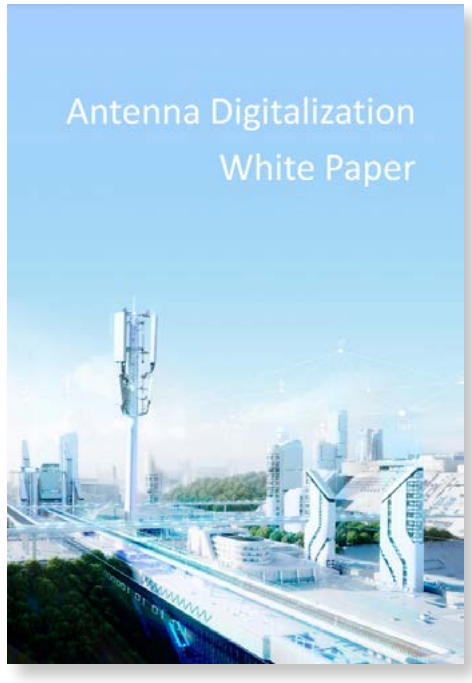
Huawei and the University of Hong Kong (HKU) jointly held a launch ceremony for "The University of Hong Kong & Huawei Global Smart Campus Network Showcase." This marks a new milestone in their collaboration on developing smarter campus network connectivity and infrastructures. Both parties are committed to creating a global showcase for smart campus network innovation, which not only accelerates HKU's digital and intelligent transformation, but also serves as an excellent reference and inspiration for more universities worldwide. Several key leaders from both parties attended the ceremony, including Flora Ng, Chief Information Officer and University Librarian at HKU; Wilson Kwok, Associate Director (CIO & Librarian Office) at HKU; Jason He, President of Huawei's Global Enterprise Data Communication Marketing & Solution Sales Dept; Jim Bi, President of ICT Marketing & Solution Sales Dept of Huawei Hong Kong; Yury Yin, Vice President of Huawei's Data Communications Product Line; Jackie Yu, Director of the Branding & Marketing Execution Dept, Huawei Enterprise Business. "As a world-class university, HKU is committed to providing the best teaching and research environment for global academic talent and promoting the integration of education and technology," said Flora Ng in her welcome speech. "This year marks the 112th anniversary of the HKU Libraries, which has become a vital platform for global academic research over a century. With the growing diversity of teaching needs and accelerating digital

transformation, building a smart campus is critical for providing high-quality educational services." She continued: "Together with Huawei, we have built a high-quality 10 Gbps campus network powered by Wi-Fi 7, and deployed it in multiple scenarios, such as libraries, main building (Loke Yew Hall), classrooms, and HKU Station. These deployments ensure stable, smooth network connections for teaching applications in smart classrooms, libraries, study rooms, and auditoriums, laying a solid foundation for HKU's smart campus." Ng added: "Moving forward, both parties will continue to work closely on smart networks and dive deeper into scenarios such as network security, intelligent Operations and Maintenance (O&M), and smart campus Internet of Things (IoT). Doing so will build a more secure, efficient, and intelligent education environment for the future, thereby driving the digital transformation of the education industry." "Currently, education is rapidly integrating with digital technology. Huawei fully leverages its unmatched expertise and strengths in the ICT field to help HKU innovate in scientific research, teaching affairs, and management processes," said Jason He, President of Global Enterprise Data Communication Marketing & Solution Sales Dept, Huawei, in his speech. "Specifically, Huawei's high-quality 10 Gbps campus network solution powered by Wi-Fi 7 brings to HKU three types of experience upgrade: wireless experience upgrade, application experience upgrade, and O&M experience upgrade. This solution meets various campus scenario-specific needs while ensuring data security, ultimately delivering a fresh-new network experience." Technological

innovations meet diverse network needs, taking campus network experience to new levels. With the advent of the digital era, online exams, live classes, lectures, and ceremonies pose higher performance requirements on modern campus networks. Especially in smart classroom scenarios, a key priority is to ensure always-optimal teaching experience in the classroom. Huawei's high-quality 10 Gbps campus network solution can meet these needs. By leveraging cutting-edge Wi-Fi 7 technology, this solution greatly increases network bandwidth needed for 4K/8K HD interactive teaching in smart classrooms. It also offers application assurance (which automatically identifies and prioritizes key teaching applications), application quality visibility, and other compelling capabilities to ensure superior experience with teaching applications. Huawei's latest Wi-Fi 7 APs deployed in the Loke Yew Hall (a historical landmark and also important activity center), libraries, and study rooms provide smooth network connectivity during centralized online exams and peak hours of celebration activities. This cooperation is a key milestone and practice on the road to smarter education and smarter campus connectivity of the future. Said Jason He: "Looking forward, Huawei will continue our partnership with HKU to further create a high-quality educational environment, solidifying HKU's leading position in global higher education. This cooperation can also set an excellent example for more Hong Kong universities to embark on their digital education journey."

Huawei Releases Antenna Digitalization White Paper, Opening a New Chapter for the Antenna Industry

At the Global Mobile Broadband Forum 2024 (MBBF 2024), Huawei released its Antenna Digitalization White Paper. The white paper explores new trends and key innovation directions in antenna digitalization and envisions the key role of the antenna industry in the mobile AI era. AI is driving a new wave of technological transformations in many sectors, including wireless networks. For networks to become more intelligent, further innovation is needed in wireless network infrastructure. Antennas are a crucial component of wireless networks, and their digitalization will play a key role in the future. The white paper states that network intelligence and automation require building digital capabilities for remote management and multidimensional adjustment of antennas. Remote management requires antennas to be capable of providing real-time, accurate information to network systems, including engineering parameters and beam shapes. This will help building comprehensive data models to support intelligent networks, providing all necessary information for intelligent optimization. Multidimensional adjustment means that antenna parameters, such as signal radiation directions and radiation beam shapes, can be remotely adjusted in real time. This enables greater flexibility and expanded possibilities for intelligent network optimization. The Antenna Digitalization White Paper explores Huawei's latest innovations in antennas. Andy Sun, President of Huawei Antenna Business Unit, remarked: "This white paper reflects the collective vision and insights of our partners, industry scholars, and Huawei's own experts. It integrates our in-depth analysis and prospects of the antenna industry in the mobile AI era. Antenna digitalization is an inevitable foundation for intelligent networks. Looking ahead, Huawei will continue to work with industry partners worldwide to promote antenna digitalization through innovation, and contribute to the construction of even more intelligent and efficient wireless networks."



Huawei Revenue Boosted by Device Demand

Huawei continued to see momentum for its devices in Q3, as the company posted a revenue rise of almost 16 per cent, although net profit took a hit. In a statement to the Shanghai Clearing House, Huawei recorded sales of CNY168.4 billion ($23.7 billion), up 15.6 per cent year-on-year, on the back of growth in handset shipments. Research company IDC stated last week Huawei device shipments in China grew 42 per cent year-on-year in Q3, placing the company in third spot and marking four quarters of year-on-year growth. While shipments were a bright spot, Huawei's net profit fell 70.5 per cent to CNY7.8 billion. Bloomberg reported the drop could be due to an outlay around manufacturing chips, as Huawei pushes to develop its own technologies due to US sanctions. The company did not break out figures in the statement for individual business units. In the opening nine months, Huawei recorded a 13.7 per cent drop in net profit to CNY62.9 billion, while revenue rose from CNY452.3 billion to CNY585.9 billion.

PTCL Group Launches Pakistan's first 800G Wavelength Division Multiplexing System in partnership with Huawei

PTCL Group, Pakistan's top integrated ICT provider, has achieved a major milestone by successfully launching the country's first 800 Gbps per wavelength Super C+L Wavelength Division Multiplexing (WDM) system. This advanced technology enables a data transmission capacity of 64 Tbps per fiber, with the potential to reach up to 96 Tbps, marking a significant step forward for Pakistan's digital infrastructure. Developed in collaboration with Huawei, PTCL's Super C+L system supports a broader optical spectrum of up to 12 THz, compared to the 4.8 THz provided by traditional systems. It combines high-speed 800 Gbps per wavelength, ultra-wide Super C+L spectrum, and advanced Flexible Grid optical switching. This breakthrough positions PTCL at the forefront of Pakistan's digital transformation, preparing the network for future technologies like Fixed 5.5G (F5.5G) and enabling faster, smarter, and more efficient connectivity. Jafar Khalid, Group Chief Technology and Information Officer, PTCL & Ufone 4G, commented: "Our focus is on advancing cutting-edge technology while maintaining sustainability. This upgrade will improve service quality, lower latency, and enhance the overall user experience for both consumers and enterprises, while reducing our environmental footprint. It will also help us manage the growing demand for data traffic across different customer segments with reliable, cost-effective solutions." Victor Zhou, President of Huawei's Optical Domain, stated: "We are proud to support PTCL in building this high-speed optical network, which will boost Pakistan's digital growth and sustainability efforts. It will strengthen data center connections, reduce carbon emissions, and set the stage for future advancements like F5.5G. This technology investment will underpin Pakistan's digital economy for years to come." This successful collaboration between PTCL Group and Huawei marks a transformative moment for Pakistan's telecommunications landscape. By leveraging cutting-edge optical technology, PTCL is paving the way for enhanced digital services, faster internet speeds, and a more connected society. As Pakistan moves towards a more digitized and sustainable future, PTCL Group continues to play a pivotal role in driving technological innovation and expanding the nation's digital infrastructure.

OIC-CERT and Huawei Join Forces to Strengthen Cybersecurity for OIC Member States

OIC-CERT (Organization of The Islamic Cooperation – Computer Emergency Response Teams) and Huawei announced a strategic collaboration plan to strengthen cybersecurity for OIC member states. The announcement came during a high-level strategic meeting at Huawei's headquarters in Shenzhen, China, attended by OIC-CERT board members from Oman, Malaysia, the United Arab Emirates (UAE), Indonesia, Azerbaijan, Brunei, and Egypt, alongside leaders from Huawei's Global Cyber Security and Privacy Office. The partnership will focus on building cybersecurity frameworks, standards, and best practices that are in line with global advances in important sectors such as 5G, cloud computing, artificial intelligence, and post-quantum cryptography. These measures will be crucial for protecting OIC members" digital transformation journeys and building a mature and trustworthy digital economy. These frameworks will cement OIC-CERT's influence in the global cybersecurity environment and establish it as a reliable leader and collaborator. Eng. Badar Al Salehi, Chair of the OIC-CERT and

Director General of the Oman CERT said, "Cybersecurity is a shared responsibility, and partnerships with leading global ICT leaders like Huawei are essential to building a safer and more secure digital future for all. We are confident that this collaboration with Huawei will significantly contribute to strengthening the cyber resilience of OIC member states and fostering a more secure digital ecosystem for our citizens and businesses." The strategic meeting provided a platform for in-depth discussions on global cybersecurity trends, including the increasing sophistication of cyberattacks, the evolving threat landscape in the face of emerging technologies, and the importance of international cooperation in addressing these challenges. The meeting also reviewed the existing collaboration between OIC-CERT and Huawei in 5G and cloud security, laying the groundwork

for a more impactful and comprehensive partnership moving forward. "As cyber threats become more sophisticated and widespread, collaboration is crucial for creating a secure and resilient digital world," said Sean Yang, Huawei Global Cyber Security and Privacy Officer. "This strategic partnership with OIC-CERT underscores Huawei's commitment to sharing its expertise and practice to empower OIC member states with the tools and knowledge needed to navigate the evolving cybersecurity landscape." The collaboration will also include cybersecurity training programs based on Huawei's extensive experiences and best practices. These programs will be tailored for selected OIC member states, contributing to enhanced cybersecurity awareness and capacity building within the region. "This strategic collaboration represents a significant step towards achieving the shared vision of "Cybersecurity partnership to strengthen self-reliance in cyberspace'. added Eng. Badar. By combining Huawei's cutting-edge technological expertise with OIC-CERT's regional leadership, the collaboration paves the way for a more secure and resilient digital future across the OIC community. This partnership will empower OIC member states to confidently embrace the opportunities of the digital age while effectively mitigating emerging cyber threats.

AIS and Huawei Launch RAN Intelligence Pioneers Program to Expedite AN L4 Evolution

AIS Thailand and Huawei have jointly launched the RAN Intelligence Pioneers Program, a collaborative initiative aimed at driving wireless intelligence innovation and building robust, high-quality intelligent wireless networks. AIS is dedicated to realizing its strategic goal of Autonomous Networks (AN) L4 by 2025. In collaboration with Huawei, AIS has made substantial progress in wireless intelligence over the past two years, successfully developing applications like base station outage detection and compensation, and intelligent traffic burst optimization. These innovations have boosted network traffic and operational efficiency while significantly improving user experience and satisfaction. As a result, AIS has achieved its strategic goal of AN L3 in critical wireless scenarios. The RAN Intelligence Pioneers Program unites Huawei, telecom operators, and industry partners to develop innovative intelligent wireless network applications and business models through state-of-the-art intelligence technologies like foundation models and digital twins. The goal is to uncover new business opportunities and economic value in the wireless sector. As a vital partner, AIS is considered an important partner of this program, marking a significant step towards achieving the strategic vision of a Level 4 Autonomous Network, where the system can manage the network almost 100% on its own. AIS and Huawei have announced their intention to collaborate on three key subjects.

- First, they will work together on how to leverage decision-making intelligence technologies to deliver a reliable and unique experience for 5G and future 5G-A users.
- Second, how to apply digital twin technology to improve the ability of making decisions with multiple objectives in mind for intelligent energy saving features, achieving optimal energy saving while ensuring more performance counters.
- Third, how to use generative artificial intelligence (GenAI) technologies to acquire network operation and maintenance expertise, diagnose issues, and offer expert advice for resolution and forecasting.

Kitti Ngarmchatetanarom, Chief Technology Officer AIS said: "Through our partnership with Huawei, we have achieved significant advancements in the AN field over the past few years. By fully embracing the RAN Intelligence Pioneers Program, we have poised to further enhance our network operations, provide a tailored and exceptional user experience for each individual, accelerate our transition to AN L4, and evolve from a conventional communications service provider to a pioneering force in cognitive technology." Calvin Zhao, President of Huawei Wireless Network MAE Product Line, stated: "Huawei has always been committed to working closely with operators and industry partners to improve network productivity and unlock new business prospects and value for the industry. Through the RAN Intelligence Pioneers Program, Huawei will team up with AIS to pioneer innovations in foundation models and digital twin technologies. Huawei will also support AIS in setting a new standard for AN L4 in 5G network deployment, driving the wireless intelligence revolution together." The RAN Intelligence Pioneers Program has gained significant recognition from operators since its launch at MWC Shanghai in June 2024. With continued operator and industry partner involvement, this program will propel intelligent innovation in the industry, offering a robust technical framework and real-world case studies to accelerate the wireless AN sector's progress toward L4 capabilities.

Microsoft Sells Metaswitch to Alianza

Cloud player Alianza struck a deal to buy software company Metaswitch from Microsoft for an undisclosed sum, a move the purchaser positioned as bolstering its offering for communications service providers. Microsoft bought virtualized network software and voice, data and communications specialist Metaswitch in 2020 as part of a drive to up its role in the then emerging 5G ecosystem. Although now offloading the asset, Microsoft corporate VP Yousef Khalidi said "the telecommunications industry remains a priority" for the company, adding "we will continue to empower telecom operators to modernize, monetize, and innovate through our secure AI platform". The executive added "as we advance our cloud platform and AI capabilities, partners like Alianza are crucial for providing support to our mutual customers". Alianza already provides cloud communications services to operators and plans to integrate Metaswitch's voice and communications software services and IP protocol into its range. Including the assets being acquired, it will have a customer base of more than 1,000 communications service providers, including 19 of the top 20 operators, the company stated in the acquisition announcement. Alianza noted its upgraded "comprehensive portfolio of services" would "streamline the path to a cloud-orchestrated, AI-powered communications future" for customers. CEO Brian Beutler added its platform "empowers operators to monetize network investments through improved customer experiences and the delivery of modern, high-margin communications service offerings". The deal is expected to close in Q1 2025.

Nokia Secures 5G Extension Deal from Bharti Airtel

Nokia said it has secured a multi-year extension deal from Indian operator Bharti Airtel to deploy 4G and 5G equipment across key Indian cities and states Under the terms of the new deal, Nokia will deploy equipment from its 5G AirScale portfolio including base stations, baseband units and the latest generation of Massive MIMO radios, all powered by its ReefShark System-on-Chip technology. The European vendor noted that these solutions will enhance Airtel's network with additional 5G capacity and coverage. Furthermore, Nokia will modernize Airtel's existing 4G network with multiband radios and baseband equipment, which can also support 5G. Airtel will also be leveraging Nokia's MantaRay Network Management for intelligent network monitoring and management that uses AI-based tools covering digital deployment, optimization and technical support, the vendor added. Gopal Vittal, vice chairman and managing director at Bharti Airtel, said: "This strategic partnership with Nokia will future proof our network infrastructure and provide customers with unparalleled user experience along with a network that will be eco-friendly to minimize environmental impact." "This strategic agreement further solidifies our long-standing collaboration with Airtel and our footprint in India. Our AirScale portfolio and AI-based services will enhance the energy efficiency of Airtel's network, enabling premium 5G capacity and connectivity," said Pekka Lundmark, president and CEO of Nokia. Nokia and Airtel had previously launched the so-called "Green 5G Initiative", aimed at improving the energy efficiency of Airtel's network and reducing carbon emissions. Last month, Ericsson had secured a new 5G contract for selling 5G equipment from Bharti Airtel. The new contract comes after Ericsson got part of a $3.6 billion contract for selling 5G equipment to India's Vodafone Idea. Airtel is currently using equipment from Ericsson, Nokia and Samsung to provide 5G services.

Nokia to Lead EC-Backed Sustainable 6G Project

Nokia was selected to spearhead a European Commission (EC) supported project to explore how 6G can play a key role in building a sustainable future, focusing on energy smart grids, e-health and agriculture. The vendor will coordinate the SUSTAIN-6G project after being chosen by the Smart Networks and Services Joint Undertaking; a public-private partnership funded by the EC. Nokia explained the initiative is designed to develop solutions to sustainability challenges "using the toolkit 6G will offer". The Finnish vendor is tasked with leading a consortium of "innovators" to look at the future role of 6G in developing environmentally-, economically- and societally-sustainable technologies. SUSTAIN 6G will devote considerable time to working out use cases for three targeted areas: energy smart grids; e-heath and telemedicine; and agriculture. On the first area, the consortium will explore how 6G can be used to create microgrids that manage energy demand, along with the use of AI technologies for real-time control of the networks. In the field of e-health, the group will be tasked with generating new ideas around how 6G infrastructure can be useful for analyzing and transmitting medical data, and also be the foundation for new home-based assessment services. Last but not least, the consortium will investigate how 6G can be allocated to enable smart agricultural applications requiring high bandwidth, sensing, telemetry, data analytics and automation. Peter Merz, VP of Nokia Standards, said the UN Paris Agreement committed the world to combatting climate change and "every industry must do its part". Work on the project kicks-off in January 2025 and is scheduled to complete in 2027. The EC also selected Nokia to lead work on the Hexa-X projects, which are focused on creating a pre-standardized 6G platform.

Nokia Achieves Milestone with First FIPS 140-3 Security Level 2 Certification for Layer 1 Optical Transport

Nokia has announced a groundbreaking achievement in the field of network security with the receipt of the Federal Information Processing Standards (FIPS) 140-3 Security Level 2 Validation certificate for its 1830 PSS, PSI-M, and PSS-24x products. This certification marks the first FIPS 140-3 Security Level 2 validation for Layer 1 (L1) optical transport systems in the industry, setting a new benchmark for secure network operations. The FIPS 140-3 standard is a crucial framework established by the National Institute of Standards and Technology (NIST) to ensure the protection of sensitive and valuable data within federal systems. As an incremental advancement of FIPS 140-2, FIPS 140-3 aligns with ISO 19790:2012 and ISO 24759:2017 specifications and includes additional NIST-mandated requirements to enhance data security. Nokia's 1830 Photonic Service Switch (PSS), Photonic Services Interconnect – Modular (PSI-M), and PSS-24x platforms, including software, equipment controllers, management interfaces and encryptors, have achieved this significant certification, underscoring the company's commitment to advancing security standards in the industry. The certification of Nokia's 1830 Photonic Service Switch (PSS) and 1830 Photonic Services Interconnect – Modular (PSI-M includes all features needed for use with Nokia's secure and trusted Quantum-Safe Optical network encryption, featuring centralized pre-shared key distribution through Nokia's 1830 Security Management Server (SMS). Mike Loomis, President of Nokia Federal Solutions, said: "This achievement represents a major step forward in securing mission-critical optical networks for the U.S. federal government. Our FIPS 140-3 Security Level 2 certification demonstrates our dedication to providing cutting-edge solutions that meet the highest standards of data protection. We are proud to be the first in the industry to offer validated layer 1 optical transport ready for the quantum age." The FIPS 140-3 Security Level 2 certification signifies that Nokia's optical transport products meet rigorous security requirements and are capable of safeguarding sensitive data across various sectors, including U.S. Federal data, against potential threats.

Nokia and SK Broadband Deploy Quantum Secure Network to Protect Korea Hydro and Nuclear Power's IT Infrastructure

Nokia has announced that Nokia and SK Broadband have deployed a leased line network for Korea Hydro and Nuclear Plant (KHNP) to enhance data security. Completed in August 2024, this deployment enables KHNP to protect its network against existing and emerging cyber threats, including quantum computing-based cyberattacks. Nokia's Quantum-Safe Network solution, which uses a defense-in-depth approach with advanced network cryptography for protection against sophisticated cyber threats. The key technologies used in this project include Nokia's transmission equipment, interconnect routers, and service access systems. Nokia's Network Services Platform (NSP) also helped in simplifying network operations and management. Kim Gooyoung, Head of Enterprise Sales Division at SK Broadband, said: "The integration of Nokia Quantum-Safe MACsec cryptographic technologies with KHNP's network will significantly enhance the security and reliability of South Korea's critical energy infrastructure. Advanced technologies, like quantum-safe networks, are becoming pivotal in safeguarding essential systems today and in the forthcoming quantum era. Collaborating with Nokia allows us to stay ahead of the constantly shifting cybersecurity environment and help our customers access the latest quantum-safe technology advancements for secure growth." Jay Han, Head of Network Infrastructure business at Nokia Korea, said: "Protecting critical infrastructure is a hallmark of quantum-safe technology, and an area we understand well at Nokia. Our industry-leading quantum-safe network solutions and proven expertise in delivering high-performance, secure technologies for critical infrastructure operators are helping companies like KHNP safeguard their essential systems to protect against disruptions and attacks caused by cyber threats. We look forward to working with SK Broadband to expand the use of our quantum-safe MACsec cryptographic technology throughout Korea."

Nokia and du Conclude Successful Transport Network Slicing Trial in UAE

Nokia has announced that it has successfully completed a network slicing trial with du, the leading telecom and digital services provider. This trial is the UAE's first live transport slicing deployment which will allow the service provider to operate a variety of network services that cater to different needs while remaining within the existing network infrastructure. Network slicing allows operators to flexibly allocate resources for optimal performance and quality within each slice. By leveraging Nokia's cutting-edge slicing technology with the Network Service Platform (NSP), du will deliver a wide range of services such as ultra-reliable low-latency communications for gaming and video streaming to massive machine-type communications that can be used for IoT devices. Ultimately, this approach will lead to improved network utilization and energy savings in the long run. Moreover, the network slicing will offer enhanced security and privacy, service innovation, improved quality of service, and efficient resource utilization, all of which will contribute towards better monetization opportunities and an edge over the other market players. Saleem Alblooshi, Chief Technology Officer at du, said: "Nokia's network slicing technology, integrated with the Network Service Platform (NSP), aligns perfectly with our vision of being an AI enabler in line with the UAE National Strategy for AI 2031. This cutting-edge technology empowers du to optimize resource allocation in real-time, based on demand and traffic patterns. It plays a crucial role in our monetization strategies by enhancing network operations and elevating the customer experience. As a company committed to innovation, investing in network slicing is a natural and progressive step for us." Rima Manna, Vice President of Network Infrastructure Sales, Middle East and Country Director of UAE at Nokia, said: "This partnership with du is an essential step in enabling our customers with technologies that will set them apart in the industry. Network slicing automates the creation, assurance, and optimization of transport slices to facilitate dynamic services with specific requirements in terms of bandwidth, latency and reliability."

Nokia Signs Patent License Agreement with HP

Nokia announced it has signed a multi-year patent license agreement with HP covering the use of Nokia's video technologies in HP's devices. Under the agreement HP will make royalty payments to Nokia. The agreement resolves all patent litigation between the parties, in all jurisdictions. The terms of the agreement remain confidential as agreed between the parties. Arvin Patel, Chief Licensing Officer New Segments, at Nokia said: "We are delighted to have reached an agreement with HP which recognizes Nokia's leadership in video and multimedia technologies and our decades-long investments in R&D." Nokia is a leader in the development of video and multimedia technologies, including video compression, content delivery, content recommendation and aspects related to hardware. In the past 25 years, Nokia has created almost 5,000 inventions that enable multimedia products and services, and continues to play a leading role in multimedia research and standardization. Nokia's expertise in multimedia and video research is built on continuous investment to advance the industry. Nokia has invested around €150 billion in R&D since 2000 (including over €4 billion in 2023 alone) for cutting edge technologies including cellular and multimedia.

Nokia Expands Wi-Fi 7 Portfolio with the Launch of Beacon 19 Gateway

Nokia launched the Beacon 19, a new Wi-Fi 7 gateway designed to provide seamless, high-capacity mesh networking enabling operators to deliver a superior broadband experience. As a tri-band device, the Beacon 19 offers up to 19Gbps of Wi-Fi capacity – essential for the expanding demands of streaming, online gaming, video, smart home, and security applications in the home. With the widespread adoption of XGS-PON and the rise of 25G PON services, Wi-Fi upgrades are critical for delivering multi-gig speeds into the home. Nokia's Beacon 19 is designed specifically for this purpose, allowing service providers to offer a best-in-class Wi-Fi 7 experience. By incorporating Wi-Fi 7's full capabilities, the Beacon 19 brings up to19Gbps of Wi-Fi capacity, reducing network congestion with its three radio bands to eliminate slowdowns and buffering issues. Moreover, The Beacon 19 supports multi-link operations (MLO), enhancing connection speeds by allowing devices to simultaneously send and receive data across different frequency bands and channels. Nokia's new Beacon 19 is powered by its Corteca software. Nokia Corteca works end-to-end, from applications embedded in the device, through the home, and into the cloud. Built on open industry standards (TR-369, EasyMesh), Corteca integrates advanced Wi-Fi and device management while offering a marketplace with applications -including 3rd party- that run on fiber (ONT) gateways, FWA gateways and mesh Wi-Fi beacons. Justin Doucette, Head of Wi-Fi, Fixed Networks at Nokia, said: "WiFi 7 is a pivotal new technology that will power the connected home of the future. The Beacon 19 Wi-Fi 7 gateway is designed to help service providers make sure multi-gigabit speeds reach every corner of the house. Combined with our Corteca software, built-in TR-369 support for management, and open framework, it makes managing devices in the home much simpler. This means providers can easily optimize Wi-Fi, offer new services, and ultimately give their customers a fast, reliable, and seamless broadband experience" Michael Philpott, Research Director, Digital Consumer Services at Omdia, said: "With the rise of XGS-PON and 25G PON services, Wi-Fi upgrades are becoming critical for delivering multi-gig speeds into the home. Since becoming standardized in January 2024, we've already seen 11% of the 61 telcos we benchmark launch Wi-Fi 7, and with other launches already announced, we expect that number to quickly grow. Wi-Fi 7 sets the stage for a faster, more connected future and solutions like Nokia's Beacon 19 will allow service providers to offer a best-in-class Wi-Fi experience to its customers."

Nokia Acquires Rapid Technology and R&D Unit to Strengthen Development of Network API Solutions and Ecosystem

Nokia announced that it has acquired Rapid's technology assets, including the world's largest API hub used by thousands of active developers globally, and its highly skilled research and development unit. This deal builds on Nokia's strategy of expanding its network API product roadmap and leading the API ecosystem of operators, systems integrators, independent software vendors, and hyperscalers to utilize 5G and 4G network capabilities and monetize network assets. Following massive investments in 5G, operators are using network APIs to monetize their network assets and core capabilities by exposing their network functions in a standardized way to developers so they can build and sell new consumer, enterprise, and industrial applications. The integration of Rapid's industry-leading API technology with Nokia's Network as Code platform with developer portal will enable operators to seamlessly integrate their networks, actively control API usage and exposure, enhance API lifecycle management, and collaborate with Rapid's global developer base on its public API marketplace. Since launching the Network as Code platform in September 2023, Nokia has gained significant momentum with 27 partners globally, including BT, DISH, Google Cloud, Infobip, Orange, Telefonica, and Telecom Argentina. Raghav Sahgal, President of Cloud and Network Services at Noka, said: "Operators need a bridge to connect to thousands of developers to drive enterprise and consumer value creation and monetize their networks. Rapid's technology and talented R&D team, together with Nokia, will allow usto bring a robust API infrastructure platform to accelerate network API-related product development and drive adoption across its broad global developer community." Marc Friend, CEO of Rapid, said: "We are pleased to join forces with Nokia. The combination of Rapid's API technology and R&D expertise with Nokia's scale and network and API domain expertise will enable us to expand the broader API ecosystem." Rapid's API technology includes a public marketplace, enterprise services, and an enterprise-grade API hub that allows companies to securely design, build, test, and share APIs across their organization and with external partners. With the public API marketplace, developers around the world can list and monetize their own APIs, and connect to hundreds of other APIs.

Nokia Named Leader in GlobalData's Small Cell Competitive Landscape Assessment 2024 Report

Nokia has been named Leader in GlobalData's Small Cells: Competitive Landscape Assessment September 2024 report. The in-depth report judged all leading small cell providers and positioned Nokia as overall Leader in the Residential and Outdoor categories. In particular, Nokia was commended for being the only vendor to offer an "All-in-One" 5G solution for both outdoor and residential use cases available to the global market. GlobalData is a globally recognized data analytics and consulting organization. GlobalData commented that: "Nokia's outdoor small-cell portfolio offers the lightest, smallest 5G products on the market and support for a wider range of spectrum bands than nearly every other vendor. The portfolio is also distinguished by containing the only all-in-one 5G small cell supporting sub-6 GHz spectrum that is not a CBRS product – a product, branded Kolibri, that is also as compact as any outdoor small cell radio on the market. And its Shikra Outdoor Residential Enterprise." GlobalData defines small cells as "mobile base stations that operate under lower power and with a smaller coverage range than traditional base stations. This category includes what have traditionally been called femtocells and picocells, which improve mobile coverage and capacity inside homes and businesses, respectively." Nokia has the widest range of small solutions that address all deployment requirements and offer seamless coverage, capacity and performance in dense urban areas and indoor venues with minimal infrastructure, enabling flexible and scalable deployments. Its advanced indoor radio solutions and compact, plug-and-play small cells enhance in-building coverage and capacity, such as in offices, malls and enterprises. They also support mmWave bands with high bandwidth and data rates for demanding 5G applications like VR, AR and gaming as well as smart cities and IoT applications. Mark Atkinson, Head of RAN at Nokia, said: "We are proud to be named Leader in GlobalData's small cells competitive landscape assessment report. It's recognition of the steps we have taken to make our portfolio best-in-class for our customers. All of our solutions benefit from having the latest ReefShark chipsets and support all frequency ranges for premium coverage and capacity both indoors and outdoors."

Nokia, Windstream Wholesale and Colt Technology Services Join Forces to Complete World's First Ultra-Fast 800gbe Optical and IP Service Trial Connecting London and Chicago

Nokia, Windstream Wholesale (WW), an optical technology leader in advanced network solutions, and Colt Technology Services (Colt) announced the successful completion of a world-first 800 Gigabit Ethernet (800GbE) service trial connecting London, UK with Chicago, US across an 8500km subsea and terrestrial route over the production network. The trial showcased innovative power-saving networking technologies from the three global tech businesses to test the boundaries of next-generation wavelength, capacity, speed and latency between two of the world's largest financial trading hubs. The field trial involved connecting one of Colt's five powerful transatlantic subsea cables and part of its extensive terrestrial fiber optic network with Windstream Wholesale's domestic U.S. low latency, optical fiber Intelligent Converged Optical Network (ICON) monitoring speed and performance. Together, Colt and Windstream Wholesale have partnered to demonstrate the world's first transoceanic 800 gigabit ethernet (GbE) end-to-end service transport from router to router over 1Tbps optical transport. The trial was successfully delivered using Nokia's pioneering sixth-generation Photonic Service Engine (PSE-6s) coherent optics and 7750 Service Router (SR) high-performance routing platforms boosting internet service speeds and supporting ultra-high wavelength capacity, while maintaining power efficiency. 800G marks a breakthrough in service bandwidth, doubling capacity to support advanced network applications like AI data center networking, content delivery networks, and financial data hub connections. Buddy Bayer, Chief Operating Officer of Colt Technology Services, said: "Pushing the boundaries of technology innovation is a fundamental part of our customer commitment: it means we stay a step ahead of the market, so we're ready when our customers ask, "What's next for us?" This trial has seen us build a powerful industry collaboration to explore the "what's next?'. It's tested the limits of infrastructure performance and capability across thousands of miles of land and sea with incredible networking technologies, and it's demonstrated the power and potential of what can be achieved, without skipping a beat." Joe Scattareggia, President of Windstream Wholesale, said: "Our latest innovation represents a true game-changer for global connectivity. By partnering with two extraordinary leaders in the industry, we're enabling unprecedented bandwidth capabilities that are essential for driving AI-powered applications worldwide for our customers. As an optical technology leader, Windstream Wholesale and our partners are establishing 800GbE as the next evolutionary advancement increase for wave services. This collaboration has pushed the boundaries of what's possible, creating a network solution like no other. Together, we're not just meeting the demands of the future—we're shaping it." Federico Guillén, President of Network Infrastructure at Nokia, said: "Such an ambitious project — to link two of the world's most important financial hubs — sets the bar very high for network capacity, speed, security and reliability. This demonstration would simply not have been possible without the commitment of Nokia and our partners to the highest standards of innovation in networking technology. Together, we are redefining the art of the possible for IP and optical networks enabling cross-continental subsea and terrestrial communications." Following the successful completion of the trial, the organizations are currently exploring options to bring 800GbE connectivity services to market for global business customers.

Ooredoo Kuwait Wins SAMENA Council LEAD 2024 Award for Excellence in Digital Services Innovation

In a significant milestone that underscores its leadership in innovative partnerships with both the public and private sectors, Ooredoo Kuwait, recently won SAMENA Council's LEAD 2024 Award for Excellence in Digital Services Innovation. This accolade reflects the company's exceptional strategy of expanding its partnerships across various industries to diversify its offerings and become a trusted digital enabler to its customers. Ooredoo Kuwait, a pioneer in integrated telecommunications, continues to garner recognition for its continuously contributing the field of technology and telecommunications. The announcement came during SAMENA LEAD 2024 award ceremony, recognizing Ooredoo Kuwait for significantly contributing to the growth and advancement of the telecom sector. The prestigious accolade also highlights Ooredoo's commitment to providing innovative communication solutions that meet customer needs and enhance the digital experience in Kuwait. The international SAMENA LEAD 2024 Awards program shortlisted Ooredoo Kuwait, out of numerous nominations in the Excellence in Digital Services Innovation category. This selection was based on the pioneering initiatives Ooredoo launched in collaboration with government and private sectors, enriching the digital landscape in the country. According to SAMENA, the most notable achievement that led to this recognition was Ooredoo's leadership in

digital transformation and technological innovation, particularly through strategic OTT partnerships. One such initiative was the establishment, management, and operation of digital entertainment platform, 51, in collaboration with the Ministry of Information in Kuwait. Additionally, Ooredoo Kuwait was able to forge an outstanding partnership with Alshaya Group, the retail giant, to bring the two worlds together, retail and telecom, and launch "Aura Mobile – powered by Ooredoo," the loyalty points based mobile service. This reflected the company's strategy to serve not just as a telecommunications provider but as a digital partner and enabler that meets the diverse needs of both retail and corporate customers. As Ooredoo Kuwait continues to develop seamless solutions and innovative digital services, it positions itself at the forefront of the telecommunications and digital solutions market in the region. The SAMENA Council Jury commended Ooredoo's capabilities and achievements within this growing sector, especially when it comes to driving 5G and OTT applications. The panel also noted Ooredoo Kuwait's customer-centric implementations. Through extensive research and strategic planning, Ooredoo has gained valuable insights into customer needs and preferences, extending its focus beyond telecommunications to create distinctive and innovative partnerships that deliver advanced digital solutions. With its ongoing efforts centered around customer needs, Ooredoo Kuwait strives to become the ideal partner for its customers, aligning its offerings with

the daily lifestyles and communication needs of all different segments. The company's distinctive ability to innovate in service delivery enables it to meet and anticipate the aspirations of modern, evolving consumers. With its forward-thinking vision, Ooredoo Kuwait actively also contributes to social and economic development by expanding its network and reach and providing essential and enhanced services as a reliable provider. This commitment positions Ooredoo as a pivotal player in driving progress and digital transformation in Kuwait, affirming its status as a key contributor to the modern communications landscape, and a digital enabler to its community. The SAMENA Council LEAD Award reinforces Ooredoo Kuwait's leading stature as an industry leader among the region's main players. It also drives the company's aspirations further for a digitally driven era characterized by innovation and collaboration. This recognition also aligns with Ooredoo's strategic objectives, focusing on digitally empowering society while adhering to the principles of corporate and digital sustainability. Furthermore, Ooredoo Kuwait remains steadfast in its dedication to excellence, broadening its service offerings to address the interests and needs of a wide customer base. This commitment ensures that customers benefit from the best available digital solutions, along with innovative digital entertainment options, reflecting Ooredoo's passion for creativity—a key driver behind its continued success and efforts to become the preferred choice in telecommunications. In conclusion, it serves to mention that winning the SAMENA Council Award for Excellence in Digital Services Innovation adds to Ooredoo Kuwait's impressive and long list of awards and accolades, each serving as a testament to its outstanding achievements.

Ooredoo Kuwait Holds Inaugural Board Meeting Under Dr. Hamad Al Naimi's Leadership, Setting Strategic Goals for 2025

Ooredoo Kuwait has held its first board meeting under the leadership of Dr. Hamad Al-Naimi, newly appointed Vice Chairman, to review the company's 2024 achievements and set the course for its 2025 strategy. The meeting highlighted the company's strategic successes, including its contribution to boosting Kuwait's global rankings in internet speed and connectivity, marking a significant milestone in the company's growth within the telecommunications sector. Dr. Al-Naimi emphasized that the company's achievements reflect collective commitment and teamwork. "The milestones we've achieved are the result of focused efforts and unity," he said. "We are committed to fulfilling our Vision 2025 and enhancing our infrastructure to support digital transformation for the benefit of all."

A Strong Foundation for 2025

The meeting also discussed Ooredoo Kuwait's forward-looking strategy for 2025, with a strong emphasis on advancing technological infrastructure and digital transformation, particularly in the field of artificial intelligence (AI). This will position Ooredoo as a leader in delivering future-ready innovative solutions in Kuwait's telecommunications industry, ensuring the company remains responsive to evolving customer needs and market dynamics.

2024: A Year of Milestones and Strategic Expansion

Throughout 2024, Ooredoo has made notable strides in the digital transformation

landscape, offering innovative services and solutions that enhance the customer experience. The company has expanded partnerships with key government agencies and leading private sector entities to introduce new communication solutions, enriching Kuwait's digital ecosystem. Among the key initiatives launched were new digital solutions that had a direct impact on the daily lives of Kuwaiti citizens. The company's commitment to sustainability and innovation aligns with Kuwait's Vision 2035, underscoring Ooredoo's ongoing role as a key player in the region's telecommunications and digital transformation.

Digital Transformation and Corporate Sustainability

Internally, Ooredoo's HR department has focused on investing in human capital development, creating an environment that fosters employee engagement, innovation, and leadership. The company has continued to prioritize local talent development, aiming to empower young professionals and foster a positive work culture. Dr. Al-Naimi expressed pride in Ooredoo's successes, noting that these achievements are a result of teamwork and a shared focus on innovation. "We've reached our strategic goals for 2024, and the path is clear for more success in the coming year," he said.

2025 Strategy: Focusing on AI and Digital Innovation

Looking ahead, Ooredoo Kuwait's strategy for the year ahead will focus on leveraging AI to streamline operations and enhance customer service. This includes automating processes to increase operational efficiency and offer tailored customer experiences through data-driven insights. The company plans to launch new digital products that align with global technological advancements, in collaboration with leading tech companies.

Leading with Vision and Innovation

In his closing remarks, Dr. Al-Naimi expressed pride in the company's progress and outlined the goals for the future. "The next phase requires ambitious planning and a proactive approach to addressing both challenges and opportunities, especially in the realms of digital innovation and AI," he stated. "We are poised to build on our successes from 2024 and continue delivering on our 2025 vision."

Ooredoo Kuwait's CEO, Abdulaziz Al-Babtain, echoed Dr. Al-Naimi's sentiments, reinforcing the company's commitment to growth and innovation. He stressed that the company's vision for 2025 focuses on leadership, sustainability, and continuous improvement, reinforcing Ooredoo's position as a key player in the regional telecommunications market.

Salam Mobile Renews Strategic Partnership with Zain KSA

The Integrated Telecom Company (Salam Mobile) has extended its strategic partnership with Zain KSA, the leading provider of telecommunications and digital services in Saudi Arabia. This newly signed agreement extends the collaboration until 2030, focusing on expanding and enhancing Salam Mobile's services by leveraging Zain KSA's cutting-edge hosting capabilities and advanced telecommunications infrastructure. This collaboration aligns with Salam Mobile's strategy to elevate user experiences, strengthen its presence, and expand its services across the kingdom. By leveraging Zain KSA's advanced 5G infrastructure and digital capabilities, Salam Mobile aims to deliver enhanced mobile solutions, while contributing to the Kingdom's broader digital

goals. The partnership also reinforces Zain KSA's dedication to promoting digital inclusion and advancing Saudi Arabia's telecommunications and smart services sectors. Through direct, strategic investments in innovation and expansion, Zain KSA empowers mobile virtual network operators (MVNOs) like Salam Mobile, along with other digital service providers, to grow and actively participate in the Kingdom's digital transformation journey. On the collaboration, Salam Mobile CEO Engineer Ahmed Al Anqari said: "Our partnership with Zain KSA has been instrumental in supporting our growth and expansion plans, playing a pivotal role in our transformation as a key contributor to the Kingdom's digital transformation journey." "With the renewal of this strategic partnership, we will leverage one of the most advanced 5G networks in the region, enabling us to expand our coverage and enhance our service and product portfolio for both individuals and businesses," stated Al Anqari. "This move reaffirms our commitment to building strong partnerships and harnessing cutting-edge technologies to accelerate digital transformation and support the Kingdom's broader objectives," he added. Acting CEO of Zain KSA, Engineer Saad bin Abdulrahman Al Sadhan, said: "We remain committed to supporting the realization of Saudi Vision 2030 and our leadership's aspirations to transform the Kingdom into a global hub of innovation and a smart digital economy." "As a leading telecommunications provider, we recognize our duty to promote digital inclusion, which enhances the daily experiences of our customers and helps them achieve their goals. Our responsibility also extends to our partners in this vital telecom sector, particularly mobile virtual network operators (MVNOs)," stated Al Sadhan. "Empowerment drives impact, and inclusive partnerships yield widespread benefits. This is why we are focused on creating a level playing field that serves everyone and improves the overall quality of services and solutions. In line with this vision, we are pleased to extend our strategic partnership with Salam Mobile until 2030, building on years of successful collaboration," he noted. The partnership between Zain KSA and Salam Mobile, initiated in 2021 with Salam's licensing to offer mobile virtual network services, remains robust utilizing Zain KSA's advanced infrastructure, he added.

stc Bahrain Receives Double Recognition at the International CSR Awards 2024

stc Bahrain, a digital enabler, is proud to announce its double recognition at the International CSR Awards 2024. The company has received two awards in the "Partnerships/Sponsorship" category for their transformative support of the Bahraini Farmers Market, and in the "Community Commitment" award for their jeel ICT program. Both awards highlight the significant impact of stc Jusoor, stc Bahrain's corporate social responsibility arm, which has been instrumental in driving these initiatives. Both "jeel ICT" program and the revitalization of the "Bahraini Farmers Market" stand as strong examples of stc Jusoor's mission to empower individuals and enhance community development. "jeel ICT" program reflects stc Bahrain's commitment to nurturing young talent and aligning with the government's agenda for societal and economic advancement. This initiative was a collaboration with key entities including the Ministry of Labor, Bahrain Economic Development Board (EDB), The Labor Fund (Tamkeen), Supreme Council for Women, and Bahrain Institute of Banking and Finance (BIBF), offered a platform for Bahraini youth to develop techno-commercial skills, enhancing employment prospects and personal growth over a span of one year. Upon its launch, the program has received over 3,000 applications from Bahraini graduates, and after a thorough selection process, 33 outstanding graduates were chosen to be part of this one year-long internship at stc Bahrain. In parallel, stc Bahrain's support of the "Bahraini Farmers Market" has led to a significant transformation of the market. Through infrastructure upgrades and community engagement efforts, the market now provides a welcoming environment for visitors, advocates for agricultural education and sustainability, and promotes local Bahraini produce. This initiative has led to an increase in foot traffic from 13,546 to 240,000 visitors within four weeks, enhancing visibility for 33 participating farmers and 18 F&B outlets. Eng. Khalid Al Osaimi, CEO of stc Bahrain, stated, "We are extremely honored to receive these recognitions. Our work with the Bahraini Farmers Market and the jeel ICT program highlights our dedication to creating a positive and lasting impact within our community. These initiatives, driven by stc Jusoor, truly reflect our commitment to supporting Bahrain's Economic Vision 2030 and building a digitally empowered future."

Tech Mahindra and USI Establish First Development Center in India to Drive Engineering Innovation

Tech Mahindra, a leading global provider of technology consulting and digital solutions to enterprises across industries, announced a collaboration with Universal Scientific Industrial (Shanghai), USI, a global leader in electronic design and manufacturing and in SiP (System-in-Package) technology, to establish USI's first Engineering Offshore Development Center (ODC) in India. Located at Tech Mahindra's Bengaluru office, the development center will accelerate innovation in smart device engineering. This collaboration aims to provide scalable solutions, accelerate time-to-market, and deliver innovative advancements. It will leverage Tech Mahindra's specialized talent pool and advanced labs, focusing on technologies expected to drive the future of connected devices, additive manufacturing, connected vehicles, and augmented and virtual reality. The center marks a significant milestone for USI as it expands its engineering capabilities to India, providing a strong foundation for enhancing device software development, hardware design, and testing. USI aims to leverage Tech Mahindra's expertise, particularly the need for scalability and flexibility, faster product launches, and access to specialized skills and facilities. Narasimham RV, President – Engineering Services, Tech Mahindra, said, "We are delighted to collaborate with USI to launch a first-of-its-kind engineering development center. This underscores our commitment to driving innovation through specialized engineering services. We are positive that this collaboration will pave the way for device software and hardware design advancements, ultimately setting the stage for future partnerships." In addition, the center will provide comprehensive services, including modem software development, android telephony, middleware, board support package (BSP), device driver engineering, and advanced hardware and printed circuit board (PCB) design. Through this collaboration, Tech Mahindra, known for its expertise in providing next-generation technology solutions, will enhance its modem, radio frequency software, and video bar development capabilities. John Fang, USI CTO, said, "The establishment of our offshore development center with Tech Mahindra marks a significant milestone in extending the capabilities of USI's R&D efforts. By leveraging Tech Mahindra's specialized talent pool and deep expertise in the telecom and automotive sectors, we are well-positioned to enhance both the speed and quality of our innovations. This partnership will provide us with the scalability and flexibility needed to accelerate our time to market and meet the evolving demands of our customers. We are excited about the collaboration with Tech Mahindra and look forward to achieving new heights together." The center will also help USI streamline product development, enabling it to focus on its core competencies while benefiting from competitive pricing and efficient service delivery. As USI's first development center in India, this facility will serve as a hub, showcasing how global companies can tap into India's engineering talent to improve their time-to-market and enhance product development innovation. The center marks a new chapter, emphasizing the potential for joint innovation and operational excellence to meet the evolving needs of the global market.

Tech Mahindra Announces Integration with ServiceNow to Deliver GenAI-Powered Enterprise Service Management Solutions

Tech Mahindra a leading global provider of technology consulting and digital solutions to enterprises across industries, announced integration with ServiceNow to drive enterprises into the GenAI era with One E2E Platform, an end-to-end enterprise service management solution. The platform by Tech Mahindra will enable businesses to enhance operational efficiency and competitiveness by integrating GenAI capabilities into their business-critical processes and

modernizing infrastructure to be future-ready. The collaboration will combine Tech Mahindra's global domain expertise with capabilities from the ServiceNow platform, focusing on joint go-to-market (GTM) strategies and accelerating digital transformation for global enterprises. The One E2E Platform will facilitate operational efficiencies through Tech Mahindra's netOps.now offering an AI accelerator on the ServiceNow Store. It will integrate advanced analytics, GenAI, and automation capabilities to enable businesses to optimize their network operations, leading to business growth. The joint offering will strengthen enterprises" existing capabilities and build contextualized solutions across communications, manufacturing, BFSI, and healthcare industry verticals. Atul Soneja, Chief Operating Officer, Tech Mahindra, said, "Businesses are grappling with multiple challenges in their digital transformation journey, such as technological advancements and cost reduction while improving service quality. By integrating GenAI with our industry expertise, we aim to tackle these issues and enhance customer experiences through our One E2E Platform. Together with ServiceNow, we are set to redefine how enterprises thrive in the digital age." As part of this partnership, Tech Mahindra aims to increase its ServiceNow certifications by twofold within 12 months through the ServiceNow Enterprise Learning Agreement. This learning initiative will provide its workforce with free certification, helping them be future-ready. Erica Volini, SVP Global Partnerships and Channels at ServiceNow, said, "We are thrilled to partner with Tech Mahindra to enable business transformation for today's digital-first world. Our collaboration is critical in bringing the power of AI to organizations across India. Combining Tech Mahindra's deep experience in telecom and industry expertise in multiple domains, we are well-positioned to provide advanced solutions to our customers jointly." Ahlstrom, a global leader in fiber-based materials manufacturing, has been successfully leveraging Tech Mahindra's ServiceNow offerings to utilize data-driven insights, optimize workflows, and enhance service delivery. As a member of the ServiceNow Partner Program, Tech Mahindra delivers an end-to-end digital workflow platform to elevate customer experience. By strengthening domain expertise and engineering capabilities through joint investments, Tech Mahindra and ServiceNow will empower organizations worldwide, fostering long-term growth and success in an increasingly digital landscape.

Ooredoo Qatar and Tech Mahindra Sign Strategic Partnership for Managed Security Services

Ooredoo, Qatar's leading telecommunications operator and ICT provider, is excited to announce a strategic partnership with Tech Mahindra, a leading global provider of technology consulting and digital solutions to enterprises across industries, to enhance the Managed Security Services (MSS) it provides to its B2B customers. This partnership marks a significant milestone in Ooredoo's commitment to delivering state-of-the-art cybersecurity solutions in collaboration with one of the world's leading technology service providers. The ceremony featured the presence of senior executives from both organizations, including Thani Ali Al Malki, Chief Business Officer at Ooredoo Qatar, Atul Soneja, Chief Operating Officer at Tech Mahindra, and Ram Ramachandran, Sr. Vice President – India, Middle East, and Africa Business at Tech Mahindra. This exclusive partnership with Tech Mahindra, who took over Ooredoo's Managed Security Services platform in April 2024, has already shown significant success in scaling and managing the cyber security needs of business customers in Qatar. Thani Ali Al Malki, Chief Business Officer at Ooredoo Qatar, stated: "Our partnership with Tech Mahindra is a testament to our ongoing commitment to provide comprehensive, cutting-edge security solutions tailored to meet the evolving needs of businesses in Qatar. Together, we aim to enhance the security and resilience of our B2B customers by leveraging Tech Mahindra's global experience and expertise in advanced cybersecurity services." Ram Ramachandran, Senior Vice President - India, Middle East, and Africa business, Tech Mahindra, said, "In today's interconnected world, securing our customer's digital assets is more critical than ever. Our partnership with Ooredoo is a strategic move to address this pressing need across the IMEA markets. Through our combined efforts, we focus on leveraging our global expertise to ensure that customers" security needs are met, and a new benchmark is set for security services across the region." With over 20 years of experience serving Fortune 500 clients, Tech Mahindra brings an extensive portfolio of services, including Security Operations Center (SOC) management, Security Information and Event Management (SIEM), Cloud Security, and advanced solutions like Endpoint Security, Zero Trust Platforms, and Threat Intelligence.

Tech Mahindra Announces AI Center of Excellence, Powered by NVIDIA AI Enterprise and omniverse Platforms

Tech Mahindra, a leading global provider of technology consulting and digital solutions to enterprises across industries, announced the establishment of a Center of Excellence (CoE) powered by NVIDIA platforms to drive advancements in sovereign large language model (LLM) frameworks, agentic AI, and physical AI. Based on the Tech Mahindra Optimized Framework, the CoE leverages the NVIDIA AI Enterprise software platform — including NVIDIA NeMo, NVIDIA NIM microservices and NVIDIA RAPIDS — to offer customized, enterprise-grade AI applications to help its clients adopt agentic AI in their businesses. Agentic AI significantly improves productivity by enabling AI applications to learn, reason, and take action. The CoE also uses the NVIDIA Omniverse platform to develop connected industrial AI digital twins and physical AI applications across various sectors, including manufacturing, automotive, telecommunications, healthcare, banking, financial services and insurance. Leveraging the capabilities of the CoE, Tech Mahindra has also developed Project Indus 2.0, an advanced AI model powered by NVIDIA NeMo based on Hindi and dozens of its dialects, such as Bhojpuri, Dogri, and Maithili. Project Indus 2.0 caters to diverse sectors, including retail, banking, healthcare, and citizen services, in India. It stands out as a state-of-the-art LLM that advances Hindi and dialect conversations. In the future, Indus 2.0 aims to include agentic workflows and support multiple dialects to provide a more nuanced and effective AI solution tailored to India's diverse linguistic and cultural landscape. Atul Soneja, Chief Operating Officer, Tech Mahindra, said, "At Tech Mahindra, we are redefining the boundaries of AI innovation. Collaborating with NVIDIA, we are setting a new benchmark for enterprise-grade AI development by seamlessly integrating GenAI, industrial AI and sovereign large language models into the heart of global enterprises and industries." Tech Mahindra will also leverage the new NVIDIA NIM Agent Blueprint for customer service to help call center clients build custom AI virtual assistants that can aid human agents in rapidly resolving issues. John

Fanelli, Vice President, Enterprise Software at NVIDIA, said, "Built with NVIDIA technology, Tech Mahindra's Center of Excellence will accelerate the development and adoption of sovereign AI LLMs and applications tailored for India's diverse industries and linguistic landscape. Our collaboration with Tech Mahindra is helping create a foundation for AI-driven innovation in the region and around the world." The CoE, located within Tech Mahindra's Makers Lab in Pune and Hyderabad, is a significant step in the organization's efforts to bring GenAI, LLMs, and digital twins into mainstream use, providing solutions for enterprises and end users.

Tech Mahindra Launches agentX, a Comprehensive Suite of GenAI Solutions to Drive Efficiency for Enterprises Globally

Tech Mahindra a leading global provider of technology consulting and digital solutions to enterprises across industries, announced the launch of TechM agentX—a comprehensive suite of GenAI-powered solutions designed to drive intelligent automation and enhance efficiency for enterprises globally. The solutions will address inefficiencies in traditional operations, enabling enterprises to achieve enhanced productivity, scalability, and user experience. Through these solutions, enterprises can automate complex business, IT, and data tasks, improving productivity by up to 70%. The first solution of the TechM agentX suite, agentAssistX, is a GenAI-powered, agentless business, IT, and end-user support solution aimed at unifying and optimizing support silos. This will make IT support faster, easier, scalable, and more efficient. In addition, agentAssistX can integrate with ITSM (service management) software, enterprise security, network telemetry data, and cloud management tools to automate ticket resolution and provisioning. By seamlessly integrating with existing business processes, agentAssistX will maximize the value of AI investments, driving adoption and delivering measurable outcomes for enterprises. Kunal Purohit, President – Next Gen Services, Tech Mahindra, said, "With the launch of TechM agentX, our vision of AI-driven enterprise automation takes a significant leap forward. The implementation of these solutions will be a game-changer for enterprises. By automating intricate processes and significantly enhancing productivity,

agentAssistX will provide a cohesive method for ensuring seamless user experiences and scalability across various systems." In addition, agentAssistX will automate critical functions, including meeting room technology operations, software and device management, access and security management, real-time monitoring, knowledge management, and cloud and data center operations. It will also empower enterprises to improve compliance, mitigate risks, streamline IT support, and enhance workforce capabilities, enabling them to focus on more strategic endeavors. Tapati Bandopadhyay, Expert Advisor, Third Eye Advisory, said, "The next wave of AI—actionable, autonomous, and responsibly designed Agentic AI—broadens generative AI's enterprise applications. Tech Mahindra's agentX solutions make these applications enterprise-ready by embedding codified human expertise and intuitive experiences. These solutions accelerate value realization, boosting productivity and decision times by over 70% in business and IT automation while addressing key readiness needs like GRC, security, identity, and monitoring." The launch of TechM agentX reinforces the company's commitment to delivering AI-powered solutions that drive business agility and unlock new levels of productivity across industries.

Yahsat to Launch Seven Satellites in UAE's Earth Observation Space Program

Al Yah Satellite Communications Company (Yahsat), a subsidiary of Space42, is set to launch seven satellites as part of the UAE's Earth Observation Space Program. The first satellite, Foresight 1, was successfully launched last August. Ali Al Hashemi, CEO of Yahsat Satellite Services, announced on the sidelines of the start of trading on Space42 shares, following the merger between Bayanat and Yahsat, that discussions are underway to manufacture Earth observation satellites in the UAE. This aligns with the country's vision to drive innovation and advance space technology. Al Hashemi emphasized that Foresight-1 represents a significant achievement that reinforces the UAE's global leadership in the space sector. It positions the UAE among the top 20 countries in the world actively operating and managing Earth observation satellites. Space42 plans to launch the Thuraya 4 satellite by the end of this year, with Al Yah 4 and Al Yah 5 scheduled for launch in 2027 and 2028, respectively. "Space42 has become a pioneer in AI-powered space technology, addressing the rapidly evolving needs of the global space industry and offering advanced business intelligence solutions for governments, businesses, and communities," Al Hashemi stated. He added that the merger between Bayanat and Yahsat marks a significant leap and is the first of its kind globally. He anticipates that more companies will follow suit to create larger entities that integrate satellite communication services, geospatial analytics, and artificial intelligence.

Zain is in the Process of Launching 5G-Advanced Technology in Saudi Arabia

Saudi telco Zain KSA has announced the acquisition of new spectrum in the 600 MHz band with the aim of boosting its 5G Standalone (5G SA) mobile services. The telco secured the new frequencies in a recent spectrum auction conducted by the Communications, Space and Technology Commission (CST) of Saudi Arabia. The Arab telco noted that the 600 MHz spectrum enables more comprehensive coverage across cities, villages, remote areas and highways across Saudi Arabia, thereby expanding service reach, improving quality and increasing the capacity of its 5G network. The carrier added that this frequency band offers greater flexibility in delivering advanced 5G services, including Internet of Things (IoT) and smart city solutions. Furthermore, deploying this frequency enhances indoor coverage in residential and commercial spaces due to its strong penetration capabilities through both physical and natural barriers, it added. Acting CEO of Zain KSA Saad bin Abdulrahman Al-Sadhan said: "The 600 MHz band is a key enabler for achieving these national goals, driving digital innovation and accelerating 5G adoption to fuel the growth of the digital economy and support the transition to Industry 4.0. Acquiring these new frequencies marks a significant step toward enhancing the quality of our services for individuals and businesses. It enables us to expand our enterprise solutions portfolio and improve our existing services." "This specific band also offers advanced capabilities that support private and enterprise networks, empowering businesses to create highly efficient, state-of-the-art communication solutions. We look forward to making a positive impact for our nation and its people," the executive said. In May, Zain KSA had announced plans to invest a total of SAR1.6 billion ($427 million) to expand its 5G network and digital services ecosystem in Saudi Arabia. The operator said it will expand its current 5G network coverage to 122 cities across the country. The telco's plan stipulated the expansion of its 5G network sites in the country to more than 7,000, covering over 66% of Saudi Arabia's populated area. The operator also said that nearly 45% of the new expansion plan will support 5G-Advanced (5G-A) technologies.

Zain Bahrain Pioneers" Deployment of Dual Band Massive MIMO Technology in the Region

Zain Bahrain, an innovator in the telecommunications industry, has announced the groundbreaking deployment of the latest generation Dual Band Massive MIMO (Multiple Input Multiple Output) radios, becoming the first operator in the region to implement this advanced technology. This significant milestone enhances the quality and efficiency of mobile connectivity for Zain customers. The AIR 3229 is a newly designed dual-band TDD Antenna Integrated Radio unit featuring 32 transmitters and 32 receivers per band (B78/B41). These Massive MIMO radios support two separate frequency bands within a single multi-mode antenna integrated radio unit, facilitating faster and more efficient 5G and 4G network expansions. This innovative approach eliminates the need for additional antennas, simplifies installation, and optimizes physical space in urban areas, underscoring Zain Bahrain's commitment to innovation and efficiency. Zain Bahrain's new technology offers substantial operational benefits, including a passive cooling system that reduces maintenance requirements and increases energy efficiency by up to 20% compared to deploying two separate radio components. This commitment to sustainability aligns with Zain Bahrain's goal of reducing emissions. The innovative solution ensures Zain Bahrain's dedication to providing a world-class network user

experience for ZAIN-BH customers across the kingdom. "We are excited to lead the region in deploying Dual Band Massive MIMO technology. This innovative solution aims to enhance our network capacity and efficiency, reinforcing our commitment to delivering the best mobile experience to our customers. Zain Bahrain will continue to invest in cutting-edge technology and expand its network capabilities to provide superior connectivity and service to our valued customers," said a spokesperson for Zain Bahrain.

ZTE to Collaborate with SAMENA Council in Helping Shape ICT Frameworks & Policies in the Region

The SAMENA Telecommunications Council has announced that ZTE, with its presence in more than 160 countries, serving global telecom operators, government and enterprise customers, and consumers, has joined its membership of Operators and Tech Providers to help enhance ecosystem development and strive toward achieving sustainability within the ICT industry. ZTE is committed to actively embracing the digital construction wave, accelerating its transition towards "connectivity + computing," thereby driving the company's high-quality development. In the field of connectivity, ZTE has achieved industry-leading competitiveness in key technologies and products and continues to evolve around next-generation ICT technologies such as 5G-A, all-optical networks, and 6G. In the computing power field, ZTE has comprehensively deployed new technologies such as general computing, intelligent computing, and large models, possessing the ability to provide full-stack solutions including hardware infrastructure, software platforms, large-scale model capabilities, and industry AI application adaptation. In the terminal field, ZTE has proposed the concept of "AI for All," launched an AI-driven full-scenario intelligent ecosystem 3.0, and released a variety of innovative products and technologies. By joining SAMENA Council, ZTE aims to proactively participate in shaping telecommunications policies and regulatory frameworks across the Middle East, South Asia, and North Africa (SA-ME-NA) region, while equipping ZTE to better position its role as a key enabler in fulfilling national ICT visions and accelerating expansion of the digital market. Sun XueZhi, CEO of ZTE Middle East, sharing his thoughts on ZTE's decision to become a member of the SAMENA Council, stated: "ZTE's membership in the SAMENA Council provides direct access to potential business partners, operators, and regulators. This facilitates networking, partnerships, and business growth opportunities, aligning with ZTE's Middle East expansion strategy, especially in Saudi Arabia and surrounding regions. We look forward to being able to proactively contribute to SAMENA Councill's platforms, work with other Member companies, exchange industry insights, showcase innovations and advancements in technology, and being an active Member of the Council's community." Bocar BA, CEO & Board Member, SAMENA Council, welcoming ZTE Middle East's decision to join as Member of the Council, stated: "ZTE is an important digital technology players and has multiple areas of leadership where greater brand visibility and greater collaboration work can be achieved. As an established platform for stakeholder collaborations, brand enhancement, and for building new legacies in cooperation and industry enablement for the benefit of all stakeholders, SAMENA Council warmly welcomes ZTE and we look forward to a new era of multi-stakeholder inclusion and ICT-development focused collaboration-building throughout the region. ZTE joins a highly esteemed community of key Tech Providers in the world that are valued Members of the SAMENA Council." With its established and industry-wide recognized aim of addressing telecoms ecosystem priorities, enabling access to greater region-wide collaboration in digitalization and digital transformation, the SAMENA Council actively advocates on behalf of its Members and engages closely with private-sector stakeholders, including regional Operators and Regulators, and Policymakers. The SAMENA Council is pursuing improved policymaking, agile regulation, and close collaboration among the digital ecosystem players, and is using its strong advocacy support mechanism to address issues, such as those relating to spectrum, revenue-generation, innovative offerings, and the overarching need for accelerated digitization and sustainability in digital development, investments, operations, and the environment.

Sun XueZhi
CEO of ZTE Middle East

ZTE Shapes the Future of MEA with Ultimate Managed Digital Services

ZTE Corporation, a global leading provider of integrated information and communication technology solutions, has won the Asia Best Digital Transformation Award at the 2024 Telecom Review Excellence Awards. The announcement was made at the 18th Global Leaders Summit, organized by the renowned ICT media outlet Telecom Review, which concluded successfully in Dubai. The Telecom Review Excellence Awards recognize industry participants who have made exceptional contributions to the development of the telecommunications sector through innovation. In the wave of global digitalization and intelligence, achieving rapid digital transformation has become essential for meeting the growing demand for high-quality networks and exceptional user experiences. As a leader in digital network deployment, ZTE utilizes big data and AI large models to build an intelligent brain, driving the evolution of networks toward higher-level intelligence. ZTE's intelligent O&M services begin at the network element level and extend across single-domain and cross-domain layers. This approach ensures structured and domain-specific evolution of digital and intelligent O&M capabilities. By deploying integrated, self-intelligent networks focused on performance, business requirements, and user experience, ZTE has supported numerous global operators in their digital transformation journeys. Through its OSS O&M management platform and VMAX big data analysis platform, ZTE empowers operator clients to create real-time visual dashboards for dynamic presentations of network alarms, performance metrics, user experience data, and complaint handling information. Leveraging AI technology, ZTE predicts potential faults and provides early warnings, enabling maintenance teams to take proactive measures. It also forecasts network traffic and equipment capacity, assisting operators in precise expansion planning to maximize investment returns. ZTE has made significant strides in network fault and complaint handling by enabling layered autonomy and cross-domain collaboration. These innovations create an automated closed-loop process, equipping operators with "self-repair" and "self-optimization" capabilities in intelligent networks. Over the past year, ZTE has partnered with multiple operators on managed service projects, delivering remarkable outcomes. Overall O&M costs (OPEX) have decreased by over 15%, network traffic has increased by 10–20%, and user bases have grown by approximately 10–15%. Additionally, fault occurrence rates have dropped by 30%, while business quality indicators have improved by 15%. Several partner operators have achieved top rankings in local third-party tests, digital maturity assessments, and user satisfaction surveys. This award underscores ZTE's dedication to advancing "active, automatic, and agile" high-level intelligent networks. It follows previous accolades, including the TM Forum Outstanding Catalyst Award and the W.Media Bridging the Digital Divide Award. Moving forward, ZTE will continue to refine its proactive O&M model, driven by user perception and centered on the value O&M concept. By doing so, ZTE aims to help global customers enhance network quality, unlock the potential of the digital economy, and embrace the future under high-level intelligent networks.

China Mobile Shaoxing collaborates with ZTE to Complete the Pilot of "Fiber Fingerprint" Intelligent ODN Solution in Live Network

ZTE Corporation, a global leading provider of integrated information and communication technology solutions, today announced the successful completion of the pilot project for an intelligent Optical Distribution Network (ODN) solution leveraging "fiber fingerprint" technology. The project, undertaken in collaboration with China Mobile Shaoxing, was implemented at Shengshi Mingyuan residential community in Shaoxing. The solution involved the reconstruction and upgrade of the existing ODN network to enable intelligent management and maintenance features, such as topology visualization, resource visualization, and intelligent operation and maintenance (O&M) for home broadband scenarios. It achieved precise identification of splitter port usage, increasing the ODN resource accuracy to over 95%. Additionally, it revitalized approximately 16.1% of idle splitter port resources and reduced the average fault delimiting time by about 90%. Leveraging precise resource data has also allowed for one-time service provisioning, significantly enhancing O&M efficiency. Traditionally, optical access ODN networks have operated as passive "dumb" pipelines, leading to persistent challenges such as difficulty in refreshing resources, locating faults, and proactively identifying optical path quality. ZTE's innovative "fiber

fingerprint" intelligent ODN solution addresses these issues by enabling precise identification of optical splitter port statuses, intelligent topology restoration, and accurate identification and localization of optical path quality and faults. By employing technologies like optical path identification, high-precision detection, and AI analysis, the solution transforms the "dumb" ODN pipeline into a "smart" one. This transformation enhances the accuracy of ODN resources, revitalizes idle resources, and significantly boosts O&M efficiency, paving the way for an end-to-end digital and intelligent optical access network. Moving forward, China Mobile Shaoxing plans to deepen its collaboration with ZTE by extending the application of the intelligent ODN solution to broader scenarios, including businesses, industrial campuses, and 10G migration. This will accelerate the integration of high-quality productivity into all-optical networks.

MTN and ZTE Launch 5G-A Public Experience in South Africa, Achieving 9.2 Gbps Download Speed

ZTE Corporation, a global leading provider of integrated information and communication technology solutions, in collaboration with MTN South Africa, has launched 5G-A public experience at the MTN Store in V&A Waterfront, Cape Town. The event achieved an ultra-download speed of 9.2 Gbps, further solidifying MTN's leadership in the South African telecom market. The 5G-A public experience attracted hundreds of participants and featured several cutting-edge applications namely an AI-generated content (AIGC), and a robotic dog, and nubia's glasses-free 3D tablet with cloud-based rendering applications. During the event, ZTE showcased the latest test results of its 5G-A technology, leveraging its next-generation millimeter-wave AAU (Active Antenna Unit). The test achieved a download speed of 9.2 Gbps, underscoring the technological superiority of ZTE and MTN South Africa in 5G-A innovation. The setup included an 8-server configuration, operating on a 5G Standalone (5G SA) network architecture with 3GPP Release 18 features, enabling ultra-low latency of 6ms. Additionally, ZTE demonstrated its space division multiplexing and 5GC end-to-end slicing capabilities, with further enhanced the flexibility and efficiency of network resources.

Innovative Applications on Display

The event featured several engaging cutting-edge applications, offering participants hands-on experiences with the latest in technological advancements that will be made viable with the advent of 5G-A:

- AIGC (Artificial Intelligence-Generated Content): This technology uses AI to automatically generate various types of content, including text, image, audio, and video. By leveraging deep learning, natural language processing (NLP), and real-time cloud rendering, AIGC can create artworks with an ultra 5G-A connection with cloud engines comparable to or even surpassing traditional human creativity, offering inspiration in fields such as art and education.
- Robotic Dog: Equipped with radar, sensors, and cameras, the robotic dog conducts 360° scanning and mapping of its surroundings. Leveraging the 5G-A network, it uploads data to the cloud, enabling real-time collaboration with other IoT devices. This technology is particularly suited for industrial applications, including mining and fire rescue operations.
- nubia Pad 3D II: As the world's first 5G+AI eyewear-free 3D tablet from ZTE, this device adopts advanced glasses-free eyewear-free 3D display technology, allowing users to experience 3D visual effects directly on the screen without the need for traditional 3D glasses. It supports ultimate 3D entertainment such as gaming, video and streaming, as well as extended application ecosystem, offering an immersive visual experience.

Moving forward, ZTE and MTN will continue to deepen the collaboration and promote the deployment and commercialization of 5G-A networks in South Africa. Through this partnership, both companies aim to drive the country's digital transformation and contribute to its economic growth.

ZTE and Indosat Expand Digital Experience in Indonesia Through iFlexiTrunk Microwave Backbone Technology

ZTE Corporation, a global leader in integrated information and communication technology solutions, and Indosat Ooredoo Hutchison (Indosat or IOH), are proud to announce a groundbreaking collaboration that is transforming digital experience across Indonesia. This partnership leverages ZTE's cutting-edge microwave technology to bring reliable and high-speed communication to remote islands and rural areas, by enabling more rural Indonesians to enjoy the marvelous Indosat 4G network. Indonesia, with its 17,000 islands and challenging geography, faces significant hurdles in building communication infrastructure. Traditional wired communication struggles with the country's rugged terrain and high costs, leaving many areas digitally disconnected. This lack of access hinders economic opportunities and limits societal development, emphasizing the urgent need for cost-effective and accessible solutions. To tackle these challenges, ZTE and Indosat have deployed over 550 ultra-capacity backbone microwave links across Indonesia, covering nearly 80% of major cities and remote islands. ZTE's innovative microwave technology is specifically tailored to Indonesia's needs, providing ultra-capacity and long-distance transmission. The deployment has been achieved with remarkable speed and efficiency, connecting previously inaccessible regions and enabling communities to transition from "non-connected " to "connected." The microwave solution integrates multiple advanced features to address Indonesia's unique environmental conditions. ZTE's multi-frequency Ultra Broadband Antennas (UBA) allow flexible frequency selection, reducing tower load and rental costs. Customized Branching Units minimize hardware requirements, enhancing cost efficiency while maintaining high performance. Built to withstand Indonesia's harsh weather, including heavy rain, strong winds, and corrosion, the equipment ensures long-term reliability. The integration of advanced 4T4R Modem boards and intelligent energy-saving technology enables rapid deployment with minimal resource consumption. Moreover, the scalable design supports seamless upgrades, allowing for capacity expansion by up to eight times and coverage extension to new areas.

MiFibra Partners with ZTE to Complete the Commercial Deployment of Smart Cloud Platform

ZTE Corporation, a global leading provider of integrated information and communication technology solutions, today announced its partnership with MiFibra to successfully commercialize ZTE's Smart Cloud Platform (SCP) in Peru. The platform enables the visualization and management of home networks, supporting the full lifecycle of Customer Premise Equipment (CPE), including pre-sales, sales, and after-sales services. This collaboration helps MiFibra enhance O&M efficiency, reduce costs, and increase marketing revenue. As one of the top ISPs (Internet Service Provider) in Peru, MiFibra provides the fastest Internet services with speeds of up to 2 Gbps across Piura, Lambayeque, La Libertad, and Ancash. MiFibra not only focuses on enhancing customers" internet speed but also believes that intelligent management tools are essential for improving customer experience and developing home broadband services. ZTE's SCP, the industry's first integrated home network management platform, assists MiFibra in achieving end-to-end, full lifecycle visibility and management of home networks. ZTE's SCP offers proactive marketing capabilities, enabling MiFibra to implement precise marketing strategies and maximize efficiency. It leverages cloud-based AI to recognize applications, facilitating value-added services like gaming acceleration and parental controls, which boost revenue and user engagement. For the installation team, SCP helps implement high-quality CPE installations via an app that simulates Wi-Fi heat maps to avoid coverage blind spots. In operations and maintenance, SCP uses AI and big data to identify network faults and their root causes, providing optimization suggestions for quick resolution. Additionally, it offers an integrated app that allows users to manage their home network components, enhancing self-management and engagement. The commercialization of SCP by ZTE and MiFibra signifies a deepening collaboration in home network, representing significant progress from bandwidth enhancement to improvements in user experience. Moving forward, ZTE and MiFibra will continue to strengthen their cooperation and drive innovation, dedicating themselves to delivering an exceptional home network experience to users in Peru.

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ARTICLE

Leveraging AI and Sustainability for a Transformative Telecom Future

The telecommunications industry is at the forefront of technological evolution in today's digitized world. In these fast-changing paradigms, optimizing telecommunication services through AI will have a significant sustainability impact for today's eco-conscious consumers. With AI driving this digital transformation, telecoms are uniquely positioned to address environmental challenges through optimized energy consumption, reduced carbon emissions, and enhanced climate monitoring.

> *AI manages 5G complexity by optimizing resource allocation and ensuring connectivity for IoT and smart cities. LLMs aid in deploying future network tech efficiently. Together, they provide data-driven insights, enabling predictive analytics for market demands and service optimization. AI fosters innovation in AR, VR, and smart solutions, while LLMs streamline service deployment.*

The Current Landscape of Telecom & the Technological Advancements

The telecommunications sector has witnessed significant technological advancements, notably the transition to 5G networks and the early exploration of 6G. The integration of Internet of Things (IoT) devices, edge computing, and advanced data analytics has already led to rapid evolution in the field. By prioritizing data security and ethical AI practices, telecom firms can effectively balance the positive aspects of AI with connectivity needs and infrastructure security. AI's role in advancing sustainability is significant, leveraging data to address climate challenges. The projected investment of over $5 billion in AI by the telecom sector by 2026 underscores the growing importance of sustainable AI methods, essential for maintaining a balance between technical progress and environmental responsibility.

Manish Mangal
Chief Technology Officer, Telecom & Global Business Head, Network Services
Tech Mahindra

Challenges Faced by the Industry

The telecommunication industry faces several significant challenges, primarily concerning sustainability, increasing operational costs, and the necessity for scalable and efficient network management. Sustainability concerns stem from the high energy consumption required to power extensive networks, leading to a substantial carbon footprint. For instance, the proliferation of data centres and the exponential growth of data traffic demand continuous and efficient energy solutions. Increasing operational costs are another major challenge, driven by the need for constant infrastructure upgrades to support advancing technologies like 5G and 6G ahead. These upgrades necessitate significant financial investments in hardware, software, and skilled personnel. Finally, the demand for scalable and efficient network management poses a critical challenge as the industry must handle the growing volume and complexity of data traffic. Efficiently managing these networks involves integrating advanced technologies such as AI and ML to automate processes and optimize performance, ensuring seamless connectivity and service quality amidst escalating demands.

The Role of AI in Telecom & AI-driven Innovations

AI is being integrated into telecom networks in various innovative ways. It enhances network optimization by analysing vast amounts of data in real time, allowing for more efficient use of resources and improved performance. AI-powered customer service bots revolutionize the telecommunication industry by providing quicker, more accurate responses, thereby enhancing customer satisfaction. They efficiently resolve inquiries and technical issues 24/7. Most of the chat-bots use natural language processing to understand complex queries and deliver precise solutions instantly, reducing wait times and improving the overall customer experience.

Predictive maintenance, powered by AI, enables telecom providers to foresee potential issues and address them proactively, thereby reducing downtime and maintenance costs. Further, AI is pivotal in optimizing network management, enhancing security protocols, and deploying advanced communication technologies within the telecommunications industry. AI will also be instrumental in accelerating the vision of autonomous networks, where the networks will be able to configure, observe, and maintain themselves with self-healing abilities.

Gearing up to garner benefits, the telecommunications industry in the Middle East has witnessed accelerated adoption of Artificial Intelligence (AI) technology to deliver seamless customer experiences.

Leading the RACE Sustainably

The Information and Communications Technology (ICT) sector is responsible for 3% to 4% of global CO2 emissions, with telcos accounting for 1.6% of total global CO2 emissions in the ICT sector. However, the ICT industry can potentially reduce up to 15% of all global emissions by 2030 if it takes steps in the right direction.

Several strategies are being adopted to achieve sustainability in telecom. Energy-efficient network designs are now a priority, aiming to reduce the power consumption of network components. For instance, new base stations incorporate advanced cooling systems that cut energy use by 30%. Additionally, telecom towers are being equipped with solar panels, significantly reducing reliance on traditional power grids. In coastal areas, wind turbines are also being installed to harness wind energy, ensuring a steady and renewable power supply.

AI is being integrated into telecom networks in various innovative ways. It enhances network optimization by analysing vast amounts of data in real time, allowing for more efficient use of resources and improved performance. AI-powered customer service bots revolutionize the telecommunication industry by providing quicker, more accurate responses, thereby enhancing customer satisfaction.

Companies like ours are dedicated to delivering ESG offerings for the telecom industry by introducing solutions like RAN Energy Optimization, Green data centres, Green IT and tools like Green CodeRefiner. These leverage to significantly reduce energy consumption, lower CO2 emissions and enhance overall sustainability.

Intelligent automation helps telcos enhance visibility over existing network assets, creating a single source of truth to track sustainability goals, which will aid in achieving net-zero emissions and reduce costs with enhanced efficiency.

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Predictive analytics for energy consumption and AI-driven sustainability reporting are becoming standard practices as businesses seek to optimize energy use

and reduce their environmental footprint. By leveraging advanced data analytics and AI, enterprises can anticipate energy needs, identify inefficiencies, and generate accurate, real-time sustainability reports, driving informed decision-making and enhancing their commitment to sustainability goals.

Intelligent automation helps telcos enhance visibility over existing network assets, creating a single source of truth to track sustainability goals, which will aid in achieving net-zero emissions and reduce costs with enhanced efficiency.

> *The telecom industry's profound transformation is driven by the rapid evolution of AI and Network LLMs. AI and LLMs revolutionize network optimization and management by analysing network traffic in real time to optimize data flow, reduce latency, and ensure efficient bandwidth usage, resulting in improved network performance and a better user experience.*

Network LLMs: The Game Changer

Large Language Models (LLMs) are playing an enabling role in enterprises" race to sustainability. Designed to process and generate human language on a grand scale, these sophisticated AI systems are enabling a wide range of technological advancements. LLMs can be used to analyse research on renewable energy sources and suggest alternative energy solutions. This ability to generate novel ideas can be a game-changer in the battle against climate change.

The Role of AI and Network LLMs in Transforming Telecommunications

The telecom industry's profound transformation is driven by the rapid evolution of AI and Network LLMs. AI and LLMs revolutionize network optimization and management by analysing network traffic in real time to optimize data flow, reduce latency, and ensure efficient bandwidth usage, resulting in improved network performance and a better user experience.

AI algorithms and LLMs excel in predictive maintenance and fault management through historical data analysis, reducing network outages and maintaining service quality. They diagnose problems, interpret log data, and provide actionable insights, speeding up resolution and enhancing reliability. For instance, uses AI to predict network equipment failures before they occur, scheduling maintenance proactively to reduce downtime and improve reliability. AI enhances security measures by monitoring network activity for suspicious behaviour, detecting security threats in real time, and taking preventive actions to safeguard the network. AI algorithms analyse transaction patterns to detect and prevent fraudulent activities, ensuring the integrity of telecom services.

> *AI enhances security measures by monitoring network activity for suspicious behaviour, detecting security threats in real time, and taking preventive actions to safeguard the network.*

AI manages 5G complexity by optimizing resource allocation and ensuring connectivity for IoT and smart cities. LLMs aid in deploying future network tech efficiently. Together, they provide data-driven insights, enabling predictive analytics for market demands and service optimization. AI fosters innovation in AR, VR, and smart solutions, while LLMs streamline service deployment. This frees telecom employees for strategic tasks, aided by AI-driven training. AI ensures regulatory compliance and LLMs manage data privacy, adhering to legal standards. Together they empower telecom for future growth, with an adaptable workforce and efficient operations.

Future Prospects and Trends

AI, sustainable engineering, and Network LLMs are transforming the telecom industry. The vision for the future includes ongoing innovation and the potential for even greater improvements in network management and sustainability. Industry leaders are encouraged to embrace AI and sustainable practices to ensure a resilient, sustainable, and cost-effective future for telecom.

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REGIONAL NEWS

CST Holds A Workshop on "Digital Wellbeing" in Cooperation with "Ithra"

The Communications, Space and Technology Commission (CST) held a workshop on "Digital Wellbeing", in cooperation with King Abdulaziz Center for World Culture (Ithra), on the sidelines of the Internet Governance Forum (IGF) in Riyadh. The workshop aims to highlight the Saudi Arabia's efforts to keep up with the developments in global digitization and its impact on quality of life, discuss the Global Digital Wellbeing Index and its importance in enabling sustainable development goals, and ensure digital sustainability by meeting daily needs while maintaining a sustainable future for all. The workshop witnessed the participation of Mr. Naif Sheshah, Deputy Governor of Strategy and Digitalization Sector at CST, through which he highlighted the importance of enhancing the relationship between the beneficiary and digital technologies, and achieving digital balance and inclusiveness through a secure, reliable, balanced and inclusive digital environment; as he invited other countries to adopt the Global Digital Wellbeing Index. The Global Digital Wellbeing Index aims to promote collaboration between policymakers and regulators by providing the best practices and standards to enhance the use of digital technologies and maximizing their impact. The Index also aims to bridge the digital divide for unconnected communities, promote digital balance and raise awareness of digital users around the world.

Oman Launches Its First Earth Observation Satellite, Powered by AI

Oman has successfully launched its first earth observation satellite, named OL-1, marking a significant milestone in the country's technological advancement. The satellite, developed by Oman Lens Company, is equipped with advanced optical sensors and artificial intelligence capabilities for real-time data capture and analysis. "With the successful deployment of this satellite, the Sultanate officially enters the realm of space technology," announced the Oman Lens Company. OL-1 is the first in a planned constellation of satellites that will provide Oman with comprehensive earth observation capabilities. The satellite's AI-powered features enable it to capture high-resolution imagery and analyze data more rapidly than conventional satellites, delivering valuable insights for various applications. The satellite's data will be used to monitor Oman's environment, infrastructure, and natural resources, providing valuable information for decision-making in both the public and private sectors. "The launch of the OL-1 satellite marks a significant occasion for Oman, as it not only bolsters monitoring abilities but also applies artificial intelligence for quick analyses directly from outer space," stated the company. The OL-1 satellite project aligns with Oman Vision 2040, which emphasizes technological innovation and data-driven solutions for national development. Oman Lens plans to launch a series of satellites over the next five years, contributing to the development of smart cities and advanced data analytics capabilities in the country. This achievement highlights Oman's commitment to investing in space technology and leveraging its potential for economic growth and societal progress.

Kuwait's Vision 2035 Drives Digital Transformation Through Strategic Partnerships and Technological Advance

Kuwait is undergoing a significant digital transition as part of its Vision 2035, aiming to diversify its economy and establish itself as a regional financial and technological hub. A key focus of this transformation is the development of digital identity and biometric technologies, which are essential for updating government services and enhancing national security.

Biometric Projects and Government Initiatives

Recently, the Ministry of Interior's biometric fingerprinting project reached a major milestone with over 3 million citizens and foreigners registered as part of the national digital transformation initiative. This biometric project is critical to improving security and modernizing government services by providing precise identification for accessing public and private sector services. While the project has made substantial progress, more than 754,000 individuals are yet to complete the registration. The deadline for Kuwaiti citizens has passed, but expatriates have until December 31 to comply. The initiative not only streamlines services but also bolsters Kuwait's security infrastructure using biometric technology.

Role of STC Kuwait and Thales in Digital Growth

STC Kuwait, a major player in Kuwait's digital transformation, has expanded its role from traditional telecommunications to becoming an integral part of the country's digital advancement. The company has forged strategic contracts that enhance the nation's connectivity, while assisting the government in meeting broader digital goals, such as incorporating biometrics and AI technology across various industries. Similarly, Thales has been instrumental in supplying secure multi-application eID cards to citizens and residents. With advanced smart card technology and experience in identity management, Thales has played a key role in facilitating the shift to a digital government platform in Kuwait.

The Kuwait's Growing Digital Infrastructure push for a digitally empowered economy continues as Kuwait's Vision 2035 also aims to reduce the country's reliance on oil. To realize this ambition, the government is making substantial investments in information and communication technology (ICT) and digital infrastructure. The ICT market in Kuwait was valued at $22.48 billion in 2023 and is projected to reach $39.83 billion by 2029. The Vision emphasizes telecom improvements, especially the rollout of 5G networks, which will increase connectivity, improve digital services, and promote the growth of smart cities.

Security and Data Privacy Priorities

The Central Information Technology Regulatory Authority (CITRA) has been instrumental in strengthening Kuwait's cybersecurity landscape. However, the country still faces challenges related to cyber-attacks and data protection concerns. Despite the establishment of the National Cybersecurity Center (NCSC) in 2022, Kuwait remains the third most targeted country in the GCC by ransomware attacks. To tackle this, Kuwait has partnered with Microsoft to implement a Zero Trust security model to protect its digital platforms.

Financial and Security Sector Integration

Kuwait's biometric initiatives are also significantly impacting the financial and security sectors. The Kuwait General Administration of Customs (KGAC), in collaboration with M2Sys, implemented a multimodal biometric border control system that incorporates facial recognition, fingerprint scanning, and iris identification. The biometric registration efforts have also extended to the banking sector, where 60,000 unregistered individuals faced bank account suspensions due to the biometric registration deadline.

Mobile and Digital Identity Solutions

The Public Authority for Civil Information (PACI) is managing the civil ID initiative, which is the cornerstone of Kuwait's digital infrastructure. The Kuwait Mobile ID app by Zain enables users to access government services, sign documents online, and complete transactions, thus enhancing Kuwait's e-government services and improving the overall experience for citizens and residents.

Partnerships for Youth Empowerment and Skill Development

Kuwait's private sector is also contributing to digital empowerment, particularly through initiatives aimed at enhancing digital skills for youth. Collaborations with institutions like Zain, the National Bank of Kuwait (NBK), and the Kuwait Foundation for the Advancement of Sciences (KFAS) are providing training in emerging technologies such as artificial intelligence (AI), cloud computing, and big data.

Strategic Global Partnerships and Kuwait's Technological Future

Kuwait's collaboration with Google Cloud aims to digitize government services, secure data migration to the cloud, and develop a national digital skills program. This partnership aligns with Vision 2035, which emphasizes the diversification of Kuwait's economy and the growth of technology sectors such as healthcare, education, and smart cities.

Cybersecurity and E-commerce Growth

Despite facing cybersecurity challenges, Kuwait's e-commerce market has grown significantly due to increasing internet, mobile phone, and banking penetration. Online digital payments have surged, with Knet, Apple Pay, and Google Pay transactions growing nine times faster than point-of-sale transactions in recent years.

Kuwait's Digital Identity Evolution

The journey toward a digital government began in the early 2000s and accelerated with the Kuwait Civil ID card program. In 2009, Kuwait launched the National Identity Project, which was completed in partnership with Intercede, Diyar United Company (DUC), and VeriSign to issue biometric-based smart ID cards.

Vision 2035 Goals and Future Outlook

Kuwait's efforts under Vision 2035 are paving the way for a more secure and technologically advanced future. The country's strategic alliances with firms such as Thales, Google Cloud, and STC Kuwait are enhancing connectivity, security, and e-services, supporting economic diversification and reinforcing Kuwait's global position in the digital economy.

BNET Acquires Amwaj Islands" ICT Infrastructure Assets

Bahrain Network (BNET), the national company responsible for providing fiber-based broadband network in Bahrain, has announced its complete acquisition of Amwaj Islands" fixed-fiber infrastructure network assets. Since 2022, both parties have been working closely to complete the asset acquisition agreement, which will enable BNET to expand its network coverage and deliver high-quality telecommunications services to all users and residents of the area. Ahmed Jaber Alhogbani Aldoseri, CEO of BNET, said: "This acquisition aims to support the vision of His Royal Highness Prince Salman bin Hamad Al Khalifa, the Crown Prince and Prime Minister to achieve the competitive and sustainable growth of the telecommunications and ICT sector, which stands as supportive foundation for a variety of industries." Saud Kanoo, Chairman of Ossis Property Developers, commented: "Through our partnership with BNET, we look forward to enabling the residents of Amwaj Islands to receive efficient, uninterrupted telecommunications services. We also strive to support the government's directives toward achieving a single network in Bahrain." This acquisition marks a landmark achievement in the local telecommunications sector as BNET will increase its reach to over 6,000 additional addresses. This step aims to benefit consumers as it creates fair competition between all licensed operators, while also providing equal access to their services. Once the migration to BNET's fiber-optic broadband network is completed in a few months, all existing consumers will have the freedom to select their preferred service provider. Bahrain's Fifth National Telecommunications Plan (NTP5) stipulates the transfer of all fixed telecommunications infrastructure assets to BNET, reinforcing its role as the kingdom's national broadband operator providing equal access to all telecommunications companies operating in the retail sector

PTCL First Ever in Pakistan to Achieve EPI Data Center Certification

Pakistan's leading telecom and integrated ICT services provider, Pakistan Telecommunication Company Limited (PTCL) has raised the data center industry benchmark by achieving the prestigious TIA-942-C data center certification form Enterprise Products Integration (EPI) – a global leader in data center certification. The meticulously audited and certified milestone underscores PTCL's unwavering dedication to excellence and innovation in the mission-critical data center industry in Pakistan. PTCL's state of the art data centers offer rack hosting services designed to accommodate servers, networking devices, and other data center computing equipment. The purpose-built facilities provide carrier customers with a secure, cost-effective, and space-efficient solution for housing essential infrastructure. Strategically located in major cities across Pakistan, the data centers ensure high levels of security, resilience, and flexibility, helping businesses reduce costs, enhance IT value, and maintains efficient operational footprint.

Kuwait Ranks Third Globally for Mobile Internet Speed

Kuwait has secured an impressive third-place ranking both globally and in the Arab world for mobile internet speed, achieving an average speed of 258.51 Mbps, according to the October 2024 Speed Test Global Index. This achievement positions Kuwait among the global leaders in mobile connectivity. The United Arab Emirates (UAE) topped the global and regional rankings with a remarkable mobile internet speed of 428.53 Mbps, while Qatar ranked second globally and regionally with an average speed of 356.7 Mbps.

Countries within the Gulf Cooperation Council (GCC) showed strong performances on the index. Saudi Arabia ranked fourth in the Arab world and 11th globally, with a mobile internet speed of 121.9 Mbps. Bahrain secured fifth place regionally and 13th globally, registering an average speed of 116.6 Mbps, while Oman placed sixth in the Arab world and 29th globally, with a speed of 89.3 Mbps.

The index also highlighted the performance of other Arab nations outside the GCC. Morocco ranked seventh in the Arab world and 67th globally, with an average speed of 42.5 Mbps. Iraq ranked eighth regionally and 77th globally, achieving 34.7 Mbps, while Lebanon took the ninth spot in the Arab world and 83rd globally, with a speed of 30.8 Mbps.

Tunisia rounded out the top ten for the Arab region, ranking 90th globally, with an average mobile internet speed of 26.16 Mbps. Kuwait's strong performance reflects its significant advancements in telecommunications infrastructure and underscores the country's commitment to providing high-speed mobile internet services. The outstanding performances of GCC countries further highlight the region's investment in cutting-edge technology and digital innovation, positioning the region as a global leader in the digital landscape.

#		Country	Mbps
1	-	United Arab Emirates	428.53
2	-	Qatar	356.74
3	-	Kuwait	258.51
4	+2	Denmark	149.73
5	+3	Bulgaria	147.68

Saudi Arabia Selected to the International Advisory Body for Submarine Cable Resilience

Saudi Arabia, represented by His Excellency Engineer Abdullah bin Abdulrahman AlMubadal, the Deputy Governor for Telcom Sector at the Communications, Space and Technology Commission (CST), has been selected to the International Advisory Body for Submarine Cable Resilience. This recognition underscores the international confidence in the Kingdom of Saudi Arabia, its leadership capabilities, and its extensive expertise in enhancing the safety and resilience of this vital infrastructure. Established by the International Telecommunication Union (ITU) in collaboration with the International Cable Protection Committee (ICPC), the Advisory Body aims to set the strategic direction for improving cable resilience, addressing related challenges, promoting best practices for protecting submarine cable systems, and coordinating international cooperation, technical development, and investment models. The board brings together governments, regulators, industry leaders, and key stakeholders involved in enhancing the safety and resilience of submarine cable protection.

PTA opened Granting Class License for Data Services in Pakistan

Pakistan Telecommunication Authority (PTA) has opened/ resumed granting Class License for Data services for provision of Data Services for Pakistan. VPN service provides are required to obtain Class License for Data (Data Services) to provide VPN and related services. Class License for Data (Internet Services) and Class License for Voice services shall remain suspended/ stopped till further notice. Therefore, PTA will not be accepting any such applications. However, Class License for Data (Vehicle Tracking Services) and CVAS Registration applications will continue to be received and processed by PTA as per procedure for award of licenses. All Class Licensees for Data (Internet Services) for up-gradation of their Class License to Nationwide and Renewal are advised to obtain Local Loop (LL) License.

UAE Cabinet Approves Establishment of Supreme Space Council

The UAE Cabinet, chaired by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister and Ruler of Dubai, has approved the formation of the Supreme Space Council, a permanent entity reporting directly to the Cabinet. The council will be chaired by H.H. Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, Deputy Prime Minister, and Minister of Defence. The Council will include the Minister of Industry and Advanced Technology, the Minister of Economy, the Chairperson of the Board of Directors of the UAE Space Agency, as member and Secretary-General of the Council, the Minister of State for Artificial Intelligence, Digital Economy and Remote Work Applications, the Vice President of the Mohammed bin Rashid Space Centre, Faisal bin Abdulaziz Al Bannai, Advisor to President for Strategic Research and Advanced Technology, and Major General Dr. Mubarak bin Ghafan Al Jabri, Assistant Undersecretary for Support and Defence Industries within the Ministry of Defence; Assistant Undersecretary for Support and Defence Industries at the Ministry of Defence. Key responsibilities of the Council, as defined by the resolutions, include approving the public policies for regulating the space sector and related activities, defining national priorities for the space sector, identifying the technologies required to ensure the country's technological independence, and setting investment and acquisition priorities for both public and private entities involved in space activities. Additionally, the council will be responsible for approving plans and strategies focused on space security in cooperation with international partners, and the comprehensive framework for managing infrastructure, facilities, and assets in space sector, ensuring integration across all relevant sectors. The council will work on plans for capacity building in the space sector, as well as the establishment of local, regional, and international partnerships that benefit the space sector and related industries. It will also review and approve legislation, policies, strategies, and national programmes related to the space sector in coordination with the appropriate authorities. The decision assigns the UAE Space Agency as the General Secretariat for the Council, responsible for providing technical and administrative support.

Orange Concludes its Participation in the 10th Edition of MENA ICT Forum

The event served as a platform for Orange to engage with attendees from experts and industry leaders in addition to the public showcasing its solutions and innovations as well as its tireless support for entrepreneurs through its pavilions. On the sidelines of the forum, the CEO of Orange Jordan, Philippe Mansour was part of the panel discussion titled “Pioneering the Future: Innovation and Regulation in Telecommunications”. During the session, he shed a spotlight on the advancements taking place in the telecom sector to enable industry leaders to “Lead the Future” equipped with today's capabilities. Mansour also emphasized the significance of innovatively supporting startups and the entrepreneurial scene as a whole which in turn will elevate the telecom landscape. Orange embraces innovation in everything it does. Based on that, its pavilion served the purpose of introducing the public to its full-fledged set of digital solutions namely Internet, telecommunication, Smart Life solutions, 5G experiences through mixed reality, fiber experiences with virtual reality, and virtual reality hospitals. The company enabled its partner Trismart International Trading, which is one of the most prominent providers of protective devices in Jordan to showcase its products to the forum that welcomed more than 3000 visitors.

Bahrain Partners With UNDP to Drive Digital Transformation for Human Development

The United Nations Development Program (UNDP) in Bahrain and the Bahrain Center for Strategic, International, and Energy Studies (Derasat) have signed a project document aimed at advancing Bahrain's National Human Development Report (NHDR). This strategic initiative focuses on accelerating digital transformation to promote inclusive and sustainable growth, aligning with Bahrain Vision 2030 and the Sustainable Development Goals (SDGs).

NHDR: Mapping Bahrain's Digital Transformation. The NHDR on Digital Transformation will explore how digital advancements can propel human development across Bahrain, with a focus on key areas such as reducing the digital divide, enhancing privacy, strengthening cybersecurity, and integrating digital technologies into public services. This comprehensive report will highlight the transformative potential of digital technologies for both social and economic progress, alongside the challenges and considerations for ensuring safe and equitable implementation. The NHDR will not only assess Bahrain's digital ecosystem but will also benchmark its progress against regional and international standards. Through actionable insights and recommendations, the report aims to strengthen digital inclusion, privacy protection, and digital infrastructure security to create a more resilient society.

Collaborating for a Digital and Inclusive Future. UNDP's partnership with Derasat, alongside contributions from government agencies, civil society, and private sector entities, ensures that the NHDR is informed by diverse perspectives and aligned with Bahrain's national goals. Together, these stakeholders aim to lay the groundwork for policies that integrate digital technology to foster inclusive, sustainable growth throughout Bahrain. UNDP Bahrain remains committed to empowering communities through digital transformation, ensuring all citizens and residents have equitable access to technology and opportunities. With Derasat and the Kingdom of Bahrain as key partners, UNDP looks forward to driving impactful progress toward a digitally inclusive and resilient society.

Pakistan's Telecom Sector Faces Surge in Cyber Attacks

A recent report from Pakistan's Telecommunication Authority (PTA) reveals alarming figures in the country's telecom and digital sectors, with 720 malware attacks recorded in 2023 alone. In addition, the digital landscape experienced 550 phishing attacks, 300 DDoS incidents, 200 ransomware intrusions, and 150 insider threats. These figures underline the urgent need for stronger cybersecurity measures to protect Pakistan's rapidly expanding digital economy and secure user data and critical infrastructure.

The report highlights the growing threat from Advanced Persistent Threats (APT) groups, considered the most sophisticated and dangerous cyber adversaries. APT groups continuously evolve their attack strategies, often staying ahead of traditional defenses, and target high-value sectors with geopolitical motivations, posing significant risks to national security. Notable APT groups targeting Pakistan in 2023 include Gamaredon, Donot, Sidewinder, and Lazarus, which have primarily focused on government agencies, internet infrastructure, and healthcare organizations. The report emphasizes that geopolitical factors influence these attackers" objectives, as they seek to steal sensitive information and disrupt operations in critical sectors. The telecom sector in Pakistan was particularly impacted, with Gamaredon responsible for 20 attacks, Donot with 14, Bitter with 13, and Kimsuky and Lazarus each conducting 8 attacks. Sidewinder accounted for 7 incidents, along with 17 attacks from various other APT groups.

Qatar's Digital Commerce Sector Poised for Significant Growth

The digital commerce sector in Qatar is set for robust growth, with transaction values projected to reach $7.29bn (QR26.73bn) by the end of this year, according to a Statista report. The sector is expected to grow at a compound annual growth rate (CAGR) of 21.70%, leading to a projected total of $19.46bn from 2024 to 2029. The report forecasts that over 1.6 million new users will join the digital commerce market during this period, signaling Qatar's increasing presence in the e-commerce space. Over the past decade, the country has seen significant developments that have made it an active market for digital commerce. Sources told The Peninsula that this growth highlights the acceleration of digital marketing solutions and strategies for strong businesses, further transforming the online shopping dynamics in the region. Industry leaders pointed out the evident shift in the Qatari economy, with the QR26bn transaction value reflecting the government's efforts through spending and infrastructural projects aimed at boosting the digital commerce sector. However, analysts note that Qatar's digital commerce market faces certain challenges, such as navigating regulatory complexities, adapting to new technologies, market saturation, and addressing cultural sensitivities. Despite these challenges, the overall outlook for the digital market in Qatar remains optimistic, with researchers suggesting that AI, data analytics, and automation will shape marketing strategies in the coming years. AI technology experts and officials praised Qatar's initiatives during the Web Summit Qatar and Qatar Economic Forum, highlighting the potential for local entities to leverage AI to enhance customer experiences and boost revenue.

CRA Concludes WTSA-24 with Key Global Partnerships and Future-Oriented Discussions

The Communications Regulatory Authority (CRA) concluded its participation in the World Telecommunication Standardization Assembly 2024 (WTSA-24) in New Delhi, India, emphasizing its commitment to advancing global telecommunication standards. Led by Engineer Ahmad Abdulla AlMuslemani, President of CRA, the delegation actively engaged in high-level discussions, highlighting Qatar's capabilities, its pioneering role in the digital landscape, and its contributions to sustainable development worldwide. During the two-week prestigious event, Engineer Ahmad Abdulla AlMuslemani, President of CRA, met with key leaders from the International Telecommunication Union (ITU), including Ms. Doreen Bogdan-Martin, ITU Secretary-General, Dr. Cosmas Zavazava, Director of ITU's Telecommunication Development Bureau, Mr. Mario Maniewicz, Director of ITU's Radiocommunication Bureau, and Mr. Adel Mohamed Darwish, Regional Director for Arab States at the ITU. Discussions focused on setting global standards that drive innovation, enhance security, and support growth in the Information and Communication Technology (ICT) sector, all priorities integral to Qatar National Vision 2030. These meetings reinforced Qatar's role in creating a connected, sustainable future on both national and international fronts. During a collaborative exchange with Mr. Javier Juárez Mojica and Mr. Arturo Robles Ravalo, Commissioners of the Mexican Federal Telecommunications Institute, CRA shared its successful experience in spectrum management during the FIFA World Cup Qatar 2022™. This dialogue offered valuable insights to support Mexico's preparations for the FIFA World Cup 26™ and strengthened bilateral relations as part of Qatar's broader goal to foster global partnerships under Qatar National Vision 2030. Key meetings were also held with His Excellency Mr. Mohammed bin Hassan Jaber Al Jaber, Ambassador of Qatar in India, who visited CRA's booth to learn about Qatar's preparations for hosting

the 2026 ITU Plenipotentiary Conference (PP-26). Important discussions were held with key ICT leaders, including Mr. Ritu Ranjan Mittar, Chair of WTSA-24; Mr. Frederic Sauvage, Chair of the ITU Council; H.E. Dr. Ömer Fatih Sayan, Deputy Minister of Transport and Infrastructure of Türkiye; H.E Mr. Bogdan Dumea, Secretary of State MCID Romania; Mr. Oli Bird, Chair of Com-ITU; and Mr. Oscar Giovanni León Suárez, Executive Secretary of the Inter-American Telecommunications Commission. These meetings emphasized CRA's collaborative efforts to strengthen ICT infrastructure and foster mutual cooperation, in alignment with its strategy and future vision. CRA's active engagement at WTSA-24 underscored its alignment with Qatar National Vision 2030's pillars, promoting economic, social, and environmental development through innovative and secure ICT frameworks. CRA is dedicated to fostering international partnerships that contribute to Qatar's digital future, advancing the nation's goals of sustainable growth and international leadership in telecommunications.

UAE Among Fastest Nations to Deploy AI: Omar Al Olama

Omar bin Sultan Al Olama, Minister of State for Artificial Intelligence, Digital Economy, and Remote Work Applications, said the UAE has recognized the transformative potential of artificial intelligence since 2017, embarking on a journey of exploration and implementation unlike any other nation. This journey, inspired by the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister and Ruler of Dubai, has been guided by three key principles: boldly and proactively embracing AI, recognizing its crucial role in the future, and striving for unparalleled speed in deployment, he added. This came during a session in which Al Olama addressed participants of the 2nd Global Government Leaders Program (GGLP), organized as part of a series of field visits that takes them around various government entities and national projects to learn about the UAE's best practices and success in various strategic sectors. Al Olama congratulated the cohort on being selected to take part in this program, which aims to create resilient government leaders capable of navigating future challenges. Initially, the focus was on technologies like self-driving cars and computer vision, considered cutting-edge at the time. However, the rapid evolution of AI, particularly with the rise of large language models (LLMs), has shifted the landscape dramatically. Omar Al Olama said, "The UAE's approach is unique, viewing AI not as a tool for profit, but as a catalyst for enhancing quality of life, attracting and retaining talent, and ultimately, enhancing quality of life." He explained how the future of AI is intertwined with the future of the world, pointing out that the UAE, through continuous investment in infrastructure and talent development, is positioning itself at the forefront of this technological revolution. "Early investments in supercomputing capabilities have enabled the nation to train its own Large Language Models (LLMs) and attract global partnerships, such as Microsoft's investment in G42," Al Olama said. "The focus now shifts towards building in-house capabilities and addressing the unique local needs for Arabic language models." The UAE, he noted, recognizes the importance of global collaboration in navigating the evolving landscape of AI, and adopts an approach based on knowledge sharing and collective action to maximize the benefits and limit the risks of this transformative technology. Speaking about the realities of AI deployment, Al Olama said that AI's promise lies in its ability to revolutionize industries and improve lives, however, its rapid advancement also presents potential risks, including those of misuse and of ignorance in the decision-making process. He highlighted the UAE's proactive efforts to address this challenge through initiatives like organizing an eight-month AI training program for senior government officials, in partnership with Oxford University, creating a cadre of experts to navigate the complexities of AI deployment. Furthermore, programs like the UAE AI Camp aim to demystify the technology and foster public understanding, combating misconceptions fueled by science fiction and stereotypes. Concluding the session, Al Olama showcased valuable lessons offered by the UAE's experience, noting how the rapid pace of AI development requires continuous learning and adaptation. Careful consideration and proactivity are required to address the economic implications of AI, including the cost of training complex models and the growing importance of energy resources. Ultimately, the UAE's unique approach and commitment to responsible regulation and international collaboration, set a global example for harnessing the power of AI for the betterment of society. The Global Government Leaders Program, jointly organized by the Mohammed bin Rashid Center for Leadership Development (MBRCLD) operating under the Executive Office of His Highness Sheikh Mohammed bin Rashid Al Maktoum and the Government Experience Exchange Office at the Ministry of Cabinet Affairs, empowers first- and second-tier government leaders from participating countries. By sharing the UAE's successful experience in government performance, the program equips participants with practical tools and models to enhance their institutions" future readiness and effectiveness. Participants in the 2nd cohort of the Global Government Leaders Program come from 31 countries, namely: Azerbaijan, Mongolia, the Kurdistan Region, Iraq, Bermuda, Ethiopia, Georgia, the Maldives, Andorra, Kyrgyzstan, Egypt, Barbados, Romania, Costa Rica, Madagascar, the Seychelles, Kazakhstan, Uzbekistan, Fiji, Rwanda, Senegal, Colombia, Paraguay, Brazil, Turkmenistan, Guyana, Brunei, Malta, Zimbabwe, Serbia and the UAE.

PTCL Group Wins Best Business Strategy and Expansion Award at SAMENA LEAD Awards 2024

PTCL Group, Pakistan's largest ICT services provider, has been

honored with the "Best Business Strategy and Expansion" award at the Leadership and Excellence Awards in Digital Development (LEAD) by the SAMENA Telecommunications Council. The prestigious award was presented to Hatem Bamatraf, President and Group CEO of PTCL and Ufone 4G, in recognition of the company's relentless efforts to innovate and broaden its market presence. Moreover, the award recognizes PTCL Group's exceptional business strategies, which have enabled the company to take challenges head-on, make strategic decisions, and successfully position itself on a path of sustained growth and success. Commenting on the achievement, Hatem Bamatraf said: "PTCL Group's success at the SAMENA LEAD Awards 2024 is a reflection of our commitment to driving growth through strategic business expansion. This recognition highlights the strides we have made in contributing to the telecom sector and positions PTCL as a leader in the highly competitive global telecom industry. It is a testament to our dedication to excellence, innovation, and delivering exceptional customer satisfaction across the region." PTCL Group has always been at the forefront when it comes to business strategies that have allowed it to remain competitive in the dynamic telecom landscape. The Group continues to introduce new products and services to reach a broader customer base, while also bridging the communication gap with the underserved regions in Pakistan. The SAMENA LEAD Awards 2024, organized by the SAMENA Telecommunications Council, celebrate outstanding achievements in the telecom sector, recognizing the efforts of operators, and regulators across national, regional, and global levels. The LEAD Business Excellence Awards is a platform where leading companies like PTCL showcase their transformative contributions to the telecom industry, inspiring others to pursue innovation and leadership.

80 Pakistani Companies Participate in GITEX Global 2024 in Dubai

Sajjad Mustafa Syed, Chairman of Pakistan Software Houses Association (P@SHA), has said that Pakistan – as the tech des¬tination – made a remarkable impact at GITEX Global 2024 in Dubai with the grand inaugu¬ration of Pakistan Pavilion and the much-anticipated Pakistan Night; hosted by P@SHA and the Pakistan Software Export Board (PSEB) in coordination. Syed added that these events showcased Pakistan's dynamic IT sector and magnified its sta¬tus as the official Tech Destina¬tion of the Year by GITEX Global. He apprised that the inaugura¬tion ceremony notably featured Faisal Niaz Tirmizi, ambassador of Pakistan in UAE, high-ranking officials from Special Invest¬ment Facilitation Council (SIFC), Muhammad Umair Nizam, Se¬nior Vice Chairman P@SHA, Raheel Iqbal, vice chairman P@SHA and CEOs of some of the top IT companies of Pakistan. P@SHA chief maintained that being celebrated as Tech Des¬tination of the Year on a global platform is no less than a game-changer, and sets the stage for exponential growth in IT & ITeS exports of the country – if capi¬talized through consistency in trade, taxation, SME, IT industry and STZA related policies. Mu¬hammad Umair Nizam elaborat¬ed that Pakistan Night brought together industry leaders,

gov¬ernment officials and tech in-novators for an exclusive net¬working opportunity. Attendees engaged in meaningful discus¬sions about potential business partnerships, investments, joint ventures and bilateral collabo¬rations – reinforcing the strong ties between Pakistan and UAE in various tech sectors and

ver¬ticals. Haris Naseer, Treasurer of P@SHA, highlighted the asso¬ciation's critical role in driving economic growth and human resource development; while Dr Sohail Munir elaborated on the substantive contributions of Pakistan's IT industry in the digital transformation of UAE. Raheel Iqbal informed that 80 Pakistani companies participat¬ed in the event; which is strate¬gic in nature as these companies were from the realms of IT, ITeS, diverse hi-tech sub-sectors and allied or supporting industries. This approach effectively cre¬ates a tech ecosystem needed for socioeconomic growth of any country, he added. Impor¬tant speakers also included Ali Zaib Khan, Trade & Investment Counselor at the Pakistan Em-bassy UAE, who emphasized the importance of strengthening Pakistan–UAE tech relations. Zeeshan Rehman Khattak, act¬ing CEO of PSEB, provided an in¬sightful overview of Pakistan's flourishing IT industry with the help of important milestones. Nadeem Malik, secretary gener¬al P@SHA, stressed that GITEX Global 2024 served as an excep¬tional platform for Pakistan – as it generated tangible contracts, MoUs and B2B linkages. The event concluded with closing remarks by Faisal Niaz Tirmizi – reaffirming the significance of bilateral cooperation in emerg¬ing technologies between the brotherly countries of Pakistan and UAE through diverse range of business-to-business (B2B) and govt-to-govt (G2G) syner¬gistic partnerships and complimentary trade relations.

CRA Issues Communications Consumer Protection Policy and Regulation to Enhance Telecom Consumers Experience

The Communications Regulatory Authority (CRA) of the State of Qatar has issued the Communications Consumer Protection Policy and Regulation, setting a new standard for consumer rights and Service Provider obligations in Qatar's telecommunications sector. This decisive action is fully aligned with Qatar's telecommunications law and regulatory framework, ensuring that consumers are protected under a comprehensive and legally grounded structure that demands higher levels of transparency and responsibility from Service Providers. The Policy outlines the key objectives and principles that will govern consumer protection efforts in Qatar. This policy establishes the foundation for ensuring that consumers" rights are not only recognized but actively safeguarded in an era of rapid technological change. The Regulation is a detailed set of rules and procedures that Service Providers must adhere to. It covers critical aspects such as advertising standards, marketing practices, billing transparency, contract fairness, data privacy, and customer notifications. Specific provisions are included to address common consumer concerns, including unsolicited direct marketing, spam, and the safeguarding of personal data. The regulation also lays out clear processes for handling consumer complaints and disputes, ensuring that consumers have continuous access to essential emergency services without disruption. "The Communications Consumer Protection Policy and Regulation we have issued marks a crucial step in our ongoing commitment to creating a fair and transparent communications environment in Qatar. Aligned with Qatar's telecommunications law and regulatory framework, our goal is to protect consumers by ensuring they receive clear information, fair contracts, and reliable services, while holding Service Providers to the highest standards," said Amel Salem Al-Hanawi, Director of the Consumer Affairs Department at CRA. "By issuing this instrument, we are reinforcing our commitment to fostering a competitive and consumer-friendly communications market, in line with Qatar's Vision 2030 and the Digital Agenda 2030," she added. The new Policy repeals the Telecommunications Consumer Protection Policy issued on January 2014. Also, all previous regulatory instruments issued by CRA or the Ministry of Communication and Information Technology (previously known as ictQATAR) and related to consumers will be repealed after the transition period set out in the Communications Consumer Protection Regulation. These instruments include CRA's Code of Advertising, Marketing and Branding issued on September 25, 2014; CRA President Decision No. 11 of 2016 issuing the Spam Regulation; and CRA President Decision No. 12 of 2016 issuing the Premium Services Regulation. The issuance of the Communications Consumer Protection Policy and Regulation reflects CRA's proactive approach in safeguarding consumer rights and maintaining a balanced relationship between consumers and Service Providers.

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SATELLITE NEWS

Apple Preps Ultra Watch Satellite Capability

Apple's next high-end Ultra Watch was tipped as likely to feature satellite connectivity, allowing users to send off-grid messages as part of the company's latest attempts to convince customers to upgrade their devices. Bloomberg reported the capability could be a key selling point for the next Apple Watch Ultra line, which expected to launch in late 2025 and would use Globalstar's fleet of satellites. The move would extend satellite connectivity to the company's top-of-the-range watch after being launched on the iPhone 14 in 2022. At the time, Apple allowed users to contact emergency services when unable to access Wi-Fi or mobile connectivity. The capability was expanded this year to allow users to send messages over satellite using its iMessage platform. Apple markets the Ultra as the "ultimate sports and adventure watch", pitching it as ideal for walking and other outdoor activities. Satellite connectivity on the device could, therefore be attractive to its target audience. Bloomberg reported if the launch happens, Apple Watch Ultra would be the first mainstream smartwatch to offer the capability. Apple extended its partnership with Globalstar in November, investing around $1.5 billion and taking a 20 per cent stake in the satellite service provider. Bloomberg added Apple is expanding work on a blood-pressure feature for its watches, but it is unclear if it will be ready for the 2025 line up.

Vodafone Inks Long-Term Satellite Broadband Deal with AST SpaceMobile

Vodafone has entered into a long-term commercial agreement with space-based cellular broadband firm AST SpaceMobile. The agreement sees Vodafone having placed an order for gateways for AST's Block 1 BlueBird satellite, which would provide cellular coverage to smartphones from low-Earth Orbit (LEO). The BlueBird gateways will connect to Vodafone's existing network infrastructure to route broadband data to user devices in a deal that lasts through 2034. "This agreement establishes the framework for Vodafone to offer space-based cellular broadband connectivity in its home markets, as well as to other operators via its Partner Markets program," a statement announcing the deal reads. AST SpaceMobile is attempting to build a global cellular broadband network in space that's capable of operating directly with standard mobile devices. Vodafone has supported the space firm since 2018, having been a three-time investor in the Midland, Texas-based firm. While the operator has secured gateways for Block 1, AST is currently developing its next-generation Block 2s, which feature up to 2,400 square foot communications arrays that are capable of delivering up to 10 times the bandwidth capacity of

BlueBird satellites currently in orbit. Vodafone becomes the latest big-name mobile operator to enter into an agreement with AST, joining more than 45 others, including the likes of AT&T, Verizon, Telefonica, and TIM. In addition to backing from Vodafone, Google, Verizon, and AT&T have all made investments in the satellite firm.

Starlink Secures License for Chad Operations

Chad's discussions with Starlink have been ongoing since 2021 as part of its larger effort to close connectivity gaps and support digital transformation. Chad has become the latest African country to officially license SpaceX's Starlink for its low-Earth orbit (LEO) satellite internet services. Chad's discussions with Starlink have been ongoing since 2021 as part of its larger effort to close connectivity gaps and support digital transformation. With Chad's approval, Starlink's reach has expanded to 16 African countries, including Burundi, Zimbabwe, Ghana, Botswana, Madagascar, and Sierra Leone, all receiving operating approvals in the past six months. This milestone reflects Starlink's rapid expansion across the continent, offering promising solutions for countries with underserved digital infrastructures.

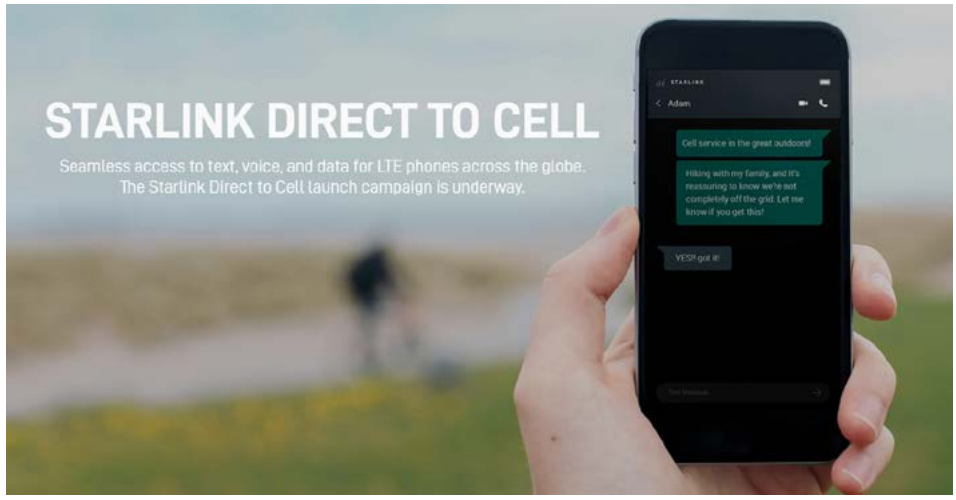
China to Launch Next-Generation Beidou Satellites in 2027

China has announced a strategic roadmap for advancing its Beidou positioning and navigation system by 2035, in a move which could have global implications. The country plans to complete key technology research for the next-generation Beidou system by 2025 and launch three test satellites around 2027, according to the "Beidou Satellite Navigation System Development Plan before 2035," released by the China Satellite Navigation System Management Office (CNSO) Nov. 28. The next generation of Beidou system networking satellites will then be launched around 2029. The construction of the next-generation Beidou system will be completed by 2035. China already has a 30-satellite Beidou system providing positioning, navigation and timing services globally. It features 24 satellites in medium Earth orbits, with eight in each plane, excluding backups. There are three Beidou satellites in inclined geosynchronous orbits and three satellites in geostationary orbits. The upgraded Beidou system will use satellites in high (likely referring to geosynchronous), medium and low Earth orbits, according to the report. The new system will provide real-time, high-precision, and highly reliable navigation, positioning, and timing services across Earth and near-Earth spaces, with accuracy ranging from meter-level to decimeter-level, according to state media Global Times. The system will support user terminals spanning from Earth's surface to deep space, and integrate with other non-satellite-based navigation and timing technologies. Beidou, like the U.S. Global Positioning System (GPS) and other systems from Europe and Russia, are used for civilian applications such as driving, aviation, and maritime navigation worldwide, as well as supporting industry, agriculture and finance. They also have military applications through precision-guided munitions, UAVs, and battlefield navigation. Notably, the system is already widely considered to be superior to the GPS in some areas. GPS's capabilities are already "substantially inferior to those of China's Beidou," according to the National Space-Based Positioning, Navigation and Timing Advisory Board (PNTAB). While Beidou has unique advantages, such as two-way communication and regional accuracy, GPS still dominates globally in terms of adoption and certain technological benchmarks. Meanwhile, U.S. efforts to modernize GPS face delays and technical challenges, according to a Government Accountability Office (GAO) report. An improved, next-generation Beidou could see China far surpass the U.S. and others in PNT capabilities. This could see it become the most favored system, expanding its commercial and economic influence, position China as a provider of global public goods and enhance its soft power, and provide enhanced military capabilities. This effort aligns with China's broader national initiative for a Space-Ground Integrated Information Network (SGIIN), which aims to merge communications, remote sensing, navigation, weather forecasting, and other satellite services into a unified system. Beidou's integration into SGIIN would potentially enhance its utility and further solidify its role in global satellite infrastructure. China is planning at least two low Earth orbit megaconstellations for communications, and has already built up remote sensing infrastructure in orbit through its Gaofen and Yaogan systems. China launched its first Beidou satellite in October 2000. The final pair of backup Beidou-3 satellites—the 59th and 60th launched during the program—launched on a Long March 3B rocket in September.

China Establishes Aerospace Information, Satellite Internet Innovation Alliance

China established an aerospace information and satellite internet innovation alliance in the Xiong'an New Area in north China's Hebei Province, marking a significant step forward in the collaborative development of the aerospace information field. Led by the country's key centrally-administered state-owned enterprises and involving telecommunications operators, universities, research institutes, private enterprises and field experts, the alliance is poised to drive international exchange, academic dialogue and technological innovation – thereby bolstering the aerospace information industry and satellite internet initiatives. The alliance aims to meet innovative development needs by rallying resources and strengths across industry, academia, research and practical applications. It will build an open platform for innovation, fostering the popularization and advancement of related industries. The alliance will actively engage in international exchanges and cooperation, creating a dynamic innovation environment focused on joint technology development, resource sharing and ecosystem collaboration. It is committed to providing robust scientific and technological support to help implement national strategies in the aerospace and satellite internet sectors.

FCC Approves SpaceX Direct to Cell Services Over Starlink



The Federal Communications Commission (FCC) has approved SpaceX to provide satellite coverage direct to mobile devices through its Starlink service. It will allow SpaceX to push forward with its partnership with T-Mobile to deploy mobile signal connectivity from space to cover dead spots. The license is the first between a satellite operator and a mobile carrier to be approved by the regulator to provide cell coverage from space. "The Commission recognized that satellite-to-device connectivity can support critical public interest benefits, including ubiquitous connectivity, access to 911 service from remote areas, technological advancement, and innovative spectrum use," said the FCC in its filing. Elon Musk-owned SpaceX filed for regulatory approval for its Starlink satellites more than two years ago but faced a lengthy battle to receive the FCC's approval. SpaceX has been given permission to use cellular frequencies from T-Mobile via its existing Gen2 Starlink constellation, with the 7,500 satellites allowed to operate at orbital altitudes of 340 to 360km using the Ku-, Ka-, E-, and V-band frequencies. The FCC told SpaceX it is authorized to "conduct operations using its very high frequency (VHF) beacons at altitudes of 340km, 345km, 350km, and 360km." However, based on a recommendation from the National Aeronautics and Space Administration (NASA), SpaceX's deployment and operations at altitudes below 400km are "conditioned on successful physical coordination with NASA to ensure protection of the International Space Station (ISS), ISS visiting vehicles, and launch windows for NASA science missions." Although SpaceX has been given the go-ahead to operate 7,500 satellites, its request to operate an additional 22,488 satellites, within the 340km, 345km, 350km, and 360km orbital shells, has been deferred by the Commission. SpaceX and T-Mobile were given temporary authority to use Starlink satellites to provide direct-to-cell coverage for cellphones in areas of North Carolina hard-hit by Hurricane Helene last month. T-Mobile and SpaceX first announced a partnership in August 2022, when the carrier set out plans to provide mobile signal connectivity from space with the target of leaving no area without coverage in the US. Last month, Musk confirmed that SpaceX's satellite broadband subsidiary Starlink will provide mobile phone Internet in the US exclusively to T-Mobile for just one year. T-Mobile's domestic rivals AT&T and Verizon previously told the FCC to delay T-Mobile and Starlink's planned direct-to-cell satellite service, claiming that the plans would harm their respective mobile broadband networks. SpaceX said its proposed SCS operations will not harm its competitors, while the company along with T-Mobile has claimed the filings are a tactic to delay its deployment of the service. AT&T and Verizon have their own partnerships with AST SpaceMobile to provide 100 percent coverage across North America through messaging services.

Starlink to Boost Cape Verde's Tech Infrastructure with Launch

Starlink, the satellite Internet service by Elon Musk's SpaceX, has launched in Cape Verde, marking a significant step in its African expansion strategy. This move aims to enhance Internet connectivity across the continent, especially in underserved regions. In October 2024, Cape Verde's regulatory authority, Agência Reguladora Multissectorial da Economia (ARME), authorized Starlink to provide electronic communications services nationwide, emphasizing the importance of competition and quality in the communications sector. This development positions Cape Verde as the 117th country,16th in Africa, to adopt Starlink's low-Earth orbit satellite-based connectivity solution, aiming to enhance digital inclusion and economic growth. The introduction of Starlink's satellite internet service represents a pivotal moment in Cape Verde's technological advancement. Historically, the archipelago has faced challenges in establishing robust Internet connectivity due to its dispersed geography and limited infrastructure. Traditional cable-based systems often struggled to provide comprehensive coverage, leaving many remote areas without reliable internet access. Starlink's satellite technology overcomes these barriers by delivering high-speed Internet directly from space, ensuring that even the most isolated communities can connect to the digital world. Economically, the availability of reliable high-speed Internet is poised to be a catalyst for growth. Local businesses can leverage improved connectivity to expand their operations, access new markets, and enhance productivity. Educational institutions and students stand to benefit from a wealth of online resources, facilitating better learning outcomes. In the healthcare sector, telemedicine can become a viable option, improving access to medical services for remote populations. Starlink's

mission is to provide high-speed Internet to areas lacking reliable connectivity. Its low Earth orbit satellite constellation offers faster and more reliable Internet services compared to traditional satellite providers. In Africa, where internet penetration remains low—approximately 40% as of recent estimates—Starlink's technology holds transformative potential. The launch in Cape Verde aligns with Starlink's broader African strategy. Earlier this year, the service became operational in countries like Nigeria, Mozambique, and Zambia. In August 2024, Starlink secured licensing to operate in Chad, aiming to enhance Internet access across the central African nation. However, the expansion hasn't been without challenges. In November 2024, Namibia ordered Starlink to cease operations, citing the lack of necessary telecommunications licenses. The entry of Starlink into new markets has significant implications for local Internet service providers (ISPs). Its competitive pricing and superior service quality have prompted discussions among stakeholders.

China's Commercial Satellite Constellation to Provide Brazil with Internet Services

China's commercial satellite constellation Spacesail will provide satellite communication services to Brazil and broadband internet access to the country's remote and underserved regions. The services will be carried out through the partnership between the constellation's developer Shanghai Spacesail Technologies Co., Ltd. and Telebras, a Brazilian telecommunications enterprise, according to a memorandum of cooperation signed by the two companies. The memorandum noted that the commercial services to Brazil will officially kick off in 2026. The cooperation marks the official launch of the Chinese company's overseas business. Spacesail is a low Earth orbit megaconstellation with full frequency bands and a multi-layer and multi-orbit design. Its commercial network construction was officially launched on Aug. 6, 2024. At present, the constellation has 36 operational satellites in orbit. They have completed relevant service tests and have proven to be capable of providing broadband communication services. The Spacesail Constellation will start its worldwide satellite Internet service in 2025, facilitating the fields such as transportation, new energy, smart cities, smart agriculture, emergency disaster relief and low-altitude economy. Shanghai Spacesail Technologies Co., Ltd. has begun business negotiations with more than 30 countries to promote the global commercial application and services of its constellation. China currently has 1,059 satellites in orbit, 492 of which are commercial satellites. By the end of June this year, 546 commercial space enterprises were registered and effectively operating in China.

Spacex Launches 24 Starlink Satellites in Back End of Coast-to-Coast Double Launch

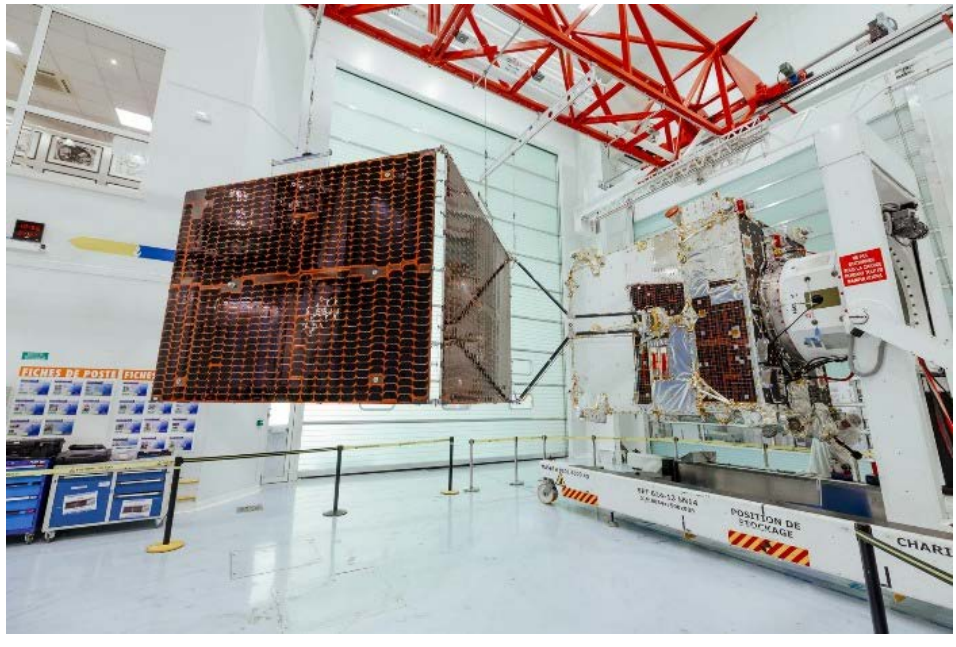
SpaceX launched 24 more Starlink satellites into orbit from Cape Canaveral Space Force Station in Florida. SpaceX said in a statement, "On Thursday, November 14 Falcon 9 launched 24 Starlink satellites, to low-Earth orbit from Space Launch Complex 40 (SLC-40) at Cape Canaveral Space Force Station in Florida. This was the 18th flight for the first stage booster supporting this mission, which previously mPOWER-C, OneWeb2, Intelsat 40e, Digital Globe 2, Turksat-6A, Eutelsat 36X, Ovzon-3, CRS-26, and now 10 Starlink missions." The launch placed 24 additional Starlink V2 Mini satellites into lower Earth orbit in what has become a routine occurrence for SpaceX's business. It will be part of a constellation that will allow Internet service around the world, even in its most remote areas. The launch is the 18th for the first stage of the Falcon 9 rocket, which returned to Earth about eight minutes after liftoff and landed on the drone ship Just Read the Instructions in the Atlantic Ocean. The liftoff was part of a double launch for SpaceX. Five hours earlier another SpaceX rocket lifted 20 Starlink satellites into space from the Vandenberg Space Force Center in California. It will include testing a suite of heatshield experiments and maneuvering changes to have the ship re-enter and descend over the Indian Ocean, according to a SpaceX mission update.

Indosat and GoTo Launch Indonesia's First Open-Source AI Ecosystem with Nvidia

Indosat Ooredoo Hutchison CEO Vikram Sinha, Nvidia CEO and co-founder Jensen Huang, State-Owned Enterprises Minister Erick Thohir, and GoTo CEO Patrick Walujo launched Sahabat-AI, an open-source large language model (LLM) ecosystem designed for Bahasa Indonesia and regional languages, in Jakarta on Thursday, Nov. 14, 2024. (Photo courtesy of Indosat) Jakarta. Telecommunications company Indosat Ooredoo Hutchison (IDX: ISAT) and tech conglomerate GoTo Gojek Tokopedia (IDX: GOTO) have announced the first phase of Sahabat-AI, an open-source large language model (LLM) ecosystem designed for Bahasa Indonesia and regional languages. Unveiled at Indonesia AI Day 2024 in Jakarta, the event featured Jensen Huang, CEO and co-founder of Nvidia, the world's largest company. Sahabat, meaning "best friend" in Indonesian, is designed to process vast amounts of data in Bahasa Indonesia and local languages. Developed with Nvidia's full-stack AI platform, Sahabat-AI will launch in its initial phase with 8-billion and 9-billion parameter models. "By creating an AI model that speaks our language and reflects our culture, we empower every Indonesian to harness advanced technology's potential," Sinha said. Supported by AI Singapore, Tech Mahindra, and Nvidia's AI Enterprise software, Sahabat-AI incorporates input from Indonesian universities such as the University of Indonesia and Gadjah Mada University, as well as local media, to ensure it aligns with Indonesia's cultural and linguistic context. "Sahabat-AI launches Indonesia's AI journey and showcases how LLMs can serve unique linguistic and cultural needs," said Jensen Huang.

Sout Korea's Telecom Satellite Koreasat-6A Launched

A telecommunication satellite from the South Korean telecom giant KT has been launched into space and is now in orbit. According to a launch video from SpaceX, the Koreasat-6A, a geostationary satellite for communication services, was launched aboard SpaceX's Falcon 9 rocket from the Kennedy Space Center in Florida. The booster of the Falcon 9 rocket successfully separated and descended to Earth approximately seven minutes after launch, and the second-stage rocket continued its flight and successfully deployed the satellite into orbit about 35 minutes after launch. The Koreasat-6A will provide fixed satellite services and broadcasting satellite services. KT SAT, the satellite service arm of KT, plans to put the telecom satellite into official service in the first quarter of next year after completing tests in orbit by the end of this year.



Intelsat Claims Major Milestone with Nigerian Backhaul Service Launch

Satellite and terrestrial network operator Intelsat has unveiled a new satellite cellular backhaul service platform, located at the Open Access Data Centers facility in Lagos, Nigeria. Data center facility provider OADC is a division of core digital infrastructure solutions and managed network services company WIOCC. Intelsat says this launch marks a major milestone in its efforts to enhance Nigeria and Africa's connectivity infrastructure. As Intelsat points out, sub-Saharan Africa remains the region with the widest usage and coverage gaps (59% and 15% respectively), adding that attempts to expand mobile networks are often slowed by the high cost and slow pace of traditional infrastructure deployment methods – and deterred by low returns on investment. The company says that Intelsat CellBackhaul Nigeria, its fully managed cellular backhaul service, will support MNOs and ISPs in Nigeria and West Africa by helping them to overcome challenges related to expanding mobile coverage in the region, enabling rapid and cost-effective network expansion via Intelsat's satellite and terrestrial network. The new Nigerian solution will be added to the existing platforms in several other African countries delivering services to millions of people across thousands of cell towers. As Rhys Morgan, RVP, EMEA, Intelsat, explains: "Satellite technology is critical to closing the digital divide. To connect unconnected populations in rural and remote locations, satellite backhaul is often the most viable option for a rapid, reliable, cost-effective connectivity solution,"

Telco Joins Low Earth Orbit Satellites

Vodafone Fiji has become Fiji's latest authorized reseller of Starlink satellite Internet services and the second Amalgamated Telecom Holdings (ATH) subsidiary to do so in less than five months. Vodafone Fiji made the announcement last week. "This collaboration introduces advanced satellite internet technology to Fiji, representing expansion in Vodafone Fiji's mission to deliver innovative connectivity solutions to the Fijian community," it stated. "By leveraging Starlink's low-Earth orbit satellites, Vodafone Fiji will provide its enterprise customers with reliable high-speed internet, even in the most remote regions of the country." Starlink's entry into the Pacific has been a double-edged sword for ATH, whose expansion into the Pacific in recent years now sees it operating mobile telephone services in a number of Pacific countries through the Vodafone brand and subsea cable Internet to complement its offerings. In its latest annual report released early this month, the telecom conglomerate said Starlink's entry provided it with important development opportunities as well as concerns. "While Starlink is a competitive option at the retail front, we also view significant opportunity to leverage the capabilities to enhance our services and help bridge the digital divide by connecting underserved communities in a cost-effective manner," said ATH chief executive officer Ivan Fong. "Our subsidiary, Telecom Fiji Ltd (TFL), along with potentially others in the near future, is partnering with Starlink to leverage Starlink satellite technology, which will extend our reach and improve connectivity across the region. "While ATH sees potential in collaborating with telco operators like Starlink to expand mobile coverage in remote areas, we also have concerns. "The rise of LEO satellites potentially raises issues related to data sovereignty, information security, and compliance with exchange control regulations and tax laws. "Additionally, ATH believes that

uniform terms and conditions for all internet service operators are essential to ensure fair competition in the market," Mr Fong said. Starlink's official launch in Cook Islands last month had a quick direct impact on Vodafone Cook Islands, a subsidiary of ATH, which experienced a 12 per cent decline in Internet revenue and "significant loss in the high-yield residential and certain business segments of the broadband services market" attributed to Starlink's entry. In July this year, Telecom Fiji had become the first ATH subsidiary to become a Starlink reseller in Fiji.

Viasat and Altan Partner to Boost Cellular Coverage in Mexico

Global communications company Viasat has announced the launch of a home and mobile broadband service in Mexico that, they say, will boost cellular coverage in the country. Viasat, in collaboration with Altan, the Mexican telecommunications wholesaler, will integrate Viasat's satellite and wireless LTE technologies with Altan's shared mobile network and provide cellular coverage for consumers in previously uncovered areas across Mexico. Viasat says its innovative service seamlessly combines cutting-edge satellite and wireless systems to provide LTE over satellite via a cost-efficient, power-independent, wireless LTE infrastructure. Viasat's service is available today in 13 states across Mexico, providing cellular coverage to more than 150,000 individuals. The company adds that its ultra-low-cost wireless LTE towers are strategically positioned across Mexico's most remote areas, providing access to connectivity in regions where cellular coverage had until now had been minimal or non-existent. Some LTE towers utilize solar panels as a backup power source, while others are entirely solar powered. This collaboration aims to expand the availability of high-speed broadband to remote communities throughout Mexico. Viasat say that according to the US Department of Commerce's International Trade Administration, approximately 30% of Mexico's population – more than 38 million people – live in areas without broadband access. In an effort to bring connectivity to remote communities in Mexico, Viasat launched the Mexico Ambassador Program in 2021. The program partners with local representatives, mostly women, to share knowledge and expertise in areas connected by Viasat technology. By training the ambassadors in developing digital skills, the program promotes gender equality and digital inclusion. Hector Rivero, general manager of Mexico broadband at Viasat, says: "Viasat is revolutionizing Mexican communities by providing fast, reliable, secure, affordable, and high-quality internet access." He adds: "With this service, we are fueling digital inclusion and empowering teachers and students with educational resources, improving healthcare through telemedicine, facilitating communication for families separated by migration, and stimulating local commerce with digital tools."

SpaceX Launches OneWeb 20 Mission

A set of satellites for the European internet provider EutelsatOneWeb were successfully launched by SpaceX late Saturday night. The satellites were launched by a Falcon 9 rocket from SLC-4Eat the Vandenberg Space Force Base in California around 10:13 p.m. local time. The rocket's first-stage booster landed on a landing pad about eight minutes after the launch. "Deployment of OneWeb satellites complete," SpaceX said on social media after the launch. The firm Eutelsat OneWeb, founded from the merger of Eutelsat and OneWeb in 2023, is headquartered in London and is a subsidiary of the French satellite internet giant Eutelsat Group. After the launch, Eutelsat Group chief executive Eva Berneke said the company was "delighted" to have successfully contacted each of the 20 satellites. "We are delighted to see the successful launch and deployment of new OneWeb satellites. These satellites will strengthen our network services, improving overall performance for our customers," Bernekesaid. "As we celebrate the anniversary of the merger with Eutelsatand OneWeb, we are excited by the growing demand for our multi-orbit services and we remain committed to delivering value for our customers and shareholders." The company is now believed to have nearly 700 functional satellites in its constellation, after a previous OneWeb launch with SpaceX in May 2023 -- before its Eutelsat merger.

Sidus Space Receives FCC Approval to Expand Satellite Constellation in Low Earth Orbit

Sidus Space, Inc. announced that it has secured approval from the U.S. Federal Communications Commission (FCC) to operate a micro constellation of remote sensing satellites in Low Earth Orbit (LEO). This regulatory clearance marks a significant step forward in the company's plan to broaden its orbital presence and provide versatile, cost-efficient data acquisition services through its data-as-a-service model. Sidus retains ownership of the data collected via its LizzieSat sensors for all missions, ensuring clients have direct access to valuable data streams. The FCC authorization covers LizzieSat 2 through 5, allowing Sidus to expand its operations beyond the inaugural LizzieSat-1 mission. This approval aligns with the company's long-term vision to establish itself as a key enabler in space missions, offering enhanced situational awareness for government, defense, intelligence, and commercial users worldwide. "We are thrilled to receive this key FCC approval, which allows us to further expand our on-orbit presence and offer our customers a seamless combination of hosted payload capabilities and data services," said Carol Craig, Founder and CEO of Sidus Space. "This milestone underscores the value of our data-as-a-service model, providing clients not only with payload hosting and on-orbit AI enhanced processing, but also with continuous data streams to meet their operational needs. Additionally, with Sidus" ownership of the data collected by our LizzieSat sensors, we offer a unique proposition for customers looking for comprehensive and reliable data solutions." As part of

the LizzieSat 2 and 3 missions, Sidus will host the HEO's Holmes Imager payload, which is designed to capture detailed images of satellites and space debris in orbit. In addition to payload hosting, Sidus will provide HEO with monthly data services. This FCC approval represents a substantial advancement for Sidus Space, enhancing its capacity to deliver expanded real-time, space-based data solutions across various industries.

Starlink's Entry into Zimbabwe Lowers Internet Tariffs

In September 2024, SpaceX's satellite Internet service, Starlink, officially launched its operations in Zimbabwe and it is already making a significant mark on pricing of Internet services in the Southern African nation. In Zimbabwe, Starlink's user terminals retail from US$200 for the mini kit which offers unlimited Internet and speeds of over 100 Mbit/s for US$30 per month. With this pricing Starlink has now become the cheapest Internet provider in the country. In just over two months, Starlink's equipment has also sold out in the country's capital of Harare, as well as other surrounding areas. The launch of broadband services via Starlink's low-Earth orbit (LEO) satellite constellation had been long anticipated in the country. Before the September announcement by the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ), several residents had opted to use Starlink's roaming services via service providers in neighboring countries such as Zambia and Mozambique. However, it came at a high price, with Starlink kits averaging at US$600 (due to third-party suppliers) along with a monthly bill of US$50 for unlimited roaming Internet services. Internet is a sought-after commodity in the country. However, due to the hefty prices charged by Internet services providers (ISPs) – which average at around US$500 for unlimited Internet – many have had to resort to monthly data packages from mobile network operators (MNOs), often at exorbitant rates. Erratic Internet service from MNOs is also the norm and the reason why Starlink is now the preferred choice. Speaking to Connecting Africa, Sammy Tatenda Nyere, ZimCyber-Security's chief technology officer, said the current electricity crisis is also contributing to unreliable Internet services, especially for MNOs who often need to use electricity for their network boosters. Before Starlink's official launch in Zimbabwe, some residents had been using its roaming services via service providers in neighboring countries, however this came at a high price. Nyere commended Starlink for having the capacity to accommodate several users per terminal, which allows households in a particular street to share one Starlink kit and contribute towards monthly payments, in return for accessing faster Internet at a lower price. "Starlink's inception in Zimbabwe has been most welcome, most people especially in high density areas are sharing Starlink costs, which means more people will have access to the Internet creating a more tech-savvy generation which understands that Internet is not only for WhatsApp and TikTok," said Nyere. In addition, information technology company Compulink believes that the arrival of Starlink in the country represents an opportunity to improve Internet connectivity and coverage, especially in rural areas.

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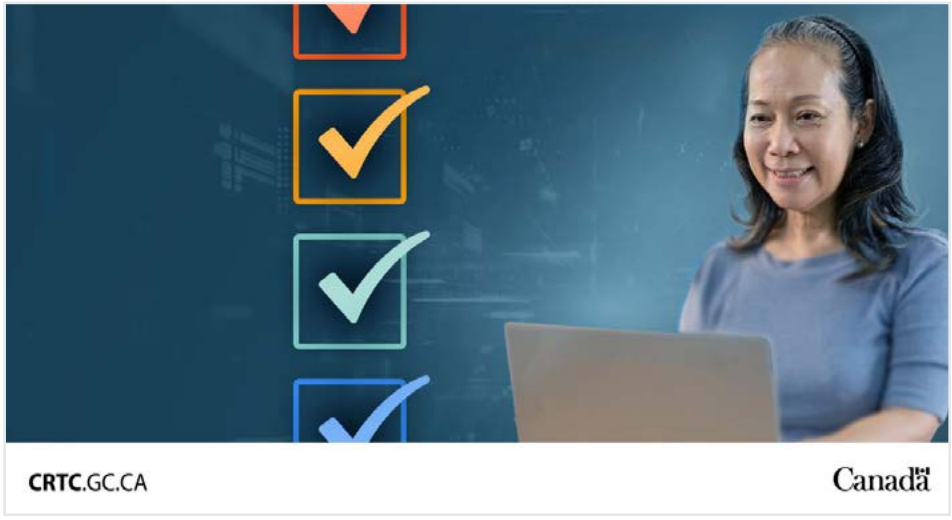
WHOLESALE NEWS

Ghana and Gambia to Sign Free Roaming Agreement

Ghana's National Communications Authority (NCA), in conjunction with the Ministry of Communications and Digitalization and Mobile Network Operators (MNOs), will sign a Memorandum of Understanding (MOU) with The Gambia to enhance the implementation of ECOWAS free foaming initiative. The NCA said in a statement that the MOU will allow MNOs to start technical and regulatory negotiations, which will eventually lead to the implementation and deployment of the ECOWAS roaming laws in the first half of 2025. The Ghanaian and The Gambian delegations have been meeting since Tuesday, and the meeting concludes today with the signing of the MOU. According to the NCA, the aim of this initiative is to reduce the cost of telecommunications services for citizens traveling between Ghana and the Gambia, promoting seamless communication and strengthening economic and social ties. During his opening remarks, Prof. Ezer Osei Yeboah-Boateng, NCA's Deputy Director General (Technical Operations) and leader of the Ghana delegation, stated that the meeting is a significant step toward regional integration. He acknowledged Ghana's leadership in strengthening regional connectivity, highlighting existing bilateral roaming agreements with Côte d'Ivoire, Togo, and Benin. "This collaboration with The Gambia marks the next phase in extending affordable telecom services across the region," he said. Prof. Yeboah-Boateng went on to say that, in addition to cost savings, collaboration represents a shared commitment to creating an inclusive, seamless communication system that promotes economic growth, tourism, and unity in West Africa. Solo Sima, Deputy Director General of The Gambia Public Utilities Regulatory Authority, expressed optimism at the meeting that the ECOWAS free roaming Initiative would help to connect Africa while also creating employment and business opportunities. He asked regulators to evaluate the implications of emerging technologies, such as 5G, while keeping agreements flexible and consumer-focused.

CRTC Sets Rates that Will Allow for Greater Choice of Internet Services

Canadian Radio-television and Telecommunications Commission (CRTC) decision sets interim wholesale rates that competitors will pay large telephone companies to access their modern fiber networks. The decision will increase choice of affordable Internet services at the higher speeds Canadians expect. This is the latest step in implementing the CRTC's policy to increase Internet competition in Canada. In November 2023, following an expedited process, the CRTC provided competitors with access to fibre networks in Ontario and Quebec, where competition had declined most significantly. In that decision, the CRTC set interim rates that have been successfully used by competitors to offer new options in those provinces. In August 2024, following a comprehensive review and a week-long public hearing, the CRTC broadened the access to the large telephone companies" fiber networks across Canada. In that decision, the CRTC required that access be given by February 13, 2025, and committed to issuing interim rates this year. Today's decision sets those rates. Established



using the CRTC's long-standing approach, these rates are based on a thorough analysis of detailed costing information filed by the large telephone companies. The rates reflect the actual costs of building fiber networks and will allow companies to continue investing in high-quality networks. The rates are consistent with the ones already being used by competitors in Ontario and Quebec. "Today's decision will provide Canadians with new options for Internet, television, home phone, and smart home services. We are already seeing competitors using fibre access to bring new offers in Ontario and Quebec, and we look forward to this broader access benefiting even more Canadians."

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TECHNOLOGY NEWS

2024 WLAN Industry Summit and World WLAN Application Alliance (WAA) 2024 General Assembly Held in Shenzhen, Advancing Innovation and Global Collaboration for WLAN Development

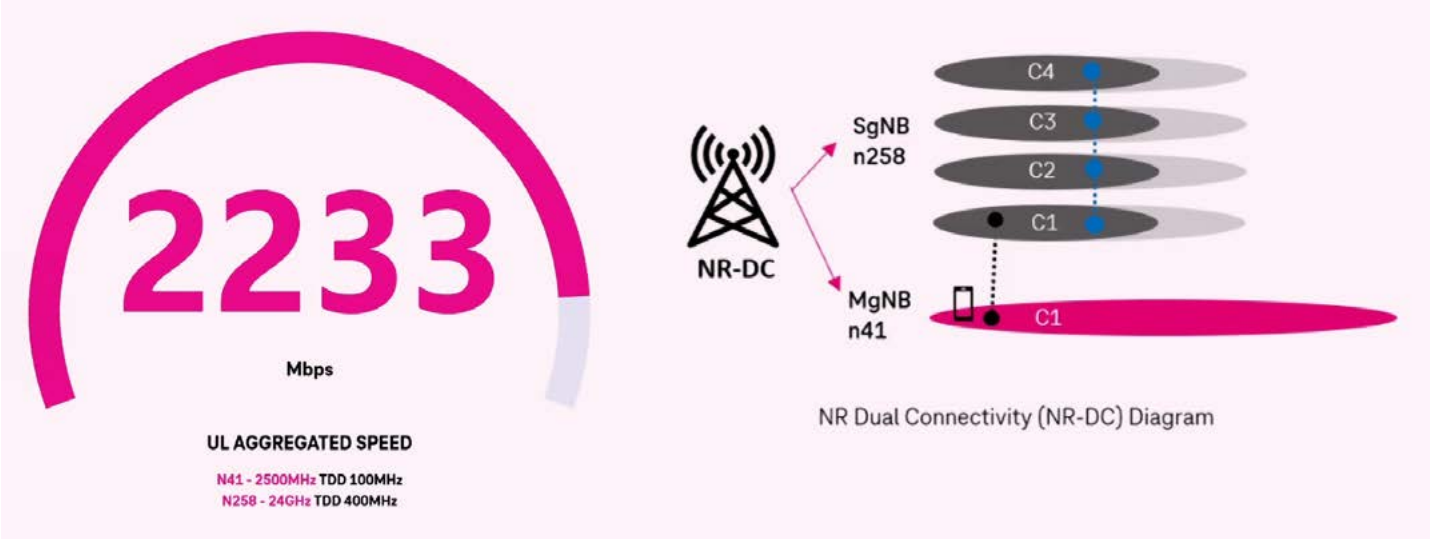
On November 28th, Shenzhen played host to a gathering of global WLAN industry leaders at the 2024 WLAN Industry Summit: "In Unity and Innovation Toward a New Era," alongside World WLAN Application Alliance (WAA) 2024 General Assembly. Honored to host the event, WAA received invaluable support from the Shenzhen Development Agency of the Hetao Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone and the Shenzhen Industry and Standards Innovation Consultancy Center. WAA is an international organization dedicated to promoting the development of the Wireless Local Area Network (WLAN) industry. It consists of nearly a hundred member units worldwide, covering multiple fields such as technology research and development, product manufacturing, testing and certification, and application services. WAA is committed to providing the best experience in wireless local area networks. It has made significant contributions to the development of WLAN by publishing industry reports, promoting standardization work, conducting testing and certification services, and strengthening international exchanges and cooperation. The Summit gathered industry leaders and important partners in the WLAN ecosystem, whom collectively witnessed the achievements of the WLAN industry in 2024 and engaged in discussions on the outlook and development of the industry. Distinguished domestic and international attendees included Zhang Ping, Academician of the Chinese Academy of Engineering, Counselor of the State Council, and Chair of WAA; Zhang Gang, former Counselor of the State Council and Co-Director of WAA's Strategic Advisory Committee; Lin Yi, Deputy Director-General of the Shenzhen Municipal Bureau of Industry and Information Technology; Yu Jie, Deputy Director-General, He Tao Shenzhen-

Hong Kong Science and Technology Innovation Cooperation Zone; Gan Bin, Vice President of Huawei Technologies Co., Ltd., WAA council member; Li Feng, General Manager of the Home Smart Connectivity Division at China Mobile (Hangzhou) Information Technology Co., Ltd.; Robert Stacey, Chair of IEEE 802.11 Working Group; and Dr.Mustafa Aykut, Director of Programs and Public Policy at the SAMENA Telecommunications Council along with other prominent domestic and international figure. These influential figures contributed to exploring new pathways for the industry's steady and long-term growth. Notably, WAA has made significant strides in enhancing its certification framework, expanding its testing capabilities, and accelerating its internationalization process, all of which have provided a strong boost to the global WLAN industry's prosperous development. Zhang Ping, academician of the Chinese Academy of Engineering, counselor of the State Council, and Chair of WAA, delivered the opening speech. He introduced the notable achievements of WAA in 2024 within the WLAN industry including industry reports publication and technology standardizing. He also briefly outlined the development plan for WAA for 2025, emphasizing that the Alliance will continue to lead industrial progress and explore more global collaboration opportunities. During the Summit, WAA proudly released the "WLAN Advanced User Experience Technologies White Paper", which offered an in-depth analysis of the latest advancements in technological innovation, standard development, and performance evaluation. The white paper highlighted particularly outstanding achievements in accelerating network transmission speeds, strengthening stability, and optimizing user experiences. This milestone initiative reflects the collective wisdom of WAA and its member companies and provides profound insights into the latest trends and future directions of WLAN technology. In addition, WAA's certification services became one of the shining highlights of the Summit. The

certification services, which underwent a comprehensive upgrade in 2024, were widely recognized by industry partners and global markets. This move marks WAA's leadership in technological innovation and standardization, underscoring its forward-thinking vision and industry leadership. Furthermore, it demonstrates WAA's unwavering commitment to advancing the WLAN industry toward higher quality and higher standards. The Summit also showcased WAA's powerful testing capabilities, with the introduction of a new testing platform. This platform integrates cutting-edge technologies and equipment, offering efficient, accurate, and comprehensive testing services across the entire product lifecycle, from research and development to mass production. Additionally, WAA launched an all-encompassing experience and performance evaluation service for WiFi 7 devices, designed to provide consumers with precise and reliable purchasing advice. Entering 2024, WAA has adopted an increasingly open approach to global cooperation, forging closer relationships with international industry organizations such as IEEE 802.11 and the SAMENA Telecommunications Council, and signing Memorandum of Understanding with international industrial organizations such as WBA and Wi-Fi NOW. WAA also actively promoted the establishment of the BRICS New Connectivity Committee within the BRICS Partnership on New Industrial Revolution Innovation Base Industry Alliance, and as the secretariat of this committee, WAA will facilitate deeper cooperation among BRICS countries in the field of new connectivity industry in the future. Additionally, WAA successfully hosted multiple international industry forums, including the WAA and Informa Tech 2024 Barcelona Roundtable and the 2024 BRICS New Connectivity Innovation Forum, and participated in the 2024 Shanghai Mobile World Congress and the 2024 BRICS New Industrial Revolution Exhibition. These events effectively promoted the implementation of the Alliance's achievements and enhanced WAA's international brand recognition. Next, WAA plans to explore pathways for converting its alliance standards into international standards. The contributions of the IEEE 802.11 Working Group Chair and SAMENA Telecommunications Council's Director of Programs snd Public Policy further elevated the Summit's international influence, injecting new energy into WAA's global expansion strategy. With these key developments, WAA's testing system and certification standards are beginning to have a tangible impact on the industry, laying a solid foundation for improving the overall quality and performance of WLAN products globally. The "WAA Certification" standard is increasingly becoming synonymous with high-quality WLAN products, fully reflecting the Alliance's unwavering commitment to achieving excellence both domestically and internationally.

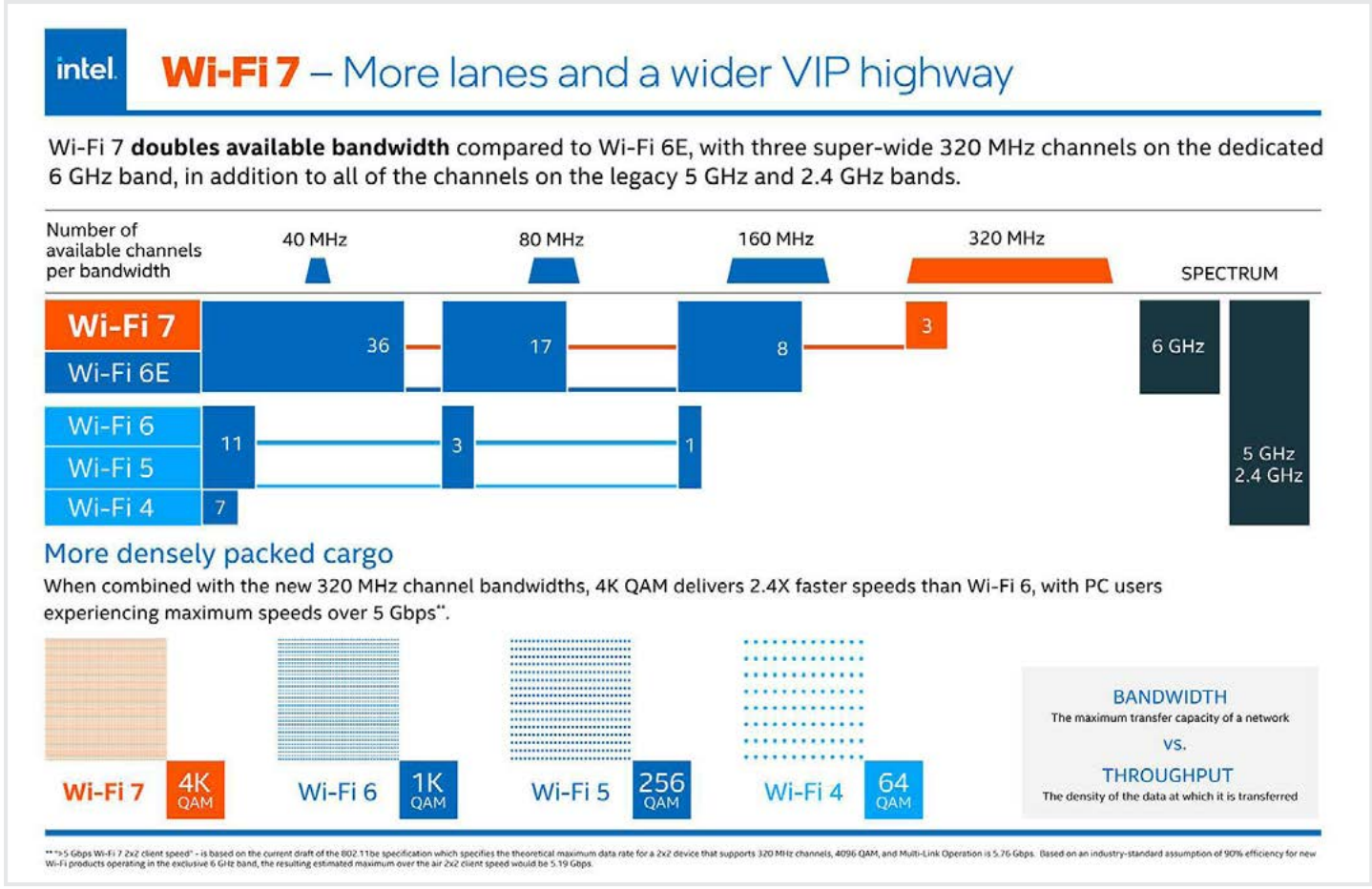
T Mobile Shatters World Record for 5G Uplink Speed

T-Mobile announced it broke another world record with its 5G standalone (SA) network, leveraging an emerging feature called New Radio Dual Connectivity (5G DC). With 5G DC, the Un-carrier was able to massively increase uplink throughput and capacity, reaching peak speeds of 2.2 Gbps — that's the fastest recorded anywhere in the world — and demonstrates the technology's potential to create serious efficiencies in how data is transmitted from devices to the network. 5G DC enables the Un-carrier to aggregate 2.5 GHz and mmWave spectrum, allowing for an insane boost to uplink throughput and capacity. In this test, T-Mobile was able to allocate 60% of the mmWave radio resources for uplink where previous use cases typically allowed up to 20%. Completed on T-Mobile's 5G SA production network in SoFi Stadium in Southern California with equipment and 5G DC solution from Ericsson and a mobile test smartphone powered by a flagship Snapdragon® X80 5G Modem-RF System from Qualcomm Technologies, Inc., this test changes the game for providers looking to offer customers and businesses the best experience possible at crowded events. "With 5G DC, T-Mobile is pushing the boundaries of what's possible to create better experiences in the places that matter most to our customers," said Ulf Ewaldsson, President of Technology at T-Mobile.



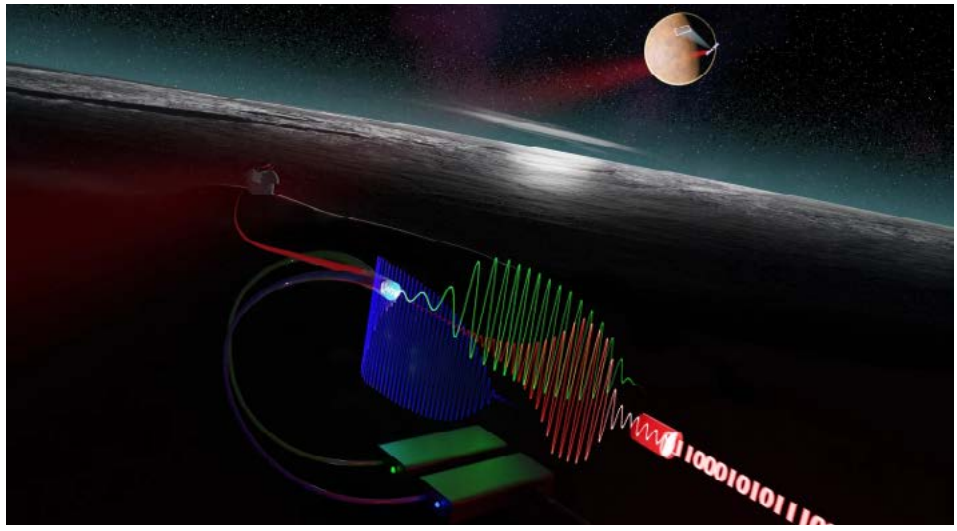
320 MHz will be "Mainstream" in Wi-Fi 7 and 8, say Broadcom and Intel

Wi-Fi 7's support of 320 megahertz (MHz) channels, double the 160 MHz of Wi-Fi 6E, has long been a headline feature, delivering unprecedented reliability and range while offering gigabit-plus performance. Because of these clear benefits, Broadcom views 320 MHz as "table stakes" and says that early adoption indicates it will be "mainstream" in Wi-Fi 7 and 8. "Virtually every Access Point has 320 MHz support in the 6 GHz band and a high percentage of phones and PCs support 320 MHz," Gabriel Desjardins, director of product marketing in Broadcom's Wireless Connectivity Division, told RCR Wireless News. He noted that handset volumes on the market are split right now between 160 and 320 MHz, but believes the market is "moving entirely to 320 MHz in the near future." And Desjardins expects similar penetration for the Access Point market, as the benefit there is also apparent: "Basically, at every point in your home, you're going to get higher throughput with a Wi-Fi 7 AP than with 6E or 6," he said. When it comes to the Personal Computing Devices market, such as notebooks, desktops and tablets, Intel recently found that of the 269 models on the market, 87% support 320 MHz while just 13% only support up to 160 MHz. The company further reported that Wi-Fi 7 has ramped 2.3x faster than Wi-Fi 6E one year after the Wi-Fi Alliance Certification launch. "Intel is thrilled to see the rapidly maturing ecosystem and growing number of devices with Wi-Fi 7. Support for 320 MHz channels in the 6 GHz band is essential to enable gigabit speeds and wired-like responsiveness in more places throughout the home or office," commented Eric McLaughlin, VP of Intel's Client Computing Group and GM Connectivity Solutions Group. "Users will be able to maximize their broadband connections and enjoy great Wi-Fi speeds for a variety of new entertainment, collaboration, and productivity experiences." Broadcom conducted extensive 320 MHz testing in its Edge Computing labs in Dallas, Texas. Using a commercially available 320MHz-enabled phone and a commercial Broadcom-based Wi-Fi 7 access point in a large empty conference room, speeds in excess of 4 gigabits per second were obtained throughout the room. In addition, to illustrate the power of 320 MHz channels in a challenging environment, Broadcom tested this feature live last May at the Dynamic Spectrum Alliance (DSA) Summit in Geneva. The test environment was simple enough: a large, crowded room, with lots of movement, which is typically a challenging place for Wi-Fi. Yet Broadcom achieved consistent gigabit per second speeds at the furthest reaches of the room. "These demos using commercially-available devices clearly demonstrate not just the value of Wi-Fi 7 operating in a 320 MHz channel, but also that device migration to wider channels is imminent. Seeing is believing. The ability to operate in a 320 MHz is foundational for indoor gigabit wireless broadband," said VijayNagarajan, Vice President of product marketing in Broadcom's Wireless Connectivity Division.



Faster Communication with Earth Possible Through Record-Sensitive Receiver

In a significant advance for space communication, researchers at Chalmers University of Technology in Sweden have developed a new system featuring a silent amplifier and a record-sensitive receiver, enabling the faster and clearer transmission of images, videos, and data from space probes to Earth using light. This development holds potential for enhancing long-distance optical links that face power loss and interference during the journey to Earth. Optical communication using laser beams is increasingly favored over radio waves for space applications, as it suffers from less signal loss over vast distances. However, even light-based signals diminish in strength over the journey, requiring highly sensitive receivers on Earth to detect these weakened signals. The new system by Chalmers researchers seeks to meet this need by providing a pathway for higher-speed, error-free transmissions over distances such as those from the Moon or Mars to Earth. "We can demonstrate a new system for optical communication with a receiver that is more sensitive than has been demonstrated previously at high data rates. This means that you can get a faster and more error-free transfer of information over very long distances, for example when you want to send high-resolution images or videos from the Moon or Mars to Earth," said Peter Andrekson, Professor of Photonics at Chalmers and one of the lead authors of the study, which was recently published in the scientific journal "Optica'. At the heart of the system is an optical amplifier designed to enhance the signal with minimal noise, making data transmission more reliable. As light spreads and weakens with distance - similar to a flashlight beam - signals sent from space are often too faint upon reaching Earth to overcome the electronic noise in receivers. The Chalmers team previously developed a noise-free optical amplifier, but its practical implementation had been hindered by the demanding requirements it placed on both transmitter and receiver. The current design simplifies these demands, with the receiver on Earth generating two of the three light frequencies necessary for noise-free amplification, allowing the transmitter to produce only a single frequency. This adjustment means the noise-free amplifier can now be utilized with a standard laser transmitter, potentially allowing existing optical transmitters on space probes to function seamlessly with the new system on Earth. "This phase-sensitive optical amplifier does not, in principle, generate any extra noise, which contributes to a more sensitive receiver and that error-free data transmission is achieved even when the power of the signal is lower. By generating two extra waves of different frequencies in the receiver, rather than as previously done in the transmitter, a conventional laser transmitter with one wave can now be used to implement the amplifier. Our simplification of the transmitter means that already existing optical transmitters on board satellites and probes could be used together with the noise-free amplifier in a receiver on Earth," explained Rasmus Larsson, Postdoctoral Researcher in Photonics at Chalmers and a lead author of the study. This progress brings Chalmers" silent amplifier closer to practical use in space-Earth communication links, which could alleviate a bottleneck currently facing space agencies, referred to as "the science return bottleneck." This bottleneck arises from the challenges in rapidly transmitting scientific data from space back to Earth. NASA has highlighted this bottleneck as a critical issue in the data transmission chain. "We believe that our system is an important step forward towards a practical solution that can resolve this bottleneck," said Andrekson. The Chalmers team plans to advance this technology by testing the optical communication system in field conditions on Earth, followed by trials in satellite-to-Earth communication links.



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REGULATORY NEWS

UN, ITU Launch Advisory Body to Strengthen Submarine Cable Resilience

The International Telecommunication Union (ITU), in collaboration with other UN departments established a new body aimed at strengthening the resilience of submarine cables in response to rising outages. The ITU, the United Nations Agency for Digital Technologies, and the International Cable Protection Committee (ICPC) have jointly formed the International Advisory Body for Submarine Cable Resilience. The new body will explore ways to improve cable resilience by promoting best practices for governments and companies. Its focus will include ensuring timely deployment and repair of submarine cables, reducing the risk of damage, and enhancing connectivity continuity. "Submarine cables carry over 99 per cent of international data exchanges, making their resilience a global imperative," said ITU Secretary-General Doreen Bogdan-Martin. "The Advisory Body will mobilize expertise from around the world to ensure this vital digital infrastructure remains resilient in the face of disasters, accidents, and other risks." The ICPC estimates that an average of 150 to 200 faults occur globally each year, requiring around three cable repairs per week. The primary causes of cable damage are accidental human activities, such as fishing and anchoring, as well as natural hazards and equipment failures. The Advisory Body is co-chaired by H.E. Bosun Tijani, Minister of Communications, Innovation and Digital Economy of the Federal Republic of Nigeria, and Professor Sandra Maximiano, Chair of the Board of Directors of Portugal's National Communications Authority (ANACOM). "Submarine cables are essential to the functioning of our connected world, but they face risks that require coordinated, proactive action," said Tijani. "We are therefore pleased to host the inaugural Submarine Cable Resilience Summit in Nigeria in early 2025." "This initiative underscores the global community's commitment to strengthening these networks and advancing international cooperation for digital resilience," added Maximiano.

Oman's MTCIT Tackles 136 Cybersecurity Incidents and Advances Digital Authentication Services in 2024

Oman's Ministry of Transport, Communications, and Information Technology (MTCIT), through the National Centre for Information Security, has successfully addressed 136 cybersecurity incidents in the first nine months of 2024. The swift detection and resolution of these issues underscore the ministry's commitment to safeguarding the nation's digital infrastructure against emerging cyber threats. In addition, MTCIT issued 25 cyber alerts and warnings concerning security vulnerabilities. These alerts were accompanied by detailed guidelines to help institutions mitigate potential risks and prevent breaches. The National Laboratory for Digital Evidence, during the same period, processed 164 cases and analyzed 757 devices, including desktop computers, laptops, mobile phones, and external hard drives. MTCIT has also made significant progress in enhancing Oman's digital authentication services, issuing over 2.3 million electronic authentication certificates linked to residence cards. Furthermore, more than 233,000 certificates were provided for mobile phone authentication, and 213 certificates were issued for electronic signature tools for government and private sector employees. To further strengthen Oman's digital ecosystem, MTCIT completed the integration of 14 new electronic systems from various institutions, expanding access to electronic authentication services. This initiative aims to streamline operations and ensure secure digital interactions across sectors. These achievements reflect MTCIT's ongoing efforts to fortify Oman's cybersecurity infrastructure and drive the country toward a safer and more efficient digital future.

Kingdom Launches New Framework to Standardize Digital Services

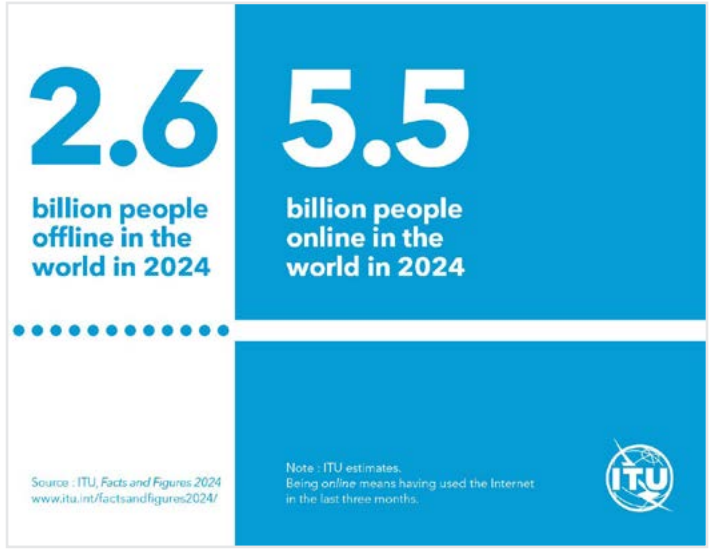
The Digital Government Authority has launched the Platform Code, a national framework for designing and developing government platform interfaces in Saudi Arabia. Unveiled during an event in Riyadh, the initiative aims to unify platform designs, ensuring a seamless and consistent digital user experience. The event gathered dignitaries, digital transformation leaders from public and private sectors, and key stakeholders. Ahmed Al-Suwaiyan, governor of the Digital Government Authority, said that the Platform Code aligns with local and global digital standards. He described it as a critical step toward comprehensive digital transformation, enhancing compliance, and fostering efficient and impactful services aligned with Saudi Arabia's strategic digital goals. The Platform Code, an open-source design system, integrates coding frameworks, design tools, and community guidelines, enabling rapid development of unified user experiences. It allows designers and developers to address specific needs using pre-built assets. The authority also unveiled the Saudi Digital Strategy, focused on growing the digital economy and expanding opportunities for public and private sector products. Other initiatives included the Digital Transformation Ambassador program, fostering an integrated digital community, and the Scene Program, promoting holistic user experiences locally and globally through advanced frameworks and tools. Committed to advancing digital governance, the authority aims to position Saudi Arabia as a global leader in innovative digital services. It leverages cutting-edge technologies like AI and emerging tech while offering consultancy programs and fostering leadership in digital transformation. These efforts contribute to Vision 2030's goals of enhanced service quality and economic growth.

WRS-24: Global ITU Seminar Outlines Latest Radio Spectrum Regulations

The ITU World Radiocommunication Seminar (WRS-24) was held in Geneva, Switzerland, from 2 to 6 December. The biennial seminar equips national telecom regulators, spectrum managers, and engineers with the latest knowledge and tools for effective spectrum management. Participants at this latest session received hands-on training on the application of ITU Radio Regulations, the key legal instrument allowing all administrations to establish and use radio services free from harmful interference. "In today's interconnected world, effective management of radio frequencies is more critical than ever," said Mario Maniewicz, Director of the ITU Radiocommunication Bureau. "Conformity with the provisions of the ITU Radio Regulations ensures that radio frequencies and any associated orbits are used rationally, efficiently and economically and that countries worldwide have equitable access to these limited natural resources." The week-long seminar covered topics related to radio spectrum management at the global level and the implications for subsequent regional coordination, and national regulation.

ITU: Global Internet Users Hit 5.5 billion, Digital Divide Persists

The International Telecommunication Union (ITU) stated that 227 million new people connected to the internet for the first time in 2024, bringing the total number of connected people to over 5.5 billion. This figure accounts for 68% of the global population, meaning that a third of the world's population (2.6 billion) remains offline as the "stubborn digital divide persists," the ITU stated in its Facts and Figures 2024 report. For comparison, in 2023, there were 2.8 billion unconnected people, equivalent to around 35% of the population. ITU Secretary-General Doreen Bogdan-Martin (pictured) said the figures highlight "a tale of two digital realities between high-income and low-income countries." "Stark gaps in critical connectivity indicators are cutting off the most vulnerable people from online access to information, education, and employment opportunities. This report is a reminder that true progress in our interconnected world isn't just about how fast we move forward, but about making sure everyone moves forward together," Bogdan-Martin added. "The world is inching towards universal access at a time when it should be sprinting," said Cosmas Luckyson Zavazava, Director of ITU's Telecommunication Development Bureau. The report found that 70% of men used the internet in 2024 compared to 65% of women, a gap of around 189 million. However, progress is being made towards achieving gender parity. Affordability is improving, with the cost of fixed broadband in low-income countries now equating to nearly a third of average monthly income. Around four out of five people aged over 10 own a mobile phone, but this is more prevalent in high-income countries—where 95% of those over 10 possess a mobile phone—compared to just 56% in low-income markets. A more significant divide exists between urban and rural dwellers, with 83% of urban residents using the internet compared to only 48% of rural inhabitants. Of the 2.6 billion people who remain unconnected, 1.8 billion live in rural areas. Coverage of 5G is estimated to reach over half (51%) of the global population this year, but "significant disparities" persist between high- and low-income countries. While 84% of people in high-income nations are covered by 5G, only 4% have access in low-income countries. The average monthly mobile broadband traffic per subscription in high-income nations (16.2 GB) is eight times higher than in low-income economies (2 GB). "While we continue to make progress on connectivity, our advances mask significant gaps in the world's most vulnerable communities, where digital exclusion makes life even more challenging. We must intensify our efforts to remove the barriers that keep people offline and close the usage gap. We must renew our commitment to achieving universal and meaningful connectivity so that everyone can access the internet," added Zavazava.



Satellite Communications to Improve Connectivity in Remote Areas

Despite the significant progress made on superfast and gigabit-capable broadband, certain remote and rural locations across the UK still face challenges where satellites offer the only practical solution for connectivity. These areas, often characterized by difficult terrain and sparse populations, make traditional infrastructure costly and impractical. The UK Space Agency is working closely with the Department for Science, Innovation and Technology (DSIT) and the European Space Agency's (ESA) telecommunications research program to help close the digital divide. The new funding call aims to select partners for three projects focused on delivering future satellite services. One of these projects will provide portable gigabit-capable internet speeds, with terminals designed to be mounted on vehicles to improve connectivity for users such as local authorities, farmers, emergency services, and the events and hospitality sector. In two specific rural and remote islands in Shetland and Northern Ireland, two other projects will test innovative hybrid networks to see if they could be used to support further locations unable to connect to traditional networks. This improved connectivity will support education, research, tourism, conservation, local businesses, and healthcare, enhancing the economy and quality of life in very hard to reach places.

New Global Agreements on AI, Metaverse and Sustainability at Key ITU Standards Conference

Members of the International Telecommunication Union (ITU) have agreed on priorities for standards and capacity development in areas from artificial intelligence (AI) and the metaverse to sustainable digital transformation at the World Telecommunication Standardization Assembly (WTSA-24) which closed in New Delhi, India. The conference reviewed and modified existing guidance and agreed eight new resolutions reinforcing the organization's standards work to meet fast-evolving global needs. "The outcomes of WTSA-24 remind us that humanity has one Earth, one human family and one shared digital future," said ITU Secretary-General Doreen Bogdan-Martin. "Together with the global standards community, ITU is committed to ensuring that our digital future is technically strong, with innovation, inclusion and sustainability at its core." "What was seen as a form of communication has today become the highway on which the future of not only our countries, but the future of humanity in the next decades will be building," said India's Minister of Communications, Jyotiraditya Scindia. "Over the past 10 days we have embarked on an extraordinary odyssey. One that has not only allowed us to envision a radiant digital future but also empower us in order to be able to sculpt for the future, for rich dialogues, audacious ideas, and transformation partnerships." Accelerated support for high-priority standards work

The new WTSA Resolutions all emphasize support for developing countries. The decisions direct ITU to prioritize:

"ITU standards and capacity development must create the foundation for the digital future we want," said Seizo Onoe, Director of the ITU Telecommunication Standardization Bureau. "My top priorities are impactful standards and the strong industry engagement and support to developing countries that create this impact. The decisions of WTSA highlight ITU membership's commitment to these goals." All decisions of the conference are publicly available in the WTSA-24 Proceedings."As we look ahead to the future, I am confident that the resolutions that we have developed will pave the way for groundbreaking innovations, sustainable growth and greater connectivity worldwide," said Ritu Ranjan Mittar, Chair of WTSA-24. "It is said that the march of technology will always continue, and it is the collective responsibility of all of us that standards and standardizations keep pace with it." WTSA is the governing conference for ITU's standardization work. The conference set out the strategy, structure and working methods of ITU's standardization arm (ITU-T). Two expert groups were consolidated to create the new ITU-T Study Group 21 on technologies for multimedia, content delivery, and cable TV. ITU's standardization work is driven by the contributions and consensus decisions of ITU's membership, including 194 Member States and over 1000 member companies, universities, and international and regional organizations. India's Prime Minister, the Honorable Narendra Modi, inaugurated WTSA-24 on 15 October with an emphasis on the importance of universal connectivity, ethical AI, consensus decisions, and meaningful digital inclusion. Prior to the main conference, ITU's Global Standards Symposium (GSS-24) and celebrations with partners of World Standards Day on 14 October explored innovation and standards to propel sustainable AI, smart cities, virtual worlds, and more. The opening week also featured the first International AI Standards Summit, organized by the leading developers of international standards, ITU, the International Organization for Standardization (ISO), and the International Electrotechnical Commission (IEC). The new summit finished with AI for Good Impact India, kicking off a new series of regional AI for Good events.

Other high-profile special events during WTSA-24 raised awareness in India and globally about how ITU standards can ensure new technologies are a force for good.

- Responsible, safe, and inclusive AI, including collaboration via the AI for Good platform;
- Trusted, inclusive and interoperable metaverse applications;
- Sustainable digital transformation across multiple industries and technologies;
- Technical requirements for digital public infrastructure;
- Communication technologies for vehicle-to-everything, intelligent transport systems, and automated driving;
- Caller-location information from mobile phones to support emergency communications;
- Preparing students and young professionals as the next generation of ITU standards experts;
- Continual improvement and evolution to meet new policy objectives and market demand.

FCC Launches First Review of Submarine Cable Rules Since 2001

The Federal Communications Commission has voted to launch a major review of licensing rules surrounding submarine cable rules. A new Notice of Proposed Rulemaking adopted by the Federal Communications Commission (FCC) will begin a review of the regulations surrounding submarine cables. The rulemaking notice, approved Nov. 21 by the FCC, will now seek public comment regarding how the commission can streamline the rules around submarine cables to ensure efficient deployment. According to the FCC's release following the vote, the agency has not conducted a major review of submarine cable rules since 2001. "Oversight of submarine cables traces back even before the existence of the commission itself," the FCC's release following vote stated. According to the release, there are currently a total of 84 FCC-licensed submarine cable systems. As part of the rulemaking notice approved Thursday, the FCC will also seek comment on how the commission can improve security and protection of submarine-cable infrastructure. "This proceeding will look to streamline the agency's review process," the release stated. "It proposes a three-year periodic reporting requirement for cable landing licenses and, in the alternative, seeks comment on shortening the current 25-year license term." As of Dec. 2022, the FCC reported that cable-landing licensees had more than 5.3 million Gbps of available capacity, with an additional 6.8 million Gbps in planned capacity this year alone. "Today's action continues the FCC's recent efforts to support national security," Thursday's release continued. "The commission has proposed new rules that would require, for the first time, companies with international telecommunications authorizations to file renewal applications with the FCC."

FCC Establishes New Guidelines for National 4.9 GHz Band Manager

The Federal Communications Commission (FCC) voted on October 18 to approve new rules supporting a nationwide Band Manager framework for the 4.9 GHz band, as reported by the International Association of Fire Chiefs (IAFC). The framework seeks to improve coordination within the 4.9 GHz band, enhancing public safety operations through the integration of current technologies, such as 5G. The FCC outlined that a chosen Band Manager will be granted a nationwide overlay license, allowing for a spectrum-sharing agreement with the First Responder Network Authority (FirstNet). This move is designed to maximize the use of the 4.9 GHz band for public safety purposes while protecting existing licensee operations from interference. The FCC specified several key responsibilities for the national 4.9 GHz Band Manager. These include frequency coordination, managing interference protections, and facilitating a spectrum-sharing agreement with FirstNet. The Band Manager is expected to encourage the adoption of the latest commercially available technologies to optimize public safety spectrum use. Additionally, the Band Manager will be required to submit an annual report to the FCC on its activities. The FCC has mandated that any sharing agreement with FirstNet must include provisions for compliance

with both FCC and National Telecommunications and Information Administration (NTIA) regulations, ensuring no harmful interference affects current license holders. The FCC delegated authority to its Wireless Telecommunications and Public Safety & Homeland Security Bureaus to manage the Band Manager selection process. This includes establishing procedures for the formation of a selection committee, setting selection criteria, and identifying representatives to participate on the committee. The bureaus will also determine the structure and oversight for this selection process.

FCC Proposes Expanding 6 GHz Band Use for Very Low Power Devices

FCC Chairwoman Jessica Rosenworcel proposed new rules to expand very low power (VLP) device operations in additional spectrum in the 6 GHz band alongside other WiFi-enabled devices. VLP devices are designed for short-range mobile applications and can be used indoors or outdoors. They're intended to support new applications such as augmented reality, in-car connectivity, and healthcare monitoring. The agency has expanded unlicensed use between 5.925 and 7.125 GHz in recent years, noting that's helped usher in WiFi 6E, set the stage for WiFi 7, and support the growth of the Internet of Things. Rosenworcel says "opening access to the airwaves without licenses makes it possible to innovate without permission and to develop low-power wireless technologies that change the way we live and work. We are making more spectrum available to bolster this growing eco-system of cutting-edge applications like wearable technologies and augmented and virtual reality, that will help businesses, enhance learning opportunities, improve healthcare outcomes, and bring new entertainment experiences." VLP devices operate at very low power across short distances and provide very high connection speeds. They're designed to prevent external antennas from being installed and cannot have weather resistant enclosures or operate on battery power. If adopted by a vote of the Commission, the proposed Report and Order would permit the VLP class of unlicensed devices to operate across 350 MHz in the U-NII-6 (6.425-6.525 GHz) and U-NII-8 (6.875-7.125 GHz) portions of the 6 GHz band. They could operate at the same power

levels and technical/operational protections as recently approved for the U-NII-5 (5.925-6.425 GHz) and U-NII-7 (6.525-6.875 GHz) bands. The rules would protect incumbent licensed services that operate in the 6 GHz band, according to the Commission. VLP devices would have no restriction on where they may operate and have no requirement to operate under the control of an automatic frequency coordination system. "To ensure the risk of interference remains insignificant, the devices would be required to employ a contention-based protocol, implement transmit power control, and be prohibited from operating as part of a fixed outdoor infrastructure," says the FCC.

UScellular Announces Sale of Select Spectrum Assets for $1.0 Billion

United States Cellular Corporation has entered into an agreement with Verizon Communications Inc. to sell a portion of the Company's retained spectrum licenses for total consideration of $1.0 billion. Additionally, UScellular has entered into agreements with two other mobile network operators for the sale of other selected spectrum licenses. The transactions are part of the objective UScellular announced on May 28, 2024, to opportunistically monetize the spectrum that was not included in the proposed sale to T-Mobile. "We are pleased that significant value for a portion of the remaining licenses will be realized," said Laurent C. Therivel, President and CEO, "and, importantly, that these agreements with multiple mobile network operators ensure that this spectrum will be put to work for consumers throughout the country. We are continuing the process to opportunistically monetize the remaining spectrum assets not included in today's announcement." UScellular reached an agreement with Verizon to sell 663 million MHz POPs of its Cellular (850 MHz) spectrum licenses as well as 11 million MHz POPs of its AWS and 19 million MHz POPs of its PCS licenses for a total of $1.0 billion. The purchase price is payable in cash and subject to certain potential adjustments specified in the purchase agreement. The transaction with Verizon is subject to the receipt of regulatory approvals and satisfaction of customary closing conditions. In addition, UScellular reached agreements to sell a total of 12 million MHz POPs of its spectrum licenses across the CBRS, C-Band, and 700 MHz B/C Block bands to two additional mobile network operators. Buyers and terms have not been disclosed. Each transaction is contingent upon the closing of the proposed sale of the UScellular wireless operations and select spectrum assets to T-Mobile. TDS, in its role as the 82 percent shareholder of UScellular, has delivered its written consent approving the Verizon transaction. No further action by UScellular's shareholders will be needed or solicited in connection with these transactions. Following these transactions, UScellular's retained spectrum will represent 3.4 billion MHz POPs of low and mid-band spectrum (700 MHz, 3.45GHz, CBRS and C-Band) as well as 17.2 billion MHz POPs of mmWave spectrum. UScellular is continuing the process to opportunistically monetize these retained assets.

37 GHz: A "Clean Slate" for Spectrum Sharing

The 37 GHz band represents a new opportunity to develop a spectrum-sharing model for federal and non-federal uses, according to a new report from the National Telecommunications and Information Administration (NTIA). The 37 GHz band is one of the sections of spectrum that were identified in the National Spectrum Strategy (and the subsequent implementation plan, released earlier this year) as a pipeline of spectrum to study with an eye toward opening up additional spectrum for various uses. The Biden administration's National Spectrum Strategy (NSS) identified five candidate bands for near-term study and development, totaling 2,786 megahertz with an emphasis on midband spectrum and bolstering technology for dynamic sharing of spectrum. The candidate bands ranged from 3.1 GHz to 37.6 GHz, with all but one of them under 20 GHz, and were a mix of federal bands and shared federal/non-federal bands, to be studied not only for terrestrial wireless use but for space-based services and aerial drones. The NSS also declared that "Evolving to a "designed to share whenever feasible" mindset will accelerate efficient and effective use of spectrum for all users" and said that NTIA would pursue "development of an enduring, scalable mechanism to manage shared spectrum access, including through the development of a common spectrum management platform." The first assessment of NSS-identified bands has focused on the 37 GHz spectrum. In NTIA's report, it said that because there are limited incumbent uses of 37 GHz, "the band presents a "clean slate" for developing a new model for co-primary Federal and non-Federal access. Specifically, this spectrum supports the creation of very narrow, directed beams and limited propagation for ground communications, making robust forms of sharing possible." Some history, here: Back in 2016, the Federal Communications Commission's order on the 37 GHz band "concluded that non-Federal fixed and mobile applications can share 37-38.6 GHz with DoD operations." The lower 37 GHz band was made available for "co-primary sharing," via a coordination mechanism that would require registering of sites. There are a number of protected federal sites already identified, including 15 military sites, five National Aeronautics and Space Administration receiving earth station operations and two National Science Foundation sites. The upper 37 GHz band, at 37.6-38.6 GHz, was part of the millimeter-wave spectrum that was auctioned by the FCC in 2019 as part of its Spectrum Frontiers auction. That band was divided for auction into 10 blocks of 100 megahertz in each Partial Economic Area (PEA) geographic designation. According to the NTIA report, the agency, along with the FCC and DoD, have been having discussions about a coordination mechanism in the lower 37 GHz band since 2020, including a 2024 public notice from the FCC gathering more input on potential sharing issues and accommodations of use cases.

CMA Clears Vodafone, 3 UK Megadeal

The UK Competition and Markets Authority (CMA) cleared a merger of 3 UK with Vodafone Group's unit in the country, subject to meeting commitments around network investment and capping prices on certain tariffs for three years. Approving the union, the regulator stated an eight-year network upgrade and integration plan devised by the operators, combined with short term pledges on some retail and wholesale pricing, had resolved its initial concerns. The operators have pledged to invest £11 billion in what Vodafone claims will become one of Europe's most advanced 5G networks. Communications regulator Ofcom and the CMA are set to oversee delivery of the plan. The CMA noted the independent group assessing the proposal concluded the network upgrades "would boost competition between the mobile network operators in the long term, benefitting millions of people". Along with capping selected mobile and data tariffs for three years, the pair are obliged to offer pre-set prices and terms for wholesale services for the same period, a move designed to ensure MVNOs "can obtain competitive terms and conditions as the network plan is rolled out". During the approvals process, Vodafone also inked a deal to sell some spectrum to rival Virgin Media O2 should the combination with 3 UK be given the go-ahead, in an apparent attempt to allay competition concerns. Predictably, Vodafone and 3 welcomed the CMA's decision, and in a joint statement highlighted they would engage with the regulator to put the required measures in place. Vodafone Group CEO Margherita

Della Valle said the approval "releases the handbrake on the UK's telecoms industry and the increased investment will power the UK to the forefront of European telecommunications". Deputy chair of 3 parent CK Hutchison Canning Fok added it would "fully support the merged business in implementing its network investment plan…transforming the UK's digital infrastructure and ensuring customers across the country benefit from world-beating network quality". The deal was announced in June 2023 and is expected to close in H1 2025. Vodafone is set to own 51 per cent of the combined company, with CK Hutchison the remainder. Vodafone has an option to buy its partner out three years after completion subject to conditions.

UK Regulator Ofcom Prepares to Enforce Online Safety Laws

With just two months until new online safety laws come into effect, Ofcom has issued a warning to tech companies that enforcement actions will be taken if they fail to comply with upcoming legal duties. In an update on its progress, Ofcom outlined the steps taken so far in implementing the Online Safety Act and what can be expected in the coming year. "The time for talk is over. From December, tech firms will be legally required to start taking action, meaning 2025 will be a pivotal year in creating a safer life online," said Dame Melanie Dawes, Chief Executive at Ofcom. The Online Safety Act, passed in October 2023, introduces new legal obligations for platforms operating in the UK. As part of the process, Ofcom is required to conduct public consultations on the codes of practice and guidance needed to enforce these duties. Over the past six months, Ofcom has consulted on key issues, including illegal harms, pornography age verification, and children's safety. Advice has also been submitted to the Government regarding thresholds that determine which services will be categorized and subject to further obligations. In preparation for the changes, Ofcom has engaged with both large and small tech firms, ensuring they understand the steps they need to take now and in the future.

Positive Changes Already in Motion

Several UK-based platforms have already begun strengthening their protections. Meta and Snapchat have made adjustments aligned with Ofcom's proposals from the illegal harms consultation. These include new measures to prevent children from being contacted by strangers on platforms like Instagram and Facebook, alongside Instagram's introduction of "Teen Accounts," which limits who can interact with young users and the content they are exposed to. While these changes represent positive progress, Ofcom emphasized many platforms must do much more when the Act comes into force.

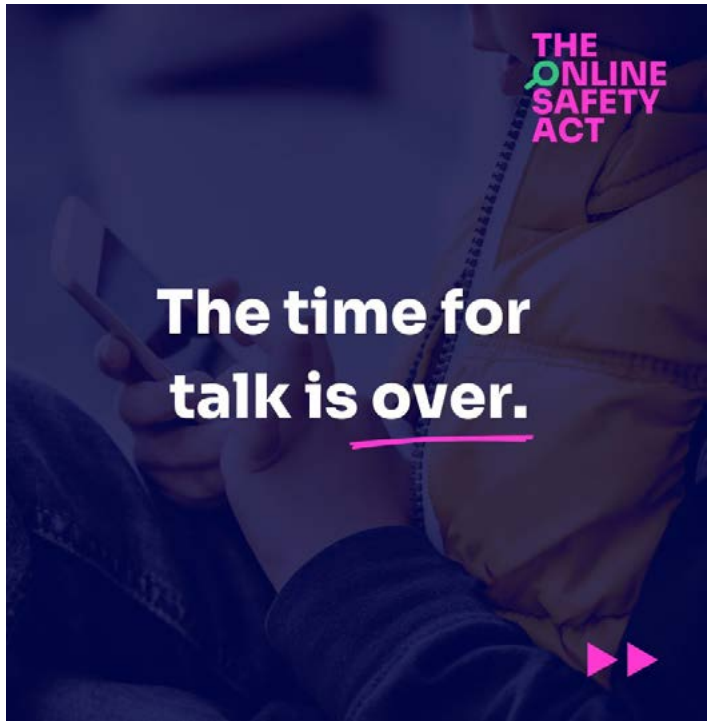
Looking Ahead: Key Milestones for 2025

As Ofcom moves towards the finalization of its codes and guidance, several important dates have been set for the next year. These include:

December 2024: Publication of the first edition of illegal harms codes and guidance, with platforms given three months to complete a risk assessment.

January 2025: Finalization of guidance on children's access and pornography providers" age assurance.

March 2025: Platforms must complete illegal harms risk assessments and implement safety measures.



April 2025: Finalization of children's safety codes and guidance, with platforms required to complete risk assessments within three months.

July 2025: Platforms must implement safety measures following children's risk assessments.

Ofcom said it will review selected assessments to ensure compliance and will require improvements where necessary to mitigate risks.

Enforcement Powers and Consequences

Ofcom said it is prepared to take enforcement action against any platform that does not comply with the new legal duties. This includes imposing significant fines and, in the most serious cases, seeking court orders to block access to services within the UK or limit their access to payment providers and advertisers.

Ofcom's approach will be firm, with high expectations set for compliance. Although some platforms have already responded positively, those who fall short can expect swift and decisive action to protect users, particularly children, from harmful content such as child sexual abuse, pornography, and fraud.

UK Govt Announces £22m Investment in "Smart Data"

Smart Data Research UK, a national program for data research and part of UK Research and Innovation (UKRI), has announced a £22 million investment to help UK researchers access new "smart data'. Smart data is information that has been processed to provide clear, actionable insights. Unlike raw data, which can be difficult to interpret, smart data is focused, helping businesses make informed decisions quickly. For example, instead of analyzing every customer interaction, smart data highlights key patterns, such as common reasons for support requests, allowing companies to improve their services efficiently. The new projects being funded by this £22 million investment include the UK's first smart data donation platform and a satellite imagery service, providing valuable data about the UK's economy, environment, and public health. The investment will be targeted at four key

areas, based at universities across the country:

- The Imagery Data Service (Imago): Led by professors at Newcastle University and University of Liverpool, this data service combines AI and stakeholder collaboration to develop new data products based on satellite imaging, helping tackle challenges like urban development and social inequalities in the UK.
- The Smart Data Donation Service (SDDS): The SDDS will recruit data donors to provide data securely with researchers, aiming to help develop evidence-based policy around online safety and digital wellbeing. Initially focused on 90,000 data donations from video game users, the SDDS will enable research into mental health, digital literacy, online community, addiction, discriminatory behavior, and disinformation. It will be led by professors at the University of York.
- The Geographic Data Service: This project will bring together different data sources to provide insights into fair and sustainable growth, focusing on geographic differences and the challenges faced by vulnerable groups. It will support new partnerships and coordinate a national master's dissertation program to help nurture the next generation of smart data researchers. The project is led by professors from UCL and the University of Liverpool, with collaboration from the University of Oxford and the University of Edinburgh.
- The Healthy and Sustainable Places Data Service: Led by the University of Leeds, this project will leverage data sets from the retail, business, transport and infrastructure sectors to help tackle ongoing challenges related to health and sustainability in local economies.

"This investment in a new network of smart data services helps put the UK at the forefront of data-driven innovation. Data infrastructure is as critical to our shared prosperity as transport, water or power networks.

Ofcom will Award Spectrum in the 25.1-27.5 GHz and 40.5-43.5 GHz Bands Next Year

U.K. telecom regulator Ofcom announced the publication of the text of the final regulation for the upcoming spectrum of mmWave frequencies. This text, which may be subject to minor amendments, will be enacted and become law in early 2025, Ofcom said. Next year, the watchdog will award spectrum in the 25.1-27.5 GHz and 40.5-43.5 GHz bands. The regulator noted that this spectrum can carry large amounts of data and has the potential to improve mobile speeds in busy areas, such as train stations, football stadiums and concert venues. It could also support innovative services such as virtual reality and factory automation, Ofcom said. Ofcom has also published information for parties considering participating in the spectrum auction, including:

- practical guidance to help participants navigate the auction, including how to apply, and indicative timings for each stage of the award process;
- information about the spectrum being made available and the conditions for use of the spectrum; and
- information about where the spectrum will be licensed for use.

The auction will take place in 2025 and Ofcom noted that it will provide a further update on timings before the end of this year. In September 2023, Ofcom announced that it will open these spectrum bands to mobile technology, including 5G services, for the provision of faster 5G speeds across 68 towns and cities across the U.K. Ofcom aims to award several 15-year, fixed term citywide licenses to use the mmWave frequencies in 68 major towns and cities across the U.K., as well as some localized licenses for "low density areas" within those cities via a shared access licensing framework, according to previous reports.

In a previous update, Ofcom also confirmed that the mmWave spectrum auction will not include a negotiation period during the final assignment stage, which typically provides winners of spectrum with the opportunity to agree that their respective allocations of spectrum will be adjacent. Ofcom also previously confirmed it will not hold an auction of mmWave spectrum until a decision has been made by the country's competition authorities on a proposed merger between local carriers Vodafone and Three UK. The U.K.'s Competition and Markets Authority (CMA) has recently provisionally found that a multi-billion-pound commitment to upgrade the network of the new entity resulting from the merger of local carriers Vodafone and Three UK across the country, including the rollout of 5G, combined with short-term customer protections could solve competition concerns identified by the regulator in September and allow the merger to go ahead. The CMA investigation provisionally found in September that the merger could lead to higher prices for customers and harm the position of mobile virtual network operators.

VEON and Engro Corp Announce Strategic Partnership for Telecommunications Infrastructure

VEON Ltd a global digital operator, announces that it is entering into a strategic partnership with Engro Corporation Limited with respect to the pooling and management of its infrastructure assets, starting in Pakistan. In the first phase of the partnership, VEON's infrastructure assets housed under Deodar (Private) Limited ("Deodar"), a VEON Group company wholly owned by VEON through its subsidiary PMCL, will vest into Engro Corp's subsidiary, Engro Connect, via a scheme of arrangement. VEON's digital operator Jazz will continue to lease Deodar's extensive infrastructure for the provision of nationwide mobile voice and data services under a long-term partnership agreement. The partnership marks a significant milestone in VEON's asset-light strategy, aimed at increasing the Company's focus on the development of services-focused businesses in line with VEON's digital operator model. The arrangement is subject to the customary legal and regulatory approvals in Pakistan. As part of the arrangement, Engro will pay Jazz an amount of approximately USD 188 million and will guarantee the repayment of Deodar's intercompany debt in the amount of USD 375 million. "This strategic partnership is a pivotal move in advancing VEON's asset-light strategy. The traditional vertically integrated telco model is no longer viable for operators, neither is it conducive to the sustainable growth of developing economies. Our collaboration with Engro Corp, starting in Pakistan, our largest market, will empower Jazz to focus on innovative digital services and cutting-edge technologies that serve Pakistan's digital ambition. It will also help VEON showcase the wide range of opportunities for

shareholder value creation and new business models across our markets," said Kaan Terzioglu, VEON Group CEO and Chairman of Jazz Board.

African Ministers Urge Private Sector Collaboration Amid Regulatory Criticisms

African ministers highlighted the importance of collaboration with the private sector to drive the technology sector and strengthen economies across the continent, despite criticism from global companies such as Meta regarding over-regulation and taxation by African governments. Speaking on a panel at Africa Tech Festival, Meta's Director of Public Policy, Fargani Tambeayuk, cautioned African regulators about policies that could stifle emerging technologies like AI. He cited Cameroon as an example, where subsea cable providers must go through mobile network operators to land their cables, creating what he described as a "monopoly" and a "roadblock" to expanding connectivity. Meta is among several global companies that invested in the 2Africa subsea cable system, which spans 45,000km, linking Africa to Europe, Asia, and the Middle East. Reflecting on this, Tambeayuk said, "If I think about the journey we've been on over the past four years with the 2Africa cable, there's been significant interest and support from governments, but we've also encountered numerous challenges that create roadblocks and hinder our investments." In a separate panel today (13 November), Uganda's Minister for Science, Technology and Innovation, Monica Musenero Masanza (pictured, second), defended regulators, asserting that the public and private sectors share a "joint interest in making ecosystems favorable for users, developers, and businesses," adding that governments create the foundation for businesses to operate. "Our responsibility is to facilitate the private sector as key players in advancing technology. The government only intervenes in areas where the private sector has not yet shown interest. In these cases, we take the initiative to highlight the area, understand the ecosystem, and remove barriers," said Masanza. Kenya's Cabinet Secretary for the Ministry of Information, Communication and the Digital Economy, Dr. Margaret Nyambura Ndung'u (pictured, last), added that the Kenyan government works closely with the private sector, as both sides need each other to broaden connectivity. She highlighted Kenya's Universal Service Fund, which collaborates with the private sector to direct investment. The government is also undertaking a nearly 50-50 project to

lay 100,000 kilometers of fiber for a private fibre network, expected to be completed in 2025. "When it comes to the Universal Service Fund, which we use to extend connectivity to rural areas, the primary contributors are from the private sector. We work collaboratively to ensure value for money, especially in remote areas that may lack a strong business case." She added, "In Kenya, the private sector is essential to our initiatives, but we're also encouraging academia and civil society to collaborate. By involving every stakeholder, we ensure sustainability is embedded in our projects."

CCP Conducts Phase II Merger Review of PTCL's Acquisition of Telenor Pakistan and Orion Towers

The Competition Commission of Pakistan (CCP) is conducting an in-depth Phase II Merger Review of PTCL's acquisition of 100% shareholding in Telenor Pakistan (Private) Limited and Orion Towers (Private) Limited. The review focuses on key aspects of the telecommunications sector, including market power concentration, competitive dynamics, and the potential impact of the proposed merger. The CCP bench, led by Chairman Dr. Kabir Ahmed Sidhu and Members Salman Amin and Abdul Rashid Sheikh, is ensuring a thorough and inclusive process, giving all stakeholders the opportunity to present their views. During a recent hearing, Asif Inam, Chief Operating Officer of Transworld Associates, along with Legal Counsel Ms. Rabia Kiyani, emphasized the need for both preventive and corrective measures, citing international regulatory practices from the UK, UAE, and KSA to safeguard competition through structural and behavioral remedies. Telenor Pakistan was represented by Vice President Ms. Advokat Anette Aarset and Counsel Shabbir Harianawala, who defended the transaction. Previous hearings featured representations from PTCL, led by Senior Counsel Ms. Rahat Kaunain Hassan and Mustafa Munir Ahmed of Legal Oracles, with Wateen Telecom represented by Mian Sami-ud-Din of BNR, and Jazz by Khalid Ibrahim. The CCP's team included key officials such as Shahzad Hussain (Director General/Registrar), Barrister Ambreen Abbasi, Hafiz Naeem, Arshad Javed (Legal Department), Ms. Marryum Pervaiz (HoD Merger Department), Umer Sheikh (Joint Director), and Noman Ahmed (Assistant Director). The commission's analysis will play a crucial role in determining the merger's potential impact on competition in Pakistan's telecommunications sector.

Telstra Pays AUD3M for Emergency Call Failures

Australian operator Telstra paid a fine of more than AUD3 million ($1.9 million) and took a number of steps to rectify its processes following a technical disruption at its emergency call center. The Australian Communications and Media Authority (ACMA) noted the operator updated its backup phone number list and appointed an independent consultant to conduct a review after the agency found it failed to comply with emergency call rules. An investigation spotted 473 breaches of the rules during an incident on 1 March, when Telstra's call centre had trouble transferring calls to emergency services for 90 minutes. It initiated a contingency process to transfer calls using a list of backup numbers, but several were incorrect, resulting in 127 calls not being passed over. The operator managed those calls by providing the caller details to emergency service organizations via email and phone calls, ACMA explained. ACMA member and consumer lead Samantha Yorke noted it was concerning the breaches occurred because Telstra neglected to update its backup phone data. Yorke acknowledged Telstra had a strong record of compliance in its role as the national emergency operator and made considerable efforts to keep the public informed during the outage. She added Telstra took a variety of immediate actions when problems were identified, which "go a long way to restoring the community's trust in this critical service". In October, ACMA introduced rules to ensure mobile subscribers can access emergency services after operators switch off 3G networks.

China Mobile | International

Together we evolve

The complete suite of high-quality iConnect products and services, ranging from global Voice, SMS, Data, Mobile to IoT and professional services, is built on one of the world's largest and most technologically sophisticated networks. iConnect is your connect-all carrier solutions that empower you to strive for even greater success in the journey of global connectivity.

To realize the potential of 5G, cloud, AI and IoT, CMI evolves with you to drive digital transformation and seize every opportunity.

BEST MOBILE/5G SERVICE INNOVATION
Global Carrier Awards 2021

BEST CLOUD INNOVATION
Global Carrier Awards 2021

BEST IoT SOLUTION PROVIDER
CC-Global Awards 2021

180+ POPs SMS 70+ Cable Resources

CUSTOMER VOICE CARING IOT INNOVATION

iCONNECT

INSIGHT INTEGRATION

DATA Your Connect-All Carrier Solutions

PRO COLLABORATION MOBILE

100T International Transmission Bandwidth

Website LinkedIn

cmiiconnect@cmi.chinamobile.com

A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION

Algeria

The Minister of Post and Telecommunications, has emphasized the country's commitment to expanding access to modern communication technologies and digital services. This initiative is a key part of Algeria's strategy to drive economic growth and achieve a leading position in the digital landscape. During the opening of an International Telecommunication Union (ITU) regional workshop themed "Towards Inclusive and Targeted Connectivity in the Arab Region," Minister highlighted Algeria's dedication to digital advancement. "Algeria has benefitted from the political will of the country's highest authorities, led by the President of the Republic, Abdelmadjid Tebboune, who has made the generalization of modern communication technologies and the digitization of government services, one of the important lines of his ambitious program for the economic revival of Algeria," said Minister. He emphasized that Algeria has mobilized significant resources and human capital to achieve its ambitious goals in digital transformation. After hailing a generation of young people imbued with national values, seeking to assert themselves and demonstrate their skills in all fields, through start-ups and medium and large enterprises, the minister said that these companies have adopted the digitization process and have perfectly integrated it in service of their strategies. (November 14, 2024) www.meatechwatch.com

Bahrain

The Telecommunications Regulatory Authority (The "Authority") revoked IMCTelecom W.L.L Individual International Telecommunications Services License (ISL) granted on 29 August 2006 and renewed on 29 August 2021. Accordingly pursuant to Article 31 of the Telecommunications Law, the ISL granted to IMC Telecom W.L.L is revoked effective from the date of publishing the final announcement in the Official Gazette. For the avoidance of doubt, IMC Telecom W.L.L is not licensed to provide any telecommunications services in the Kingdom of Bahrain.
(November 17, 2024) www.tra.org.bh

The Telecommunications Regulatory Authority of Bahrain was recognized for its" Regulatory Enablement at the South Asia, Middle East, and North Africa (SAMENA) Telecommunications Council's Leadership & Excellence (LEAD) Awards ceremony in Dubai, UAE. In attendance were executives and dignitaries from the most prominent telecom operators, ICT providers, and regulatory bodies in the region. This award reflects the Authority's commitment to deliver world-class telecommunications services to the people of Bahrain. This recognition underscores the Authority's significant achievements in enhancing national fiber connectivity and the advancement of multi-gigabit networks. General Director at TRA, Philip Marnick commented "We are honored to receive this award, which recognizes our dedication to making Bahrain a global leader in telecommunications market. Our commitment to providing fast, reliable internet access to every consumer has been the driving force behind our work. This award confirms the TRA team's dedication and the ongoing efforts to deliver exceptional telecom services to all."
(October 16, 2024) www.tra.org.bh

The 74th Information and Communication Technology Governance Committee (ICTGC) meeting, chaired by Mohammed Ali Al Qaed, Chief Executive of the Information & eGovernment Authority (iGA), was held remotely to review projects and purchase orders submitted by various government entities. During the meeting, Al Qaed highlighted Bahrain's impressive achievement in the United Nations" eGovernment Development report 2024, where the country ranked 18th worldwide. He commended the contributions of all ministries and government entities that played a role in this success. The committee's agenda included several important items, such as the Ministry of Justice, Islamic Affairs, and Waqf's digital transformation project. This initiative encompasses the development of virtual notary and virtual court hearing services, aimed at creating a secure platform for conducting court hearings and notarial services digitally. Advanced technologies like artificial intelligence and blockchain will be employed to enhance identity verification and ensure document confidentiality. The project will also integrate with the eKey system and the government notification system to maximize the use of shared services provided by the iGA. Additionally, the committee assessed the Ministry of Electricity and Water Affairs's mobile app project for electric vehicle (EV) chargers, designed to streamline payment processes at EV charging stations. This initiative is part of the ministry's efforts to enhance the infrastructure for electric vehicle charging across Bahrain. The committee also examined the

electronic animal registration system project proposed by the Ministry of Municipalities Affairs and Agriculture. This initiative aims to create a system for registering animals and documenting their health records, automating related procedures as part of the ministry's digital transformation efforts. Modern development technologies, such as Low-Code platforms, will be utilized for this project. Finally, the committee reviewed the implementation of decisions made in previous meetings and discussed the progress achieved in ongoing projects.

(October 1, 2024) www.meatechwatch.com

Bangladesh

Bangladesh Telecommunication Regulatory Commission (BTRC) will issue more Nationwide Telecommunication Transmission Network (NTTN) licenses if services to customers are compromised as the regulator prioritizes service quality, said BTRC Chairman Maj Gen (retd) Md Emdad Ul Bari. "NTTN licenses should be limited, but we need to assess whether we have become "hostage" to them, holding back the entire nation. If necessary, we will issue 10 more licenses," he said. "We can even grant licenses on a zonal basis. I am only considering this idea; it is not something I plan to implement immediately. Our main requirement is to deliver services to users," he said. "Our priority is service, not just sustaining businesses," added Bari. The BTRC chairman was addressing a discussion styled "The Importance of a Nationwide Telecommunication Network for the Future of Bangladesh", organized by the Telecom and Technology Reporters Network Bangladesh at a Dhaka hotel. The NTTN guidelines were introduced in 2008. According to it, the task of NTTN operators in Bangladesh is to build, maintain and manage a nationwide fiber-optic transmission network, providing shared infrastructure for telecom operators and internet service providers.

(November 5, 2024) www.thedailystar.net

Following a recent policy decision, the Bangladesh Telecommunication Regulatory Commission (BTRC) has taken the initiative to conduct a comprehensive audit of Teletalk, the state-owned telecom company, for the first time. Teletalk, as a state-owned entity, holds an important position in providing mobile and data services to a substantial portion of the population. The audit aims to assess the company's operations, financial health, and adherence to regulatory guidelines. When asked about the initiative, Musfiq Mannan Choudhury, Commissioner of BTRC, said, "We have already issued files to audit Teletalk". Previously, BTRC has conducted audits of the three private operators, namely Grameenphone, Robi, and Banglalink. However, this marks the first time that the government telecom operator Teletalk is being formally audited by the regulatory commission. As per official sources, the regulatory body has received audit objections of more than BDT 14 thousand crore from the three private operators. BTRC has thus far collected a part of that amount, with the rest being collected in an ongoing process.

(October 30, 2024) www.thedailystar.net

Egypt

Given the rapid growth of the telecommunications sector in Egypt and in line with the state's ambitious plans to establish numerous smart cities, the NTRA, Egypt has issued a new regulatory framework for the establishment, operation, and leasing of in-building wireless infrastructure. The presence of a neutral operator to manage this infrastructure will significantly contribute to realizing Egypt's vision of transforming into an advanced digital society, opening up new avenues for economic growth. This regulatory framework aims to encourage investment in the establishment and leasing of shared infrastructure for mobile networks within buildings. By improving coverage and service quality inside buildings, this framework will enable companies to provide better services to their customers and allow individuals to enjoy a seamless digital experience anywhere. The Egyptian telecommunications market is one of the largest in Africa and the Middle East, and it is highly dynamic. With four major companies already competing in the market and serving over 100 million subscribers, there is significant potential for growth, development, and fostering a competitive environment for telecommunications service. (December 10, 2024) www.samenacouncil.org

Egypt has granted licenses to seven major companies, significantly enhancing the country's position as a leading global hub for digital services and outsourcing. The ceremony, which was attended by Minister of Communications and Information Technology Amr Talaat, saw companies such as Vodafone International Services, Raya Call Center Services, Telecom Egypt for Information Systems (Exceed), Concentrex, Capgemini Egypt, Genpact Egypt, and TTAC Egypt receiving the licenses. The licensing event was witnessed by NTRA CEO Mohamed Shamroukh and Ahmed El Zaher, CEO of the Information Technology Industry Development Agency (ITIDA). This initiative is a crucial step in supporting the expansion of Egypt's call center sector and reinforcing its role in the global digital services and outsourcing market. The granting of these licenses underscores Egypt's commitment to fostering growth in the digital and outsourcing sectors. This move is

expected to further solidify the country's position as a global leader in providing outsourced contact center services. (November 21, 2024) www.meatechwatch.com

The CEO of the National Telecom Regulatory Authority (NTRA) Mohamed Shamroukh, announced the agency's initial approval to increase the prices of telecommunications services in Egypt. This came during the Fifth-Generation session on the sidelines of Cairo ICT 2024 exhibition. He explained that this expected increase comes as a result of the high operating costs facing mobile companies, adding that NTRA sees the right of companies to review service prices. The CEO of the NTRA said that the agency is currently studying the appropriate timing to implement the new increase in telecommunications service prices, in order to best take into account consumer interests. The post NTRA approves increase to telecommunications service prices in Egypt appeared first on Egypt Independent. (November 20, 2024) www.ozarab.media

The head of Egypt's National Telecommunications Regulatory Authority (NTRA), Mohamed Shamroukh, has announced plans to increase telecom service prices in response to rising operational costs driven by higher energy prices. Shamroukh emphasized that this adjustment is necessary to ensure that services meet the needs and expectations of citizens. For several months, mobile operators in Egypt have urged the NTRA to approve price hikes to address the financial pressures stemming from escalating fuel costs and the devaluation of the Egyptian pound. Operators have expressed concerns that without approval for increased prices, their ability to invest in 5G technology may be adversely affected. Despite these challenges, Egypt's mobile operators have successfully obtained licenses for 5G services, which promise to enhance internet connectivity, speed, and capacity. According to Egypt's Minister of Communications, Amr Talaat, the sale of these licenses generated approximately USD 675 million (EGP 32.7 billion) for the country on October 7. The licenses were acquired by Egypt's four major mobile operators, including Vodafone Egypt, which is owned by South Africa's Vodacom Group, and Orange Egypt, a subsidiary of France's Orange Group. Additionally, Etisalat Egypt, part of the UAE-based &e Group, and state-owned Telecom Egypt, which holds a 45 percent stake in Vodafone Egypt, also secured licenses. Shamroukh further announced that "eSIM services will be launched in the Egyptian market within a month," and "Wi-Fi calling services will be available before the end of 2024," indicating ongoing advancements in Egypt's telecommunications landscape. (October 10, 2024) www.meatechwatch.com

Egypt's Ministry of Communications and Information Technology (MCIT), represented by the National Telecommunications Regulatory Authority (NTRA), signed agreements for the second phase of 5G licenses with three mobile operators: Vodafone Egypt, Orange Egypt, and e& Egypt. The agreements were signed by NTRA Executive President Mohamed Shamroukh, Orange Egypt CEO Yasser Shaker, Vodafone Egypt CEO Mohamed Abdallah, and e& Egypt CEO Hazem Metwali. In January, Telecom Egypt secured the first phase of the 5G license, without frequencies or any special privileges, for a value of $150 million. Minister of Communications and Information Technology Amr Talaat said during a press conference that the agreements aim to enhance 5G services, bring about a qualitative shift in improving the quality of communication services, and expand the network's capacity for optimal performance. "The agreements are a crucial step in our efforts to deliver advanced technological services to our citizens," Talaat said. He confirmed Egypt's capability to provide the latest 5G technologies, contributing to service improvement and enhancing mobile network capacity. Talaat explained that these agreements are part of the state's strategy to provide citizens with advanced technological services, emphasizing the support of vital sectors like smart cities, logistics, healthcare, and agriculture, which heavily rely on Internet of Things (IoT) technologies supported by 5G. "The 5G network is key to the development of these sectors," Talaat said. The minister noted that the agreement emphasizes the importance of partnership among the four companies operating in Egypt's telecommunications sector to ensure continuous service development, benefitting Egyptian citizens and strengthening the role of the information technology sector in economic development. "We believe this partnership will be crucial to the success of the 5G rollout in Egypt," Talaat said. The 5G network, or fifth generation of wireless mobile networks, builds on the four preceding generations, which focused on improving mobile phone data. The 5G network seeks to expand upon this trend and broaden its use for mobile broadband access.
(October 8, 2024) www.zawya.com

Iraq

The Ministry of Communications announced the signing of an agreement with global telecom giant Vodafone to launch a fully government-owned 5G network. Vodafone is one of the leading telecommunications companies in Europe and Africa, serving over 330 million customers across 15 countries. "The project seeks to improve telecom services, lower costs, increase state revenues, and bring modern technology…It will create jobs for Iraqi youth and enhance their network management skills," Communications Minister Hayam Al-Yasiri stated. Peter Dvorak, Vodafone's CEO for Partner Markets, said the initiative would boost Iraq's social and economic development, emphasizing "the company's global expertise and dedication to training young Iraqi talents." The agreement covers preparations for the telecom operator's launch, network design, commercial proposals, business growth plans, and a memorandum for ongoing discussions on services and the optimal management model. On 26 November, Vodafone secured the license to operate Iraq's national telecommunications network, after the Council of Ministers approved its selection as the operator for the national mobile license project using 5G technology. (December 4, 2024) www.shafaq.com

The Iraqi government has announced its intention to collaborate with international telecommunications companies for the deployment of its first 5G mobile network. This move signifies a major step towards modernizing the country's digital infrastructure and enhancing connectivity for its citizens. A committee, headed by Communications Minister Hayam Al-Yassiri, has been tasked with engaging with potential international partners. The committee will prioritize companies with demonstrated experience in 5G network installation and operation, particularly those with a strong presence in the Middle East. "The committee will negotiate with international telecom operators in serious and capable companies with experience in the installation and operation of the 5G mobile phone network," stated the Iraqi Prime Minister's office. This initiative reflects Iraq's commitment to leveraging global expertise to ensure a successful and efficient 5G rollout. By partnering with established international players, Iraq aims to accelerate the deployment process and benefit from best practices in 5G technology. The selection process will focus on identifying the "best operators with experience in the Middle East," highlighting the importance of regional expertise and needs of the Iraqi market. This development marks a significant milestone in Iraq's digital transformation journey. The introduction of 5G technology is expected to bring numerous benefits, including faster internet speeds, improved network reliability, and enhanced opportunities for innovation across various sectors.

(October 24, 2024) www.meatechwatch.com

Jordan

In a significant meeting held in Amman, Jordan, Dr. Waed Badhieb, the Acting Minister of Communications and Information Technology of Yamen, discussed ways to enhance cooperation in the telecommunications sector with Bassam Al-Sarhan, the Chairman of the Board of Commissioners and CEO of the Jordanian Telecommunications Regulatory Authority. During the meeting, both officials emphasized the importance of strengthening their partnership. They highlighted the need for exchanging expertise and providing technical support to develop Yemen's telecommunications sector. This collaboration aims to improve technical services and bolster the telecommunications infrastructure in Yemen. Minister Badhieb praised Jordan's pioneering experience in the telecommunications field. He expressed Yemen's commitment to solidifying bilateral relations and leveraging Jordanian technical support and expertise in this vital area. The focus on collaboration reflects a mutual desire to enhance the quality of telecommunications services in both countries. This meeting marks a crucial step toward fostering stronger ties between Yemen and Jordan, particularly in the telecommunications sector, which is essential for economic growth and technological advancement.

(November 21, 2024) www.en.yementv.tv

Jordan has made notable progress in the global rankings for mobile download speeds, moving up three positions to 84th place worldwide with an average speed of 29.4 Mbps. Additionally, the Kingdom has advanced two spots in fixed internet rankings, now sitting at 31st place internationally with an average download speed of 155 Mbps, according to data released by Ookla, a reputable source for tracking trends in broadband and mobile internet speeds globally. The Telecommunications Regulatory Commission (TRC) stated in a press release to The Jordan Times that this progress can be attributed to Jordan's strong regulatory framework, which fosters competition and investment. The TRC emphasized that public-private partnerships are crucial for advancing the Economic Modernization Vision. The TRC also mentioned that Jordan's ranking is expected to improve further as fiber internet subscriptions increase steadily, driven by the rollout of 5G services and the issuance of necessary licenses to telecommunications providers. Bayan Khaled, a computer and automation engineer, commented that "the improvement reflects enhanced regulatory frameworks and increased investments in fiber infrastructure." He added that such developments could attract additional investments in the local digital market, but maintaining this momentum will require focused cooperation and sustained efforts. Razan Hourani, a telecommunications specialist, noted that the planned expansion of 5G services across the country indicates promising advancements in connectivity. "We are witnessing a surge in tech-focused investments in Jordan, which lays a strong foundation for digital innovation," she stated.

(October 28, 2024) www.meatechwatch.com

Kuwait

The Communication and Information Technology Regulatory Authority announces the launch of a new organizational structure that includes a comprehensive update of its sectors, along with the establishment of new departments and divisions. This aims to enhance the authority's effectiveness in regulating the telecommunications and information technology sector and better meet the needs of its beneficiaries. The new update includes the Regulatory Sector, which focuses on protecting the rights of beneficiaries by monitoring the performance of companies and ensuring their compliance with standards

and regulatory guidelines. The Regulatory Sector also aims to promote a fair and efficient competitive environment, contributing to the improvement of service quality for users. Through this new structure, the authority aims to reflect its vision of providing a highly developed regulatory environment with greater precision and effectiveness by transitioning from a traditional administrative role to a fully integrated regulatory and supervisory role. This role focuses on protecting consumer rights, ensuring transparency, and enhancing market competitiveness. The Communication and Information Technology Regulatory Authority is confident that these changes will strengthen its role as a protective umbrella for users and ensure the provision of the best possible services. The authority always looks forward to the support and participation of citizens and residents on this new path.

(November 11, 2024) www.citra.gov.kw

Kuwait plans to deepen its partnership with Google Cloud as part of efforts to give impetus to a national digital drive in line with its strategic 2035 vision, Communication Minister Omar Al-Omar said. Luring more foreign investment would be a by-product of a full-fledged digital transformation, the minister told a one-of-a kind gathering entitled, "Cloud Day," an initiative organized by Google, with whom Kuwait has already established a joint training program for the development of "national skills" pertinent to Artificial Intelligence and Cybersecurity technologies, added the minister. A national training program is already up and running in a bid to further hone the "digital skills" of youngsters and state body employees alike, giving them the opportunity to keep abreast of the most cutting-edge digital technologies as they foray into the job market, the minister underlined. Underlining the significance of such endeavors, the Kuwaiti minister expected a "new generation" of tech leaders to lead the digital transformation in Kuwait, ensuring that the nation if firmly placed on a path towards a "brighter and more prosperous" future, he emphasized. Addressing the gathering, Country Manager for Google Cloud in Kuwait Shaymaa Alterkait said that the tech giant is "dedicated to fostering a thriving digital ecosystem," allowing businesses, government entities and individuals to harness the "power of the cloud and AI" to drive economic growth. Google Cloud's expanding network of 40 regions, 121 zones and 187 network edge locations represent the "backbone" of the global infrastructure, she highlighted, saying that Google has built a "dedicated and uniquely skilled" team that will contribute towards Kuwait's digital transformation.

(October 9, 2024) www.zawya.com

Kuwait has pre-qualified four companies to bid on the development of its fixed telecommunication network, according to local reports. The firms include Bahrain Telecom Company (Batelco), UAE's e&, Canada's Brookfield Corp, and Italy's TIM Group, as reported by Alqabas. The Kuwait Authority for Partnership Projects (KAPP) is overseeing the project, which will be executed as a public-private partnership. The four pre-qualified companies have been invited to purchase the necessary bidding documents. The partnership contract for the project will span 50 years.

(October 7, 2024) www.meatechwatch.com

Morocco

Morocco is positioning itself as a digital hub and trendsetter in Africa, driving inclusive and sustainable transformation as the continent embraces the rapid evolution of its digital landscape. This commitment was highlighted during the G20 Compact with Africa's peer-learning event on digital investments, held in Rabat from December 2 to 4. The event brought together African leaders, international partners, and industry experts to exchange strategies and discuss actionable steps to foster digital innovation across Africa. It further reinforced Morocco's role as a leader in digital transformation on the continent. At the event, Amal El Fallah Seghrouchni, Morocco's Minister Delegate for Digital Transition and Administrative Reform, outlined the country's strategy for digital transformation. Seghrouchni emphasized the importance of building essential infrastructure and fostering a digital culture to ensure digital inclusion. Her vision aims to improve access to information and communication technologies (ICT) across all sectors of society, establishing a more inclusive economy. Seghrouchni also highlighted that digital inclusion is not just about technology, but a powerful driver of societal change. "Closing the digital gap is crucial for improving productivity, public service quality, and fostering innovation," she said, adding that Morocco is ready to share its expertise with other African nations on their digital transformation journeys. As Morocco continues to lead Africa's digital evolution, its strategic investments and collaborations are helping shape a digitally inclusive future for the continent. Technology is increasingly becoming a key driver of empowerment and economic resilience for Africa.

(December 4, 2024) www.meatechwatch.com

Subscribers of national fixed and mobile networks will be able to port their numbers with greater ease and fluidity thanks to the implementation of the Porting Authorization Code. It is an identifier assigned by each operator to their customer's call number. It provides information on the operator with whom the subscription or subscription is made, the customer category and the type of contract in force. (November 12, 2024) www.anrt.ma

In the rapidly evolving digital landscape, managing data securely and efficiently remains paramount for both governments and businesses. Recognizing this, Morocco has embarked on a significant step to enhance its digital infrastructure through a strategic partnership with AI71, a leading artificial intelligence (AI) firm. The collaboration was officially sealed at the Gitex Global technology exhibition in Dubai. This event saw Morocco's Ministry

of Digital Transition and the United Arab Emirates" Technology Research Council—AI71's parent organization—come together to forge this new alliance. This initiative is a key component of Morocco's "Morocco Digital 2030" strategy, aimed at accelerating the country's digital capabilities. By adopting AI71's advanced AI solutions, such as the "Falcon" system, Moroccan enterprises and governmental bodies will gain access to state-of-the-art tools for data management, ensuring enhanced security and confidentiality of information. The potential benefits of integrating AI solutions are significant. According to a PwC study, the adoption of AI could potentially increase Africa's GDP by $1.2 trillion by 2030, which translates to a 5.6% GDP growth. This partnership not only aims to secure data but also to increase transparency and compliance with international standards, fostering an environment conducive to digital innovation and growth for Moroccan startups.
(October 17, 2024) www.meatechwatch.com

Oman

The Telecommunications Regulatory Authority (TRA) organizes an auction for the special numbers of the Omani Qatari Telecommunications Company (Ooredoo); containing 43 diamond numbers and 157 gold numbers. The auction was launched on the company's website, noting that the bidding will continue until three o'clock on Tuesday, December 10, 2024. The Authority distributes the amounts collected from the sale of special numbers to charitable societies approved by the Ministry of Social Development, according to what is stipulated in the Telecommunications Regulatory Law in Article (16) and its executive regulations in Article (49), which states that (the Authority determines the fee for allocating special numbers and undertakes to collect it and deposit its proceeds in a special account allocated for donations to charitable bodies and institutions). (December 8, 2024) www.omanobserver.com

Oman's telecommunications sector has undergone notable changes over the past year, with significant growth in postpaid mobile phone subscriptions and a steady rise in internet usage, according to the latest data from the National Centre for Statistics and Information. By the end of September 2024, postpaid mobile subscriptions in Oman had increased by 23% compared to the same period last year, reaching a total of 2,163,883 subscriptions. In contrast, prepaid mobile subscriptions saw a 6% decline, dropping to 5,077,026. Despite this decrease, the overall number of mobile phone subscriptions, including both prepaid and postpaid, grew by 1.2%, amounting to 7,240,909. Of these mobile subscriptions, 3,837,108 were issued by mobile operators, while 1,239,918 came from resale channels. Broadband internet usage also showed growth, with active mobile broadband subscriptions reaching 5,821,865 by the end of September. Fixed internet subscriptions rose by 3.5% compared to September 2023, totaling 577,713. Fixed broadband subscriptions, those with speeds exceeding 256 kilobytes per second, increased by 3.5% to 576,011. However, low-speed internet subscriptions, including telephone-based and some leased lines, remained minimal, with only 1,702 subscriptions. The data also revealed a decline in traditional fixed-line services. Fixed-line subscriptions fell by 25.1%, bringing the total down to 430,585 by the end of September. Subscriptions to analogue fixed-line services, including prepaid and postpaid lines, saw an even sharper decline of 72.6%, dropping to just 62,749. Conversely, the number of fixed lines connected to Internet Protocol (IP) technology increased by 10.5%, reaching 318,149. The number of subscriptions to Integrated Services Digital Network (ISDN) channels decreased by 2.8%, totaling 48,979, while public telephone numbers remained unchanged at 6,801. Fixed wireless subscriptions also saw a decline of 25.6%, amounting to 553. In terms of regional distribution, Muscat accounted for the largest share of fixed analogue telephone lines, holding 48.45%, followed by Dhofar at 10.55%, and North Batinah at 10.85%. The remaining governorates made up the final 30.15%. This data highlights the shifting landscape of telecommunications in Oman, with a marked preference for postpaid and high-speed broadband services, while traditional fixed-line connections continue to decline. (November 13, 2024) www.meatechwatch.com

The Ministry of Transport, Communications, and Information Technology (MTCIT) has signed a cooperation agreement with the University of Technology and Applied Sciences (UTAS) to advance the government's digital transformation efforts in Oman. This initiative aims to equip future leaders with the necessary skills for innovation and creativity within the digital landscape. Under the auspices of the Government Digital Transformation Program (Tahawul), MTCIT and UTAS will jointly launch a Master of Science program in Digital Transformation and Innovation. The program is designed to strengthen collaboration between the government and academia, enhancing the skill sets of human resources essential for navigating digital advancements. The agreement was signed by H.E. Dr. Ali bin Amer al Shidhani, Undersecretary for Communications and Information Technology at MTCIT, and Dr. Saeed bin Hamad al Rubaie, President of UTAS.
(October 28, 2024) www.meatechwatch.com

Telecommunications Regulatory Authority issued regulations for Data Center and Cloud Computing. The regulation includes six chapters distributed over 30 articles. It addresses the provisions for providing data center services and cloud computing services, information security and contractual obligations, methods of processing subscriber content and data, and others. The objectives of the regulation include, enabling investment in innovative technologies and services, improving communication services, Developing a flexible and evolving regulatory environment, Licensees to provide fixed public telecommunications services, Data Center and Cloud Computing Provider, Shared Data Center and Cloud Computing Services.
(October 1, 2024) www www.arabiandaily.com

Pakistan

Chairman PTA, Major General (R) Hafeez ur Rehman chaired a meeting with Madiha Hamid, CEO, DEMO Pakistan and Waqas Hassan, Regional Lead for Global Digital Inclusion Partnership (GDIP). DEMO is the only organization from Asia to win over USD 1 million grant by the WiDEF - a fund established by USAID and the Bill and Melinda Gates Foundation. DEMO will implement the 2-year grant to address Pakistan's gender digital divide, where only 26% of women have internet access, compared to 47% of men. This project will empower 10,000 women in government colleges through digiskills training, provide online safety chatbot for 52 million Whatsapp users in Pakistan and run advocacy campaign targeting 8 million social media users to bring about social and behavioral change. Chairman PTA reaffirmed PTA's full support for the project's successful implementation, highlighting the authority's commitment to enhancing digital inclusion and empowering women. (December 12, 2024) www.pta.gov.pk

The Pakistan Telecommunication Authority (PTA) has officially hired National Economic Research Associates Inc. (NERA) for consultancy services to assist in the release of IMT spectrum aimed at enhancing next-generation mobile broadband services in Pakistan. The contract was signed on November 5, 2024. As part of the agreement, NERA will conduct stakeholder consultations and provide recommendations to the government on key aspects of the upcoming spectrum release, including proposed reforms, spectrum valuation, and auction design. The process is expected to be completed by April 2025. NERA, a leading U.S.-based international consultancy firm, was selected after accepting the letter of intent (LOI) for the 5G spectrum auction. Despite submitting the second-highest technical bid, NERA was chosen due to offering the lowest financial bid of $0.75 million for the consultancy services. (November 20, 2024) www.profit.pakistantoday.com.pk

The Pakistan Telecommunication Authority (PTA) said that 5G internet service would be introduced in Pakistan by April 2025. The PTA local chapter sources told APP that efforts were being made to expand the telecom market and provide better facilities to users. They said that the restoration of the submarine cable was currently underway in the country, which was expected to be completed by August 27, 2025. Despite upgradation of services, no further disruption was expected, and customers would get better services, they added. Meanwhile, the PTA awarded a letter of intent to National Economic Research Associates (NERA) to oversee the 5G spectrum auction. NERA is a US-based consultancy that specializes in telecom and government sector modeling. (November 12, 2024) www.dailytimes.com.pk

To recognize the outstanding achievements in enhancing cybersecurity within the telecom sector of Pakistan, The Pakistan Telecommunication Authority (PTA) organized Cybersecurity Awards 2024 at Islamabad. Commending the industry's commitment, Minister of State for IT and Telecommunications, Shaza Fatima Khawja, reiterated the government's vision for a robust cybersecurity framework essential for Pakistan's economic and digital stability. Major General (R) Hafeez Ur Rehman HI(M), Chairman PTA, in his keynote address, underscored PTA's initiatives fostering a proactive cybersecurity culture, emphasizing collaboration for a secure sector. Shields were presented to top-ranking telecom entities and key stakeholders for their roles in enhancing Pakistan's Global Cybersecurity Index (GCI) ranking. Cybersecurity annual report 2024 was also launched on the occasion detailing PTA's initiatives. The report and the details of rankings will be available on the PTA website. Cyber security awards celebrate the telecom industry's dedication to strengthening security frameworks, showcasing advancements toward a more resilient telecom infrastructure.
(November 5, 2024) www.pta.gov.pk

The Pakistan Telecommunication Authority (PTA) conducted an independent Quality of Service (QoS) survey in 23 cities across Sindh, Punjab, Balochistan, and Khyber Pakhtunkhwa to evaluate the performance of Cellular Mobile Operators (CMOs). Survey routes covered main and service roads, and sectors/colonies, with around 4,000 km traveled per CMO over 83 days. During the survey, 0.38 million mobile broadband tests and 57,500 voice call and SMS tests were conducted using automated QoS monitoring tools. Based on compliance with KPIs from NGMS licenses and QoS Regulations 2021, CMOs were ranked for mobile network coverage, voice services, and broadband speed. Survey results showed compliance in upload/download speeds and improvements in network latency and webpage loading times. Some voice KPIs, however, fell below the licensed threshold in certain areas. Operators using advanced technologies like LTE Carrier Aggregation and Voice over LTE provided better services. PTA has instructed operators to improve service quality. The survey aims to enhance mobile service quality and foster healthy competition among operators. (October 11, 2024) www.pta.gov.pk

A Letter of Cooperation (LoC) was signed between The Pakistan Telecommunication Authority (PTA) and Malaysian Communications and Multimedia Commission (MCMC) in a ceremony held today at Prime Minister's House. Heads of both organizations Mr. Tan Sri Mohamad Salim bin Fateh Din, Chairman MCMC & Major General (R) Hafeez Ur Rehman HI(M), Chairman PTA, signed the LoC in the presence of Honorable Prime Ministers of both countries. The LoC is focused on collaboration for organizing, executing and implementing the Regulations Capacity Development Program (RCD) in areas of mutual interests to enhance collaboration between PTA and the MCMC to achieve shared goals and objectives. The focus areas under consideration include 5G Ecosystem, Digital Connectivity, Enhancement of Fixed Broadband Services, Emerging Technologies such as Artificial Intelligence (AI), Internet of Things (IoT), Cloud Computing, Data Analytics, etc. This collaborative effort between PTA and MCMC is anticipated to drive innovation, economic growth, and enhanced connectivity in both countries. (October 3, 2024) www.pta.gov.pk

The Pakistan Telecommunication Authority (PTA) is poised to enhance internet connectivity in the country by preparing to grant a license to Starlink, the satellite internet venture led by Elon Musk. PTA officials report that the decision to issue the license has been finalized, pending only security clearance. "Starlink's license is ready; we are just awaiting security approval," confirmed PTA representatives. The rollout of Starlink's high-speed satellite internet service is expected to significantly improve connectivity, particularly in rural and remote regions where conventional broadband options are often limited or slow. In addition to the license, Starlink will be required to enter a commercial agreement with Pakistan's Space and Upper Atmosphere Research Commission (Suparco). This agreement will also need PTA approval. If all goes according to plan, Starlink is expected to launch its services in Pakistan within the next year, providing residents nationwide with access to reliable and fast satellite internet.

(October 3, 2024) www.dunyanews.tv

Qatar

Ahmad Abdulla al-Muslemani, President of the Communications Regulatory Authority (CRA), emphasized the CRA's decade-long success in managing and overseeing radio spectrum usage in Qatar, fully aligning with legal frameworks. His statements showcase the authority's pivotal role in critical sectors such as telecommunications, security, oil and gas, aviation, and maritime navigation. Speaking to the Qatar News Agency (QNA), al-Muslemani noted that the CRA's continuous efforts to issue regulations and grant licenses, permits, and approvals ensure the optimal utilization of the radio spectrum. This work has solidified the CRA's central position in maintaining Qatar's communication security and sustainability. He highlighted the CRA's instrumental role in supporting major local and international events, including the FIFA World Cup Qatar 2022, ensuring seamless radio frequency management for various stakeholders. Through these efforts, the CRA ensured uninterrupted communications and prevented radio interference during the event. The CRA has also achieved significant international milestones, such as forging cooperation agreements with countries including Turkey, Morocco, the Gambia, Somalia, South Korea, and Romania, strengthening global partnerships in spectrum management. Over the past ten years, the CRA has worked on ensuring the efficiency of Qatar's telecommunications networks. A key focus has been managing the national numbering system, including the allocation of 11 million mobile numbers and 2 million landline numbers to telecom companies. Furthermore, the CRA has supported the growth of the Internet of Things (IoT) and machine-to-machine (M2M) applications by allocating 300,000 numbers for these uses. Al-Muslemani also noted the CRA's contributions to advancing Qatar's digital landscape. This included expanding the nation's digital presence globally and improving its digital infrastructure and cybersecurity. The CRA has encouraged the adoption of Qatari Internet domain names and supported technological innovation, aligning with the country's ambition to become a global leader in information and communications technology (ICT).

(December 16, 2024) www.meatechwatch.com

The Communications Regulatory Authority (CRA) has issued the fifth version of the Class License for Short-Range Devices after reviewing feedback received from stakeholders and interested parties on the public consultation document published on CRA's website in the second quarter of this year. This step emphasizes CRA's commitment to keeping pace with the rapid technological developments in radiocommunication devices and their applications, and to ensure alignment of technological applications and frequency bands for short-range devices intended for import and use in the State of Qatar with rules, international standards and technical specifications for such devices. The fifth version of the Class License for Short-Range Devices includes additional frequency bands with new values and greater flexibility related to permitted transmit power values in response to recent developments in radiocommunication devices and their applications. These additional frequencies will allow the use and sale of a wider and more diverse range of short-range devices and their applications throughout the State of Qatar. These devices and applications serve various sectors and a broad segment of consumers in the country. This update supports Qatar National Vision 2030 and the Third National Development Strategy 2024-2030, which prioritizes improving residents" quality of life and delivering services that meet global standards. The draft of the Class License previously published by CRA for public consultation included several important proposals aimed at updating the fourth version (previous version), allowing stakeholders and interested parties to submit their views and feedback to CRA. This process helped CRA to understand the needs of this important sector and consider them in an organized and transparent manner. Consequently, CRA has published the fifth version, which replaces the fourth version issued in June 2021. (November 10, 2024) www.cra.gov.qa

The Communications Regulatory Authority (CRA) of the State of Qatar has issued the Communications Consumer Protection Policy and Regulation, setting a new standard for consumer rights and Service Provider obligations in Qatar's telecommunications sector. This decisive action is fully aligned with Qatar's telecommunications law and regulatory framework, ensuring that consumers are protected under a comprehensive and legally grounded structure that demands higher levels of transparency and responsibility from Service Providers. The Policy outlines the key objectives and principles that will govern consumer protection efforts in Qatar. This policy establishes the foundation for ensuring that consumers" rights are not only recognized but actively safeguarded in an era of rapid technological change. The Regulation is a detailed set of rules and procedures that Service

Providers must adhere to. It covers critical aspects such as advertising standards, marketing practices, billing transparency, contract fairness, data privacy, and customer notifications. Specific provisions are included to address common consumer concerns, including unsolicited direct marketing, spam, and the safeguarding of personal data. The regulation also lays out clear processes for handling consumer complaints and disputes, ensuring that consumers have continuous access to essential emergency services without disruption. "The Communications Consumer Protection Policy and Regulation we have issued marks a crucial step in our ongoing commitment to creating a fair and transparent communications environment in Qatar. Aligned with Qatar's telecommunications law and regulatory framework, our goal is to protect consumers by ensuring they receive clear information, fair contracts, and reliable services, while holding Service Providers to the highest standards," said Amel Salem Al-Hanawi, Director of the Consumer Affairs Department at CRA. "By issuing this instrument, we are reinforcing our commitment to fostering a competitive and consumer-friendly communications market, in line with Qatar's Vision 2030 and the Digital Agenda 2030," she added. (October 21, 2024) www.zawya.com

In a move set to bolster Qatar's position as a regional digital hub, Qatar Investment Authority (QIA) announced plans to merge the telecommunications businesses of Qatar National Broadband Network (QNBN) and Gulf Bridge International (GBI). QNBN, Qatar's leading passive fiber service provider, has a nationwide coverage of over 95 per cent, while GBI offers high-capacity connectivity solutions across the Middle East, Europe, and Asia. By merging their strengths, QNBN and GBI aim to attract global hyperscalers and AI innovators to Qatar, offering a seamless gateway to interconnect within the Middle East region. "With highly complementary assets and operations, our combined businesses will be better placed to capture the rapidly growing international connectivity opportunity to support our future growth ambitions, said Engineer Essa Bin Hilal Al-Kuwari, chairman of QNBN and GBI. The combined entity will focus on maximizing opportunities within the international data traffic market, leveraging its combined resources to drive innovation and expand its global presence. The transaction is expected to close in Q4 2024, subject to regulatory approvals. QIA's CEO, Mansoor Ebrahim Al-Mahmoud, expressed the company's commitment to Qatar's Third National Development Strategy, stating that the merger would attract foreign direct investment and serve as a catalyst for economic diversification. Al-Mahmoud added: "We aim to position Qatar as a leading digital hub both regionally and globally and connect Qatar to the world."
(October 3, 2024) www.gulfbusiness.com

The Communications Regulatory Authority (CRA) of the State of Qatar, in collaboration with the Telecommunication Development Bureau (BDT) of the International Telecommunication Union (ITU), is hosting the ITU Workshop on Promoting and Measuring Universal and Meaningful Connectivity for the Arab States. The three-day event, taking place from 1-3 October 2024 and brings together key stakeholders, policymakers and statisticians from across the region to discuss strategies for improving digital inclusion and access to connectivity for all. The workshop aims to explore how universal and meaningful connectivity can be achieved across the Arab world, focusing on the critical role of Information and Communication Technologies (ICTs) in driving sustainable development. It will provide a platform for policymakers, industry experts, and representatives from both public and private sectors to share insights, best practices, and innovative solutions to address connectivity challenges. As the world becomes increasingly reliant on digital platforms for economic, social, and educational growth, achieving universal and meaningful connectivity has never been more important. The workshop will delve into key areas, such as the digital divide, infrastructure development, affordability of services, and the role of emerging technologies like Fifth Generation (5G) and Artificial Intelligence (AI) in enhancing access. Eng. Hussain Abdulla Salatt, Public Relations and Communication Manager at CRA, emphasized the importance of the workshop saying: "Universal and meaningful connectivity is essential for the socio-economic development, and its importance continues to grow as we advance toward achieving the goals of Qatar National Vision 2030 and the Digital Agenda 2030. At CRA, we are committed to working alongside international partners like ITU to achieve digital inclusion in the Arab region. To realize this goal, we are focused on fostering innovation, enhancing digital infrastructure, and improving affordability, especially for underserved communities. This workshop is a significant step toward building frameworks and strategies that will enable everyone to participate in the digital economy." Over the course of the workshop, participants will also discuss how to measure progress in achieving universal connectivity, utilizing ITU's frameworks and tools. These tools are crucial for assessing the effectiveness of policy initiatives and ensuring that all population groups, particularly in underserved and remote areas, can benefit from the opportunities that the digital economy provides.
(October 1, 2024) www.cra.gov.qa

Saudi Arabia

The Communications, Space and Technology Commission (CST) announced the winners of the Tech Innovation Challenge 2024, and crowned the winning teams Hams.AI, Sammu, VOIR, Challenge The Space, Ebda, Sanad AI, Farm Care, Chromaero and Moraqeb. The Challenge was launched in collaboration with the National Technology Development Program (NTDP), Huawei and the Artificial Intelligence Governance Association. This initiative aims to support innovation and the development of tech products,

encourage entrepreneurs, invest in national capabilities, which will contribute to GDP by increasing the number of local companies specializing in emerging technologies. CST highlighted that this edition had witnessed the participation of over 900 participants, representing 290 teams. The challenge focused mainly on AI, IoT, robots through within communications, Space and technology tracks. The winners were awarded by Mr. Raed Alfayez, Deputy Governor for Technology Sector at CST, and Mr. Ibrahim Neyaz, CEO of National Technology Development Program, with the presence of H.E. Mohammed Altamimi, Governor of CST, and H.E. Eng. Haitham AlOhali, Vice Minister at Ministry of Communications & Information Technology, and a number of Their Excellencies. It is worth noting that the Tech Innovation Challenge builds on the previous IoT Challenge, which held three editions and witnessed a participation from more than 3,000 individuals, resulting in over 1,500 submitted ideas that presented innovative solutions to various challenges in Saudi markets in many fields.
(December 10, 2024) www.cst.gov.sa

The Communications, Space and Technology Commission (CST) announces the winners for the Spectrum Auction in the Frequency Bands (600, 700, 3800) MHz for Mobile Telecommunication Networks to be as follows: STC won a total of (40) MHz in the frequency band (600) MHz and a total of (100) MHz in the frequency band (3800) MHz, while Mobily won a total of (20) MHz in the frequency band (700) MHz and a total of (100) MHz in the frequency band (3800) MHz, and Zain won a total of (30) MHz in the frequency band (600) MHz The auction will contribute with over 25 billion SAR to the GDP by 2030, through enhancing the digital infrastructure, promoting investment and competitiveness in Mobile Telecommunications Networks, and deploying innovative and high-quality telecom Services. The auction will also increase the total licensed frequencies for mobile telecommunication networks from 1110 MHz to 1400 MHz, with an increase of 27%. This achievement positions the Kingdom as the leading country among the G20 countries the in total licensed spectrum for mobile networks in bands below 6 GHz. Furthermore, CST highlighted that the Kingdom is the first country in Europe, Africa, and the Middle East to license the 600 MHz frequency band for mobile telecommunication networks. (November 11, 2024) www.cst.gov.sa

The Digital Regulatory Academy (DRA) held a training program on "Role and Value of Critical Resources in the Digital Market", which aims to enhance capabilities in resources management within the ICT sector, evaluate the role of regulators and policymakers in sources management and demonstrate its contribution to the development of digital markets. The 5 days program was attended by 30 experts from MCIT+ entities and a number of representatives from National Regulations Committee and service providers in the ICT sector. The training program provided strategies to develop and influence digital markets through practical scenarios, fostering a deeper understanding of the critical infrastructure that underpins these markets. It also addressed the management of limited resources, including IP addresses and radio spectrum, explored the shifts between regulation and governance, and enhanced decision-making skills by examining the economic and social effects of digital markets. The program is part of DRA initiatives to develop national capabilities in public policy and digital regulations, as well as improve regulatory awareness. Since the establishment the DRA in 2021, over 1000 participants from both public and private sectors have benefited from the academy's training programs. (November 5, 2024) www.cst.gov.sa

The Communications, Space and Technology Commission (CST) has announced the launch of the Tech Innovation Challenge 2024 in collaboration with the National Technology Development Program (NTDP), Huawei and the Artificial Intelligence Governance Association. This initiative aims to motivate the communications, space and technology sectors growth by developing innovative solutions, raising awareness of emerging technologies and artificial intelligence (AI) among stakeholders and professionals, as well as advancing the digital economy by increasing the number of local companies specializing in emerging technologies. CST mentioned that the challenge is aimed at innovative entrepreneurs and specialists in AI, the Internet of Things (IoT) and robotics, with tracks covering communications, space and technology. It highlighted that the Tech Innovation Challenge builds on the previous IoT Challenge, which held three editions and witnessed a participation from more than 3,000 individuals, resulting in over 1,500 submitted ideas. (October 2, 2024) www.cst.gov.sa

The Communications, Space and Technology Commission (CST) concluded the Digital Technology Forum 2024, which was held under the theme "Synergizing for a Sustainable Digital Future ". The forum aims to highlight the potentials of collaboration between government and private organizations in technology sector, with a focus on the major developments in the tech markets. The forum announced the huge leaps in the technology sector over the past year, with an increase in the Technology market size reaching 91 billion SAR in 2023, marking a CAGR exceeding 11% over the last five years. Moreover, CST pointed out that the number of tech companies listed in the stock market reached 20 companies, with a market cap exceeding 148 billion SAR. Additionally, Saudi Arabia achieved first place in the Middle East and North Africa for venture capital value. This year's forum presented several awards for the winning tech companies, mainly the Co-Innovation Award which was launched by CST to recognize the top three innovative tech products developed in collaboration between the service provider and the end user. The winning products of the 3rd edition of the Co-Innovation Award are "DocCerts," Faseeh," and "Muneer'. Moreover, their Excellencies have awarded the winning companies of the Tech Excellence Award, which aims to celebrate companyes contributing to the development of local tech content and achieving national goals, in addition to the winners of the Leading Tech Companies for Empowering Women, which aims to recognize the efforts of outstanding tech companies in providing an empowering environment for women. CST organizes the Digital Technology Forum annually, in partnership with the Ministry of Communications and Information Technology (MCIT) to keep pace with the latest developments and trends in the technology sector. Through 4 panel discussions and 4 presentations, the forum highlighted the main opportunities and tools for collaboration in the Saudi technology sector. The forum's sessions and presentations addressed Ecosystem

Collaboration to Boost Investment, Regulatory Collaboration to Enhance Technology, Synergizing Skills Development in the Technological Field, Collaboration in Developing the Future of Digital Infrastructure; which contribute in building shared visions on how to develop digital infrastructure, open new markets, and enhance investment in the future fields of technology, with the participation of a pioneering local and global experts.
(October 10, 2024) www.cst.gov.sa

Sri Lanka

Sri Lanka's smartphone market surged in the second quarter of 2024, with shipments reaching 365,000 units, marking a 218 percent year-on-year growth, according to IDC. This rapid expansion has sustained triple-digit growth for five consecutive quarters, signaling strong demand for mobile technology in the country. With 32.49 million cellular connections and 12.34 million internet users (56.3 percent of the population), the market continues to thrive. Honor, ZTE, Samsung, Transsion, and Xiaomi emerged as the leading brands in Q2 2024, with Honor taking a 21 percent share of the mid-range segment, driven by the success of the X7b model. Interest in 5G smartphones grew, accounting for 25 percent of shipments, as Dialog Axiata expanded its 5G network following acquisitions of Airtel and Sri Lankan Telecom. Retail channels continue to dominate the market, contributing to 98 percent of smartphone sales as consumers prefer to experience devices before buying. (October 8, 2024) www.meatechwatch.com

Tunisia

The Ministry of Communication Technologies and Digital Economy has officially granted 5G licenses to three major telecom operators: Tunisie Telecom, Orange Tunisie, and Ooredoo Tunisia. This decision marks a significant milestone in the country's digital transformation, with commercial 5G services set to launch in 2025. The licenses were approved, following a six-month tender process that began in June. The three operators submitted their applications in September. Each license is valid for 15 years and includes 5 MHz of duplexed spectrum in the 700-MHz band and 100 MHz of TDD spectrum in the 3.5 GHz band for 5G use. The Ministry has also allocated three 20 MHz blocks available for operators upon request, with other frequency bands to be released in future phases. Originally aiming for a commercial 5G launch by late 2024, Minister of Communication Technologies Sofiène Hmissi confirmed that the rollout will now begin in 2025. Despite the delay, Hmissi assured that the operators have already conducted extensive tests, pilot projects, and network upgrades in preparation for the deployment. (December 3, 2024) www.meatechwatch.com

Turkey

The National Communication Workshop organized by the Communication Technologies Cluster (HTK) was held with the participation of Deputy Minister of Transport and Infrastructure Dr. Ömer Fatih Sayan and President of the Information Technologies and Communication Authority Ömer Abdullah Karagözoğlu. The workshop brought together representatives of the communication and communications sector and discussed developments in 5G and beyond local and national technologies and cyber security issues. Speaking at the workshop, Deputy Minister of Transport and Infrastructure Dr. Ömer Fatih Sayan said, "The world of technology is changing rapidly every day and this change is deeply affecting every area of our lives. The electronic communications sector in particular is one of the areas where this transformation is felt most rapidly and deeply. Because it is a subject that is directly related to technology. Technology equals change, change equals development." Stating that the interest of citizens in electronic communication technologies is reflected in the figures, Sayan said, "We currently have 93.3 million mobile subscribers, corresponding to a penetration rate of approximately 109.3%, while the number of M2M subscribers has reached 10 million. In addition, the availability of high-speed internet over mobile and fixed infrastructures constitutes one of the fundamental goals of our country in the field of technology."
(November 2, 2024) www.btk.gov.tr

United Arab Emirates

The United Arab Emirates (UAE) is set to allocate 600MHz and 6GHz frequency bands to support the development of 6G technology, as announced by the Telecommunications and Digital Regulatory Authority (TDRA). This move is expected to pave the way for the introduction of 6G services between 2025 and 2026. According to TDRA officials, these frequency bands will facilitate the evolution of mobile telecommunications systems and gradually allow consumers to access 6G features. Sixth-generation technology promises significant advancements, including data speeds reaching the terabit level, latency below one millisecond, and enhanced AI-driven networking capabilities. Majed Al Mesmar, TDRA's director general, emphasized that these innovations will mark a major leap in mobile connectivity.

(December 3, 2024) www.meatechwatch.com

The Telecommunications and Digital Government Regulatory Authority (TDRA) organized a special workshop on Private 5G Networks at its head office in Abu Dhabi, attended by a group of ICT experts and specialists alongside more than 100 participants from 40 different entities. The workshop aimed to discuss the opportunities and challenges related to the deployment of private 5G networks in various sectors, with a focus on solutions and innovations offered by this technology. During the workshop, ideas and visions were shared between all parties involved, to enhance overall understanding of the private 5G technology and tap into its features and benefits in the industrial and service sectors of the United Arab Emirates. The workshop included presentations by representatives of operators, suppliers and some government entities in the UAE, reviewing current activities and future strategic directions, marked by a roundtable session to discuss the challenges of deploying such networks, including network construction costs and technical requirements, and identifying proposed solutions to facilitate widespread adoption. In this context, Eng. Tariq Al Awadhi, Executive Director of the Spectrum Department at TDRA, said, "Organizing this workshop comes as part of our ongoing efforts to support digital transformation in the State, and create a regulatory/organizational environment conducive to the adoption of advanced tech solutions.

(October 25, 2024) www.zawya.com

The Telecommunications and Digital Government Regulatory Authority (TDRA) organized at its premises a ceremony to recognize participants in the development and implementation of the first round of the Zero Government Bureaucracy (ZGB) Program. This recognition comes as part of the efforts to enhance efficiency and flexibility in government service delivery, thus contributing to a paradigm shift in government work and improving customer experience. In his opening speech, H.E. Eng. Mohammed Al Ramsi, Deputy Director-General of the Telecommunications Sector at TDRA and General Coordinator of the program, stressed the relevance of the ZGB Program in realizing the wise leadership's vision towards building a bureaucracy-free digital government that streamlines government formalities, ensuring a more efficient and seamless delivery of services to customers. In his remarks, he said, "The ZGB Program is a strategic step towards raising the efficiency of government work and radically improving the customer experience. This program contributes not only to saving time and effort, but also bolsters UAE's global competitiveness by providing simplified and fast-track government services." During the ceremony, highlights of results of the ZGB program were reviewed, highlighting the reduction in turnaround times by 50-80%, by employing AI, IoT and digital identity technologies in service delivery, which helped improve customers" experience and better work efficiency.

(October 24, 2024) www.zawya.com

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

Argentina

The Argentina government confirmed it will make available additional frequencies for the provision of 5G services. The presidential spokesperson Manuel Adorni stated that the government will award the 100 megahertz of spectrum that had been previously reserved for state company Arsat for mobile communications, as well as 50 megahertz that are in the hands of telecommunications services regulator Enacom. In October 2023, Argentine operators Claro, Movistar and Personal secured spectrum for the provision of 5G services in a tender carried out by the government. The government obtained $875 million for the frequencies, less than the initial expectation of $1.05 billion. The GSMA report showed that 5G penetration in Argentina is expected to reach 9% by 2025 while it would expand to 48% by 2030. GSMA also noted that 5G networks will cover 84% of Argentina's population by 2030, up from 38% in 2025.

(October 23, 2024) www.rcrwireless.com

Australia

Australia's competition regulator said it is seeking views on the Macquarie-backed telecommunications group Vocus" A$5.25 billion ($3.39 billion) takeover of local telecom operator TPG Telecom's enterprise, government, and wholesale (EG&W) fixed business and fiber network assets. The Australian Competition and Consumer Commission (ACCC) said it is seeking views from interested parties on the likely impact on prices and service quality in the supply of fixed line voice services, data networks and connectivity services, among other queries, if the deal was to receive approval. TPG Telecom announced the deal in October, stating that it would retain its radio network infrastructure, mobile and fixed retail and wireless businesses after Vocus" takeover of its fiber and fixed assets. ACCC has invited submissions from interested parties regarding the acquisition by Dec. 2, while providing Feb. 13, 2025 as a provisional date for the announcement of its findings from the ongoing review. TPG Telecom said in an emailed response to Reuters that it is committed to working closely with ACCC and Vocus "to ensure this review process concludes as quickly and efficiently as possible". Vocus Group declined to comment.

(November 18, 2024) www.channelnewsasia.com

The Commonwealth Bank of Australia (CBA) has paid a $7.5 million penalty after it sent more than 170 million emails that did not comply with Australia's spam laws. An Australian Communications and Media Authority (ACMA) investigation found that between November 2022 and April 2024 CBA contravened Australia's spam laws by sending over 170 million marketing messages to Australians that did not include a way to unsubscribe. 34.8 million of these messages were also sent to people who either had not consented or had withdrawn their consent to receive these messages. This is CBA's second major breach of the spam rules after it paid a $3.55 million penalty in May 2023 for sending 65 million emails without working unsubscribe arrangements. ACMA Chair Nerida O'Loughlin said the further breaches and vast scale of CBA's non-compliance was unacceptable. "The ACMA took action against CBA just last year for not delivering on their customers" rights to unsubscribe from marketing messages. We have now had to take further action after this new investigation found that CBA had incorrectly classified millions of messages as non-commercial. "Australians are sick and tired of this kind of spam intruding on their privacy and it's clear CBA did not have its systems in order," Ms O'Loughlin said. The Spam Act 2003 permits purely "service" messages that are not commercial to be sent without consent or an unsubscribe facility. However, the ACMA found CBA's messages either promoted products and services (including for insurance, credit and loan offerings) or promoted CBA itself.

(October 17, 2024) www.acma.gov.au

Brazil

The ongoing story of Brazilian digital infrastructure solutions company and neutral fiber optic network owner V.tal's plans to buy financially troubled telecommunication company Oi's broadband unit has taken a positive turn as Brazilian competition regulator Cade has approved the purchase – though it's far from over yet. One of the regulator's units, the General Superintendence of Cade (SG-Cade), has approved without restrictions the purchase by V.tal of Oi's fixed broadband customer unit (ClientCo – operating under the name of Oi Fibra). In making its decision, the regulator decided that, as ClientCo already operates 100% through V.tal's infrastructure network, any vertical integrations are pre-existing.

It also took into consideration idle capacity in V.tal's telecommunications network, which will continue to operate as an independent neutral network. In addition, it has taken into account that the business model adopted by V.tal is based on neutrality towards telecommunications service providers. It also believes there is adequate competition from other players. The process is not over yet. Telecom regulator Anatel's approval is still pending.

(December 1, 2024) www.developingtelecoms.com

The National Telecommunications Agency (Anatel) and the Band Management Entity (EAF) announced that the 3.5 gigahertz (GHz) frequency band, intended for 5G, had been cleared after the total removal of interference that prevented the activation of the signal in the 5,570 municipalities nationwide. Hence, mobile phone operators are now free to install 5G technology as per the authorization granted on Nov. 26 which could not be implemented earlier. Before 5G, this band was used by broadcasting and open satellite television services, mainly by satellite dishes, which operated in Band C. This technology works in the 3.7 GHz to 6.4 GHz range, very close to the 5G band, it was explained. Over the last few years, Anatel has acted on two fronts: migration from Band C and eliminating interference in the band close to 3.5 GHz. Overall, 1,482 professional satellite stations (FSS), used by radio and TV stations, distance learning institutions, and even the Air Force, which were operating in the Extended C Band, were vacated. The process ended in March this year, two years ahead of schedule. The second stage was the cleaning of the frequency, with the installation of filters in the satellite dishes to attenuate interference from the towers on mobile devices as well as the distribution of around 4.3 million free conversion kits to families benefiting from federal social programs who depend on the traditional satellite dish to access the open TV signal. The clean-up of the Band C signal used a partnership similar to that observed in the switch-off of analog television. To free up the 700 megahertz (MHz) analog TV frequency for the adoption of 4G, cellular operators paid for the distribution of UHF antennas and digital television converters to low-income families.

(December 4, 2024) www.en.mercopress.com

Canada

The CRTC issued its first decision under the Online News Act Application and Exemption Regulations (the Regulations). This decision will pave the way for Google to contribute $100 million annually to Canadian news organizations through the Canadian Journalism Collective (CJC). The Online News Act (the Act) received Royal Assent on June 22, 2023, and on December 19, 2023, the Regulations came into force. The Act (formerly Bill C-18) aims to ensure that online platforms that make Canadian news content available fairly compensate Canadian news organizations. Under the Act, the CRTC is responsible for implementing the government's Regulations. The Regulations allow online platforms to request an exemption from being required to bargain with individual news organizations if they reach an agreement with an organization that represents a broad range of Canadian news organizations. The CRTC is required to hold a public consultation on any exemption request received. In June 2024, Google filed an application to be exempt from the Act. The CRTC moved quickly and launched a public consultation on the application within three weeks. After reviewing the public record, the CRTC is granting a five-year exemption from the Act to Google. Google must pay $100 million to the CJC within 60 days of this decision. The CJC will then distribute the funds equitably to eligible Canadian news organizations. The CJC will report back to the CRTC annually.

(October 24, 2024) www.canada.ca

China

China announced the new Network Data Security Management Regulations, effective January 1, 2025, aimed at enhancing data security and privacy while establishing compliance requirements for both domestic and international entities. These regulations will significantly impact how businesses handle data, with stricter guidelines for personal information protection and cross-border transfers, ultimately providing individuals with greater control over their data rights. These new regulations aim to address the increasing challenges of data security in today's digital age by providing a legal framework for managing network data processing activities. With a focus on safeguarding the rights of individuals and organizations while ensuring national security and public interests, the regulations set out comprehensive guidelines on personal data protection, cross-border data transfers, and the responsibilities of internet platform providers.

(October 28, 2024) www.china-briefing.com

China launched a pilot program that will allow foreign investors to operate wholly owned data centers in the country. According to the Ministry of Industry and Information Technology (MIIT) will implement the pilot program in designated areas of Beijing, Shanghai, Hainan and Shenzhen. Participants in the program

will be allowed to engage in online data processing and transaction processing, and will have greater access to China's cloud computing markets. "This is an important measure to steadily push forward the institutional opening-up … and enhance China's competitive advantage and leading position in the telecommunications industry," MIIT Minister Jin Zhuanglong reportedly said. The MIIT will closely monitor the impact of the program and consider expanding its scope at an appropriate time. (October 25, 2024) www.lightreading.com

Finland

The Finnish Transport and Communications Agency, Traficom, has unveiled its latest report, "Private Networks in Finland", highlighting the rising interest in private mobile networks among Finnish businesses and organizations. The regulator noted that these networks offer tailored solutions that promise high performance, security and reliability, particularly beneficial for sectors like healthcare, manufacturing and logistics. However, the report identifies hurdles for the adoption of private networks in Finland, such as high initial costs and limited awareness, slowing widespread adoption. According to the report, these challenges are expected to diminish as technology matures, prices drop, and promotional efforts increase. The regulator also highlighted that private networks deliver stable, high-speed connectivity, making them ideal for industries that require dependable operations. Traficom's chief specialist Heidi Himmanen, said: "The fast and stable connection that a private network provides makes it possible to introduce technologically advanced solutions like automation and robotics in industrial plants." The higher capacity of the 5G network and options such as network slicing make it possible to implement increasingly high-quality services, according to the Finnish regulator. "The growing spectrum requirements of private networks needs to be recognized and considered in European spectrum management, while also taking into account the new opportunities offered by 6G technology", added Himmanen. At the moment, the regulator said that the 2.3GHz and 24.25–25.1 GHz bands are available to local 4G/5G networks with a radio license from Traficom.

(December 4, 2024) www.rcrwireless.com

Germany

The Federal Ministry for Digital Affairs and Transport (BMDV) said it is launching a consultation process for the implementation of 5G technologies for vertical industries, the ministry said in a release. The consultation process examines the needs of users in more detail and promotes dialogue on establishing a 5G and 6G ecosystem. The consultation further seeks to establish tailored measures to make the potential of private mobile networks widely usable, the BMDV said. Federal Minister Volker Wissing said: "Efficient, fast and reliable telecommunications networks are the nervous system of digitalization and the basis for growth and prosperity in the digital age. In order to help key technologies such as 5G and 6G to break through in the economy, we must tackle the opportunities and challenges together. Our consultation offers a platform for an open dialogue on how 5G can become a driver of digital innovations in the economy. In doing so, we are implementing another measure of our Gigabit strategy." The ministry also highlighted that the consultation is aimed at a wide range of recipients, including network operators, network equipment suppliers, system integrators, professional associations and forums, relevant research institutions and the broad group of users in vertical industries, such as companies and management consultancies. Comprehensive participation is crucial in order to capture the diverse perspectives and requirements and to build on the successes of the 5G innovation program, it added. "5G campus networks offer decisive advantages over the network technologies that have been predominantly used to date, such as WLAN, Industrial Ethernet or Bluetooth Low Energy applications, such as high capacities, low latencies and high reliability. The future 6G mobile communications standard will continue this development and further increase its importance for competitiveness," the ministry said.

www.rcrwireless.com

Ghana

Five months after Ghana announced its plans, the country is all set to launch 5G services on November 1, 2024. This is a significant step for Ghana, as it aims to become fully digital by 2030, providing fast and affordable mobile broadband to everyone, no matter where they are. This rollout is made possible through a collaboration between the government and tech giants like Ascend Digital, K-NET, Nokia, Radisys, and Tech Mahindra, all working to build a solid digital infrastructure in the country. As the launch date approaches, there's a buzz about how 5G could transform daily life and open up new opportunities

across various sectors in Ghana. But here's a thought—are they a bit late to the game? When you look at 5G adoption in Africa, it's been a mixed bag. Some countries like South Africa and Kenya, have been quick to roll out 5G services, while others are still catching up. The adoption has been slower in many regions due to factors like infrastructure challenges, regulatory hurdles, and the high costs associated with deploying new technology. (October 10, 2024) www.techpoint.africa

Pomp and pageantry characterized the launch of Ghana's National Cybersecurity Policy and Strategy (NCPS), a feat aimed to address the increasing cybersecurity threats arising from the nation's rapid digital transformation. The revised policy represents a strategic response to both existing and anticipated cyber threats that could undermine Ghana's gains in digitalization provides clear focus and direction to guide the development of Ghana's cybersecurity over the next five years. Unveiling the policy at the official opening of the 2024 National Cybersecurity Awareness Month (NCSAM) in Accra with the top brass of the Ghana Armed Forces and cybersecurity stakeholders in attendance, the Communications and Digitalization Minister, Hon. Mrs. Ursula Owusu-Ekuful, described the policy as a landmark achievement critical to Ghana's cybersecurity development. The policy is hinged across five critical pillars – Legal Measures, Technical Measures, Organizational Measures, Capacity Building, and Cooperation. It is consistent with the International Telecommunication Union's Global Cybersecurity Agenda guideline for cybersecurity development aimed at enhancing confidence, trust, and security in the ICT architecture of ITU member countries including Ghana. It further serves as an implementation tool to articulate the purpose of the policy statements which are to Build a Resilient Digital Ecosystem, Secure Digital Infrastructure, Develop National Capacity, Deter Cybercrime, and Strengthen Cooperation. These provide clear strategic objectives and initiatives with their corresponding descriptions, timelines and relevant stakeholders required to implement the strategic imperatives for a secure and resilient digital Ghana. Addressing the invited dignitaries, the minister underscored the fact that cyber threats were global in nature and their manifestations localized with Ghana not immune to such threats.

(October 4, 2024) www.myjoyonline.com

Hong Kong

The Hong Kong government recently secured HKD2.24 billion ($288 million) from its latest 5G spectrum auction, Hong Kong's Office of the Communications Authority (OFCA) said in a release. China Mobile Hong Kong acquired the maximum allocation of 50 megahertz in the 2.3GHz spectrum band for HKD1.07 billion, said OFCA. Hutchison Telecom followed closely behind, securing 10 megahertz in the 850MHz band —the maximum permitted — along with an additional 20 megahertz in the 2.3GHz band, for a total of HKD617 million. Meanwhile, HKT acquired 20 megahertz in the 2.3GHz band, paying HKD400 million and SmarTone obtained 10 megahertz in the 850MHz band for HKD151.5 million. In total, 110 megahertz of repurposed mobile spectrum was sold over a seven-day auction, divided into 11 separate blocks. OFCA noted that it will issue licenses for a period of 15 years. Operators have the flexibility to either pay the full amount upfront or opt for an annual spectrum utilization fee (SUF), the regulator added. "Each provisional successful bidder is required to submit a Letter of Credit by January 13, 2025, in full amount to guarantee payment of the SUF as specified in the table above. The provisional successful bidders are also required to submit performance bonds, where applicable, to ensure compliance with the network and service rollout requirement before the actual frequency assignments take effect," the spokesperson added.

(November 22, 2024) www.rcrwireless.com

India

The Competition Commission of India (CCI) slapped a INR2.1 billion ($24.9 million) penalty on Meta Platforms for abusing its dominant position in messaging and advertising by requiring users to share data for use across its platforms. In addition, the agency ordered WhatsApp to stop sharing users" data with other Meta Platforms companies for five years. An investigation found WhatsApp made data sharing with Meta Platforms mandatory when it updated its terms of service and privacy policy in 2021, removing an earlier option to opt out. The CCI stated the update constituted an imposition of an unfair condition, "as it compels all users to accept expanded data collection terms and sharing of data within Meta Group without any opt-out". By sharing WhatsApp user data with other platforms, the CCI determined Meta Platforms created an entry barrier for rivals, which resulted in denial of market access in the display advertisement market. Other remedies require WhatsApp's policy to include a detailed explanation of the user data shared with other Meta Platforms companies.

(November 19, 2024) www.mobileworldlive.com

The 25th Meeting of the South Asian Telecommunication Regulators" Council (SATRC-25) was held at New Delhi, India from 11th to 13thNovember, 2024, gathering

regulators, industry leaders, and experts from across South Asia. Hosted by the Telecom Regulatory Authority of India (TRAI) in collaboration with the Asia-Pacific Telecommunity (APT), this year's meeting brought together stakeholders to share insights, address regulatory challenges, and forge pathways toward a more inclusive digital ecosystem. Spanning three days, SATRC-25's program features key discussions that emphasize the theme of "Accelerating Telecommunication and ICT Development for Growth and Inclusiveness," promoting digital transformation for economic and social prosperity in the region. The Meeting was inaugurated by the Shri Jyotiraditya M. Scindia, Hon'ble Minister of Communications; & Minister of Development of North-Eastern Region on the 11th November, 2024 in the presence of Dr. Pemmasan iChandra Sekhar, Minister of State in the Ministry of Communications and Minister of State in the Ministry of Rural Development. Mr. Masanori Kondo, Secretary General, Asia Pacific Telecommunity (APT) was present on all three days. SATRC-25 elected Mr. Anil Kumar Lahoti, Chairman of Telecom Regulatory Authority of India as the Chair of SATRC. SATRC is an initiative under the Asia-Pacific Telecommunity (APT) that promotes regional cooperation and harmonized regulatory practices across South Asia's telecommunications sector. With members including Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, and Sri Lanka, SATRC is dedicated to creating a digitally inclusive society by supporting regulatory innovation, policy alignment, and cooperative efforts to bridge digital divides in the region. The SATRC-25 meeting featured a comprehensive agenda designed to address key issues in the telecommunications and ICT sectors. The meeting addressed several key topics, which included Regulators Roundtable discussion and Regulatory-Industry Dialogue. (November 13, 2024) www.pib.gov.in

Vodafone Idea said the company continues to be engaged with the department of telecommunications (DoT) for removal of the bank guarantee requirements for spectrum purchased before 2022 auctions. This comes after the DoT has recently issued a notice to the company asking it to submit the bank guarantees, which it is supposed to do as per the rules, a year before the moratorium on spectrum payments expires in 2025. Accordingly, Vodafone Idea needs to submit bank guarantees to the tune of Rs 24,700 crore in tranches, starting September 20. "The company has made detailed representations to the DoT and continues to be engaged with DoT for removal of the bank guarantee requirements for spectrum acquired before 2022," Vodafone Idea said in an exchange filing. "This is also an industry task. As and when a final decision is taken by the DoT, the company will make the necessary disclosures as required by law," Vodafone Idea added. Officials said that till the time the government does not take a decision to waive off this requirement, issuance of notice is a regulatory requirement. Government sources said that inter-ministerial discussions are in favor of providing relief to the company. "The company is trying to raise funds for investment to improve customer services. The idea is to make the company viable," an official said. Notably, telcos no longer are required to submit bank guarantees as a payment security for airwaves purchased in auctions from 2022 onwards. Earlier regulations required them to submit a bank guarantee equal to one annual installment. Vodafone Idea has also initiated a "fresh dialogue" with the government on the likely remedies in the AGR (adjusted gross revenue) dues matter after the Supreme Court recently dismissed its curative plea on re-computation of the AGR dues. "It's a very clear understanding with them (the government) that we are not in a position to provide bank guarantee given our current negotiation with the banks. The government itself has said the industry has matured and as a result may be bank guarantee should not be required," Ravinder Takkar, non-executive chairman of Vodafone Idea, had said during a recent investor call. He added: "We have received positive feedback from the government."

(October 9, 2024) www.financialexpress.com

Indonesia

Minister of Communications and Digital Application, Meutya V. Hafid, has announced a target for expanding 4G infrastructure and signal coverage to ensure better connectivity in Indonesia's 3T (frontier, outermost, and least-developed) regions. "Although internet coverage has reached many areas, much of it remains at the 2G level, which limits speed and connectivity," Meutya told a hearing with the House of Representatives" Commission I in Jakarta. The Ministry plans to focus 4G infrastructure development on 65 villages in the first phase, but has not specified which villages will be included. "In the past, we achieved 97 percent connectivity coverage, but it means little if the connection remains largely 2G, which is very slow," she said. The Ministry of Communications and Digital Application has laid out a 100-day plan with four main priorities:

Organizational Consolidation: This includes restructuring the ministry's post-transformation organization, proposing a revised budget structure, and finalizing regulatory policies;

Digital Infrastructure: Key initiatives involve providing equal internet access in the 65 target villages and establishing the Indonesia Digital Test House to meet global standards. The ministry also aims to complete two major infrastructure projects: the National Data

Center and 4G base stations in 3T regions;
Digital Ecosystem and Human Resources Development: This priority includes initiatives to prevent and address the impacts of online gambling through a six-city roadshow, digital skills training through the Digital Talent Scholarship program, and the goal to activate 25 digital startups;
Public Communication: The ministry will draft a Presidential Regulation on the National Public Communication System to build public trust in key government programs like the development of the Nusantara Capital City (IKN) and the free nutritious meal initiative.
Through these initiatives, the Ministry of Communications and Digital Application aims to ensure not only broader, but also faster internet access across various regions in Indonesia, supporting digital inclusion and economic growth in underserved areas. (November 7, 2024) www.indonesiabusinesspost.com

Italy

Italy is moving to introduce measures aimed at ensuring that Big Tech firms share the cost of developing telecoms infrastructure in the country, Industry Minister Adolfo Urso said. Telecoms companies argue that Alphabet's Google, Meta's Facebook, Amazon, Apple and Microsoft should bear some of the high-speed network rollout costs because they make up a huge part of internet traffic. Deutsche Telekom, Orange, Telefonica and Telecom Italia call it fair-share funding while Big Tech says it amounts to an internet tax. "We are all working on this issue. It's important that we go in this direction," Urso told reporters on the sidelines of an event in Milan. "It makes good sense for big tech to contribute to the workload that is then entrusted to the large telecommunications networks," he added. Several ruling politicians have presented proposals in parliament stating that Big Tech should negotiate technical and economic conditions for the remuneration of telecommunications operators. Our "proposal aims to introduce a contribution from online platforms, very large online search engines and gatekeeper servicers to support investments in electronic communications networks," an amendment by Andrea Dara, from the League party, said. The move is broadly in line with previous initiatives laid out at the European Union level before last June's elections, which resulted in a second mandate for European Commission President Ursula von der Leyen. (October 21, 2024) www.aol.com

Telecom Italia (TIM) confirmed it has received a €700 million bid from Italy's Ministry of Economy and Finance and Asterion subsidiary Retelit to purchase Sparkle. In a short statement, TIM Group said the bid "recognizes the enterprise value" of Sparkle, with its board of directors given until October 15 to consider the offer. Sparkle operates a global network of subsea cables spanning more than 600,000 km that transmits data from across the world. TIM had previously rejected a €600 million offer for Sparkle from Asterion, Italy's Treasury infrastructure fund back in February as it considered the bid below value. The Italian Treasury wants to take control of Sparkle as it sees the company as a strategic asset given it transmits data across the Mediterranean and to the Americas. The PoC showcases the integration of Quantum Arqit's technology using Symmetric Key Agreement (SKA) into Sparkle's state-of-the-art network infrastructure, ensuring enhanced encryption methods for data transmission across geographical borders. The latest bid will be submitted to TIM's board and will be examined "upon completion of preliminary activities preparatory to the evaluation of the offer." (October 3, 2024) www.capacitymedia.com

Malaysia

Malaysian operator U Mobile has won the rights to implement Malaysia's second 5G network to compete with original 5G operator Digital Nasional Berhad (DNB), leaving rival contenders CelcomDigi and Maxis to rethink their 5G plans. Under the Malaysian government's dual-network model, only stakeholders in DNB were allowed to submit applications to establish a second 5G network operator. In August, U Mobile, CelcomDigi and Maxis – each of which own 16.28% of DNB as of June 2024 – submitted their applications to run the second network. YTL declined to participate, while Telekom Malaysia was disqualified after it dropped plans to take a stake in DNB in August. The Malaysian Communications and Multimedia Commission (MCMC) broke the news on Friday that U Mobile was the winner. While the second 5G network will be run by a single operator (as opposed to DNB's multi-stakeholder model), the MCMC said in a statement that U Mobile is allowed to collaborate with other telcos to roll out the network, "subject to the approval of MCMC". U Mobile said in a statement that it is "excited to collaborate with various stakeholders, including MCMC and other telecommunications companies such as CelcomDigi and Telekom Malaysia to deliver world-class 5G-Advanced services to consumers." U Mobile also said it will reduce its foreign majority shareholding to 20%, "ensuring greater Malaysian control and inviting participation from local investors." U Mobile's biggest shareholder is Singapore-based Straits Mobile Investments (a subsidiary of ST Telemedia), which owns a 48.3% stake. U Mobile will also have to sell its stake in DNB under the terms of its SSA in order

to implement the second network. The decision to go with U Mobile comes as a surprise to some industry observers who saw the telco as the underdog of the race. RHB Research and CIMB Securities issued statements in September rating Maxis as the likely front-runner for the second network.

(November 4, 2024) www.developingtelecoms.com

Meta Platforms has expressed concerns over Malaysia's plan to require social media platforms to obtain regulatory licenses by 1 January 2025. The Malaysian government's new regulation aims to combat online threats like scams, cyberbullying, and sexual crimes. However, Meta's director of public policy for Southeast Asia, Rafael Frankel, criticized the timeline, arguing it's "exceptionally accelerated" and lacks clear guidelines, potentially hindering digital innovation and economic growth. Malaysia announced in July that any social media or messaging service with over eight million users would need to comply or face legal repercussions. Communications Minister Fahmi Fadzil reiterated that tech companies must align with local laws to continue operating in Malaysia, signaling no plans for delay. Frankel emphasized that Meta has yet to decide whether to apply for the license due to the vague regulatory framework, pointing out that similar regulations typically take years to finalize to avoid stifling innovation. While Malaysia's communications ministry has yet to comment, Fahmi recently met with Meta representatives, thanking them for their cooperation but urging more action against harmful content, particularly regarding minors. Meta has stated its shared commitment to online safety and is collaborating with Malaysian authorities to remove harmful content. Frankel argued that Meta already prioritizes online safety and doesn't require a licensing framework. Despite ongoing concerns, Meta hopes to work with the government to find a middle ground on the regulations before implementation.

(October 30, 2024) www.dig.watch

Namibia

The Communications Regulatory Authority (CRAN) has ordered Starlink, the satellite internet provider owned by Elon Musk's SpaceX, to cease business for operating without license in the country. While Starlink has filed an application for an operating license, the CRAN has yet to grant it, and has cautioned consumers against purchasing or using Starlink equipment. "The public is hereby advised not to purchase Starlink terminal equipment or subscribe to its services, as such activities are illegal," said an emailed statement. "Investigators have already confiscated illegal terminals from consumers and have opened criminal cases with the Namibian police in this regard." The escalation highlights Starlink's ongoing challenges in establishing a foothold in Africa, where it faces regulatory hurdles and resistance from a number of state-owned telecoms monopolies. However, since the start of 2023, Starlink has been launched in 15 African countries. Starlink's services, which are promoted as helping to bridge the digital divide in rural and underserved areas, are often seen as disruptive to local telecoms markets. Indeed, this month Starlink has faced allegations of predatory pricing in Kenya, aimed at luring away customers from local service providers, though the national competition regulator says it will not be investigating the issue. Disruption from Starlink's presence in national telecoms markets will only increase as the company begins to offer direct-to-device connectivity, which it is currently testing in the US with T-Mobile. It is worth noting that claims of operating without a license is nothing new for Starlink. Similar issues have arisen in other nations, such as Cameroon, where authorities have also seized Starlink equipment for operating illegally.

(December 1, 2024) www.totaltele.com

Nigeria

The Nigerian Communications Commission said it is leading industry reforms aimed at restoring consumer confidence in the telecommunications sector. The regulator has introduced new measures to enhance transparency and accountability within the telecommunication sector. In recent times, the services of the nation's major telecommunications operators have degenerated with users reporting persistent disruptions to calls and data services. Officials said that the commission aims to foster a healthier, more trustworthy, and consumer-cent red telecommunications environment in Nigeria by implementing rigorous evaluations of service reliability, consumer satisfaction, and regulatory compliance. One way to do this – the commission is introducing a tariff simplification method, which hopes to address price uncertainty among other things. In their usual ways of wooing subscribers, the operators have different tariffs and bonuses for data and call services. However, even when subscribers have details of the bonus or tariff before subscribing, they don't get to know how it works. In some cases, operators apply different tariffs to bonus accounts, resulting in different tariffs for the main account and bonus account of consumers. Oftentimes, the information will not be communicated to consumers, which may lead to uninformed decisions.

(October 10, 2024) www.premiumtimesng.com

Somalia

Somalia is working to put in place a favorable regulatory framework to strengthen its digital infrastructure. In particular, regulator the National Communications Authority is preparing the introduction of new regulations on submarine cable landings. A unified fiber optic deployment policy covering all aspects of fiber installation and rollout in the country is the aim. Such an initiative, the government suggests, will reduce the costs associated with the deployment and extension of fiber optic infrastructure, while promoting the growth of the modern digital economy and national interconnection. To this end the Department of Communications and Technology has organized a public consultation to get the opinions and contributions of the various stakeholders. On its Facebook page, it says: "The unified fiber optic deployment policy aims to guide national telecommunications companies towards collaboration for the installation and expansion of fiber optic cables." The country's present domestic fiber optic network is underdeveloped and fragmented, even with the existing connection to five international submarine cables (a sixth is on the way). Thus, a fair distribution of available capacity seems some way off. As the World Bank said in a report earlier this year: "The absence of a robust backbone network prevents the distribution of international capacity across the country, resulting in unequal broadband access, heterogeneous network quality, limited redundancy and slowing down competition in the market.

(November 22, 2024) www.developingtelecoms.com

South Africa

In a significant development for South Africa's regulatory landscape, the Information, Communication Technologies and Media Regulators Forum was. The Forum, formed by the Independent Communications Authority of South Africa (ICASA), the Film and Publication Board (FPB), the Domain Name Authority (ZADNA), and the Information Regulator, is set to streamline the way these sectors are regulated. The Forum was established to strengthen cooperation, reduce overlapping efforts, and create more efficient regulations to address the evolving ICT and media sectors.

- The creation of the Forum is a direct response to the rapidly evolving digital landscape, where the boundaries between traditional media, information, and communications technologies are increasingly intertwined. The primary aim of the forum is collaboration, and it is further guided by the following objectives
- Strengthening cooperation in regulating the Information and Communications Technologies and Media sectors;
- Identify and address duplication of effort.
- Identify areas for potential synergies and areas of cooperation in the future, in order to optimize a regime of effective information and communications technologies and media regulation in South Africa, that is aligned with the new developments in the digital era.

(October 10, 2024) www.icasa.org.za

South Korea

South Korea's largest telecom operators – SK Telecom, KT Corporation and LG Uplus – could face fines of up to 5.5 trillion Korean won (US$4.1 billion) for alleged price fixing. The country's Fair-Trade Commission (FTC) reportedly made the preliminary decision to impose the hefty penalties after an extensive investigation into allegations that the three companies colluded to manipulate sales incentives paid to their mobile phone retailers in order to control customer numbers. The telco operators are accused of sharing internal information in order to keep their sales incentives at the same level from 2015 to 2022. Citing the office of Representative Choi Soo-jin of the People Power Party, local news outlets reported that the FTC is ready to impose a fine of between KRW3.4 trillion ($2.5 billion) and KRW5.5 trillion ($4.1 billion). They also reported that the FTC has already decided on the fine amount for each company: between KRW1.41 trillion ($1.05 billion) and KRW2.20 trillion ($1.63 billion) for SK Telecom, between KRW1.01 trillion ($750.7 million) and KR1.69 trillion ($1.3 billion) for KT, and between KRW985.1 billion ($732.2 million) and KRW1.64 trillion ($1.2 billion) for LG Uplus. If finalized, the fines could be among the largest ever imposed by the FTC, in excess of each company's annual net income. However, the fair-trade watchdog said in a statement on Monday that no final decision has been made regarding the case. (October 10, 2024) www.lightreading.com

Tanzania

The Tanzania Communications Regulatory Authority (TCRA) has notified the new technical specifications for digital audio broadcasting receivers. The document TCRA/TS017, "Minimum Technical Specifications for Digital Audio Broadcasting Receivers," was published in mid-July 2024. It specifies the minimum technical requirements and characteristics for devices that can receive digital audio broadcasting (DAB+) signals. The document applies to radio receivers and all other products with built-in radio receivers.

(October 21, 2024) www.gma.trade

Uganda

Uganda Communications Commission (UCC) has commissioned a telecommunication market definition and assessment study to enhance competitiveness in the industry and establish possible barriers to competition so as to foster a better business environment. During a stakeholder engagement meeting organized by UCC at its head office in Bugolobi, telecommunication operators were introduced to the team of consultants who will undertake this assignment. Tilil Technologies Limited and Acacia Economics (PTY) Limited, a joint consultancy, will conduct the telecommunications market definition and market power assessment whose key objective is to examine and evaluate competition in the industry, as well as identify market participants, their services and products. World over, regulators engage in studies to inform regulatory interventions, including enhancement of competitiveness in the industry and to establish barriers to competition so as to promote a better business environment. The idea is to minimize non-competitive practices, which potentially lead to higher prices and reduced choices. The consultants presented to operators a framework and roadmap for implementing the data collection exercise and observed that the market has changed considerably, with enhanced digitalization and many newer technologies. She further explained that the study is proactive and not reactive, meaning that it is not addressing any specific complaints. The consultants are seeking to understand the market and through that establish what can be done to enhance competitiveness. The study will cover all critical elements of telecommunication, including fixed lines, mobile, broadband internet, tower markets, and other related services. (October 15, 2024) www.ucc.co.ug

Ukraine

Ukraine's telecoms regulator said it raked in UAH2.8 billion (US$67.7 million) during its spectrum auction, with Vodafone, Kyivstar and Lifecell buying five lots of spectrum in the 2100, 2300, and 2600-MHz bands. According to a statement from the National Commission for State Regulation of Electronic Communications, Radio Frequency Spectrum, and Postal Services (NCEC), Kyivstar bought two lots of spectrum in the 1940-1945/2130-2135 MHz and 2355-2395 MHz bands, while Vodafone Ukraine also bought two lots in the 1945-1950/2135-2140 MHz and 2575-2610 MHz bands. Lifecell took the fifth lot for the 1935-1940/2125-2130 MHz bands. Under the new licenses, which are good for 15 years, the operators will install 1,500 new base stations within two years, including 500 in the first year, according to Ukrainian news site UNN. They are also tasked with rapid restoration of communications in de-occupied territories within six months, as well as increasing mobile coverage on national and international highways. In a statement, Kyivstar's parent company Veon said the auction result boosts its total spectrum holding from 152 MHz to 202 MHz. Veon also said Kyivstar will invest UAH1.43 billion in the Ukrainian economy through the spectrum acquisition.

(November 21, 2024) www.developingtelecoms.com

The European Bank for Reconstruction and Development (EBRD) and the International Finance Corporation (IFC) have confirmed they will jointly invest $435 million into Ukraine's newest converged telco. Back in April, a consortium led by telecoms mogul Xavier Niel's NJJ Holding announced plans to purchase both Ukrainian TV and fixed broadband provider Datagroup-Volia and mobile operator Lifecell, with the intention of merging the two operators. The move would create the second largest converged operator in the country, with 10 million mobile customers and a fixed broadband network covering over 4 million homes. The promise of funding from the EBRD and the IFC was crucial in the planning of the acquisitions, with the details of this funding still being finalized when the merger was concluded last month. “That is the game changer,” said Holger Muent, EBRD's director of telecommunications, media and technology, told Reuters. “It will create the second-largest operator of that kind in the country and that leads to higher speed, better coverage, lower energy consumption for the network, and more redundancy in the network as well." The deal is seen as a major boon for the Ukrainian economy, ensuring the robust digital infrastructure is in place to support the nation" economic recovery. “By strengthening digital connectivity and network resilience, we are delivering a vital service to millions of Ukrainians while reaffirming our commitment to the country," said Makhtar Diop, IFC's managing director. “It sends a strong message to global investors about the resilience and significant potential of Ukraine's economy." The newly merged telco, Lifecell-Datagroup-Volia Group, is set to be led by Mykhaylo Shelemba, the current CEO of Datagroup-Volia.

(October 10, 2024) www.totaltele.com

United Kingdom

A new consultation on local commercial radio licence renewals has been published by Ofcom. The Media Act 2024 makes a number of changes to how the commercial radio sector is regulated, which includes a new route for renewal of local analogue commercial licenses. Until now, renewal has only been possible if the holder of the analogue license is also broadcasting on a relevant DAB multiplex. Following the passing of the Act, a licensee can now also apply for renewal if there is not a "suitable" DAB multiplex available. The consultation sets out how Ofcom proposes to decide whether a multiplex is "suitable" and it is open for responses until 5pm on 5th February 2025.

(December 13, 2024) www.radiotoday.co.uk

Ofcom has approved significant changes, allowing greater flexibility in the programming requirements of community radio stations across the UK. Following a public consultation, the media regulator will remove the majority of Key Commitments quotas for all community radio stations. These changes include aspects such as the primary types of music and speech content, the required hours of original programming per week, and the hours of locally produced content. To maintain service integrity, Ofcom will implement specific safeguards for stations that broadcast in languages other than English, ensuring that these languages remain integral to the station's character. Ofcom will now formally notify all analogue community radio licensees to initiate the license variation process, proposing updated draft character-of-service descriptions. These descriptions will retain core elements from each station's original character while applying standardized wording to reflect programming aspects essential to each station's identity.

(November 14, 2024) www.bizasialive.com

Manx Telecom has been fined £100,000 by the Isle of Man's telecommunications regulator for its handling of a competitor's request to connect to a UK provider. Sure had asked Manx Telecom (MT) to facilitate an interconnection with BT's sub-sea cable. In August 2023, Sure formally complained to the Communications and Utilities Regulatory Authority (Cura) over MT's failure to fulfil the request using infrastructure it controlled. Cura said the firm had "breached its regulatory obligations" by withdrawing the options to make the connection "without justification". Sure's access request was ultimately fulfilled by MT. "Consumer choice" In its decision notice the regulator said as a condition of MT's operating license the firm was required to facilitate interconnection requests and conclude agreements "in a reasonable period of time". "The authority held that the withdrawal of the options for solutions at the two sites where BT has its points of presence on the island was not reasonable," Cura said. "By withdrawing options presented to Sure and BT during the process without any objective justification, Manx Telecom had breached its regulatory obligations." "No other operator can provide the access that is required to interconnect with BT," it added. Responding to the decision, Manx Telecom said it was "proactively taking steps to enhance its processes". "By collaborating closely with Cura and other operators and implementing new policies to improve future interconnection procedures, the company is demonstrating a strong commitment to collaboration and innovation," it said. In a statement, Sure said it welcomed the regulator's decision and the "subsequent fulfilment of our access request, which directly supports the delivery of our services to customers". "Telecommunication services are critical to not only our customers but to the island as a whole, and fair competition is vital for innovation, value for money and consumer choice," it added.

(October 8, 2024) www.bbc.com

United States

The Federal Communications Commission has voted unanimously to allow Very Low Power (VLP) devices to operate, unlicensed, across the entirety of the 6 GHz band where unlicensed operations are allowed. VLP devices that operate across short distances with very high connection speeds are an emerging device category that the FCC said is "ideal for the types of high-data rate cutting-edge applications that will both enrich consumer experiences and bolster the nation's economy." The regulatory agency said that making additional spectrum available for unlicensed VLP device use will provide more capacity for devices and applications including augmented reality and virtual reality (AR/VR), in-car connectivity, wearables, healthcare monitoring, short-range mobile hotspots, high-accuracy location and navigation, automation, and more. The availability of additional unlicensed spectrum for VLP device use is meant to help support a cutting-edge device category that is still emerging. FCC Chairwoman Jessica Rosenworcel said that the FCC's action would "help jumpstart the next generation of unlicensed wireless devices." While the FCC had already opened up 850 megahertz of the 6 GHz band for unlicensed use that would include VLP devices, FCC Chairwoman Jessica Rosenworcel said in a statement that the move to allow VLP devices in additional spectrum "take[s] the effort to support unlicensed activity in the 6 GHz band even further." The FCC's action now means that VLP devices will be allowed to operate across the total of 1,200 megahertz which the FCC designated for unlicensed use back in 2020.

(December 12, 2024) www.rcrwireless.com

President-elect Donald Trump has picked Brendan Carr, a critic of the Biden administration's telecom policies and Big Tech, as chairman of the Federal Communications Commission, he said in a statement. Carr, 45, is currently the top Republican on the FCC, the independent agency that regulates telecommunications. He has been a harsh critic of the FCC's decision not to finalize nearly $900 million in broadband subsidies for Elon Musk's SpaceX satellite internet unit Starlink, as well as the Commerce Department's $42 billion broadband infrastructure program and President Joe Biden's spectrum policy. Last week, Carr wrote to Meta's Facebook (META.O), opens new tab, Alphabet's (GOOGL.O), opens new tab Google, Apple (AAPL.O), opens new tab and Microsoft (MSFT.O), opens new tab saying they had taken steps to censor Americans. Carr said on Sunday the FCC must "restore free speech rights for everyday Americans." Democratic Senator Ed Markey said Carr's letter amounted to "a regulator implicitly threatening private companies for their speech. The FCC under Trump is prepared to become the Federal Censorship Commission." (November 18, 2024) www.reuters.com

The FCC's Privacy and Data Protection Task Force announced a new Memorandum of Understanding with the California Privacy Protection Agency. Unlike state Attorneys General offices, which are responsible for enforcing all state laws and regulations, the CPPA is dedicated exclusively to protecting consumers" privacy rights. This singular focus allows the agency to be at the forefront of privacy regulation. Additionally, while state Attorneys General primarily operate within the realm of law enforcement, the CPPA wields both rulemaking and enforcement powers, allowing it to take a comprehensive approach to data privacy regulation. The FCC's partnership with this unique state agency, tasked with enforcing the California Consumer Privacy Act, as amended by the California Privacy Rights Act, will ensure both agencies can align their efforts to best protect consumer privacy, ensure businesses and consumers are well informed about their rights and obligations, and enforce privacy laws.

(October 29, 2024) www.fcc.gov

Vietnam

Vietnam's 4G mobile network coverage now reaches 99% of the population, bringing the country close to the level of developed nations, which is at 99.4%, Minister of Information and Communications Nguyen Manh Hung affirmed at a Q&A session as part of the 15th National Assembly's ongoing 8th sitting on November 12. By June 2025, all mobile network coverage gaps will be eliminated, which is both a goal and a commitment from the ministry, Hung said while answering deputies" queries on the lack of mobile phone network in remote hamlets and villages. For these over 700 coverage gaps across the country, the expansion of telecommunications coverage must comply with the provisions of the new Telecommunications Law and the accompanying decree. However, the decree has not yet been issued due to several delays. According to the minister, the ministry is working hard to finalize this draft decree and submit it to the Government for approval either in November or December of this year.

(November 12, 2024) www.vietnamplus.vt

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