December, Volume 14, 2023

A SAMENA Telecommunications Council Publication

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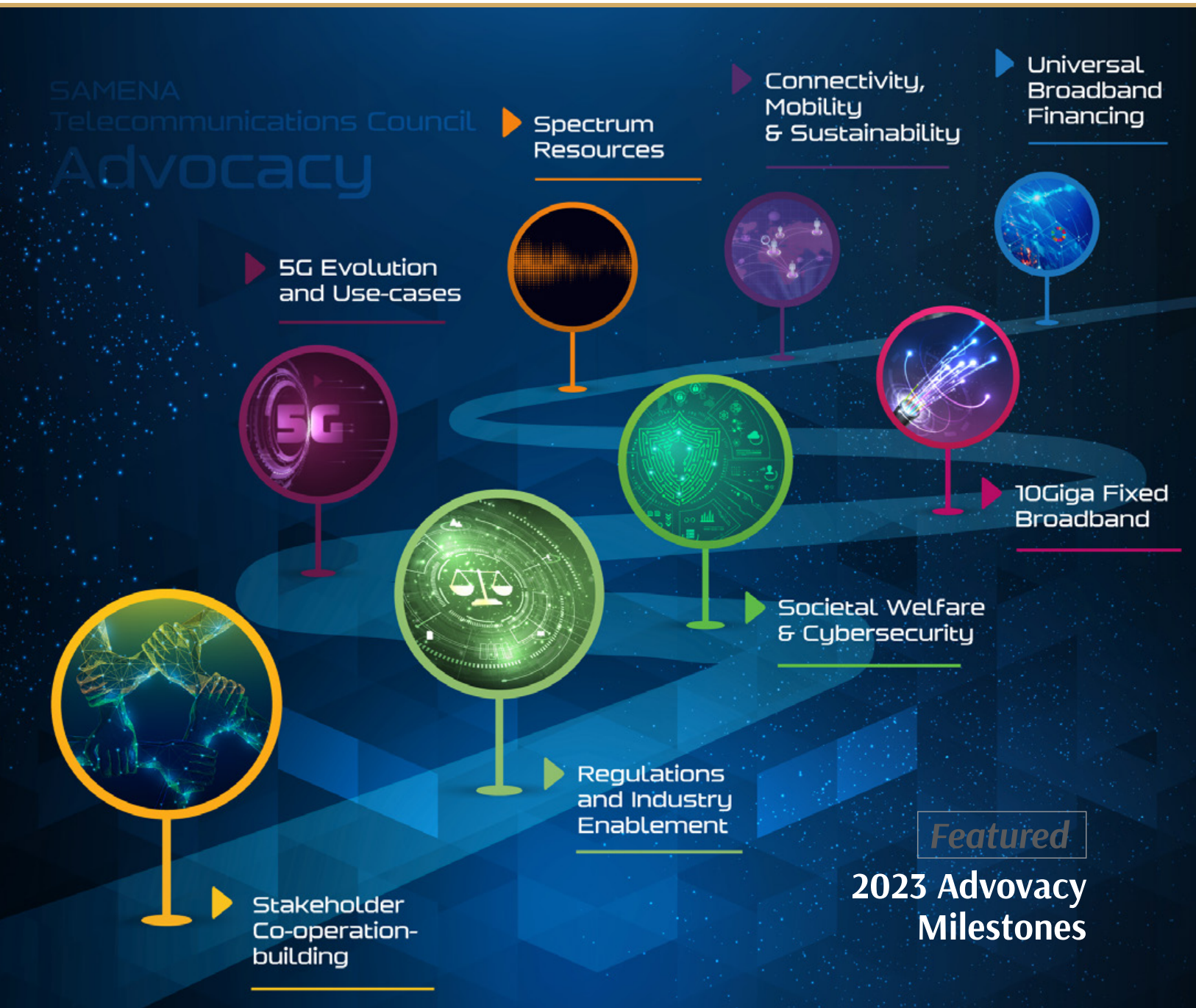
SAMENA TRENDS

FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

BUILDING DIGITAL ECONOMIES



THIS MONTH

ON THE PATH TO INNOVATION & SUSTAINABILITY

SAMENA
TRENDS

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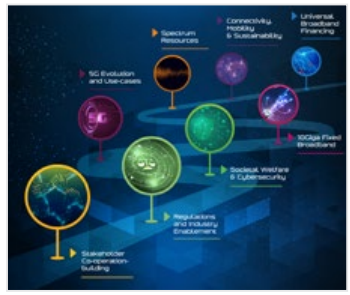

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On the Path to Innovation & Sustainability

As we prepare for continued progress in 2024, across various areas of interest to SAMENA Council Members, we look back at major areas of collective interest, where impact was achieved during the year 2023.

A significant part of the SA-ME-NA region is home to some of the most well-defined ICT and economic diversification visions in the world as well as strong international coordination on spectrum management approaches.

The emerging 5G/5G-Advanced opportunity landscape is a great reflection of the possibilities that await us across a wide group of industries, applications, and business use-cases. 2023 showed us that 5G is indeed a transformative advancement, and a door to true digital transformation. Fortunately, as evidenced through the proceedings of WRC-23, some of which SAMENA Council was a part of, with the allocation of a significant part of the 6GHz spectrum for 5G, this advancement in mobile technologies awaits a great momentum by next year.

The pace at which 5G adoption is happening, we can expect more than 1.5 billion 5G users next year, and such dramatic adoption rate equally applies to industries and niche segments now extensively being driven by digitization, new digital offerings, differentiation in value-propositions. This demands a very enabling regulatory environment, so to capitalizing on new opportunities across education, healthcare, oil and gas, port operations, and other verticals of most relevance to the diversification visions of the region.

Throughout 2023, our focus has been on building stakeholder support, advocating regulatory transformation, interlinking societal welfare with secure digital space, corroborating the necessity of high-capacity fixed networks, supporting 5G evolution for cross-industry development, bringing Mobility/Transportation sector closer to Telecom sector, voicing sustainability imperatives, and bringing an innovation framework to finance and fund future digital infrastructure.

SAMENA Council has been vocal about having good regulation at the foundation of industry development and sustainability. However, equally important is the necessity to remain engaged; closely calibrating focus on existing and arising priorities, and enhancing strategic cooperation between regulators and the Private Sector.

As it continues with its private-sector representation and advocacy support to help foster an environment of sustainability, predictability, and collaboratively executed reforms and norms that will shape the year 2024, SAMENA Council looks forward to enabling where merited and supporting where needed collective gains for Tech Providers, Telecom Operators, Digital Services Platforms, and Regulators.

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

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M360 MENA

SAMENA Council's Active Participation Reinforces Need for Continued Stakeholder Dialogue & Resolve in Tackling Universal Connectivity & Emerging Technology Issues

Focused on the transformative power of AI, IoT and edge computing, cybersecurity threats and approaches, digital inclusion and future opportunities for 5G, M360 brought together members of the Telecom/ ICT community, with SAMENA Council as a key contributor of views and insights in the discussions.

Bocar BA, CEO of SAMENA Council, during his talk in the universal connectivity panel, emphasized on the need for infrastructure investments, affordable technology, and balancing regulatory objectives.

SAMENA Council has consistently drawn attention to the need to equip Operators to invest in infrastructure development in order to fulfill the global vision for universal connectivity, which involves ensuring that everyone is connected, remains connected, and that adequate and secure infrastructure is available for the increasingly bandwidth-hungry and complex services and content, especially in a highly inter-connected and cyber-threat prone environment. Thus, SAMENA Council believes, the Industry needs to adopt a multi-prong collaboration and incentivization strategy among Operators and Governments.

Universal connectivity and co-operation in digital development go hand in hand. Therefore, it is imperative to bring hundreds of millions of people within SA-ME-NA closer to digital prospects, bridge varying digital gaps in both coverage and usage as well as affordability, while also addressing emerging issues in technology deployment, such as data bias challenges in AI implementations.

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SAMENA Council observes that future network deployment, including 6G, would greatly require attention to fulfilling environmental, social and economic sustainability requirements, as well as supporting the goals of the Paris Agreement of the United Nations Framework Convention on Climate Change. On the latter front, SAMENA Council contributed by bringing Mobility-sector and Telecom-sector stakeholders together in a discussion, held during COP28 in Dubai.

Global policy development for new digital technologies is a formidable challenge, and thus requires extensive policy, regulation, and governance-centric dialogue among the stakeholders, which should help generate both nation-specific as well as collective, global benefits.

COP28 UAE

On COP28 Day 9, SAMENA Council Led Discussion to Advocate Access to Low-cost Energy for Achieving ICT and Mobility Sector Integration & Climate Sustainability Imperatives

SAMENA Telecommunications Council, in strategic collaboration with The Future Mobility Hub, and in pursuit of innovative cross-sector partnerships, driven by digitalization and environmental sustainability imperatives, led a panel discussion, titled "Connectivity, Sustainability, and Mobility: Creating New Synergies between the ICT and Mobility Sector Players".

> *SAMENA Council curated the experts panel to bring forth cross-industry exchange of ideas that can drive innovation among Technology Providers, Telecom Operators, Satellite Operators, and Mobility sector players working together on both business opportunities as well as on fulfilling the Sustainable Development Agenda, particularly SDG 13. ("urgent action to combat climate change and its impact").*

Focused on fostering and enabling collaboration between the Mobility/ Transport and the ICT/Telecom sectors, SAMENA Council curated the experts panel to bring forth cross-industry exchange of ideas that can drive innovation among Technology Providers, Telecom Operators, Satellite Operators, and Mobility sector players working together on both business opportunities as well as on fulfilling the Sustainable Development Agenda, particularly SDG 13 ("urgent action to combat climate change and its impact").

Bocar BA, CEO and Board Member of SAMENA Council, who moderated the discussion, stated: "Visionary perspectives shared by Cisco and SES reflect on the Council's community of digital ecosystem leaders, and how major ICT/Connectivity players see the sustainability imperative. There is much to collaborate on between the Connectivity players and the Mobility/ Transport sector players. In the age of 5G/5G-Advanced, when cross-industry partnerships have emerged as crucial areas in socio-economic and innovative business-case development, and as time speeds up toward 2030, collaboration between the Mobility and the ICT sectors can make a significant difference in our efforts to achieve major SDGs while creating impactful business use-cases."

With highly valuable insights provided by Cisco's Mohamed Tantawi, MD - Telcos & Service Providers and SES's Imran Malik Khan, SVP - Enterprise & Cloud EMEA & APAC, among other speakers, the SAMENA Council-led panel delved into responsibilities of ICT and non-ICT players with respect to taking corrective action on the climate crisis; embedding digital transformation, innovations in connectivity, smart mobility applications and services, smart and cost-effective energy solutions to catalyze an altogether a new ecosystem; sustainability initiatives currently in place, and innovative strategies leveraging telecommunications to drive sustainable trends, transforming the landscape of transportation and smart mobility in the SA-ME-NA region. Policy, regulatory, and overall enablement requirements were also discussed. The panel agreed on the need for climate action, and how critical it is for the business and the environment to have access to low-cost and clean energy.

The United Nations Climate Change Conference ("UNFCCC COP 28") has convened from November 30 to December 12, 2023, in Dubai, UAE. COP28 aimed to fast-track the move to clean energy sources and to dramatically reduce greenhouse gas emissions before 2030; financing climate action for developing/LDC nations; focusing on nature and people; and fostering inclusion of multiple sectors – an objective with which SAMENA Council aligned itself by curating the "Connectivity, Sustainability, and Mobility" panel.

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2023 in Review

SAMENA Council's Recap of a Year that Brought Significant Advocacy Milestones to Fulfillment in Support of Telecom Operators & the ICT Industry, at Large

Representing a community of the largest multi-network operator groups in the SA-ME-NA region, SAMENA Council is a regionally-focused but globally-active telecommunications and ICT advocacy and regulatory reach organization. In this regard, the Council values the confidence provided to it by the Industry's top decision-makers, who constantly remain involved in what the Council does as a pan-regional telecommunications and ICT industry association, working diligently as an advocate for sustainability of the Industry and a supporter of national ICT visions throughout the geographies.

In 2023, SAMENA Council's focus has been on building stakeholder support, advocating regulatory transformation, interlinking societal welfare with secure digital space, corroborating the necessity of high-capacity fixed networks, supporting 5G evolution for cross-industry development, bringing Mobility/Transportation sector closer to Telecom sector, voicing sustainability imperatives, and bringing innovative framework to finance and fund future digital infrastructure.

▸ STAKEHOLDER CO-OPERATION-BUILDING

Regional regulatory authorities need to enhance strategic cooperation in developing the digital economy and in harnessing digital technologies for sustainable economic development.

In the words of SG-ITU "As the world rapidly adopts digital technologies, greater cross-sector collaboration is urgently needed to help every country advance on its digital transformation journey. Best-practice regulation and policy making play a crucial and catalytic role in advancing digital inclusion."

Recent policy and regulatory developments in GCC region, particularly with respect to accelerated focus on digital transformation; adopting technology and regulatory sandboxes; making beneficial use of 5G investments; network evolution toward 5.5G/5G-Advance; rising discussion on 6 GHz; new cybersecurity imperatives; emergence of metaverse; the role of financial services industry and other sectors; and the overarching critical requirement of ICT ecosystem sustainability, are serving as catalysts to rethink investment, sustainable operations, end-user and enterprise service delivery, while delivering on globally-agreed digital development expectations. Rising synergies among ICT Industry and other Industries, especially the Financial Services industry, also merit repositioning of perspectives, including on how new co-operation mechanisms can be created for intra and inter-industry development.

▸ GOOD REGULATIONS & INDUSTRY ENABLEMENT

Prior to the GSR-23, SAMENA Council, represented by CEO, Bocar BA, had acknowledged that "Regulation is what keeps things in flow, and when done right, ensures predictability, stability, and aids informed decision-making and innovation.

SAMENA Council has been vocal about having good regulation at the foundation of industry development and sustainability. "Good regulation would help set incentives, sustain investments, and would guarantee level-playing field for businesses and varied choices for the end-user. The values we want to promote, such as safety, privacy, and security, all require regulations. Thus, the role of regulatory authorities is tremendous, and it requires to be driven by an industry-enablement mindset that supports digital infrastructure development for all people."

With well-crafted regulations, we can ensure that digital technology is used to bring benefit to the public, not exploit it, and to help support the creation of a secure, sustainable, and a bright digital future for both businesses and the society, at large."

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The Best Practice Guidelines adopted at the GSR-23 International Telecommunication Union's Global Symposium for Regulators (GSR-23) in Sharm el-Sheikh, Egypt, define regulatory and economic incentives to stimulate the deployment of digital infrastructure for all people everywhere, and further adding to SAMENA Council's voice.

SAMENA Council observes that regulatory agility in the 5G era is more likely to be achieved in markets where regulators and governments are already treading the path to G5 collaborative regulation.

▸ SOCIETAL WELFARE & CYBERSECURITY

Given that the Internet or the cyberspace or the information space is central to the existence of digital economy and to new digital capabilities, experiences ,and possibilities, we have no choice but to protect cyber assets.

Cybersecurity policy and regulation should be concerned with the welfare of society. Moreover, in the interest of the society, Policymakers and Regulators need to view the Private Sector as the enabling engine of ICT-driven nation-building and sustainable development.

> *Speaking at GCF 2023 in Riyadh, SAMENA Council, represented by CEO & Board Member, Bocar BA, called for greater inclusion, greater integration of technologies and industries, and a lot more collaboration on multiple fronts, including cybersecurity.*

Speaking at GCF 2023 in Riyadh, SAMENA Council, represented by CEO & Board Member, Bocar BA, called for greater inclusion, greater integration of technologies and industries, and a lot more collaboration on multiple fronts, including cybersecurity. The complexity of the ecosystem, access to the network, and numerous uses of the communication infrastructure, inherently make network and data security a daunting challenge. Therefore, new priorities need to be defined to ensure a safer, securer, and sustainable cyberspace.

SAMENA Council highlighted the imperative of elevating cybersecurity to an important business strategic value. In his intervention at GCF, SAMENA Council linked sustainability and future network deployment, including 6G. He added: "If we look at the work being done on 6G, we note that one of the key targets for developing 6G includes cutting the average power consumption of 6G networks in half as compared to 5G, while still supporting peak speeds 100 times higher than today's 5G networks. We are talking about dramatically reducing per-bit energy consumption and carbon emissions. Companies such as Nokia and Huawei, both of which are valued members of SAMENA Council, are making tremendous contributions on future network development and deployment."

▸ 5G EVOLUTION AND USE-CASES

Following 5G investments in the region, the path to 5G and 5.5G growth appears to be relatively clear. Treading it, however, requires critical and timely decisions on all parallel fronts, ranging from technology, resources, use-cases, investments, policy and regulation, carbon control, and both social and business value-creation.

In efforts to exploit true potential of 5G and achieving cross-sector 5G business successes, and building adjacent vertical ecosystems to reconnect, rebuild, and reimagine a fully-connected, intelligent world powered by 5G/5.5G, SAMENA Council emphasized on digital transformation, technology integration, and economic diversification as being the three main pillars of inclusive progress for the SA-ME-NA region.

> *The Council emphasized on maximizing the true potential of 5G and implementing real-life use-cases across Ports, Education, Healthcare, Manufacturing, etc.*

The Council emphasized on maximizing the true potential of 5G and implementing real-life use-cases across Ports, Education, Healthcare, Manufacturing, etc. Such use-cases, some of which can show strong direct impact of advanced digital technologies on the livelihood and well-being of those working in those industries. Moreover, SAMENA Council correlated 5G advancements with the ability to connect digital divides around the region.

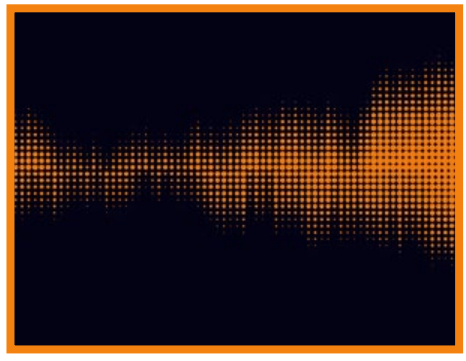
▸ 10GIGA FIXED BROADBAND

In collaboration with its valued member, Huawei Technologies, SAMENA Council held a policy "accelerator" to address the need to move toward fulfilling national resilient communication, and for fulfilling national digital visions. Moreover, our technological capabilities, which now extend to 5G-Advanced in mobile systems and similar advancements in IP bearer and data center networks for the intelligent world, will be playing important role to support the end-to-end network quality for 10 Giga Society. Therefore, SAMENA Council proposed a move toward 10 Giga, while attending to timely policy, regulatory, and business decisions in this regard. For this, readjustment of priorities to fill key gaps – whether such gaps are at the policy or regulatory level, investment level, cooperation level, or at the level of incubating new ideas – need to happen.

> *SAMENA Council observes that the region, particularly, and neighboring regions, generally, need to come at par with economies with more experience in digital transformation. Drastic steps are necessary to be taken to further broadband development, overcoming digital divides in broadband development, and IPv6 transformation, of which moving toward "gigabit" would be a dramatic leap forward.*

ICT visions and materializing the gigabit society concept, which is already under implementation in developed countries. Advancements in fixed-line networks, investments in 5G, coupled with excellent policy and regulatory approaches have the potential to help us realize this concept.
SAMENA Council observes that the region, particularly, and neighboring regions, generally, need to come at par with economies with more experience in digital transformation. Drastic steps are necessary to be taken to further broadband development, overcoming digital divides in broadband development, and IPv6 transformation, of which moving toward "gigabit" would be a dramatic leap forward.

Given the region's digitalization needs, one of the major objectives 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



▸ SPECTRUM RESOURCES

As negotiations on the allocation of spectrum carried on during the World Radiocommunication Conference, SAMENA Council, represented by Bocar BA, CEO, also participated in the WRC-23 on multiple occasions, including in the space economy forum, led by the Communication & Space Technology Commission (CST) of Saudi Arabia. SAMENA Council acknowledged by the efforts of the policymakers and space industry leaders in highlighting the importance of space sustainability, and for emphasizing on the requirements, which includes spectrum, for shaping a sustainable and prosperous digital future in this age when both digital and space economies are integral to global sustainability.

> *SAMENA Council acknowledged by the efforts of the policymakers and space industry leaders in highlighting the importance of space sustainability, and for emphasizing on the requirements, which includes spectrum, for shaping a sustainable and prosperous digital future in this age when both digital and space economies are integral to global sustainability.*

Earlier, during its Leaders' Summit 2023, as well as through direct communication with regulators, SAMENA Council had advocated that balancing capacity with coverage is a daunting task for Operators. Having undergone testing, 6GHz spectrum has proven to provide suitable coverage, comparable to C band, and to enable contiguous deployment of 5G. Moreover, due to coverage and capacity balance achievable through 6GHz, sustainability and carbon neutrality imperatives also appear to be more achievable with this frequency range if dedicated fully for IMT use. 6GHz for public mobile network use cannot only accelerate digital transformation across urban and far-flung areas, it can improve ROI on 5G investments and thus enable more capital flow in meeting the overarching goal of universal connectivity. It would be more practical to reserve 6GHz for IMT use instead of allocating it to Wi-Fi use for better Wi-Fi experience – Wi-Fi user experience can be improved through technological means instead of allocation of valuable spectrum for this

purpose. SAMENA Council also advocated consideration of 6Ghz for more suitable and optimum purposes—which is to meet coverage and capacity requirements in a 5G and post-5G environment.

Following the international gathering of spectrum policymakers during WRC-23, the ITU later announced decisions, including opening a portion of the 6GHz band (6.425-7.125GHz) for 5G licensed mobile Operators; a decision that has been received well by the SAMENA Council community as well as Operators, in general.

▸ CONNECTIVITY, MOBILITY & SUSTAINABILITY

Focused on fostering and enabling collaboration between the Mobility/ Transport and the ICT/Telecom sectors, SAMENA Council led an advocacy exercise to bring forth cross-industry exchange of ideas that can drive innovation among Technology Providers, Telecom Operators, Satellite Operators, and Mobility sector players working together on both business opportunities as well as on fulfilling the Sustainable Development Agenda, particularly SDG 13 ("urgent action to combat climate change and its impact".

In the age of 5G/5G-Advanced, when cross-industry partnerships have emerged as crucial areas in socio-economic and innovative business-case development, collaboration between the Mobility and the ICT sectors can make a significant difference in our efforts to achieve major SDGs while creating impactful business use-cases.

The SAMENA Council-led panel on sustainability was in direct, continued support to the 2022 MoU signed by SAMENA Council members, including stc Group, Etisalat (e&), Zain Group, and Omantel to reduce carbon footprint, as well as to the 2023 launch of Sustainability Innovation Hub in collaboration with GCC Telco Alliance members, including e&, Zain, Batelco, Omantel, du, Ooredoo and other key regional and international partners.

Moreover, this contribution by the Council was in continuation of its messages delivered from GCF 2023 in Saudi Arabia, where the Council had reiterated that future network deployment, including 6G networks by the end of the decade, would greatly require attention to fulfilling environmental, social and economic sustainability requirements, as well as supporting the goals of the Paris Agreement of the United Nations Framework Convention on Climate Change.

With views expressed by major SAMENA Council members, specifically, Cisco and SES, the SAMENA Council-led panel delved into responsibilities of ICT and non-ICT players with respect to taking corrective action on the climate crisis; embedding digital transformation, innovations in connectivity in collaboration with Mobility-sector players, smart mobility applications and services, smart and cost-effective energy solutions to catalyze an altogether a new ecosystem; sustainability initiatives currently in place, and innovative strategies leveraging telecommunications to drive sustainable trends, transforming the landscape of transportation and smart mobility in the SA-ME-NA region.

▸ UNIVERSAL BROADBAND FINANCING

SAMENA Telecommunications Council, in partnership with esteemed members of the Advocacy Taskforce of the former UN Broadband Commission Working Group on 21st Century Financing Models to Bridge the Connectivity Gap, including Smart Africa and Digicel, set the foundation for a new Universal Broadband Financing Framework, to be adopted for pilot implementations in Africa and may, in parallel, be extended to ASEAN states. This underscores a shared commitment by SAMENA Council to achieve digital inclusion through broadband connectivity while also alleviating pressures on Telecom Operators with respect to infrastructure investments, given the latter's critical role in carrying out future broadband infrastructure expansion across the SA-ME-NA region and beyond.

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This contribution by SAMENA Council is in continuation of the work steered within the UN Broadband Commission by the Council on 21st century funding and financing models in 2021. SAMENA Council's continued engagement and focus on unlocking capital to support Operators and to sustain digital infrastructure investments will have direct impact on broadband affordability, sustainable investments in the digital infrastructure and innovation, and would help Telecom Operators and other stakeholders achieve new milestones in collaboration. Work on this front will continue well beyond 2024.

WRC-23

World Radiocommunication Conference Revises the ITU Radio Regulations to Support Spectrum Sharing and Technological Innovation

Member States of the International Telecommunication Union (ITU) agreed on revisions to the global treaty governing the use of the radio frequency spectrum, both on Earth and in space, at the close of the World Radiocommunication Conference 2023 (WRC-23 in Dubai, United Arab Emirates. The agreement on updates to the Radio Regulations identifies new spectrum resources to support technological innovation, deepen global connectivity, increase access to and equitable use of space-based radio resources, and enhance safety at sea, in the air, and on land. "WRC-23 puts the world on a solid path towards a more connected, sustainable, equitable and inclusive digital future for all," said Doreen Bogdan-Martin, ITU Secretary-General. "Key regulatory achievements on spectrum for space, science and terrestrial radio services build on the momentum of ITU's ongoing work to achieve universal connectivity and sustainable digital transformation." A total of 151 Member States signed the WRC-23 Final Acts. The Final Acts constitute a record of the decisions taken at the conference including both the new and revised provisions of the Radio Regulations, all Appendices, and the new and revised Resolutions and ITU-R Recommendations incorporated by reference into the treaty by the conference. "The agreements reached at WRC-23 are a testament to the unwavering spirit of cooperation and compromise among all of our members," said Mario Maniewicz, Director of the ITU Radiocommunication Bureau. "Navigating the complexities of spectrum sharing to update the Radio Regulations has helped us forge a path that provides a stable, predictable regulatory environment essential for the development of innovative radiocommunication services for all."

Revisions to ITU's Radio Regulations

Among the decisions, WRC-23 identified spectrum for International Mobile Telecommunications (IMT), which will be crucial for expanding broadband connectivity and developing IMT mobile services, also known as 4G, 5G and, in the future, 6G. That new spectrum includes the 3 300-3 400 megahertz (MHz), 3 600-3 800 MHz, 4 800-4 990 MHz and 6 425-7 125 MHz frequency bands in various countries and regions.

WRC-23 also identified the 2 GHz and 2.6 GHz bands for using high-altitude platform stations as IMT base stations (HIBS) and established regulations for their operations. This technology offers a new platform to provide mobile broadband with minimal infrastructure using the same frequencies and devices as IMT mobile networks. HIBS can contribute to bridging the digital divide in remote and rural areas and maintain connectivity during disasters. For non-geostationary fixed-satellite service Earth Stations in Motion (ESIMs), the conference identified new frequencies to deliver high-

speed broadband onboard aircraft, vessels, trains, and vehicles. These satellite services are also critical following disasters where local communication infrastructure is damaged or destroyed. Provisions were included to protect ship and aircraft mobile service stations located in international airspace and waters from other stations within national territories. To support the modernization of the Global Maritime Distress and Safety System (GMDSS), WRC-23 took regulatory actions including the implementation of e-navigation systems to enhance distress and safety communications at sea. The conference provisionally recognized the BeiDou Satellite Messaging Service System for GMDSS use, subject to successful completion of coordination with the existing networks and elimination of interference. The WRC-23 negotiations were led by conference Chair, H.E. Eng. Mohammed Al Ramsi from the United Arab Emirates with assistance from six committee chairs: Basebi Mosinyi (Botswana); Cindy Cook (Canada); Hiroyuki Atarashi (Japan); Anna Marklund (Sweden); Abdouramane El Hadjar (Cameroon); and Christian Rissone (France). The conference, which took place in Dubai from 20 November to 15 December, was hosted by the Telecommunications and Digital Government Regulatory Authority (TDRA) of the UAE. "Across the globe, numerous countries, institutions, and companies eagerly anticipate the outcomes of this conference," said Al Ramsi, Chair of WRC-23 and Deputy Director-General for the Telecommunication Sector of TDRA. "We have emerged from this conference with significant results that contribute to the advancement of numerous radio services, serving the interests of countries, societies, and humanity at large." Overall, WRC-23 approved 43 new resolutions, revised 56 existing ones, and suppressed 33 resolutions. Other key WRC-23 outcomes include:

- Allocation of additional frequencies for passive Earth exploration satellite services to enable advanced ice cloud measurements for better weather forecasting and climate monitoring.
- Allocation of new frequencies to the aviation industry for aeronautical mobile satellite services (117.975-137 MHz). The new service will enhance bi-directional communication via non-GSO satellite systems for pilots and air traffic controllers everywhere, especially over oceanic and remote areas.
- Allocation of the bands 15.41-15.7 GHz and 22-22.2 GHz in Radio Regulations Region 1 and some Region 3 countries to the aeronautical mobile service for non-safety aeronautical applications. This will enable aircraft, helicopters, and drones to carry sophisticated aeronautical digital equipment for purposes such as surveillance, monitoring, mapping, and filming, and have the capacity to transfer large data from these applications using wideband radio links.
- Adoption of regulatory actions for the provision of inter-satellite links. This will allow data to be made available in near-real time, enhancing the availability and value of instrument data for low-latency applications such as weather forecasting and disaster risk reduction.
- Endorsement of the decision by the International Bureau of Weights and Measures (BIPM) to adopt Coordinated Universal Time (UTC) as the de facto time standard by 2035, with the possibility to extend the deadline to 2040 in cases where existing equipment cannot be replaced earlier.
- Recognition of the importance of space weather observation in a new Resolution and a new Article in the Radio Regulations to recognize the operation of space weather sensors as part of the meteorological aid service to observe space weather phenomena including solar flares, solar radiation and geomagnetic storms which can interfere with radiocommunication services including satellites, mobile phone services and navigation systems.
- Approval of a recommendation by the Radio Regulations Board to allow 41 countries to acquire new and usable orbital resources for satellite broadcasting. The countries were unable to use their assigned orbital slots in recent years due to factors such as lack of coordination and interference from other satellite networks. The decision aims to enable countries to implement subregional satellite systems.
- To prepare for future world radiocommunication conferences, the WRC-23 also adopted several resolutions that mandate the ITU Radiocommunication Sector Study Groups to undertake studies on specified topics that include:
- Possible new or modified space research service (space-to-space) allocations for future development of communications on the lunar surface, and between lunar orbit and the lunar surface.
- The development of regulatory measures to limit the unauthorized operations of non-geostationary-satellite orbit (non-GSO) earth stations in the fixed-satellite service (FSS) and mobile-satellite service (MSS).
- Technical and regulatory measures for fixed satellite systems (FSS) while taking into account the specific needs of developing countries including the need for equitable access to the relevant frequency bands.
- Technical and regulatory provisions necessary to protect radio astronomy operating in specific Radio Quiet Zones from radio-frequency interference caused by systems in the non-geostationary-satellite orbit.
- Possible new allocations to the mobile-satellite service for direct connectivity between space stations and mobile user equipment to complement terrestrial mobile network coverage.
- Spectrum needs and appropriate protection criteria for space weather sensors.
- Potential new frequency allocations and regulatory actions for future development of low-data-rate non-geostationary mobile-satellite systems (small satellites).
- Identification of measures to facilitate the operation of earth stations on board unmanned aircraft, including identification of suitable frequency bands to decide on the appropriate course of action to be taken in 2031 (WRC-31).

WRC-23 also approved the agenda items for the next World Radiocommunication Conference (WRC-27) and the provisional agenda for WRC-31. Over 3,900 delegates from 163 Member States attended WRC-23, including 88 ministerial-level participants. Women made up 22 per cent of all WRC-23 delegates, an increase from 18 per cent at WRC-19 in 2019.

SAMENA Council Represents its Terrestrial & Satellite Operator Community in the WRC-23 to Witness Revision of Radio Regulations in View of Global IMT and Space Sustainability Requirements

SAMENA Council, represented by CEO & board member, Bocar BA, participated in the WRC-23, hosted by TDRA-UAE in Dubai. WRC-23 convened governments for successful negotiations on the allocation of radio-frequency spectrum, especially 6 GHz.

In a message delivered during the WRC-23 on behalf of the United Nations Secretary-General H.E. António Guterres, it was acknowledged that "Radio frequencies, whether on Earth or in space, form the backbone of advanced communications for all of humanity. From education to healthcare, from agriculture to climate monitoring, expanding radiocommunication services and bridging the digital divide are key to reducing inequalities and advancing the Sustainable Development Goals."

ITU's Secretary-General H.E. Doreen Bogdan-Martin emphasized that "We are at an inflection point in tech history, and radiocommunications are at the top of the global agenda... Equitably managed spectrum and the associated satellite orbits are among the best tools in our toolbox to make good on our commitment to build a digital future that works for everyone and for our planet."

Director-General of TDRA-UAE, H.E. Eng. Majed Sultan Al Mesmar, anticipating the Conferences' successful dialogue and consensus on critical matters that concern the digital future, stated: "While today's world is full of challenges, this conference comes to set the course and direct the compass toward sustainable human development by updating the Radio Regulations and establishing international consensus on the frequencies necessary for the coming era. With the broad horizons, it brings in the fields of smart cities, digital economy, knowledge society, space and others, we are confident that this conference will achieve the results that meet the expectations and aspirations of our peoples."

Bocar BA, representing SAMENA Council and its community of Telecom Operators and Tech Providers, stated that: "SAMENA Council extends congratulations to the TDRA-UAE on hosting and organizing the WRC-23 in Dubai. The Industry has confidence in this collaboration between the TDRA and ITU to help steer consensus-building on radiocommunication matters that are very important for governments and Telecom Operators alike. As negotiations on the allocation of spectrum carry on, building an inclusive, sustainable digital future requires the right resources and timely enablement for all stakeholders. Through the efforts of the ITU and TDRA, and with the support of the Member States, particularly the regulatory authorities, we can hope for great outcomes from the WRC-23."

Bocar BA, who also participated earlier in a session focused on the future of space economy, led by the Communication & Space Technology Commission (CST) of Saudi Arabia, further stated that "We are grateful to policymakers and space industry leaders for highlighting the importance of space sustainability, and for emphasizing on the requirements for shaping a sustainable and prosperous digital future in this age when both digital and space economies are integral to global sustainability."

The WRC is organized every four years by the International Telecommunication Union (ITU). WRC-23's ongoing proceedings, scheduled from November 20 to December 15, are focused on updating the Radio Regulations (the international treaty governing the use of spectrum and geostationary and non-geostationary satellite orbits). The Radio Regulations ensure that the use of the radio-frequency spectrum is rational, equitable, efficient, economical, and signal-interference free. Therefore, the ongoing review and revision of the Regulations at the WRC-23, is critical for supporting the introduction of new radio-based technologies, systems, technologies and services and their growing spectrum requirements, while continuing to protect the vital radio services that are central to the digital infrastructure. The ITU Membership, in both national and global interest to pursue innovative technologies, mitigate environmental impact, connect the unconnected communities everywhere, and to help focus on land, sea, air, and space with a new spirit and new objectives, has embarked on this undertaking to help bring digital-led prosperity for billions of people across the world.

The WRC-23 agenda items include:

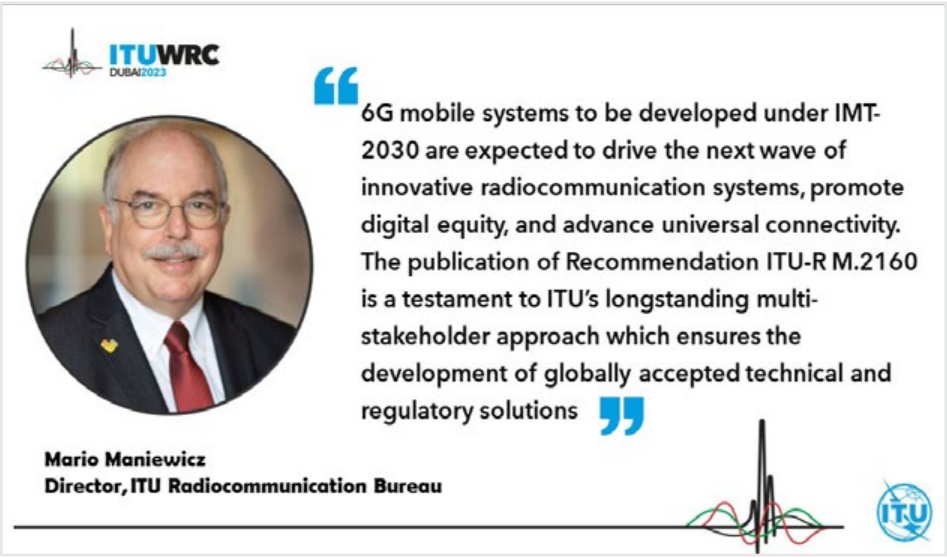
- Identifying additional frequency bands for the continued development of International Mobile Telecommunications (IMT), including the use of high-altitude platform stations as IMT base stations for the universal deployment of wireless networks.
- Improvements to the international regulatory framework for geostationary orbit (GSO) and non-geostationary orbit (NGSO) satellites while promoting equitable access for all countries.
- Use of satellite technologies for broadband services to improve connectivity, particularly in remote areas.
- New spectrum to enhance radiocommunications in the aeronautical mobile service, including by satellite, and to facilitate the use of the space research and Earth exploration-satellite services for climate monitoring, weather prediction and other scientific missions.
- The modernization of the Global Maritime Distress and Safety System (GMDSS).
- The regulatory framework for the use of earth stations in motion on board aircraft and ships for communication with GSO and NGSO satellites.
- The future of the ultra-high frequency (UHF) broadcasting band which has implications for television broadcast, program-making and special events, as well as public protection and disaster relief.

The proceedings of the WRC-23, including those in the Radiocommunication Assembly, among other outcomes, have helped achieve:

- agreement on "IMT-2030" as the technical reference for the 6th generation of International Mobile Telecommunications;
- revision of ITU-R Resolution 65, paving the way for studies on the compatibility of current regulations with potential 6th generation IMT radio interface technologies for 2030 and beyond;
- adoption of the new Recommendation ITU-R M. 2160 on the "IMT-2030 Framework," setting the basis for the development of IMT-2030. The next phase will be the definition of relevant requirements and evaluation criteria for potential radio interface technologies (RIT);
- adoption of a new resolution on the use of IMT technologies for fixed wireless broadband;
- in accordance with Resolution 219 (Bucharest, 2022), adoption of a new resolution on space sustainability to facilitate the long-term sustainable use of radio-frequency spectrum and associated satellite orbit resources used by space services. This will be supportive of further cooperation with other United Nations organizations and beneficial to the satellite industry;
- adoption of a resolution on gender equality to strengthen, accelerate and widen the active involvement of women in the work of the ITU Radiocommunication Sector (ITU-R).

WRC-23 was preceded by the ITU Radiocommunication Assembly which met in Dubai from 13-17 November to establish the structure, working methods and program of the ITU Radiocommunication Sector. Thousands of industry participants are taking part in WRC-23, including delegates from ITU Member States and ITU Radiocommunication Sector Members representing international organizations, such as SAMENA Telecommunications Council, equipment manufacturers, network operators and industry forums attending as observers.

ITU Advances the Development Of IMT-2030 for 6G Mobile Technologies



The International Telecommunication Union (ITU) has published the framework for the development of standards and radio interface technologies for the sixth generation of mobile systems, popularly referred to as 6G. The details of the 6G framework are contained in Recommendation ITU-R M.2160 on the "IMT-2030 Framework" approved by the ITU Radiocommunication Assembly (RA-23) at its recent meeting in Dubai, United Arab Emirates. ITU's Radiocommunication Sector (ITU-R) will now focus on defining technical requirements, the submission process, and the evaluation criteria for potential 6G radio interface technologies. "Mobile communications are central to our efforts to ensure that everyone is meaningfully connected," said Doreen Bogdan-Martin, ITU Secretary-General. "By agreeing on a way forward on 6G, ITU Member States have taken an important step toward ensuring that technical progress is synonymous with affordability, security, and resilience — supporting sustainable development and digital transformation everywhere. "The ITU-R Recommendation represents significant progress in the development and implementation of globally accepted standards for mobile systems using 6G. All the previous mobile telecommunication generations - analogue cellular (1G), digital cellular (2G), IMT 2000 (3G), IMT Advanced (4G), and IMT 2020 (5G) - were also standardized through ITU. "Terrestrial wireless systems to be developed under IMT-2030 are expected to drive the next wave of innovative radiocommunication systems, promote digital equity and advance universal connectivity," said Mario Maniewicz, Director of the ITU Radiocommunication Bureau. "The publication of the Recommendation on future 6G mobile technologies is a testament to ITU's longstanding multi-stakeholder approach which ensures the development of globally accepted technical and regulatory solutions." For the next phase of 6G development, companies and industry associations will submit proposals for the IMT-2030 Radio Interface Technology (RIT) for ITU-R consideration in early 2027. These submissions will then be evaluated against the agreed minimum requirements prepared by ITU's expert group on IMT systems (ITU-R Working Party 5D), with the prospect of getting a final set of 6G technology standards approved by 2030. The IMT-2030 Framework Recommendation identifies 15 capabilities for 6G technology. Nine of those capabilities are derived from existing 5G systems. IMT-2030 is also expected to help address the need for increased environmental, social and economic sustainability, and also support the goals of the Paris Agreement of the United Nations Framework Convention on Climate Change. Expected usage scenarios for 6G include:

- Immersive communication to provide a rich and interactive video experience for users.
- Hyper-reliable and low-latency communication to enable the scale-up of intelligent industrial applications including telemedicine and management of energy and power grids.
- Enhanced ubiquitous connectivity, especially in rural, remote and sparsely populated areas with the aim of bridging the digital divide.
- Massive communication to include expanded use of Internet of Things (IoT) devices and applications in smart cities, intelligent transport systems and sectors such as health, agriculture, energy and environmental monitoring.
- Artificial intelligence (AI) and communications to support AI-powered applications.
- Integrated multi-dimensional sensing to improve assisted navigation, and high-precision positioning including object and presence detection, localization, imaging and mapping.

ITU's Radiocommunication Assembly, held between 13 and 17 November, also agreed on "IMT-2030" as the technical reference for the latest generation of International Mobile Telecommunications and updated the principles (Resolution ITU-R 65) for future development of IMT for 2030 and beyond.

Saudi Arabia Sets Its Future Directions Through World Radiocommunication Conference "WRC-23" Resolutions and Recommendations

Saudi Arabia concluded its participation in the World Radiocommunication Conference (WRC-23) which was hosted by the UAE for the past four weeks. On this occasion, Eng. Mohammed Al-Abdulqader, Vice Chair of the conference and Saudi Arabia's representative, stated that Saudi's participation has contributed to its efforts in serving humanity, bridging the digital divide, and supporting Space sustainability. He added that this resulted in finalizing positive outcomes & resolutions such as allocating additional frequencies for 5G & future 6G, recognizing license-exempt networks (Wi-Fi), in addition to allocating additional frequencies for 5G HAPS, an innovative technology which was piloted by Saudi Arabia last year. In his statement, Eng. Al-Abdulqader indicated that Saudi Arabia collaborated with the international community to enable non-terrestrial services to provide internet coverage on planes and ships in order to enhance the passengers' experience, develop international regulations to register the non-geostationary satellites to support the orbital resources, in addition to the registration of a Saudi orbital slot and recognize it internationally to support the launching of a Saudi satellite to provide radio services. He also noted that the conference identified a number of topics to be studied during the next two cycles thru 2031, which includes the provision of additional frequencies in the (4,7,8,15) GHz, and the terahertz band for 5G and 6G systems, as well as the study of reusing mobile networks frequencies via satellites for Device-to-Device (D2D) technology which will promote the global usage of non-terrestrial networks (NTN). In addition, these studies will review the protection measures on the non-geostationary satellite systems that will increase their adoption, decrease its costs, and promote Space sustainability. This also covers the possibility of allocating new frequency bands for wireless power transmission (WPT), which will contribute to Saudi's sustainability efforts in many projects. The World Radiocommunication Conference is held every four years to revise the International Telecommunication Union (ITU) Radio Regulations, which is an international treaty that manages the spectrum and the satellite orbital resources efficiently among other radio services and guarantees its harmonization. The WRC23 witnessed the participation of more than 4,000 delegates from 193 countries, in addition to manufacturers and operators of various wireless technologies.

WRC-23 Wraps Up with Resounding Success and Achievements

The Telecommunications and Digital Government Regulatory Authority (TDRA) officially concluded the World Radiocommunication Conference (WRC-23), hosted by the UAE at the Dubai World Trade Center from November 20 to December 15, 2023. The conference had a crucial role in reviewing and updating the Radio Regulations and the international treaty governing the utilization of the radio-frequency spectrum and satellite orbits. With over 4,900 government officials from 193 countries and the participation of 900 international organizations, universities, and companies worldwide, WRC-23 marked a truly global collaboration. The conference lasted for four weeks, marked by intense discussions among various groups and countries aimed at reaching a global consensus on enhancing the utilization of the radio frequency spectrum. The focus was on meeting the growing demands for wireless communication services, including 5G and the Internet of Things (IoT), while addressing coordination challenges and ensuring compatibility with satellite systems to prevent interference and ensure effective operation. The deliberations also encompassed the evaluation and accommodation of emerging technologies and services reliant on radio communications, such as autonomous vehicles, smart cities, and space exploration. Additionally, efforts were directed towards modernizing the Global Maritime Distress and Safety System (GMDSS) and fostering international cooperation and synergy between countries, ITU members, industry stakeholders, and other relevant organizations. The overarching goal was to achieve consensus on spectrum allocation and regulation. Commenting on the successful conclusion of the conference, H.E. Talal Humaid Belhoul, Chairman of TDRA Board of Directors, said: This year's conference underscored the strong collaboration among nations, emphasizing the pivotal role of international cooperation in shaping the future of the telecommunications sector. It highlighted that teamwork and a shared vision are indispensable for navigating the complexities of global digital governance. All the decisions and agreements reached with the conclusion of WRC-23 will pave the way for equitable access to digital technologies, bridging divides, and opening new opportunities for all." Belhoul added: "The UAE, represented by TDRA, has played a crucial role in guiding the discussions of this global forum, fostering the consensuses achieved. We are committed to a future vision that recognizes the digital telecommunications

sector as the foundation of global progress, and to adopting innovative approaches to spectrum management, acknowledging that the telecom sector transcends borders, and technology serves as humanity's bridge to prosperity." In turn, commenting on the conclusion of the conference, H.E. Eng. Majed Sultan Al Mesmar, TDRA Director General, said: "Hosting the WRC-23 in the UAE reflects its position as a hub for significant global events, serving as key decision-making centers for issues critical to the future of humanity. This includes radio communications and frequency spectrum policies that influence numerous technological trends and strategies related to digital transformation, particularly in light of the ongoing technological breakthroughs. The UAE has earned this distinguished status through the commitment of its wise leadership to actively engage with global issues and maintain a strong presence in the international arena. The UAE's focus on the telecom sector, evident from the early emphasis on infrastructure to its evolution into electronic and then digital governance, has played a key role in shaping its current achievements, including space exploration, digital government, and more." H.E. Eng. Mohammed Al Ramsi, TDRA Deputy Director General and Chairman of WRC-23, said: " The conference has set the groundwork for a new chapter in the distinguished relationship between the UAE and the ITU, marking another success story in the UAE's global endeavors, reflecting its global mission and significant contributions to advancing international cooperation across various fields, particularly in the radiocommunications sector, which serves as the backbone of smart cities and an essential component for the success of Internet of Things technologies. Throughout four weeks of consultation, dialogue, and negotiations, we engaged in discussions touching on points of universal concern. We aimed to provide a glimpse into a world characterized by harmony, dialogue, and building bridges to reach understandings that benefit all humanity." Al Ramsi also praised the results that emerged from the conference, and the agreements that were reached at the global level, emphasizing that they will usher in a new era in the process of human development. He said: "We have emerged from this conference with significant outcomes that will contribute to the development of numerous radio services, serving the interests of countries, societies, and humanity as a whole. Today, countries have the opportunity to utilize the identified IMT bands to develop systems that enhance the digital lifestyle. Additionally, the facilitation of frequency bands for ground stations on aircraft and ships aims to improve communication services for travelers and workers in the aviation and maritime sector. To keep pace with the rapid expansion of communication services through non-geostationary satellite systems, the regulatory framework for the utilization of these systems was developed during this conference. In efforts to enhance emergency response and mitigate maritime accidents, work has been undertaken to update the Global Maritime Distress and Safety System, addressing ongoing developments in this field and adapting to the evolving needs of frequency spectrum. The ITU World Radiocommunication Conference (WRC-23), is held every four years and brings together government officials, telecommunications regulatory bodies, as well as representatives of users and major suppliers of radiocommunication services; in order to hold critical technical regulatory discussions at the global level. The conference is also a platform for presenting and discussing the latest innovations and technologies in the field of radiocommunications, and an opportunity to enhance cooperation and exchange of experiences between countries. It's noteworthy that the UAE stands as the sole country to have hosted and chaired all major conferences and events of the ITU. It is the only country that has chaired this conference twice, in 2012 and 2023. This accomplishment is a testament to the UAE's global position in the telecommunications sector, its trusted role in regional and global coordination, its relentless efforts to advance telecommunications through collaboration with diverse partners, and its achievements in sustainable development, the adoption of modern technologies, and the enhancement of telecom infrastructure.

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MEMBERS NEWS

Center3 Acquires CMC Networks to Expand in Africa and Middle East

stc Group subsidiary centre3 is acquiring CMC Networks, a global service provider offering networking solutions across Africa and the Middle East. CMC Networks operates across more than 110 service locations with a cost-effective, scalable, and resilient data communications network. It services 51 out of 54 countries in Africa and 12 countries in the Middle East, plus regional hubs in key interconnect locations across Europe, the Americas, and Asia Pacific. The acquisition aligns with center3's strategic vision for growth and expansion in the Middle East and African markets. It represents a significant step in the company's journey to extend its market presence and enhance its offerings in this dynamic and rapidly growing region. CMC Networks is being acquired from the Carlyle Sub-Saharan Africa Fund (CSSAF). In 2020, the CSSAF team formed a separate private equity firm, Alterra Capital Partners, which continues to advise CSSAF's investments including CMC Networks. Fahad Alhajeri, CEO at center3, said: "CMC's enviable global footprint, high value customer base and portfolio of capabilities is very complementary to center3's digital infrastructure and connectivity assets. This acquisition exemplifies our strategic commitment to enter key markets with significant growth potential. Our previous investment in 2Africa Cable, coupled with this acquisition, underscores our conviction in Africa's essential role in center3's future growth." Marisa Trisolino, Group CEO of CMC Networks, said: "This acquisition will bring together the strengths of both companies, fostering innovation, enhancing customer service, and providing new opportunities for growth in the African and the Middle East market." The acquisition is subject to customary conditions and approvals.

stc Conducts 5G-Advanced RedCap Use Cases Demonstration

stc Bahrain has announced a successful demonstration of Reduced Capacity (RedCap) use cases on its live network, showcasing the technology's commercial readiness and marking a milestone in the company's 5G and 5G-Advanced strategy. RedCap integrates seamlessly with 5G networks and enhances reliability, efficiency and scalability. Commenting on the trials, stc Bahrain CTDO Ahmed Al-Sharif said: 'We believe that RedCap's application in our 5G and 5G-Advanced strategy has a huge potential; with moderate speeds, low latency and adaptability to IoT such as wearables, AR/VR and CCTV, it will provide reliable and efficient solutions across various sectors, making a positive impact on businesses and communities.'

stc Unites International Digital Elites at the M360 Conference Held in Riyadh In Collaboration with GSMA

stc group, an engine of digital transformation, hosted the M360 conference for the second consecutive year. This conference was held at the Fairmont Hotel in Riyadh in collaboration with the GSMA. The conference aims to explore the digital prospects and the future of the global digital renaissance. Moreover, it aims to achieve innovation and inclusion with the new digital reality. The conference highlights the role of the group as one of the most influential leaders in the ICT sector and a key driver towards digital transformation locally, regionally, and globally. The M360 conference united international elite leaders in the ICT sector to provide their insights into the latest trends, innovations, and opportunities in the sector. It addressed the main challenges impeding the sector's growth and suggested potential solutions to overcome them. Furthermore, the conference suggested increasing the Middle East region's contribution to the global digital renaissance. The M360 discussed the impacts of the digital economy on people's lives and ways to create a more sustainable and inclusive digital future. stc Group participated in the conference with the presence of the group's CEO, where the M360 conference is considered a global gathering of digital industry leaders regionally and globally, as well as a platform for innovative ideas and future digital products. This conference is held as stc group accelerates its way towards enabling digital transformation in KSA, the Middle East, and Europe. The M360 conference reaffirms the group's commitment to strengthening its strategic relations with its digital partners worldwide. During the conference, several group officials showcased the group's capabilities in expanding the necessary infrastructure, developing technologies and services, and enhancing the user experience while maintaining the highest governance standards and social responsibility practices. Furthermore, stc group highlighted its role in enabling the digital economy through its affiliates in building innovative digital solutions in the areas of digital gaming, AI, IoT and Cloud Computing, in addition to FinTech, marine cables, data centers and cybersecurity, which address the needs of various public and private sectors. Besides, stc focused on its "DARE" strategy, launched in April 2022, consisting of 4 pillars: Digitalize stc, Accelerate core assist performance, Reinvent customer experience at World-class standards, and aggressively Expand scale and scope. The M360 conference's second edition builds on the success of last year's event. The previous edition was centered around mobile technologies and their effectiveness in achieving digital transformation in different sectors such as finance, manufacturing, and mining. It also discussed the readiness of mobile operators to respond to rapid urbanization in smart cities supported with digital infrastructure capable of meeting the residents' rapid needs. Furthermore, the group seeks to improve the digital transformation in the Kingdom and enhance its contribution to achieving the 2030 Saudi vision goals.

stc Spearheads the Sustainability Innovation Hub as Part of the GCC Telco Alliance

stc group, an engine of digital transformation, has recently unveiled the Sustainability Innovation Hub in collaboration with GCC Telco Alliance members, including e&, Zain, Beyon, Omantel, du, Ooredoo and other key regional and international partners. This project focuses on tackling climate change and enhancing the availability of affordable and dependable energy sources. In light of the significant transformation in the global energy landscape, telecom operators are actively exploring alternatives that can improve their energy efficiency and reduce their carbon footprint. The Sustainability Innovation Hub aims to bridge the gap between technology, telecom innovation, and climate action for a low-carbon economy. It will bring together cutting-edge technologies, visionary experts, and collaborative efforts to tackle one of the most critical challenges the telecom industry faces today. The core objective of the Sustainability Innovation Hub is to devise and execute cutting-edge, economically viable, dependable, and ecologically sound solutions for power generation by leveraging the potential of renewable energy sources, particularly solar and wind energy. The hub will enable telecom operators to reduce reliance on traditional fuel sources and move toward a greener future. This transition will not only lead to substantial long-term cost savings. Implementing this technology is crucial for its functional benefits and its role in promoting environmental protection. Its integration is in line with the overarching sustainability objectives of the industry. The Sustainability Innovation Hub has been established with a clear set of objectives to revolutionize the telecom industry's energy consumption and sustainability approach. The hub will foster a collaborative environment where telecom operators, technology providers, and research institutes can share knowledge, resources, and expertise, driving the development of innovative power solutions tailored to the specific needs of the telecom industry. Equipped with state-of-the-art facilities for prototyping, testing, and validating innovative power solutions using GCC telecom networks, the hub will accelerate the development cycle and ensure the effective implementation of new technologies within the industry. Recognizing the importance of skilled professionals in driving innovation, the hub will offer training programs and workshops to enhance the competencies of individuals involved in designing, installing, and maintaining power solutions within the telecom sector. The hub will actively seek collaborations and partnerships with leading industry players, government entities, and regulatory authorities, fostering a supportive ecosystem where knowledge sharing, best practices, and standardization can flourish. These objectives underscore the Sustainability Innovation Hub's commitment to transforming the energy paradigm within the telecom industry, paving the way for a more sustainable and environmentally conscious future.

e& Commits to Green Digital Action Initiative

e& announced that it is joining the Green Digital Action initiative convened by the International Telecommunication Union (ITU) with over 40 partners, marking another step towards e&'s strategy to achieve net-zero targets and support efforts aimed at a sustainable future. The new commitment bolsters e&'s efforts to being a part of the search for real-time solutions to combat climate change.The Green Digital Action, launched at COP28, focuses on decarbonizing the ICT sector and emphasizes digital technologies' crucial role in solving the climate crisis. It aims to enhance collaboration, fast-track industry-wide commitments, and place digital solutions at the forefront of climate action. e& is already aligning itself with the commitments proposed by the initiative, notably by setting science-based targets validated by the SBTi and aligned with a 1.5°C trajectory. The Group also shares data on all Greenhouse Gas (GHG) emissions, contributes to an ICT sector database of emission factors for products and services as part of the Carbon Disclosure Project (CDP), and participates in ITU-led working groups. Harrison Lung, Group Chief Strategy Officer, e&, said: "Our commitment to the Green Digital Action track marks a

significant milestone in our journey towards a sustainable future. This perfectly aligns with our strategy to integrate sustainability across all operations and brings us closer to our net-zero ambitions. By collaborating with global governments and industry leaders, e& is taking a leadership role in leveraging digital innovation for climate action and driving positive change on a global scale." The 'Principal Technology Partner' for COP 28's recent announcements underscore its dedication to sustainability. e& has committed to achieving net-zero emissions across its operations (Scope 1 and 2) in all markets by 2040, building on its previous commitment to net-zero emissions in UAE operations by 2030. e& also announced a Group-wide reduction target of 43 per cent for Scope 1 and 2 emissions and a 25 per cent reduction in Scope 3 emissions by 2030. e& is implementing several sustainability initiatives through its specialist business vertical e& enterprise, which provides digital solutions and technologies that support the decarbonization of numerous carbon-intensive industries. e& also took initial steps to deploy the first net-zero 5G Massive MIMO site in the MENA region through its legacy telecom arm, etisalat by e&. Lung added: "Our journey to a sustainable future is defined by decisive actions and strategic partnerships as well as the recent launch of the Group's Sustainable Finance Framework, involving the signing

of a sustainable loan of AED366 million, aligning with our commitments at COP28, towards financing sustainable projects and driving positive community impact, and climate transition in the technology sector." Additionally, e& has joined the World Economic Forum's EDISON Alliance, pledging to contribute significantly to the mission by striving to improve the lives of 30 million individuals through enhanced network access, financial services, and technology education by 2025. These initiatives and commitments demonstrate e&'s dedication to integrating sustainability and environmental responsibility into every aspect of its operations, reflecting its commitment to a sustainable and inclusive digital future.

e& Ends Talks to Hike Stake in Saudi Telco Mobily

The United Arab Emirates telecoms group e& said it had ended talks to raise its stake in Saudi Arabia's Etihad Etisalat (Mobily) to 50% and one share. "Emirates

Telecommunications Group Co e& has terminated discussions regarding a possible increase in its shareholding in Mobily," e& said in a company filing on the Abu Dhabi exchange. "Following a period of engagement, a way forward to conclude the potential transaction could not be determined. Hence, e& has now decided not to pursue the financial transaction." Formerly called Etisalat, e& is Mobily's biggest shareholder with a 27.99% stake. In March last year, e& made the offer to raise its stake and suggested a price of 47 riyals ($12.53) per share. e& said it will continue to focus on supporting Mobily as its major shareholder and remains positive about the company's future within the rapidly growing Saudi market.

Mobily CEO Eng. Salman bin Abdulaziz Al-Badran Wins Prestigious Labor Award for 2023

Mobily proudly announces a significant accolade for its CEO, Eng. Salman bin Abdulaziz Al-Badran, who has been honored with the Labor Award in the CEO Track for Large Establishments for the year 2023. This prestigious award was presented by His Excellency the Minister of Human Resources and Social Development, Eng. Ahmed bin Sulaiman Al Rajhi, in a ceremony organized by the Ministry in Riyadh. This award is a testament to the Ministry of Human Resources and Social Development's commitment to recognizing exceptional CEOs who have pioneered innovative business models and achieved notable successes. These achievements are crucial in enhancing the performance indicators of the labor market, aligning with the Kingdom's Vision 2030. Eng. Al-Badran distinguished himself by meeting the rigorous evaluation criteria focused on national competencies. His contributions have been instrumental in promoting nationalization and upholding Saudi leadership. Furthermore, under his guidance, Mobily has seen a notable growth in profits and an increase in career opportunities, demonstrating an impressive standard in the facility's overall performance. The recognition of Eng. Al-Badran underscores the impactful role that visionary leadership can play in the dynamic business environment of Saudi Arabia, setting a benchmark for excellence in corporate governance and societal contribution. This award reflects the recent work and achievements of the company, which include developing the work environment and placing employees at the center of attention. Additionally, the company has invested in developing human capital through job localization, empowering women, and supporting young talents with the necessary skills. Mobily has launched sustainability initiatives in various areas such as environmental, social, and governance management. The company aims to incorporate sustainability into its operations, operating responsibly and transparently while striving to make a positive impact on society. It continually monitors, measures, and improves its economic, environmental, and social performance. Moreover, the company has achieved consistent growth in its net profits over the past three years. Furthermore, its brand value ranked at the top of the list of the fastest-growing telecommunications companies in the Middle East for 2022, according to the Brand Finance rankings. In the past three years, Mobily has also received numerous awards. These include an upgrade in its rating on the MSCI ESG Index from BBB to A, as well as the Best User Experience Award for two consecutive years 2021-2022, presented by the Communications and Space Commission. The award recognized Mobily's excellence based on international standards and user feedback. Additionally, the company won the Global Carrier Awards 2023 for Best Middle Eastern Carrier, that held during the "Capacity Europe 2023 Conference" in London. This recognition is a result of Mobily's continuous efforts to provide cutting-edge digital solutions in the carrier and operator field at local, regional, and international levels.

Omantel Spearheads 'Sustainability Innovation Hub" as Part of the GCC Telco Alliance

Omantel has announced its participation in the establishment of the Sustainability Innovation Hub in collaboration with the GCC Telco Alliance members (STC, e&, Zain, Beyon, du, and Ooredoo) and other key regional and international partners. This initiative is driven by the urgent need to address climate change and expand access to affordable and reliable energy. As the global energy landscape undergoes a significant transformation, telecom operators are actively seeking alternatives that enhance energy efficiency and reduce their carbon footprint. The Sustainability Innovation Hub aims to bridge the gap between technology, telecom, innovation, and climate action for a low-carbon economy. It will bring together cutting-edge technologies, visionary experts, and collaborative efforts to tackle one of the most critical challenges faced by the telecom industry today. The primary focus of the Sustainability Innovation Hub will be to develop and implement innovative power solutions that are cost-effective, reliable, and environmentally friendly by harnessing the power of renewable energy sources, such as solar and wind. The hub will enable telecom operators to reduce their reliance on traditional fuel sources and move toward a greener future. This transition will not only lead to substantial long-term cost savings but will also play a significant role in protecting the environment, aligning with the broader sustainability goals of the sector. The Sustainability Innovation Hub has been established with a clear set of objectives aimed at revolutionizing the telecom industry's approach to energy consumption and sustainability. The hub will foster a collaborative environment where telecom operators, technology providers, and research institutes can share knowledge, resources, and expertise, driving the development of innovative power solutions tailored to the specific needs of the telecom industry. Equipped with state-of-the-art facilities for prototyping, testing, and validating innovative power solutions using GCC telecom networks, the hub will accelerate the development cycle and ensure the effective implementation of new technologies within the industry. Recognizing the importance of skilled professionals in driving innovation, the hub will offer training programs and workshops to enhance the competencies of individuals involved in the design, installation, and maintenance of power solutions within the telecom sector. The hub will actively seek collaborations and partnerships with leading industry players, government entities, and regulatory authorities, fostering a supportive ecosystem where knowledge sharing, best practices, and standardization can flourish. These objectives underscore the Sustainability Innovation Hub's commitment to transforming the energy paradigm within the telecom industry, paving the way for a more sustainable and environmentally conscious future.

Omantel Launches Fiber to The Room (FTTR) Solution to Offer Exceptional Home Broadband Experience

Omantel, the leading provider of integrated telecommunication services in the Sultanate of Oman, has launched the next-generation Fiber To The Room (FTTR) solution to deliver to home subscribers an exceptional home broadband experience. Omantel is the first internet service provider in the Sultanate to offer this revolutionary technology, an advanced tech solution that is guaranteed to considerably enhance the customer experience in every room. Saleh Mahmood Al Maimani, Senior Manager Residential, Omantel, said: "The FTTR solution represents a remarkable advance in smooth connectivity within rooms. A 2-mm thin and transparent fiber cable is used to replace traditional network cables in an innovative way to achieve premium experience of full gigabit coverage and seamless Wi-Fi coverage." From small apartments to big villas, you can get your whole home covered with up to 10 rooms with reliable high-speed connectivity and low latency that will

the best upgrade your home entertainment needs to stream 8K Ultra High Definition (UHD), play cloud gaming services and enhance your smart home living experience. Omantel is the Sultanate's first and leading integrated telecommunications services provider, enabling the digital society to flourish, allowing new ways of doing business and delivering a world of information, news, and entertainment. While striving to ensure an optimum customer satisfaction, Omantel plays a key social role to provide the required support and assistant to all sectors amongst the Omani society.

Omantel and Oman International Hospital Team Up to Support Healthcare in Oman

In continuation of its active role in community outreach, Omantel, the leading provider of integrated telecommunications services in the Sultanate of Oman, has teamed up with Oman International Hospital, to support the healthcare services provided by the hospital catering to a range of medical conditions, in association with the Ministry of Health. A Memorandum of Understanding to this effect was signed by Eng. Aladdin bin Abdullah Baitfadhil , Chief Commercial Officer of Omantel, and Marcelo Pereira, CEO of Oman International Hospital. Under the MoU, Omantel will engage with Oman International Hospital to help speed up the delivery of healthcare services to patients under sustainable medical programs adopted by the Ministry of Health. The partnership stems from Omantel's commitment to supporting healthcare services from government and private institutions, and thus contributes to the welfare and health of the Omani society. Eng. Aladdin bin Abdullah Baitfadhil , Chief Commercial Officer at Omantel, said: "One of the pillars of Omantel's corporate philosophy is to expand our social outreach and contribute to different areas in society, including the healthcare sector. This MoU mirrors that vision and boosts our ongoing efforts to support public and private institutions, and promote their sustainable programs to achieve common goals. We are particularly pleased with this partnership with the Ministry of Health and Oman International Hospital in implementing innovative health programs, which contribute to improving and enhancing medical services provided to patients and visitors." Eng. Aladdin added: "We appreciate the efforts made by the Ministry of Health and private hospitals in the Sultanate to develop and strengthen the health care system in Oman". Marcelo Pereira, CEO of Oman International Hospital, said: "As one of the main hospitals that contribute to reducing the burden on government hospitals, Oman International Hospital is delighted to enter into a partnership with Omantel, which is one of the leading companies engaged in community service, to implement a distinguished and more sustainable healthcare model through our highly qualified medical cadres and advanced equipment and devices that serve the health system in the Sultanate." 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 the latest solutions to various consumer and business sectors. The company aims to deliver an unparalleled, exceptional experience to its subscribers and strives to always exceed their expectations. Omantel works towards contributing to the achievement of Oman Vision 2040 objectives by investing in emerging technologies and providing cutting-edge solutions in modern technology, information and communications technology, such as cloud solutions, ICT 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.

Zain Cooperates with GCC Telco Alliance to Establish the 'Sustainability Innovation Hub'

Zain announces the establishment of the Sustainability Innovation Hub in collaboration with the GCC Telco Alliance members along with e&, stc, Ooredoo, Beyon, Omantel, and du, and other key regional and international partners. This initiative is driven by the urgent need to address climate change and expand access to affordable and reliable energy. As the global energy landscape undergoes a significant transformation, telecom operators are actively seeking alternatives that enhance energy efficiency and reduce their carbon footprint. The Sustainability Innovation Hub aims to bridge the gap between technology, telecom innovation, and climate action for a low-carbon economy. It will bring together cutting-

edge technologies, visionary experts, and collaborative efforts to tackle one of the most critical challenges faced by the telecom industry today. The primary focus of the Sustainability Innovation Hub will be to develop and implement innovative power solutions that are cost-effective, reliable, and environmentally friendly. By harnessing the power of renewable energy sources, such as solar and wind, the initiative will enable telecom operators to reduce their reliance on traditional fuel sources and move toward a greener future. This transition will not only lead to substantial long-term cost savings but will also play a significant role in protecting the environment, aligning with the broader sustainability goals of the sector. The Sustainability Innovation Hub has been established with a clear set of objectives aimed at revolutionizing the telecom industry's approach to energy consumption and sustainability. The hub will foster a collaborative environment where telecom operators, technology providers, and research institutes can share knowledge, resources, and expertise, driving the development of innovative power solutions tailored to the specific needs of the telecom industry. Equipped with state-of-the-art facilities for prototyping, testing, and validating innovative power solutions using GCC telecom networks, the hub will accelerate the development cycle and ensure the effective implementation of new technologies within the industry. Recognizing the importance of skilled professionals in driving innovation, the hub will offer training programs and workshops to enhance the competencies of individuals involved in the design, installation, and maintenance of power solutions within the telecom sector. The hub will actively seek collaborations and partnerships with leading industry players, government entities, and regulatory authorities, fostering a supportive ecosystem where knowledge sharing, best practices, and standardization can flourish. These objectives underscore the Sustainability Innovation Hub's commitment to transforming the energy paradigm within the telecom industry, paving the way for a more sustainable and environmentally conscious future. Jennifer Suleiman, Chief Sustainability Officer of Zain Group said, “This development is extremely timely. The negative impact of climate change globally is growing more acute over time. Individually, companies such as Zain have been working proactively to reduce the negative impact of our operations on the environment to contribute to a Net-Zero world. However, collaboration across telecom operators and the sectors we interact with, is a much-needed boost in the efforts to reverse the effects of climate change, given the significance of our industry and the impact we can exert on creating value for all our stakeholders and changing people’s lives for the better. We are stronger together.”

Zain Showcased Digitization Solutions to Transform Oil Facilities

In a move to reflect its role in accelerating the digital transformation of Kuwait’s key industries, Zain announced its sponsorship and participation in the 6th Kuwait Corrosion Conference and Exhibition, organized by the Association for Materials Protection and Performance (AMPP) – Kuwait Chapter. The event hosted some of the country and region’s biggest oil, gas, and energy players, and was attended by CEO of the Kuwait National Petroleum Company (KNPC) Wadha Al Khateeb. The company’s participation in this prominent event reflected the role it continues to play as one of the private sector’s main digital transformation enablers, empowering companies and government agencies from across key industries to embrace digitization. This is especially true within the local oil & gas sector, which is considered the backbone of the nation’s economy, as Kuwait is one of the world’s biggest oil producers. Through its dedicated booth at the event, Zain showcased a wide range of digital solutions, cloud services, and other key applications it offers to oil, gas, and energy companies to digitize their workflows and elevate efficiency. This includes solutions to monitor and evaluate the integrity of oil assets, reduce risks of corrosion in pipelines and other facilitates, and more by using drones and other advanced tech tools. In recent years, Zain has doubled down on its strategic efforts to digitalize the local oil & gas industry. The company heavily invested in tech solutions such as 5G, drones, digital applications, managed cloud services, and more to empower companies to embrace digitalization. Zain offers a number of key tools to oil & gas companies, including migrating infrastructures to more agile ones on the cloud, leveraging on 5G technologies, as well as a wide range of reliable, secure, and efficient datacenter, cloud, and connectivity solutions. The company also covers an extensive range of cybersecurity solutions, as well as rig connectivity tools through its UAV division, Zain Drones. The 6th Kuwait Corrosion Conference and Exhibition covered a wide range of topics that are having an increasing impact on the oil, gas, and energy industries, such as digital transformation, artificial intelligence, big data, and cloud computing. These technologies and more are paving the way for a new era for this vital industry, helping companies and governments elevate efficiency, increase productivity, reduce risks, and achieve sustainable goals.

Avaya Helps UK and Ireland Enterprises Deliver AI-Powered Innovation Without Disruption

Avaya, a global leader in customer experience solutions demonstrated how United Kingdom and Ireland brands can infuse artificial intelligence (AI) into the experiences they deliver without disrupting existing operations. At the JOURNEYS with Avaya event, held in London, Avaya CEO Alan Masarek said that UK and Ireland enterprises, like their global counterparts, are increasingly turning to Avaya to help them fully realize the promise of AI within the customer experience industry. With these organizations running "bullet-proof", premise-based Avaya contact center estates, he said that "Avaya is able to infuse AI into the experience without disrupting what's already working well". "Our UK and Ireland customers are demonstrating the immense potential for customer-specific and industry-optimized AI solutions. We're supporting those customers as they seek to bring these innovations, on a large scale, into their contact centers to address their own customers' most pressing challenges," he said. According to Frost & Sullivan, in 52% of UK organizations, CX improvements are one of the main drivers for implementing AI technologies. Such improvements represent a pressing industry challenge; as call volumes for most UK and Irish contact centers increased over the course of 2023, while call abandonment and the average time for an agent to answer reached an all-time high. "UK and Irish organizations recognize the fundamental importance of delivering frictionless experiences to customers. They aim to harness a seamless stack of UC, CX, and AI applications and focus on deploying analytical tools at scale and reducing the time it takes to introduce self-service applications. To modernize their contact centers, large organizations in particular opt for a 'lift-and-shift' method, avoiding the 'rip-and-replace' approach to existing estates.," said Alexander Michael, Vice President, ICT Practice Leader, Frost & Sullivan.

Enabling Innovation Without Disruption Across the UK and Ireland

Avaya counts the NHS, top high street banks, and leading telecom service providers among its customers – along with a large number of top brands from diverse industries.

In Ireland, among other top government and private organizations, Avaya supports RelateCare, a leading provider of innovative healthcare consulting, administrative and clinical support solutions. RelateCare has continued to expand its investment in Avaya contact center and workforce optimization solutions as part of its focus on enhancing client and patient experience. Masarek said that these large-scale, consumer-facing organizations feel the most pressure from customers to modernize the experiences that they deliver. "These customers are moving quickly to get digital experiences right. They want to add new capabilities like AI and chatbots, but they don't want to give up their existing solutions. That's why we aim to meet our customers where they are on their innovation journeys," he said. Demonstrated at JOURNEYS with Avaya was the company's ability to deliver such innovation without disruption. Product showcases included Avaya Experience Platform, which empowers organizations to access omnichannel voice and digital channels, as well as AI capabilities and more from the cloud – while leveraging their existing on-premises infrastructure for voice routing, call handling, and more. Another solution demonstrated at the event was Avaya Enterprise Cloud, which was recently adopted by Kura, the UK's largest independent outsourcer. The solution enables Kura to offer its clients – including leading energy and financial services companies – complex inbound and outbound contact center services on a robust platform hosted in a dedicated cloud instance with options to add services such as speech analytics, digital and social channels and secure PCI payments as required. "From readying us for initial go-live, to leveraging all the advanced features and innovation, and training us to become fully autonomous, Avaya, with its Avaya Customer Experience Services (ACES), has been key in guiding and supporting us in our journey, and we are looking forward to realizing the full potential of this new solution," said Janine Hunt, Client Partnership Director, Kura.

AT&T to Deliver Fiber Powered Broadband Access to More Than 2,100 Customer Locations in The Town of Egg Harbor

The Town of Egg Harbor announced a project with AT&T to expand AT&T Fiber to more than 2,100 customer locations in the Town of Egg Harbor. "We are excited about this collaboration with AT&T to bring high-speed broadband to the residents of Egg Harbor," said Steve Schopf, Egg Harbor Town Chair. "In today's digital age, fast connectivity is crucial to everyday life. Bringing AT&T Fiber to Egg Harbor is a great step forward in continuing to improve the quality of life for residents, businesses, first responders and visitors in our community. A special thanks to our Broadband Task Force for the endless hours they put into researching and finding the right partner for the Town of Egg Harbor." Under the agreement, AT&T will invest $6 million in the project to provide fiber services

to residential and business addresses in the Town of Egg Harbor. The Town of Egg Harbor will invest $2.5 million and will be pursuing grants to help offset part of the Town's portion of the cost. Extensive planning and engineering work for this project will begin in the first quarter of 2024. The network buildout is expected to be complete within 2 years. "Our purpose is to create connections – to friends, family, work, education, health, entertainment and more," said Robyn Gruner, Director of External Affairs for AT&T Wisconsin. "Working with the Town of Egg Harbor and the Broadband Task Force has shown how strong public-private collaborations can help bring high-speed broadband and all its benefits to communities. We're excited to bring AT&T Fiber here soon to create those connections and help bridge the digital divide." Plans call for residents and businesses to have access to superfast internet – delivering up to 5-Gig speeds1 with symmetrical upload and download speeds. Consistently fast speeds2 and increased bandwidth mean customers can connect multiple devices, stream multiple entertainment sources, quickly upload content to social media and experience ultra-low lag for pro-level gaming – all at the same time. AT&T Fiber is also multi-gig capable the day it is installed, which means it can handle the demands of today, and those well into our hyperconnected future. AT&T is working to roll out AT&T Fiber through public-private partnerships in communities across the country and to further help close the digital divide by encouraging adoption and offering affordable internet solutions. AT&T has extensive experience deploying fiber-optics across Wisconsin, with more than 1.2 million strand-miles of fiber optics in the state. In fact, more than 370,000 locations in the state have access to AT&T Fiber today. Residents and businesses can learn more about AT&T Fiber at att.com/fiber and can sign up to be notified when service will be available at their address at att.com/notifyme. AT&T is committed to connecting more Americans to reliable, high-speed internet in several ways, including expanding and upgrading our network and participating in the federal Affordable Connectivity Program (ACP). The ACP provides eligible households with a benefit of up to $30 a month (up to $75 a month on qualifying Tribal lands3) to reduce the cost of internet service and can be applied to AT&T Fiber, where available. Or use it toward Access from AT&T, offering speeds up to 100Mbps for $0 after the ACP benefit is applied. After confirming ACP eligibility, those who qualify can go to att.com/getacp, visit their local AT&T store or call us at 866-986-0963 to sign up for service. Have your ACP application ID handy.

AT&T to Accelerate Open and Interoperable Radio Access Networks (RAN) in the United States Through New Collaboration with Ericsson

AT&T's Open RAN plan is for 70% of its wireless network traffic to flow across open-capable platforms by late 2026. The company expects to have fully integrated open RAN sites operating in coordination with Ericsson and Fujitsu, starting in 2024. This move away from closed proprietary interfaces will enable rapid scaling and management of mixed supplier hardware at each cell site. Beginning in 2025, the company will scale this Open RAN environment throughout its wireless network in coordination with multiple suppliers such as Corning Incorporated, Dell Technologies, Ericsson, Fujitsu and Intel. AT&T's and Ericsson's multiyear joint commitment to Open RAN deployment comes at a pivotal moment in the 5G innovation cycle. This move to an open, agile, programmable wireless network positions AT&T to quickly capitalize on the next generation of wireless technology and spectrum when it becomes available. These innovative technologies will enable lower-power, sustainable networks with higher performance to deliver enhanced user experiences. Ericsson's open architecture will provide a foundation and springboard for developers driving innovation through open and programmable networks and bringing new suppliers into the industry. This will foster modernization and competition in the U.S. wireless equipment market. The company expects that increased competition in the U.S. RAN market will yield more innovation and greater efficiencies. Committing to Open RAN with its suppliers deploying open hardware, migrating to cloud RAN, and introducing 3rd party radios leads to more flexibility in choosing equipment, lower network costs and improved operational efficiencies. This cutting-edge open management approach to building the network will enable the company to continue to invest in its fast-growing broadband network. "AT&T is taking the lead in open platform sourcing in our wireless network," said Chris Sambar, Executive Vice President, AT&T Network. "With this collaboration, we will open up radio access networks, drive innovation, spur competition and connect more Americans with 5G and fiber. AT&T will use this new collaboration with Ericsson to enhance its wireless network in North America and expand the most reliable 5G network.

Cisco to Acquire Isovalent to Define the Future of Multicloud Networking and Security

Cisco announced the intent to acquire Isovalent, a leader in open source cloud native networking and security, to bolster its secure networking capabilities across public clouds. The acquisition of Isovalent will build on the Cisco Security Cloud vision, an AI-driven, cloud delivered, integrated security platform for organizations of any shape and size. The Cisco Security Cloud enables customers to abstract security controls from multicloud infrastructure to provide advanced protection against emerging threats across any cloud, application or workload. "Together with Isovalent, Cisco will build on the open source power of Cilium to create a truly unique multicloud security and networking capability to help customers simplify and accelerate their digital transformation journeys," said Jeetu Patel, executive vice president and general manager of Security and Collaboration at Cisco. "Imagine in today's distributed environment - of applications, virtual machines, containers and cloud assets - having security controls with total visibility, without hindering networking and application performance. The combination of Cisco and Isovalent will make this a reality."

Isovalent's team is a major contributor to the open source technology eBPF, and has led the development of Cilium, the leading cloud native solution for networking and security. eBPF provides unmatched visibility into the inner workings of the operating system - an ideal interface for building security systems that can protect a workload while it runs. Cilium provides IT and platform engineering teams with powerful networking capabilities and unparalleled visibility into the behavior and communication of cloud native applications, enabling seamless policy definition of software-defined networks. Isovalent has also recently introduced:

Cilium Mesh: allows for the easy connection of Kubernetes clusters with existing infrastructure across hybrid clouds,

Tetragon: an eBPF-based open source security solution that provides visibility to and enforces runtime behavior within an application and on the network.

Isovalent Enterprise: an enterprise distribution of Cilium and Tetragon

Cisco intends to continue offering and building on Isovalent's slate of innovations for customers, including Isovalent Enterprise. "Cisco is committed to nurturing, investing in, and contributing to the eBPF and Cilium open source communities," said Stephen Augustus, Head of Open Source at Cisco. "Isovalent's team will join Cisco's deep bench of open source governance and technical leadership to solve complex cloud native, security, and networking challenges. Their knowledge will accelerate innovation across the business and help further strengthen the Cisco Security Cloud platform to meet the growing demands of our customers." Isovalent holds leadership positions in the Cloud Native Computing Foundation and eBPF Foundation, in addition to upstream software contributions, and this acquisition strengthens Cisco's role in supporting the open source ecosystem. Together as leaders in networking and security, Cisco and Isovalent will build solutions powered by eBPF technology that aim to solve the challenge of protecting workloads no matter where they reside. Cisco is committed to Cilium and Tetragon as open source projects and intends to create an independent advisory board to help steer Cisco's contributions to these important efforts in a way that is aligned with the needs of the open source community. The Isovalent team will join the Cisco Security Business Group once the acquisition closes, which is expected in the third quarter of fiscal year 2024.

Expo City Dubai Leverages Cisco Technology to Host COP28

Cisco's secure networking technologies are powering Expo City Dubai, the venue for the 28th Conference of the Parties (COP28) of the United Nations Framework Convention on Climate Change (UNFCCC). With more than 70,000 delegates expected, including heads of state and world leaders, non-government organizations, youth groups and more, Expo City Dubai is leveraging industry-leading IT infrastructure, while contributing to a circular economy. Expo City Dubai is reutilizing more than 95% of existing hardware infrastructure spanning Cisco secure networking, data center and collaboration technologies, initially deployed for Expo 2020 Dubai, while introducing new wireless innovations and Cisco's Customer Experience Consultancy Services to meet the unique connectivity requirements of the Blue and Green Zone areas at COP28. Expo City is also taking part in Cisco's Takeback and Reuse Program, a zero-cost simple, secure and sustainable way to return end-of-use gear to Cisco, supporting a circular economy.

Eman Al Awadhi, Vice President – Network and Cyber Security, Expo City Dubai, said: "As the former site of the 2020 World Expo continues to evolve into a model for the cities of the future, the team at Expo City

Dubai is managing the convergence of information technology and operational technologies with sustainable best practices. We are proud to continue this journey with Cisco, as we work together to ensure a safe, secure and connected site."

Mary de Wysocki, Senior Vice President and Chief Sustainability Officer at Cisco said: "Cisco led the transition into the digital age decades ago. Today, our world needs a new transformation where public and private sectors act to reduce emissions, support nature-based and technology-based carbon removal solutions, and transition to clean energy. Global forums, like COP28, that facilitate this collaboration are a key part in building a low-carbon society. We are proud to work with customers like Expo City Dubai who prioritize circular business practices."

Reem Asaad, Vice President, Cisco Middle East and Africa, said: "We are proud to support COP28 and the UAE as the host country. As part of our collaboration, Cisco has provided professional and technical services to design, implement and support the network infrastructure at Expo City, enabling attendees and the host nation to connect seamlessly and securely." Asaad added, "Today's announcement is another key milestone in our journey to support the UAE's vision of unlocking the value of digitization in support of the country's sustainability efforts." Cisco has a long-standing focus on sustainability with an ambitious goal to reach net zero greenhouse gas emissions across its value chain by 2040—a goal that is approved by the Science Based Targets initiative (SBTi) under its Corporate Net-Zero Standard. Together with our customers and partners, Cisco is working to empower decisions now that can help bring about a more sustainable future.

Cisco Doubles Down on Network Assurance With AWS

At the AWS re:Invent 2023, Cisco (announced new integrations between Cisco ThousandEyes and Amazon CloudWatch Internet Monitor (CWIM), a new Internet monitoring service from Amazon Web Services (AWS). The first-of-its-kind integration empowers customers with unparalleled visibility into their cloud deployments, enabling them to deliver unmatched optimized digital experiences. With this new integration, customers can leverage operational insights to ensure optimal placement of AWS instances and monitoring coverage based on user traffic profiles. This integration comes on the heels of ThousandEyes announcing AWS Network Path Enrichment, giving customers deeper visibility into AWS by enriching ThousandEyes Path Visualization with data from AWS data sources—helping customers work more collaboratively with providers to resolve issues that are impacting application performance. Building upon the existing relationship between AWS and Cisco, the new integration demonstrates Cisco's deep commitment to its end-to-end network assurance vision. Cisco securely and sustainably connects everyone to everything and assures the digital experience of every one of those connections. By working with AWS, Cisco is delivering on its promise to provide visibility into every domain that impacts digital experience—whether user, enterprise, Internet, or cloud—so it can ultimately provide artificial intelligence (AI)-driven insights, recommendations, and remediations to support the digital transformation of every customer, wherever they are on their journey. "Since launching one year ago, Amazon CloudWatch Internet Monitor has delivered real-time insights into the traffic and performance of our customers' AWS VPCs, CloudFront distributions, and Workspaces towards Internet destinations. In-depth Internet visibility is critical to our customers, so we're excited to combine forces with ThousandEyes to provide a comprehensive view of Internet health."

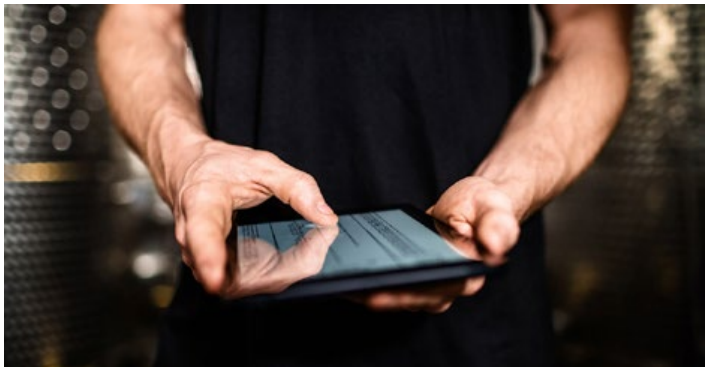
— Robert Kennedy, VP of AWS Border Network Engineering, AWS

"Connectivity is key to Sutherland's business model and to our customer interactions. Cloud visibility is a big part of that and with ThousandEyes' end-to-end visibility all the way from our employees' home environments to AWS, we're able to quickly catch and resolve issues which allows us to deliver consistent high-quality application experiences to both our employees and customers."

— Ted Sanfilippo, VP Infrastructure, Head of Global Network Services and GTOC, Sutherland

"Customers today need to assure digital experiences over any network—the ones they own and the ones they don't. As the leader in Internet visibility, Cisco is on a mission to deliver unmatched end-to-end network assurance. Today's integration with AWS demonstrates our shared commitment to empower our customers to more effectively monitor and manage their cloud environments."

— Mohit Lad, Senior Vice President and General Manager, Network Assurance, Cisco and Co-Founder, ThousandEyes



Cisco Redefines Cybersecurity Defense with Powerful, Portfolio-Wide Artificial Intelligence Capabilities

Cisco, the leader in enterprise networking and security, unveiled the Cisco AI Assistant for Security. This marks a major step in making artificial intelligence (AI) pervasive in the Security Cloud, Cisco's unified, AI-driven, cross-domain security platform. The AI Assistant will help customers make informed decisions, augment their tool capabilities and automate complex tasks. "To be an AI-first company, you must be a data-first company. With our extensive native telemetry, Cisco is uniquely positioned to deliver cybersecurity solutions that allow businesses to confidently operate at machine scale, augmenting what humans can do alone," said Jeetu Patel, Executive Vice President and General Manager of Security and Collaboration at Cisco. "Today's announcement is a monumental step forward. This advancement will help tip the scales in favor of defenders, empowering customers with AI built pervasively throughout the Cisco Security Cloud." As cyber-attacks continue to evolve, organizations' defenses must, too. Ransomware and extortion attacks continue to persist at a steady pace, making up 20 percent of Cisco Talos Incident Response engagements this year, according to the new Cisco Talos 2023 Year in Review Report. Talos also observed an increase in sophisticated attacks on networking devices this past year, particularly by state-sponsored actors. The increased speed and sophistication of malicious actors requires the adoption of machine-scale defenses. With unmatched visibility across the network and security, Cisco works with more machine-driven telemetry and on a scale larger than most in the industry. The new Cisco AI Assistant for Security is trained on one of the largest security-focused data sets in the world, which analyzes more than 550 billion security events each day across web, email, endpoints, networks and applications. It can understand event triage, impact and scope, root cause analysis and policy design. With this data, the AI Assistant aims to close the gap between cybersecurity intent and outcomes. All of Cisco's AI capabilities are built securely and align with Cisco's Responsible AI Framework. Continuing the rapid pace of innovation, today Cisco is introducing:

- AI Assistant for Firewall Policy: The Cisco AI Assistant for Security is first going live within the Cisco Cloud-delivered Firewall Management Center and Cisco Defense Orchestrator to solve the big challenge of setting and maintaining complex policies and firewall rules. Administrators can now use natural language to discover policies and get rule recommendations, eliminating duplicate rules, misconfigured policies and complex workflows with increased visibility as well as accelerated troubleshooting and configuration tasks.
- AI-powered Encrypted Visibility Engine for All Firewall Models: Most data center traffic today is encrypted and the inability to inspect encrypted traffic is a key security concern. Decrypting traffic for inspection is resource-intensive and fraught with operational, privacy and compliance issues. With the 7.4.1 Operating System now available across the entire Cisco Secure Firewall family, customers see AI go even further via the Encrypted Visibility Engine. The Encrypted Visibility Engine leverages billions of samples, including sandboxed malware samples, to determine if the encrypted traffic is transporting malware. It can tell which operating system the traffic is coming from and what client application is generating that - all without the need for decryption.

"The ability for AI to reshape our daily lives and professional landscapes is immense. As a longstanding Cisco partner, we're excited about the new Cisco AI Assistant for Security and how this will empower our customers with AI-driven efficiencies," said Graham Robinson, Chief Technology Officer, Data#3. "The introduction of the AI Assistant to Cisco Firewall Management Center will help our customers quickly and easily configure policy changes. When combined with the new features in the 7.4.1 software release and the Encrypted Visibility Engine, this offers a truly compelling overall experience."

Du Launches 5G SA; Smartphone Service Available, with Home Internet to Follow

UAE operator Du announced the commercial launch of its 5G Standalone (SA) network, heralding a significant upgrade from existing 5G infrastructure providing faster mobile data connections, smoother media streaming, lower latency, robust security features and improved overall network performance. Du's press release confirmed that the first 5G SA-enabled device available to consumers on its network is the Samsung Galaxy S23 smartphone, but added that 'an array' of devices will follow 'soon' from multiple handset manufacturers, giving users 'unprecedented speeds, minimal latency, and seamless connectivity.' Furthermore,

Du promised a 5G SA-based 'Home Wireless' internet service will be launched 'in the near future' to deliver faster speeds and improved reliability for residential fixed wireless access (FWA) broadband users. 5G SA will also support Voice over New Radio (VoNR), allowing consumers to enjoy high-quality voice/video calls transmitted within the Standalone network. Du highlighted that 5G SA technology offers significant benefits for various enterprise sectors: leveraging network slicing technology to customize applications according to clients' specific needs; supporting edge computing and advanced Mobile Private Network solutions; enabling real-time responsiveness for remote healthcare/medical services, Industry 4.0, industrial IoT, VR, AR, gaming, public safety, and real-time analytics, alongside enhanced FWA broadband connectivity for SMEs.

du Stepping Forward Towards Net Zero Emission Targets with OLT Green Intelligent Energy Saving Solutions

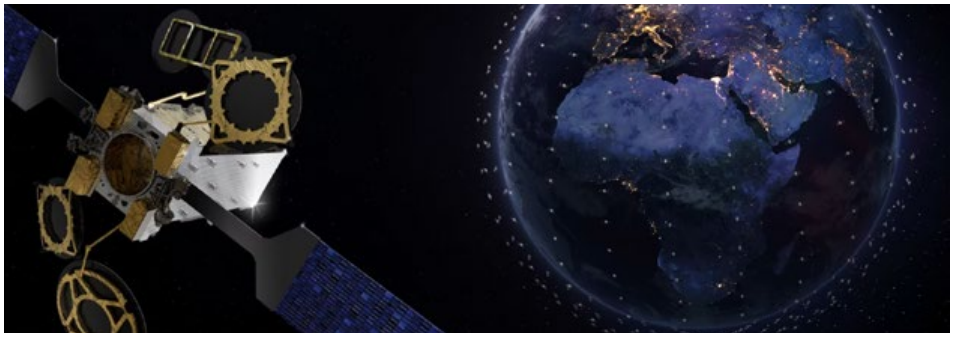
du, from Emirates Integrated Telecommunications Company (EITC), and Huawei, a leading global provider of information and communications technology (ICT) infrastructure and smart devices, jointly completed the deployment of the OLT (Optical Line Terminal) Green Intelligent Energy saving solution. It is a monumental advancement in network energy efficiency as part of du's ongoing efforts to become a Net Zero ICT service provider and promote sustainable development in the region. This groundbreaking has been demonstrated at the Expo City site, has successfully showed that the OLT energy efficiency can be enhanced by an average of 38%,which in return will help du to reduce the carbon footprint of 1020 tons across the entire network which is equivalent to planting of 51033 trees annually dovetailing with the green energy efficiency initiatives of du in the journey towards its ambitions of reducing carbon emissions and reaching Net Zero emissions by 2030 within its operations. Saleem Alblooshi, Chief Technology Officer, at du said: "We, at du, are committed to deliver the best possible service to our customers while ensuring our operations have a minimal environmental impact. Our collaboration with Huawei, especially within the esteemed Dubai Expo City, has been nothing short of transformative, yielding remarkable improvements in energy efficiency. The success of our intelligent OLT energy saving initiatives sets a powerful precedent, propelling the telecom industry towards a greener and more sustainable future." Jiawei Liu, CEO of Huawei UAE, commented: "It is our pleasure to join du in providing the advanced OLT Green Intelligent Energy saving solution. Huawei has been acting as a solid foundation for the digitization of the UAE for over 20 years. By unleashing the full potential of advanced technologies, we believe our continuous cooperation with du will lead to the further enhancement of the UAE's sustainable development, enabling a more inclusive and greener future for all." As part of the initial phase, du rolled out state-of-the-art OLT units in Dubai Expo City equipped with advanced and innovative energy-saving features. Specifically, the innovative solution offers four energy-saving modes, enabling devices to smartly adjust energy consumption based on real-time network traffic demand and automatically adjust fan speed, shut down idle ports, boards, and controllers. For instance, during peak traffic hours, the OLT will promptly power up these components and resources to ensure smooth and uninterrupted, seamless user service experience while in low traffic and idle mode, it will adjust the resources accordingly. With the successful implementation of the initial phase, du and Huawei will continue to work closely to roll out the solution across the entire network to make sure du's networks are equipped with the latest technical innovations. This cooperation will further accelerate the fulfilment of carbon footprint reduction of both the organization and government, leading the way to a sustainable future.

Eutelsat and Vivacom Group launch fourth European Ground Station in Bulgaria

Eutelsat Group, one of the world's leading satellite Internet providers and Vivacom, part of the United Group, the leading telecommunications and media services provider in South-eastern Europe, announced the commercial launch of their ground station in Bulgaria. This fourth-of-its-kind facility in Europe and one of 35 already operating in the world, will enable expanded communications services for Eutelsat Group's low Earth orbit (LEO) connectivity services. A year ago, Vivacom announced that it started the construction of the station of the satellite operator OneWeb, which since September this year merged with the French Eutelsat and now operates under the name Eutelsat Group. The project is being implemented at Vivacom's site in Stara Zagora municipality, where it will provide additional jobs in the region for the next 10 years. It will also put Stara Zagora on the world map of space technology and communications. Because of all these economic benefits, the project has been awarded Class C certification. "We are happy that, in just 1 year, we were able to launch this important project, which will bring long-term benefits to business and society in our country. We remain true to our strategy to continue investing, innovating, and offering high-quality products and services based on the most modern technologies, which deservedly strengthen Vivacom's place on the international map in this sector. We believe that, with the right strategic vision, targeted investments and high expertise of our team, we can set standards on a global scale and attract more and more international technology companies ready to invest in Bulgaria," said Nikolay Andreev, CEO of Vivacom. The ground station consists of 18 antennas and a mini data centre that connects the LEO satellites to the optical network and data centers in Bulgaria and Europe. Construction began in late 2022 and, despite the adverse weather conditions, was completed in May 2023, and was followed by a successful testing-and-commissioning procedure. "42 years after Stara Zagora made headlines with its contribution to the first Bulgarian artificial satellite 'Intercosmos Bulgaria 1300', this project puts our city back on the map of the global space industry. With open arms, we welcome the investment in this remarkable satellite communications project, knowing that it will not only stimulate the development of our city but also contribute to digital inclusion throughout Eurasia," said Zhivko Todorov, the Mayor of Stara Zagora. "We extend our gratitude to Vivacom for their collaboration and assistance in establishing an additional ground station for our LEO network. We are steadily advancing towards providing global connectivity services, and this new site represents another significant stride toward achieving our overarching goal. Vivacom not only brings a wealth of telecommunications expertise but also invaluable local knowledge, making them an essential partner," said Massimiliano Ladovaz, Chief Operations Officer, Eutelsat Group.

Rawafed Expands Agreement with Eutelsat OneWeb

Eutelsat OneWeb has signed what it describes as a 'multi-million dollar exclusive distribution agreement' with telecoms operator Rawafed Libya (RLTT) to deliver connectivity services across the North African country. The agreement will see RLTT expand its relationship with Eutelsat Group to include a hybrid bundle of both enhanced geostationary (GEO) and Low Earth Orbit (LEO) services. Eutelsat OneWeb will provide exclusive access to its LEO powered connectivity constellation, delivering full connectivity over Libya from early 2024. The services will provide high speed, low latency connectivity for a range of applications including commercial connectivity to the oil and gas and financial services industries, government sectors, cellular backhaul for telecoms operators and remote connectivity for humanitarian organizations.



At COP28, Huawei Executive Says Carbon Neutrality Will Trigger Revolutionary Change

A senior Huawei executive says the integration of the digital and energy worlds will improve energy efficiency and resource allocation worldwide. Addressing a session of the Global Innovation Hub (UGIH) of the United Nations Framework Convention on Climate Change (UNFCCC) at the 28th Conference of the Parties (COP28), hosted by the UAE, Charles Yang, Senior Vice President at Huawei, said opportunities brought about by carbon neutrality will trigger revolutionary technological and socioeconomic change. "We're working to not just enhance the ICT sector via technological innovations, but also build innovative systems to help achieve the common goal of carbon neutrality," he said. Yang spoke at a UNFCCC UGIH session entitled "Innovative, Digitally Enabled Green Transition." The panel sought to shed light on new ways of thinking and doing in the green transition, as well as new cases that have emerged and opportunities for collaboration that could be leveraged. Yang cited several Huawei innovations that lowered ICT's carbon footprint. These included fully liquid-cooled supercharging terminals that are able to charge EVs at the rate of one kilometer per second; the world's second largest PV plant in Qinghai, China where Huawei helped complete grid connection; and Huawei's contribution to powering the world's first 100 percent renewables-powered city as part of the Red Sea Energy Storage project in Saudi Arabia. Mobile operators will also be able to lend a hand in producing energy, he said. "If they could leverage the 10 million mobile base stations globally and become energy producers, that will significantly reduce carbon emissions." For Jeffrey Sachs, President of the UN Sustainable Development Solutions Network and Director of the Center for Sustainable Development at Columbia University, cooperation is key to enable the green transition and sustainable development. "We need cooperative approaches, we need great companies like Huawei that provide the technologies, and then we need solutions to scale them up," Sachs said. Referring to the UN Sustainable Development Goals (SDGs), Mohan Munasinghe, former Vice Chair of the UN Intergovernmental Panel on Climate Change and co-recipient of the 2007 Nobel Peace Prize, said digital technology is both part of SDG 9 (Industry, innovation and infrastructure) and the key to SDG 13 (Climate action). "All of the goals have to be dealt with in an integrated way. You cannot deal with carbon neutrality and climate by itself," Munasinghe said, adding: "Digital technology supports inclusive green technologies, promotes industrial infrastructure that increases economic activity… and will lead us to eco-civilization in the 21st Century." Alexandre Reis Siqueira Freire, a Commissioner of Brazil's telecoms regulator Anatel, provided a case in point. Speaking at the same panel, he introduced the sustainable and integrated Amazon program, or PICE, which consists of 11 fluvial optical fiber backbone networks with nearly 9,000 km of extension. The program has benefited more than four million inhabitants in Brazil, Freire noted, adding that "the development of advanced telecommunication infrastructure in the Amazon region shall promote the integration of the communities and digital economy."

Huawei Moves Ahead with French Factory

Huawei detailed a move to build its first telecoms equipment plant in Europe, with work on the France-based facility to begin in 2024 and operations to commence by end-2025, China Daily reported. Zhang Minggang, deputy GM of Huawei France, reportedly told French media the €200 million factory would create 500 jobs. Huawei announced plans for a factory in northeast France in 2020, but work was delayed by the Covid-19 (coronavirus) pandemic. The company declined to comment on the news. Huawei has been hit with a number of restrictions on its 5G telecoms equipment in Europe since 2020. Sweden's telecoms watchdog barred local operators participating in a 5G auction from using products made by Huawei and ZTE. The French government warned mobile operators deploying Huawei 5G equipment they would not be able to renew licenses once they expire. The UK was one of the first European countries to ban the use of the vendor's products in next-generation networks. Huawei unveiled plans to invest €150 million in a cloud hub in the Republic of Ireland in 2022.

Huawei and etisalat by e& Demo Net Zero 5G Massive MIMO

UAE telecoms group etisalat by e& has announced a strategic alliance with Huawei to unveil what is described as the first net zero 5G Massive MIMO site deployment in the MENA region. This deployment is being showcased at Dubai Expo City, the venue of the 28th Conference of the Parties to the UNFCCC (COP28), underlining what etisalat by e& describes as its commitment to environmental responsibility and technological excellence. Powered entirely by renewable energy, this 5G site is said to represent the convergence of sustainability and cutting-edge wireless technology, notably massive MIMO technology, which improves capacity, coverage and user experience. At the same time the collaboration is said to usher in a new era of green network infrastructure, with the region's most energy-efficient 100% off-grid 5G site to date. It is powered by an innovative AI-based energy management system, expected to reduce CO2 emissions by around 26 tons per year. The site includes a number of solar power and smart energy storage solutions. For example, it uses advanced MetaAAU (64T64R with 384 antenna array), multi-band RRU and green antennas, improving energy efficiency up to 25% and multi-band RRU reducing radio weight up to 66%. In addition, managed by NetEco, an artificial intelligence system, the site's energy consumption is meticulously optimized, with a focus on real-time energy management.

XL Axiata and Huawei Launch First Commercial Use of Network Digital Map in Asia-Pacific

XL Asiata, a leading Indonesian provider of telecommunications services, and Huawei successfully completed the live network trial and initiated the first commercial launch of Network Digital Map with an Asia-Pacific carrier. The two parties are now committed to accelerate the deployment of end-to-end SRv6 and network digital map across XL Axiata's operations. This commercial use proves that iMaster NCE Network Digital Map — based on the end-to-end (E2E) SRv6 network architecture and software-defined networking (SDN) automation technology — helps XL Axiata foster a digital foundation for autonomous networks. This digital map enables traffic optimization and automatic load balancing, optimize bandwidth efficiency. In terms of latency improvement, it can complete optimization and self-healing in minutes, significantly boosting 4G/5G user experience and XL Axiata's convergence business consumer. When it comes to premium SRv6 private line services, differentiated SLA assurance is offered to tap into the potential of private line service growth, enabling monetization of premium private line packages.

Leading global ICT provider XL Axiata I Gede Darmayusa, XL Axiata's CTO said, "In line with its three core strategies — network convergence, digitalization and automation, and customer-centric approach — XL Axiata believes that network infrastructure construction is fundamental to digital transformation." Therefore, XL Axiata built a high-efficiency, future-proof, unified network infrastructure for mobile, enterprise, and home services. To support XL Axiata on its journey toward SRv6 automation and autonomous networks, Huawei launched Network Digital Map in iMaster NCE. Given that XL Axiata able to tailor-made requirements from industries, Huawei provides workflows that support B2B private line production and the rollout of diversified product packages, thereby driving new growth. Hui Wang, Vice President of Huawei's Data Communication Product Line, said that digital transformation will remain a focus of global development in the next decade, and 5G application experience assurance and the upgrade to differentiated premium private lines will represent two significant opportunities for CSPs to achieve further growth. "The Network Digital Map in Huawei iMaster NCE will help

XL Axiata build a digital foundation for autonomous networks and achieve visualization on one map, demarcation in one minute, and optimization in one click," Hui Wang said, adding that this will empower the digital ecosystem of SRv6 converged transport networks, improve the quality of enterprise customers' private lines, and deliver better user experience with 5G applications. Looking ahead, Huawei will double down on its cooperation with XL Axiata in reinforcing the digital foundation and ramping up the large-scale commercial deployments of Network Digital Map + E2E SRv6 automation with customer-centricity in mind. Together, XL Axiata and Huawei will deliver automatic and intelligent converged IP transport services with the best possible experience, lead digital transformation in the Asia-Pacific region, and set a benchmark for the global digital economy.

Huawei's Role in Accelerating Morocco's Digital Transition

At the inaugural International E-Health Forum in Rabat, Huawei made a strong commitment to advance Morocco's digital transition, particularly in the healthcare sector. The event, held at the Faculty of Medicine and Pharmacy, saw key industry players and government officials discussing innovative digital health strategies.

Commitment to Digital Transformation

David Li, Huawei Morocco's General Manager, emphasized the company's mission to support Morocco's unique digital transformation journey, especially in healthcare. He highlighted the multifaceted value of digitalization in improving governance, healthcare, education, and economic growth.

Social and Economic Impact of Digital Applications

Li focused on how digital applications can enhance governance and citizen well-being. He stressed the economic benefits of IT investments, fostering new industries and increasing output, and described digitalization as a necessary transition for countries.

Collaboration in Healthcare Digitalization

Li expressed Huawei's eagerness to partner in Morocco's digital transition, particularly in healthcare, to drive innovation and sustainable growth.

Cybersecurity and Privacy

Youssef Ait Kaddour, Chief Cyber Security Officer at Huawei, highlighted the company's focus on cybersecurity and privacy. He emphasized the importance of collaboration in technology, especially in healthcare.

Huawei's Role in Morocco's E-Health Strategy

Chakib Achour, Huawei's Head of Marketing and Business Strategy, discussed Huawei's role in supporting the Moroccan government's e-Health infrastructure development. He outlined Huawei's capabilities in providing cloud services and managing data centers.

Sharing Expertise and Developing Use-Cases

Achour highlighted Huawei's ongoing projects and training programs in Morocco, focusing on cybersecurity and privacy governance. He also mentioned Huawei's commitment to developing region-specific use-cases to contribute to Africa's digital evolution. Huawei's involvement in Morocco's digital transformation, particularly in healthcare, signifies a significant step towards integrating advanced technologies in key sectors. This commitment not only aligns with Morocco's digital strategy but also demonstrates Huawei's role as a catalyst in the digital evolution of the African continent.

stc Selects Nokia Orchestration Software to Deliver 5G Slicing and Strengthen Monetization Efforts

Nokia announced that its Digital Operations' Orchestration software has been selected by stc to orchestrate the Saudi Arabian operator roll out 5G slicing services to meet and customize its customers' increasingly diverse and specific network needs, in a deal that strengthens the operator's network monetization efforts. Nokia Orchestration Center, which is part of Nokia Digital Operations Center, automates the creation and lifecycle management of end-to-end 5G slicing at scale for personalized connectivity services for enterprises and consumers. Through intent-driven autonomous operations, the creation of end-to-end slices at scale will be accelerated from days to minutes and becomes highly reliable and programmable. The deal will be adding value in realizing stc's 'DARE' strategy (Digitize, Accelerate performance, Reinvent experience, and Expand scale and scope). Nokia Orchestration Center in stc, which aligns with TMF Open Digital Architecture (ODA), will provide a single, multi-tenanted platform for onboarding customers; orchestrating the design and deployment of multi-vendor services; and delivering against business-specific Service Level Agreements (SLAs). stc will use Nokia's Orchestration Center software for various use cases including slice and IP-VPN orchestration. Samar Mittal, VP, Cloud and Network Services (CNS), Global Business Center (GBC) at Nokia MEA, said: "We are excited to further build on the Nokia-stc partnership. This agreement enables stc to capitalize on new 5G business opportunities with premium, automated network slicing services that deliver an enhanced and on-demand customer experience, with all the requirements for scale and SLA fulfilment." Anwar Al-Subhi, GM Cloud Infrastructure, at stc said: "Providing new 5G slicing services and technology openness go hand in hand for stc, so we're pleased that Nokia has these capabilities that will provide our customers with specific network experiences, while giving us fresh automaton and operational efficiency benefits."

Nokia Upgrades Bouygues Telecom's IP Network for Increased Capacity and Energy Efficiency

Nokia expands its long-term relationship with Bouygues Telecom by supplying its market-leading FP5-based IP routers to modernize the operator's IP core network and expand the capacity of its security gateway solutions. Nokia's solution includes its 7750 Service Router (SR) platform, which is powered by its ground-breaking FP5 routing silicon. The FP5, a key part of Bouygues Telecom's selection, is a significant enabler for building higher-capacity IP networks that are more energy efficient. The FP5's future-ready 800GE capability will also accelerate Bouygues Telecom's ability to scale and sustainably meet future traffic growth. Nokia's system design innovation ensures an easy upgrade to FP5 from the existing FP4 platform, extending the network life of deployed systems while scaling capacity. Nokia will also evolve Bouygues Telecom's existing Nokia security gateway services by deploying its FP5 powered, SR-1 routers and the 7750 Extended Services Appliance (ESA) to meet the increased capacity and scalability demands of mobile broadband services. Jean-Paul ARZEL, Chief Technology Officer at Bouygues Telecom, said: "We have had a long relationship with Nokia, and we were looking for a reliable future-ready solution to help us evolve our IP network to match our growing customer base. The upgrade of our IP network with FP5 will allow us to balance capacity and sustainability to deliver the best customer experience." Frédéric Bénéteau, Vice President, West and Central Europe Market Unit at Nokia, said: "We are delighted to extend our relationship with Bouygues Telecom to support its strategic priorities. Nokia's IP routing solutions offer best-in-class scalability, efficiency and security, enabling Bouygues Telecom to confidently manage their growth initiatives as they continue delivering the exceptional experience their customers count on both now and in the future."

PCCW Fiber Stake Attracts Interest from UAE Investor

Abu Dhabi Investment Authority (ADIA) of the United Arab Emirates (UAE) is considering making a bid for a significant minority stake in the fibre-optic business of Hong Kong-based group PCCW. A report from Bloomberg valued the bid at around USD1 billion, but added that other Middle Eastern and Chinese investors were also lined up as potential buyers.

Tech Mahindra Launches a Global Crowdsourcing Platform, Populii

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering solutions, announced the launch of Populii, a crowdsourcing platform that enables gig workers to collaborate with leading organizations through micro jobs requiring human-in-the-loop services. The platform will create flexible work opportunities for the gig workforce while equipping businesses with reliable data from trained and qualified candidates to build competitive AI algorithms. Populii will create extensive opportunities for gig job seekers around data management, microtasks, and user studies with industry-leading enterprises. Gig jobs on Populii will include content rating, data collection, data transcription, and data annotation of multiple data types. It will also support enterprises in creating production-grade machine-learning models with the help of a qualified workforce and flexible crowd delivery models, enabling businesses to access a pool of skilled talent for a quick ramp-up. Populii will operate with three customer-centric principles – Advise, Annotate, and Acquire, which will help enterprises scan seamlessly and accelerate product development:

- Advise from Tech Mahindra experts with extensive domain knowledge and specialised skills across industry verticals
- Annotation will be quicker because of the ability to leverage Tech Mahindra's proven training models that offer high-quality machine-learning datasets
- Acquisition of multiple data types such as image, text, video, and speech in over 80+ languages

Birendra Sen, Business Head, Business Process Services,

Tech Mahindra, said, "Building competitive next-gen Artificial Intelligence (AI) solutions requires substantial time and tapping into talent beyond traditional workplaces. Populii, Tech Mahindra's crowdsourcing platform, connects enterprises with skilled gig workers globally, helping enterprises accelerate AI solution creation while reducing costs and boosting productivity. Gig workers get access to top AI projects and flexible earning opportunities. We believe Populii will become the go-to platform for both gig workers and enterprises, fueling innovation and fostering AI success." For job seekers, Populii will serve as the best-in-class community to find gig jobs that fit their schedule, enable upskilling, and ensure on-time payments. On the other hand, for enterprises, the platform will provide rich and accurate data that aligns with their business objectives. Populii is built on the foundation of DataMime, which Tech Mahindra acquired in 2020; the solution offers customizable workflows to cater to customer-specific requirements on a multitenant secured architecture. Populii's development is aligned with Tech Mahindra's NXT.NOW™ framework, which aims to enhance the 'Human Centric Experience', with a focus on investing in emerging technologies and solutions that enable digital transformation and meet the evolving needs of the customer.

Tech Mahindra Launches Navixus™ to Help Customers Increase Productivity and Generate Revenue Through Digital Transformation

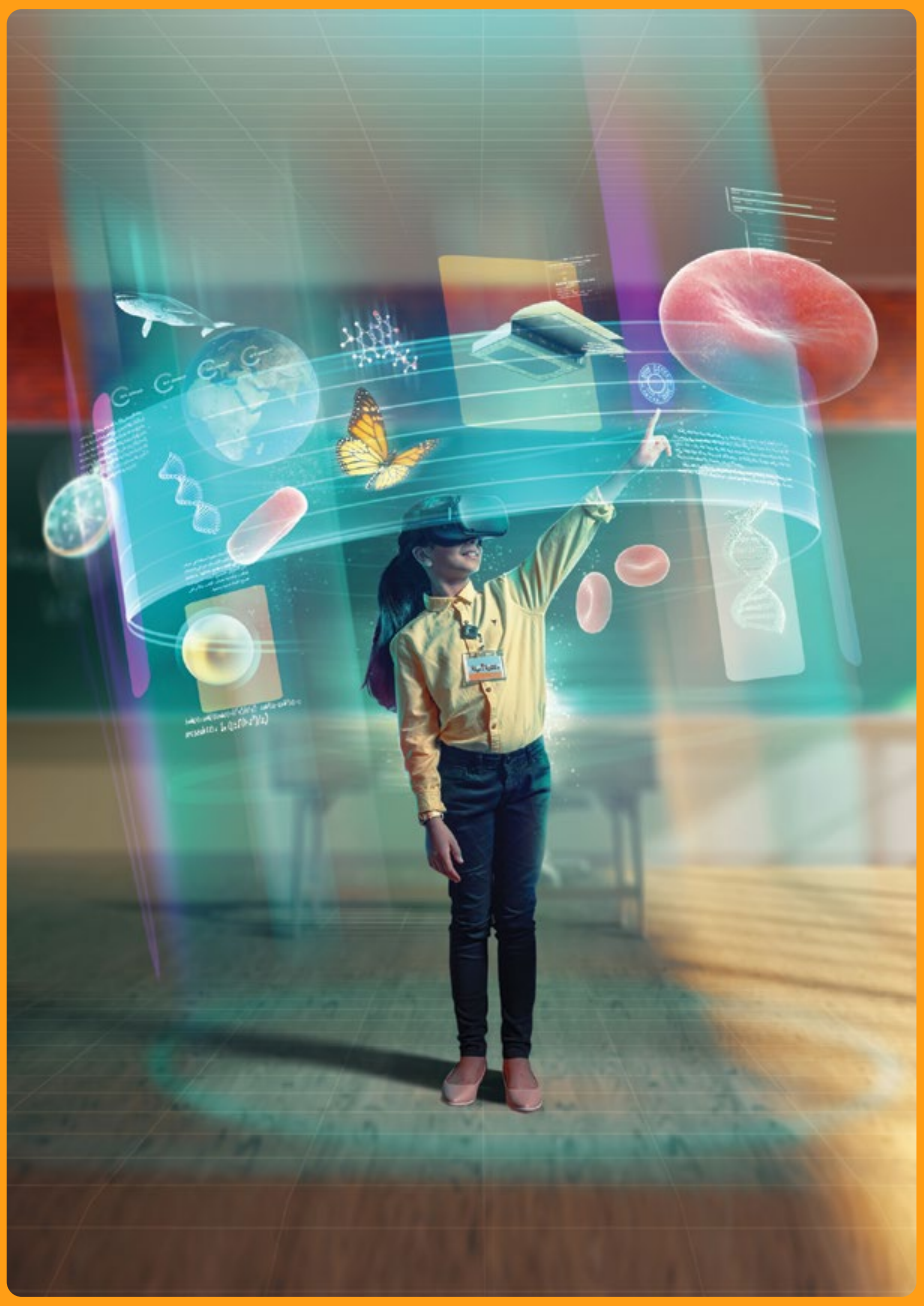
Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering solutions, has announced the launch of a new business unit Navixus™, within Tech Mahindra Business Process Services (BPS). Navixus™ will combine Tech Mahindra's Business Process Services' automation, analytics, and consulting with Eventus' customer experience (CX) and transformation capabilities to offer a holistic digital transformation suit to customers. Navixus™ offers a suite of expanded and enhanced capabilities, including consulting, operational excellence, intelligent automation, generative artificial intelligence, CX technologies. The new business unit will also provide Contact Center as a Service (CCaaS), advanced analytics, managed services, and will guide customers from optimization to transformation. According to industry reports, while nine in ten large companies globally have a digital and artificial intelligence transformation underway, they have only captured 31% of the expected revenue lift and one quarter of expected cost savings from the effort. To tackle this, Navixus™ will assist businesses in addressing the challenges arising from heightened customer expectations, omnichannel interactions, budget constraints, and inefficient processes across various industries. Birendra Sen, Business Head, Business Process Services, Tech Mahindra, said, "Today many enterprises are grappling with the challenges associated with adapting evolving technologies, ensuring robust data security, addressing skill gap, managing complex transformations, and navigating an extremely dynamic marketplace. Navixus™ aims to partner with our customers in this journey through a consulting-led approach and value-accretive suite of offerings that helps them continually deliver superior experiences." The new business unit, led by Tech Mahindra's consulting experts with decades of experience, will offer invaluable insights from global implementations and integration with major CX technology providers. Navixus™ will act as a complete digital transformation suite that caters to a customer's future goals by unifying every transformative technology and offering, bringing together all capabilities under one roof. This will empower Tech Mahindra's customers with future ready business capabilities that has a strong emphasis on customer centricity. Rob Rutledge, Business Unit Head of Navixus™ & CEO, Eventus, said, "The pace of change required for our clients to remain competitive

and exceed the increasing demands of their customers has never been greater. Companies need to evolve and automate or be replaced by those who proactively modernize their operations. Navixus™ will provide customers the experience from global implementations and the integration of nearly every major CX technology provider." Eventus, a key player in providing comprehensive customer engagement solutions including strategy consulting, cloud-based tools, and managed services, was acquired by Tech Mahindra with the aim of augmenting its consulting-led front office solutions and move up as a valuable BPS partner. Navixus™ aligns with this vision, further enabling Tech Mahindra to deliver industry leading digital-first solutions to its global customers.

Space Tech Firms Yahsat and Bayanat to Merge

Two United Arab Emirates (UAE) space tech companies are to merge to create a AED15 billion (USD4.1 billion) enterprise. Geospatial solutions provider Bayanat and satellite communications firm Yahsat will combine to create an AI-powered space technology company with global reach. The proposed transaction will be executed through a share swap, with Bayanat as the remaining legal entity. Bayanat and Yahsat shareholders will own 54% and 46% respectively of the new combined company. Bayanat's majority owner G42 will take a 42% stake, while Yahsat shareholder Mubadala will have a 29% interest. The merger, which is subject to regulatory approval, is expected to close in the second half of 2024. Tareq Al Hosani, Chairman of Bayanat, said: 'This merger will unite two leading home-grown companies to create the MENA region's first AI-powered space technology company. Leveraging our complementary assets, capabilities and ambitions will allow

us to expand across the space value chain and offer an unparalleled service to our combined customer base.'



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REGIONAL NEWS

CST Among the Top 3 Government Entities in the Digital Transformation Index 2023

The Communications, Space and Technology Commission (CST) ranked 3rd place in the Digital Transformation Index, scoring 93.25%, besides achieving the first place among government agencies in the technology, media and logistics group. The awarding ceremony took place on the sidelines of the Digital Government Forum which was held on 19-20 December 2023 in Riyadh. With the presence of H.E. Eng. Abdullah Alswaha, the Minister of Communications and Information Technology, H.E. Majed bin Abdullah Al-Hogail, Minister of Municipal and Rural Affairs and Housing, and H.E. Fahd bin Abdurrahman Al-Jalajel, Minister of Health, CST received the award of Digital Transformation Index 2023, represented by MR. Naif Sheshah, the Assistant Deputy Governor for Planning and Development. This achievement stems from CST's efforts in its digital transformation journey during 2023, which enhanced the levels of regulatory excellence through implementing over 60 digital projects in 2023, as well as achieving the 1st place in the Emerging Technology Adoption Readiness Index among government agencies, besides designing a development plan in human resources which includes various initiatives and programs in building skills. It is worth noting that CST had achieved 5th place in Digital Transformation Index in 2022, with a 90.80%; in addition to achieving the 1st place in the technology, media and logistics group.

Telecom Sector Plays Key Role in Bahrain's Economic Progress

His Royal Highness Prince Salman bin Hamad Al Khalifa, the Crown Prince and Prime Minister, affirmed the role of the telecommunications sector and the importance of strengthening it to further its contribution to the Kingdom's national economy. HRH Prince Salman was speaking as he met yesterday with the Chairman of the Bahrain Telecommunications Company (Beyon), His Excellency Shaikh Abdulla bin Khalifa Al Khalifa, and the Deputy Chairman of Beyon and Chairman of Bahrain Network (BNET), HE Shaikh Ali bin Khalifa Al Khalifa, at Gudaibiya Palace. HRH the Crown Prince and Prime Minister commended the developments made in the telecommunications sector, which reflect the Kingdom's commitment to adopting innovative solutions that achieve the desired goals. He expressed pride in the Kingdom's national workforce for their successes in this vital sector, which supports the Kingdom's comprehensive development process, under the leadership

of His Majesty King Hamad bin Isa Al Khalifa. His Royal Highness congratulated BNET for winning the award for the Best Fiber Deployment Award at a global level.

Plans and programmes

HRH Prince Salman was briefed on the BNET's plans and programmes and the company's efforts to attract specialized and skilled national cadres to enhance its telecommunication services. Shaikh Abdulla bin Khalifa and Shaikh Ali bin Khalifa expressed their appreciation for His Royal Highness's interest in the telecommunications sector, which supports companies operating in this sector. His Highness Shaikh Mohammed bin Salman bin Hamad Al Khalifa, and the Minister of Finance and National Economy, HE Shaikh Salman bin Khalifa Al Khalifa, also attended the meeting.

TDRA, DMA Sign MoU to Control Maritime Device Approvals

The UAE Telecommunications and Digital Government Regulatory Authority (TDRA) will improve the regulatory framework for maritime business operations to enhance efficiency in the sector. For this it has signed a Memorandum of Understanding (MoU) with the Dubai Maritime Authority (DMA) of Dubai Ports, Customs and Free Zone Corporation (PCFC). TDRA will lend a streamlined and cohesive procedure for acquiring the necessary authorizations for maritime vessels through the Dubai Maritime Authority. The MoU aims to simplify the process of granting wireless device authorizations for recreational marine vessels exceeding 10.6 meters in length, in addition to all classes of commercial marine vessels operating within the territorial waters of the UAE. Eng Majed Sultan Al Mesmar, TDRA Director General, commented: "Our collaboration with Dubai PCFC aligns seamlessly with our shared objectives, in harmony with the "We the UAE 2031" vision and the directives of our wise leadership. These goals emphasize the imperative of synergizing efforts to establish a cohesive digital ecosystem that fosters a knowledge-based society and economy at the national level. We highly value the dedication of PCFC officials in leveraging TDRA's role as enabler of digital transformation. We affirm our unwavering readiness to collaborate with both federal and local entities in all projects and initiatives aimed at shaping the envisioned digital future." Sheikh Dr Saeed bin Ahmed bin Khalifa Al Maktoum, Executive Director of Dubai Maritime City Authority, affirmed that the MoU signed with TDRA to work closely with all government entities to streamline service application processes for an enhanced customer experience within the Dubai Government. Registration and licensing He indicated that the registration and licensing of marine vessels are subject to assessments to verify their compliance with approved technical specifications and adherence to maritime standards, requirements and regulations. These measures are crucial for ensuring the safety of the vessels' users. This collaboration coincides with a period of substantial growth in the UAE's maritime sector, characterized by an increased demand for licenses and wireless device authorizations. This heightened demand necessitates more efficient regulatory procedures than ever before. With the implementation of this partnership, stakeholders within the maritime industry can anticipate a streamlined, effective, and hassle-free licensing process.

PTCL Chief Explains Acquisition of Telenor Pakistan

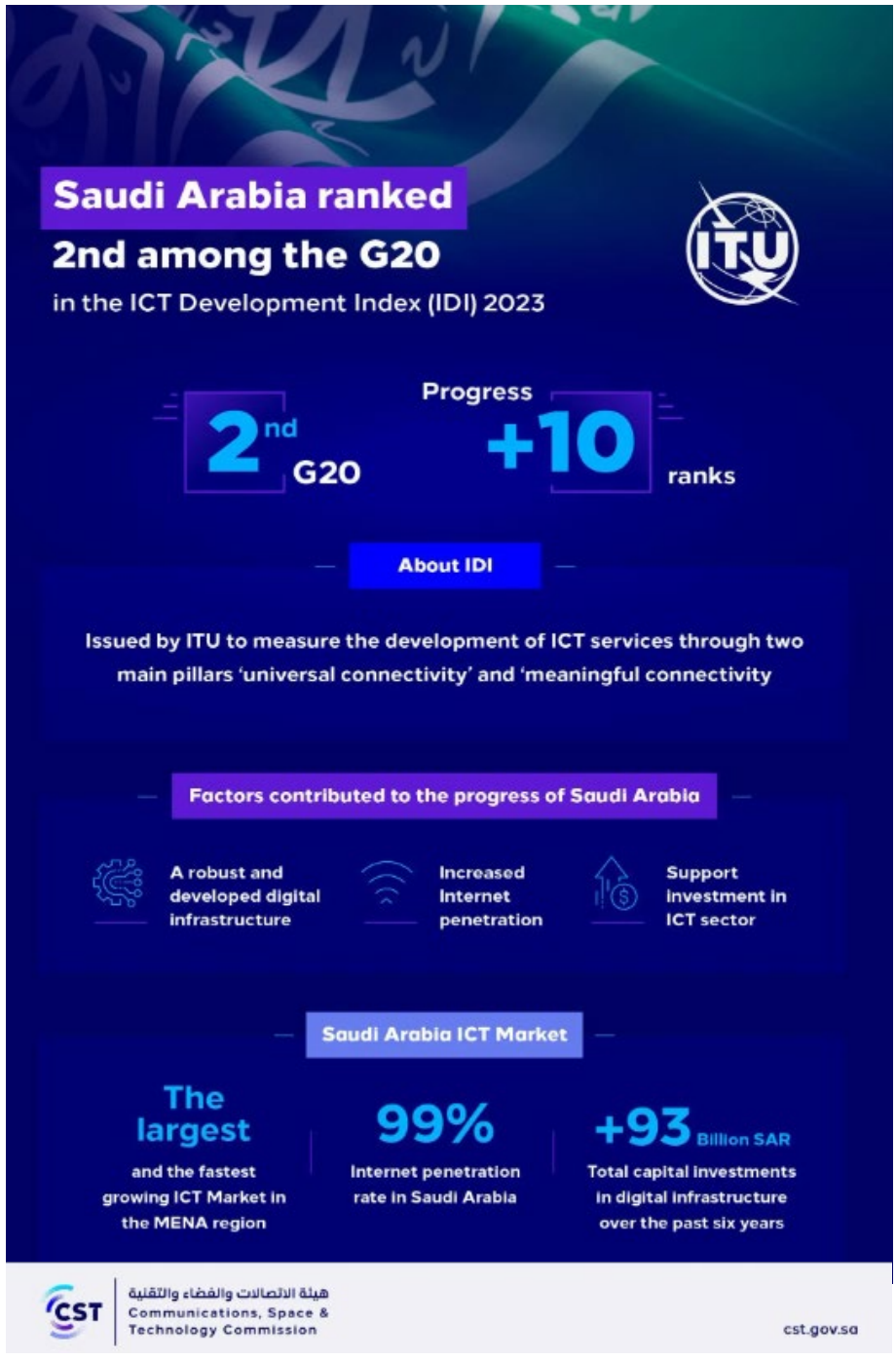
President and Group CEO, PTCL and PTML, Hatem Bamatraf stressed that Pakistan's telecom sector is just big enough for three operators to create value. Bamatraf was speaking to an audience during an event in Islamabad that was held after PTCL formally announced its acquisition of Telenor Pakistan. In a notice to the Pakistan Stock Exchange earlier in the day, PTCL said it has entered into a Share Purchase Agreement (SPA) with the shareholders of Telenor Pakistan (Private) Limited (TPL) for the acquisition of 100% shares for Rs108 billion (roughly $385 million). While responding to a query from Business Recorder at the event in Islamabad, Bamatraf explained that the sector has seen erosion of value because there are so many players operating in the space. "Relooking and consolidating the market into three players will actually protect the value," Bamatarf said. He said the change in the structure of the market was due since the four companies have not been in a healthy position. He said he was expecting the approval of the transaction by the regulators to be quick as well, stressing that this is actually a correction to the market. "We don't want to drag it for months," he said. Baratarf said that many will benefit from this transaction "but the primary beneficiary would be the customer". He added this will lead to technology advancements as well such as 5G, AI, IOT, and improvement in infrastructure. While talking to Business Recorder, PTCL Chief Financial Officer Nadeem Khan said synergies will be the biggest drivers for profitability for PTCL. As a group, he said that it is estimating Rs45 billion EBITDA after the Telenor acquisition immediately, which will improve profitability and add to synergies. "Call it cash flow if you don't like EBITDA. It will be equal, in just over two years, to the investment of Rs108 billion," he said. "We will reduce operating and capital expenditures, and we will be able to serve a much larger customer base, offer much better coverage and quality. Better coverage is going to drive both the topline and EBITDA," he earlier said in the program. On the issue of how payment will be made for Telenor transactions and whether the State Bank will allow such a huge transaction in dollars, Khan said their investors are foreigners so there will be no issue as such, hinting that payments will be made abroad from investors or financiers abroad. When this transaction materializes, the consolidated company will command a share of 37% in the cellular mobile operators' space (adding up market share of Ufone and Telenor as per Pakistan Telecommunication Authority (PTA) data), which is almost equal to Jazz, the current market leader in Pakistan.

Bangladesh's Mobile Users Reach 190.36 million

The total number of Bangladesh's mobile phone users hit over 190 million at the end of November this year, showed the latest statistics of the country's telecom regulator. According to data from the Bangladesh Telecommunication Regulatory Commission (BTRC), the number of subscribers in the South Asian country reached 190.36 million in November 2023. Currently, Bangladesh has four mobile companies, three of which are foreign-backed cell phone operators. The number of subscribers of mobile operators - Grameen Phone, Robi Axiata, Banglalink Digital Communications and Teletalk Bangladesh - stood at 82.14 million, 58.38 million, 43.38 million and 6.46 million respectively at the end of November, the BTRC data showed. The number of Bangladesh's mobile phone subscribers was 180.20 million at the end of December 2022.

Saudi Arabia Ranks 2nd Among the G20 in the ITU's ICT Development Index 2023

Saudi Arabia jumped 10 ranks to achieve 2nd place among the G20 countries according to ITU's ICT Development Index (IDI) 2023, which monitors the economies of 169 countries to measure their progress in ICT services through two main pillars 'universal connectivity' and 'meaningful connectivity', and evaluate some factors such as providing a high quality infrastructure, as well as maintaining a safe and secure internet for everyone. The IDI reflects Saudi Arabia's strong ICT infrastructure and the affordable and reliable services, which directly contribute in the development of the national digital economy, attract investment and increase the size of Saudi ICT market. Moreover, the index highlights Saudi Arabia's commitment to develop its ICT infrastructure and services to boost economic growth and create opportunities, which places the Saudi ICT market as the largest and the fastest growing in the MENA region. It reflects the robust and developed digital infrastructure, with an increase of %99 of Internet penetration rate in Saudi Arabia. Therefore, contribute to the goals of Vision 2030, to achieve international leadership in digital growth, by investing more than 93B SAR as total capital investments in the digital infrastructure over the past six years, which placed Saudi Arabia among the leading positions in international indicators. The ICT Development Index (IDI) is published by the ITU to monitor the progress of the ICT sector since 2009, while providing inclusive and transparent data and methodology submitted by Member States and experts in the field.

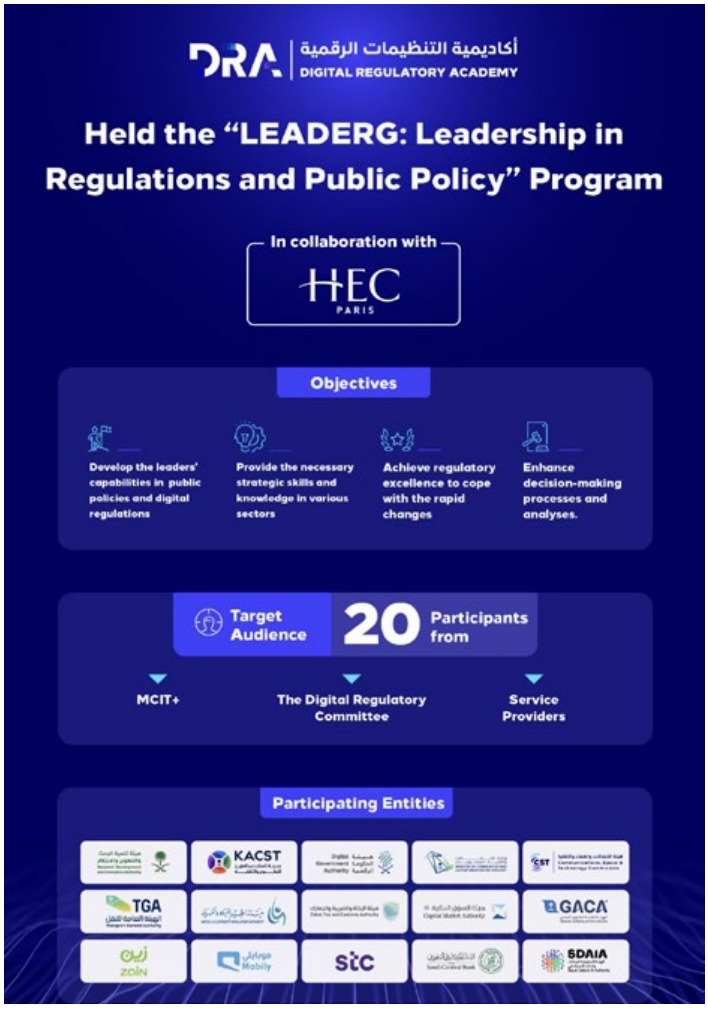


Private Wireless Network Services for the Offshore Energy Sector

Ooredoo Qatar and Nokia have launched private wireless network services for the offshore energy sector, with an initial capacity of 20,000 connections for the offshore grid. The solution offers a native offshore system designed to deliver services seamlessly integrating with the existing commercial core, enabling customers to improve operational efficiency and reduce interruptions from onshore connectivity. The integration equally enables the efficient handling of interoperability and interservice handovers, making communication between offshore and onshore locations smoother and more reliable than ever before, while managing latency issues through localised data services to improve process efficiency. Replacing legacy Wi-Fi and WiMAX technologies, the partners say their new dedicated network solutions 'will empower customers to digitalise and automate operations.' Elsewhere, Ooredoo Qatar and Qatar National Broadband Network (QNBN) are partnering on a Doha Port project which involves implementing smart connectivity solutions in line with the aims of the state's 'Qatar National Vision 2030'.

Tunisia Ranks 8th in ICT Development in Africa

Tunisia ranks 8th in Africa in terms of information and communication technology (ICT) development, with a score of 75.4, according to a recent report published by the International Telecommunication Union (ITU). In the top 5 African countries, Morocco stands out with a score of 85.1. Mauritius ranks second with a score of 81.7, followed by the Seychelles (80.9), South Africa (80.5) and Libya (79.4). The report also highlights the significant progress in ICT development in Africa, with 20 of the 45 countries surveyed scoring above 50. Algeria ranks sixth (77.8), followed by Egypt (75.8). Tunisia and Botswana share 9th place with 74 points. Gabon completes the African top 10 with a score of 72.9. Entitled "Measuring digital development: The ICT Development Index 2023", the report assesses ICT progress in 169 countries and territories around the world based on 10 key indicators. These indicators include the percentage of people using the internet, mobile broadband penetration, mobile broadband internet traffic, mobile data prices, voice services and mobile phone ownership. Internationally, the United Arab Emirates topped the rankings with a perfect score of 100, ahead of the United States (99.1), Qatar (98.7), Kuwait (98.2) and Denmark (96.9).



The Digital Regulatory Academy Held the "LEADERG: Leadership in Regulations and Public Policy" Program, with the Participation of Senior Leaders from Regulatory Entities and The Private Sector

CST's Digital Regulatory Academy has held the "LEADERG: Leadership in Regulations and Public Policy" Program in Paris, in collaboration with (HEC) to develop the leaders' capabilities in public policies and digital regulations, and provide them with the necessary skills and knowledge in cross-sectoral analysis and evaluation, in addition to achieving regulatory excellence to cope with the rapid changes in the field, and enhance decision-making processes and analyses. The 5-days program was attended by senior leaders from MCIT+, service providers, and the Digital Regulatory Committee. The executive program introduced the public policies and digital regulatory roadmap, and highlighted the best international practices to build regulations and policies. In addition, the program was presented by the world's best experts and leaders in digital regulations. Also, as part of the program, participants visited a number of prominent public institutions in the field of digital regulations and public policy. The program is part of the Digital Regulatory Academy initiatives that seeks to develop national capabilities, expand leaders' expertise in the field of digital regulations and public policy, and ensure a collaborative coordination between regulators and international institutes through strategic partnerships to leverage from the best expertise and enhance the quality of services.

UAE Telecoms: 22m Mobile Subscribers, 97% 5G Coverage, 3.8m Broadband Subscribers

The UAE has more than 22m mobile phone subscribers and almost 4m broadband internet subscriptions, according to TDRA data. The Telecommunications and Digital Government Regulatory Authority (TDRA) released the Digital Enablers Report 2023, showcasing TDRA's collaborative efforts with partners in advancing digital transformation enablers and infrastructure in the UAE. The report includes key indicators and highlights pioneering achievements in this domain.

UAE mobile phone subscribers

The report indicates that the user base for UAE Pass has grown to 6.84 million, enabling them to access 15,000 digital services offered by 232 service providers. Additionally, the "UAE Verify" digital verification platform processed 6,997,635 documents. In the API Marketplace, transactions reached 1,273,464, while the Government Service Bus (GSB) handled more than 1.5bn transactions. Furthermore, the customer relationship management system "Tawasul 171" addressed more than 500,000 cases. Regarding the performance of the Federal Digital Network (FEDnet), the Digital Enablers Report reveals the presence of 5,076 virtual servers constituting the cloud infrastructure. A total of 40 entities utilize the high-performance Internet portal, while 46 entities benefit from the cloud infrastructure, and 35 entities make use of the backup service. The report further highlights that TDRA Virtual Academy boasts a registration count of 34,000 individuals, all of whom benefit from a diverse array of 180 training courses. TDRA Director-General Majed Sultan Al Mesmar said: "The report reflects the team spirit among government entities, including local digital governments, with whom we collaborate to realize and enhance integrated digital experiences. "This aligns with our journey towards a digital knowledge society and economy, in accordance with 'We the UAE 2031' vision and the directives of our wise leadership, to focus on digitization as a cornerstone for the future economy and the implementation of smart city concepts." In the Telecommunications sector, the report indicates that mobile network coverage has achieved 100 per cent in various regions of the country, while the 5G network spans 97.03 per cent of the total populated areas. According to the report, the number of mobile phone subscribers has reached 22,178,236, with 3,774,064 subscribers to mobile broadband services. This positions the UAE the first globally in mobile network coverage, rate of mobile broadband subscriptions, and percentage of Internet users. Additionally, the UAE ranks second globally in the rate of mobile subscriptions and sixth globally in international Internet bandwidth per user. Furthermore, the UAE has maintained its global leadership for the fourth consecutive time in FTTH coverage, standing at 97 per cent, according to data from the FTTH Council Europe. On the global stage, as per the report, the UAE achieved significant results, ranking:

- 5th in Global Cybersecurity Index (GCI)
- 9th in Telecommunication Infrastructure Index (TII)
- 12th in Online Service Index (OSI)
- 13th in E-Government Development Index (EGDI)
- 18th in Digital Participation Index
- 22nd in Government AI Readiness Index

World Bank Appoints UAE to Head Cloud Computing Advancement Efforts

The United Arab Emirates (UAE) has been selected to chair the World Bank's Cloud Computing Working Group, underscoring the country's notable achievements in digital transformation. Dr. Bushra AlBlooshi, Senior Consultant of Research and Innovation at Dubai Electronic Security Centre (DESC), led the group's meeting, succeeding Singapore and the United Kingdom in the co-leadership role. Comprising 27 countries, international entities, and major companies, the working group aims to advance global standards and practices in cloud computing. Hamad Obaid Al Mansoori, Director General of Digital Dubai, emphasized that the UAE's appointment to lead the World Bank's body reflects the country's outstanding reputation in new technology and cloud computing. Al Mansoori highlighted the significance of cloud computing as a crucial element in smart cities and digitized knowledge societies. AlBlooshi stated that the UAE's leadership in the working group underscores the country's prominent position in future technologies, particularly in cloud computing. She praised the UAE for establishing itself as a global hub for technological innovation and serving as an inspiring model for digital transformation. World Bank working groups bring together experts from public and private

sectors globally to collaboratively develop knowledge products, including playbooks, how-to notes, surveys, and benchmarks. This appointment reaffirms the UAE's influence and leadership in the realm of future technologies and digital advancements.

ITIDA, Siemens Forge Strategic Partnership to Propel Egypt's Digital Transformation, Talent Development

The Information Technology Industry Development Agency (ITIDA), serving as Egypt's Ministry of Communications and Information Technology's (MCIT) executive IT arm and a hub for foreign investors in IT and business services, has signed a Memorandum of Understanding (MoU) with Siemens Digital Industries Software. This global leader in digital transformation solutions is partnering with ITIDA to expand its research and development in Egypt, nurture local talent, and promote technological innovation. The MoU signing, attended by Prime Minister Mostafa Madbouly and Minister Amr Talaat, signifies the government's robust support for the IT sector and a mutual pledge to foster technological progress and economic growth in Egypt. Under the MoU, Siemens Digital Industries Software will receive ITIDA's backing to broaden its Egyptian operations, especially in engineering, research and development (ER&D), and electronics design. The agreement also promotes joint efforts to enhance local talent through top-tier training in cutting-edge electronic design technologies and to generate job opportunities in line with Siemens' growth objectives in Egypt. Minister Talaat remarked on the partnership's significance: "This collaboration marks a key milestone in Egypt's digital evolution, affirming our commitment to elevate Egypt's standing in the electronics industry via the 'Egypt Makes Electronics Initiative.' It acts as a springboard for cooperation, knowledge exchange, and tech advancement, driving Egypt's ICT sector to global prominence." The ITIDA-Siemens alliance aims to bolster Egypt's IT and electronics industries and generate employment for its youth. Egypt boasts the largest, youngest talent pool in the Middle East and the second-largest in EMEA, with approximately 600,000 university graduates entering the job market annually. Capitalizing on this talent reservoir, Siemens Digital Industries Software intends to significantly increase its Egyptian footprint by hiring at least 20% new local employees each year, targeting a workforce of 1800 within three years. This expansion will be supported by national training programs to boost export capabilities. Moreover, the partnership is dedicated to empowering local electronics startups and nurturing an innovation ecosystem, offering initiatives like access to electronic design automation (EDA) tools, training, mentorship, and technical assistance. Mike Ellow, Executive Vice President of Siemens EDA, commented: "Today's agreement underscores several key achievements. It recognizes Siemens EDA's 28-year legacy as a frontrunner in advanced semiconductor and electronics design technology in Egypt, made possible by the country's exceptional engineering talent. It also marks a deepened collaboration with MCIT/ITIDA to expand Egypt's tech ecosystem." Ellow added: "This agreement reinforces our ongoing collaboration with the government, academia, and local entities to support our advanced development center's growth in Egypt for the next three years. We are committed to aiding local SMEs in semiconductor and electronics design and to establishing Egypt as a regional tech hub." The ITIDA is set to provide comprehensive logistical support to Siemens Digital Industries Software, including connecting with local talent and engineers. ITIDA will also recommend Siemens for government incentives aimed at the electronics design sector, reinforcing Egypt's ambition to become a premier destination for electronics design and digital industries. Ahmed El-Zaher, CEO of ITIDA, emphasized the strategic importance of the partnership: "This collaboration transcends mere operational expansion; it's a critical move to accelerate our local IT and high-end service exports. Aligning with Siemens Digital Industries Software, a global tech giant, we aim to boost Egypt's global tech competitiveness and create ample job opportunities for our rich talent pool and skilled workforce." As the catalyst for Egypt's IT sector, ITIDA is dedicated to fostering a business-friendly environment. Supporting Siemens Digital Industries Software's growth plans, ITIDA seeks to draw foreign direct investment, enhance ICT service exports, and solidify Egypt's role as a regional hub for electronics design and digital solutions, in harmony with the Digital Egypt Strategy for the Offshoring Industry (2022-2026). Renowned for its trailblazing solutions that empower digitalization, Siemens Digital Industries Software is set to expand its Egyptian operations, thereby strengthening its local presence and contributing to a dynamic electronics design and digital industry ecosystem. In this partnership, Siemens Digital Industries Software will actively collaborate with local entities, including esteemed academic institutions (National Telecommunication Institute, Information Technology Institute, and the American University in Cairo), research centers, and industry associations. The

goal is to facilitate knowledge sharing, research cooperation, and best practice exchanges to spur innovation and elevate Egypt's standing in the global marketplace. Mike Ellow, Executive Vice President of Siemens EDA, affirmed the agreement's significance: "Today's signing marks our commitment to enhancing our Egyptian presence and collaborating with MCIT/ ITIDA on mutually beneficial initiatives." The MoU was signed by Ahmed Elzaher and Hazem El Tahawy, Vice President for Siemens Digital Industries Software MENA, aligning with the national "Egypt Makes Electronics" initiative. This initiative aims to transform the electronics industry into an economic growth engine for Egypt. By nurturing highly skilled professionals and fostering innovation, Siemens Digital Industries Software and ITIDA are actively contributing to Egypt's strategic goals for economic diversification and sustainable development.

UAE, Indonesia Tie Up to Boost Digital Infrastructure

The Ministry of Investment of the UAE and the Ministry of State-Owned Enterprises of the Republic of Indonesia have signed a Memorandum of Understanding (MoU), to propel the digital economy in Indonesia. The agreement aims to set out a framework for investment cooperation in digital infrastructure, with a special focus on data center projects in Indonesia. The total capacity of data centers developed under this MoU can reach up to 1,000 MW. The MoU was signed by Mohamed Hassan Alsuwaidi, Minister of Investment of the UAE, and Erick Thohir, Minister of State-Owned Enterprises of Indonesia. Data centers, which are critical parts of the digital economy's infrastructure, provide organizations with a secure option to store critical data and run applications and have become a priority for Indonesia. As the fourth most populous country in the world, Indonesia has a thriving digital economy driven by a proliferation of start-ups. Already today, there are more than 60 hyper-scale data centers in the country, and the local data center market is expected to witness a compound annual growth rate of 14% between 2023 and 2028. Fostering partnerships between the public and private sectors in the UAE and Indonesia is an area of focus under the agreement. The two nations will explore numerous forms of cooperation under the MoU, including investment partnerships, policy research collaboration, certification development, innovation and R&D. Alsuwaidi said: "The agreement underscores the deepening bond between our nations and is testament to the UAE's commitment to collaborate with countries in promising fields such as the digital economy. We are committed

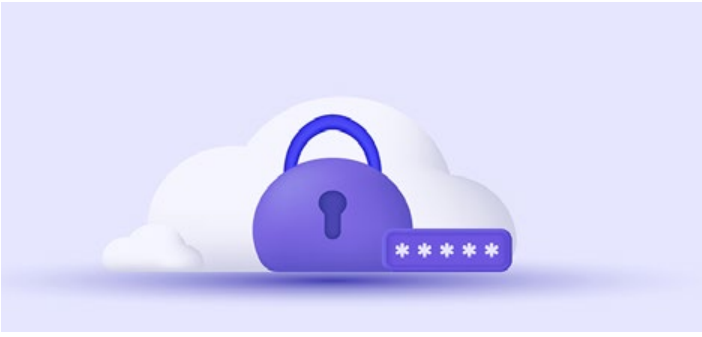
to supporting and accelerating all developmental efforts in Indonesia, and this agreement will contribute to facilitating an increase in data centre capacity, with new facilities promising to unlock opportunities that reinforce the country's path towards creating a prosperous future." Thohir said Indonesia is a leader in the field of data centers in the Southeast Asia region. One of the programmes carried out is encouraging PT Telkom Indonesia (Persero), or Telkom, one of the state-owned companies in Indonesia, to become the data center leader in Southeast Asia. "Telkom is investing optimally to ensure its data center supports Indonesia's digital economy, which will be the largest in Southeast Asia. Telkom is also focusing on infrastructure, one of which is Mitratel, which had an IPO and became the largest IPO on the stock exchange for the subsidiary category," said Thohir. This collaboration with the UAE, according to Thohir, will accelerate the development of economic infrastructure, in line with the sharpening of the strategic digital technological focus that has been implemented. The MoU builds on strong bilateral relations between the UAE and Indonesia. Trade volume between the two countries reached approximately $5 billion in 2022, showcasing an increase of around 20% from the previous year, when it amounted to $4 billion. Following the UAE-Indonesia Comprehensive Economic Partnership Agreement (CEPA) which came into effect in September 2023, annual bilateral trade is expected to increase to $10 billion over the course of the next five years.

CST Announces the Start of the "Developing E-Waste Management Regulations" initiative

The Communications, Space and Technology Commission (CST) announced the start of the "Developing E-Waste Management Regulations" initiative, launched in partnership with the International Telecommunication Union (ITU), to implement regulations in Zambia, Rwanda, and Paraguay. The announcement was made during COP28, which was attended by H.E. Dr. Mohammed Altamimi, CST Governor, Mr. Tomas Lamanauskas, Deputy Secretary-General of the ITU and representatives of beneficiary countries. CST indicated that this initiative aims to reinforce the Kingdom's ongoing commitment to lead global efforts in digital sustainability, accelerate the transition to green practices by introducing regulations that promote a circular economy; in addition to offering innovative solutions for mitigating e-waste globally, which currently amounts 54 million tons annually, only 17% of which is recycled. In addition, Mr. Tomas Lamanauskas, Deputy Secretary-General of the ITU, highlighted the importance of creating strong regulations and legislation to address the e-waste in both the private and public sectors, and transition to the circular economy, which is one of the top solutions in facing the negative impact of e-waste on the environment. Moreover, Mr. Lamanauskas encouraged the adoption and implementation of such regulations by all regulators, to accelerate the shift towards green practices. CST participated at COP28 to promote Saudi Arabia's endeavors to lead global efforts in enabling digital sustainability, which is in line with the Kingdom's transformation to circular economy, as it has worked on several qualitative initiatives that have contributed to raising awareness and publicizing the best technology practices for a sustainable future and society.

Organizations in UAE and Saudi Arabia Lose $2.3m a Year to Cloud Breaches

Inadequate cloud security practices are leaving organizations in the UAE and KSA susceptible to data breaches, according to new research from Illumio. The Illumio Cloud Security Index found that 54% of breaches in the UAE and KSA now originate in the cloud, costing organizations $2.3m USD annually. This is particularly concerning given that: Over three quarters (76%) of respondents are running high-value applications in the cloud. 100% of respondents admit to storing sensitive data in the cloud.98% say a cloud breach would impact their operations, with nearly half (46%) admitting a cloud breach would make maintaining normal operations impossible. 70% of respondents believe that cloud security in their own company is inadequate and represents a major risk (higher than the global average (63%). Fears about inadequate security practices are likely down to an inability to see and respond to risks in the cloud; 97% say they need better visibility of connectivity with third-party software. This lack of visibility is impacting organizations' ability to respond to attacks, with 97% saying they need to improve their reaction time to cloud breaches. 98% are also concerned that the connectivity between their cloud services and on-prem environments increases the likelihood of a breach. Respondents are also concerned about the consequences of attacks via the cloud. Service downtime is deemed to be the biggest risk in the UA (38%, a lot higher than the global average of 29%), demonstrating the criticality of the cloud for business. This was followed by a loss of productivity (35%), and lawsuits (33%, a lot higher than the global average of 21%). It is, therefore, no surprise that improving cloud security is a high priority for 89% of respondents in the coming year. Zero Trust Segmentation (ZTS) is believed to be the solution with 89% believing it has the potential to significantly improve their own cloud security, yet only 33% use ZTS across both on-prem and in cloud environments, a lot lower than the global average (48 percent). Ashraf Daqqa, Regional Director for META at Illumio, said: "We're seeing rapid adoption of the cloud in the UAE and KSA, but as cloud adoption increases, so do the risks." "As the attack surface becomes larger and more complex, it's critical that organizations have real-time visibility over their applications and workloads, as well as the ability to rapidly contain threats in the cloud. By introducing ZTS as a part of a proactive Zero Trust security strategy, organizations can significantly improve their cyber resilience and reduce the cost and impact of cloud breaches."



Zain, Ooredoo and TASC Restructure to Form $2.2 Billion Regional Towerco

The new company is expected to achieve a run-rate revenue of $500 million annually Zain Group, Ooredoo and TASC Towers Holding have announced the signing of a definitive agreement to combine all their tower assets to create a huge $2.2 billion dollar entity. The three firms, based in Kuwait, Qatar, and Dubai, respectively, entered into talks in July regarding the deal, which combines their collective 30,000 towers in Qatar, Kuwait, Algeria, Tunisia, Iraq, and Jordan, creating the Middle East and North Africa's largest tower company. The newly created entity will be worth approximately $2.2 billion, with Ooredoo and Zain to each own a 49.3% stake in the newly restructured entity through a process of an asset and cash equalization. The founders of TASC, which is the largest independent towerco in the MENA region, will take the remaining shares, through Digital Infrastructure Assets LLP, and will continue to manage business operations. Ooredoo and Zain will both keep their respective active infrastructure. The new company, which has not yet been named, is expected to achieve a run-rate revenue of $500 million annually. "(This deal) also positions the region as an advanced player in the global telecoms landscape, and we anticipate wide-ranging positive implications for the region – from economic growth and upgraded connectivity to technological improvements and increased global relevance," said the three companies in a joint statement. "The deal also demonstrates our joint dedication to supporting the reduction of the region's carbon footprint, contributing to our vision of reshaping the telecommunications sector by building a more sustainable ecosystem and ensuring a better-connected future for our communities across the region," the CEOs concluded. The deal is expected to close sometime next year, with the implementation in each market phased to adhere to each country's regulatory framework.

Saudi Arabia Enhances Digital Economy with National Data Index

The digital economy infrastructure in Saudi Arabia is set to receive a boost with the launch of open data programs, including the introduction of the National Data Index, also known as Nudei, during the Saudi Data Forum in Riyadh. The event also saw the launch of upgraded versions of the Open Data Platform and the Data Governance Platform. This initiative, a first for the Kingdom, aims to promote transparency, create a national data-based economy, and contribute to the assessment of data maturity in government entities, aligning with Vision 2030. Organized by the Saudi Data and Artificial Intelligence Authority and the National Transformation Program, the launch was attended by global and local experts. Participants included Assistant Minister of Interior for Technology Affairs Prince Bandar Bin Abdullah, SDAIA President Abdullah Al-Ghamdi, ministers, senior officials, and representatives from local and international companies. The National Data Index, a collaboration between SDAIA and NTP, is a dynamic results-based indicator for follow-up and evaluation. It aims to assess and track the progress of government agencies in data management, compliance, and operational indicators across 14 areas. The indicator establishes a robust data governance framework and policies to control data management practices, measure data management maturity and ensure compliance, improve the effectiveness of data management operational processes, and develop compliance and investigation-reporting mechanisms. An upgraded version of the Open Data Platform was also released, allowing individuals, government, and non-government agencies to publish their open data for entrepreneurs and other beneficiaries. The platform has achieved over 7,000 open data sets, 190 publishers, and 35 use cases. Additionally, the Data Governance Platform aims to register entities covered by the Personal Data Protection Law, providing support and advice on preserving the privacy of personal data holders and protecting their rights. Government agencies can benefit from the platform through a process that involves filling out the registration form, logging in through the national unified access platform, completing the entity's profile, and submitting data for evaluation. It also provides services, including notification about possible data leaks, privacy impact assessment, legal support, and a self-assessment tool for compliance with the Personal Data Protection Law. SDAIA and NTP signed a memorandum of understanding in 2022 to launch new strategic partnerships and smart business solutions that support the strategic objectives of Vision 2030 assigned to NTP, including SDAIA's initiatives related to data and artificial intelligence.

Egypt Advances Digital Strategy with Telecom Egypt's Regional Data Hub Expansion

Amr Talaat, Egypt's Minister of Communications and Information Technology, witnessed the signing of a crucial contract between Telecom Egypt (TE) and Raya Information Technology. This contract marks the commencement of the second phase of TE's ambitious Regional Data Hub (RDH) project, underscoring Egypt's growing role in the global digital landscape. Set to be operational in 18 months, the second phase responds to the increasing demand for data hub services. Mohamed Nasr of TE and Hisham Abdel Rasoul of Raya Information Technology formalized the agreement, indicating a strong partnership between these leading entities. The first phase of the RDH project demonstrated remarkable success, reaching full utilization within a year. This efficiency sets a high standard for the upcoming phase, which aims to further enhance Egypt's digital infrastructure. Under the new contract, Raya Information Technology will deliver advanced technological solutions to support digital transformation. The focus will be on enhancing the RDH's scalability and adaptability, aligning with global sustainability standards, and mitigating environmental impacts. A significant goal of this phase is to help TE obtain Uptime Tier III certificates, showcasing its commitment to service quality and flexible infrastructure. The RDH's strategic location positions it as a regional hub with potential for future expansions. Connected to TE's marine landing stations on the Mediterranean and Red Sea coasts, it offers businesses opportunities for global expansion. The completion of the second phase will increase the RDH's capacity to 7.1 megawatts. Plans include two additional phases, bringing the total capacity to 16.3 megawatts, catering to

the evolving needs of the digital world. This expansion is a vital step in Egypt's digital strategy, positioning the country as a major global data center. The RDH's first phase, launched in 2021, already serves over 22 international clients, including cloud and content providers, and hosts EG-IX, an open access Internet exchange platform. The RDH project by Telecom Egypt, with its expansion and technological advancements, plays a pivotal role in elevating Egypt's status in the global digital economy. This development not only enhances the country's digital infrastructure but also offers new opportunities for businesses and enriches the user experience, contributing significantly to Egypt's vision of becoming a key player in the digital world.

HUAWEI

AI for Industries

Reshaping Industries with Huawei Cloud AI

HUAWEI CLOUD
EVERYTHING AS A SERVICE

ARTICLE

Why Campuses Hold the Key to Accelerating a Net Zero Future

The Net Zero Campus – Achieving Localized Sustainability

Ever since 2015, when then Deputy Secretary-General of the United Nations, Jan Eliasson made the profound statement that "Cities are where the battle for sustainable development will be won – or lost if we fail."; a greater focus has been placed on cities as a focal point to solve key challenges. To put it into perspective Cities only cover 2% of the world's surface, yet they consume 78% of the world's energy and produce more than 60% of greenhouse gas emissions . They are also where 80% of global GDP is created.

Throughout history people of moved to cities, primarily in search of three things; security, prosperity and social interaction. So much so that not only are the number of cities increasing rapidly, but so too is their size. A mega-city is a city with a population greater than ten million; it is anticipated that the number of mega-cities across the world by 2030 will have grown by four times and will house a population five times that of the 1990 level!

> *"Cities are where the battle for sustainable development will be won – or lost if we fail."*

Why campuses are key

A campus is a bitesize chunk of city. Therefore, addressing the campus as a building block is key to helping cities transition to a more sustainable future. Cities tend to be developed or redeveloped in phases, often consisting of one or more city blocks, especially when sub-developers are involved. Traditionally we may have thought of a university, college or school, when talking about a campus. However, a campus could be any chunk of a city ranging from a single large development to a whole district. A defining characteristic being the operational management and control of the area coming under a single administration. Therefore, we could understand a shopping mall, factory or even a mixed-use development as a campus.

Safder Nazir
Senior VP of Public Sector
Huawei, Middle East & Central Asia

HUAWEI

Breaking down the city challenge into these smaller, more manageable segments of a city and adopting policies and practices at the campus level will allow more participation and localized action. So long as this is coordinated at the city, we could really accelerate transformational plans. This could begin with a target of achieving net zero energy, that is, the total amount of energy used on an annual basis would be equal to the amount of renewable energy created onsite. This step would set every campus, and therefore city, on a path towards carbon neutrality and ultimately net zero. Net zero refers to removing from the atmosphere, an amount of greenhouse gases (GHGs) – carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and Fluorinated Gases – equal to those emitted by human activity. Transitioning to a net zero world is one of the greatest challenge's humankind has faced.

Many governments around the world have committed to reducing their overall emissions, some have set a goal of achieving net zero emissions by 2050 or even sooner. To achieve these targets and reduce urban emissions, technology must play a central role in improving the energy efficiency, onsite generation and holistic management.

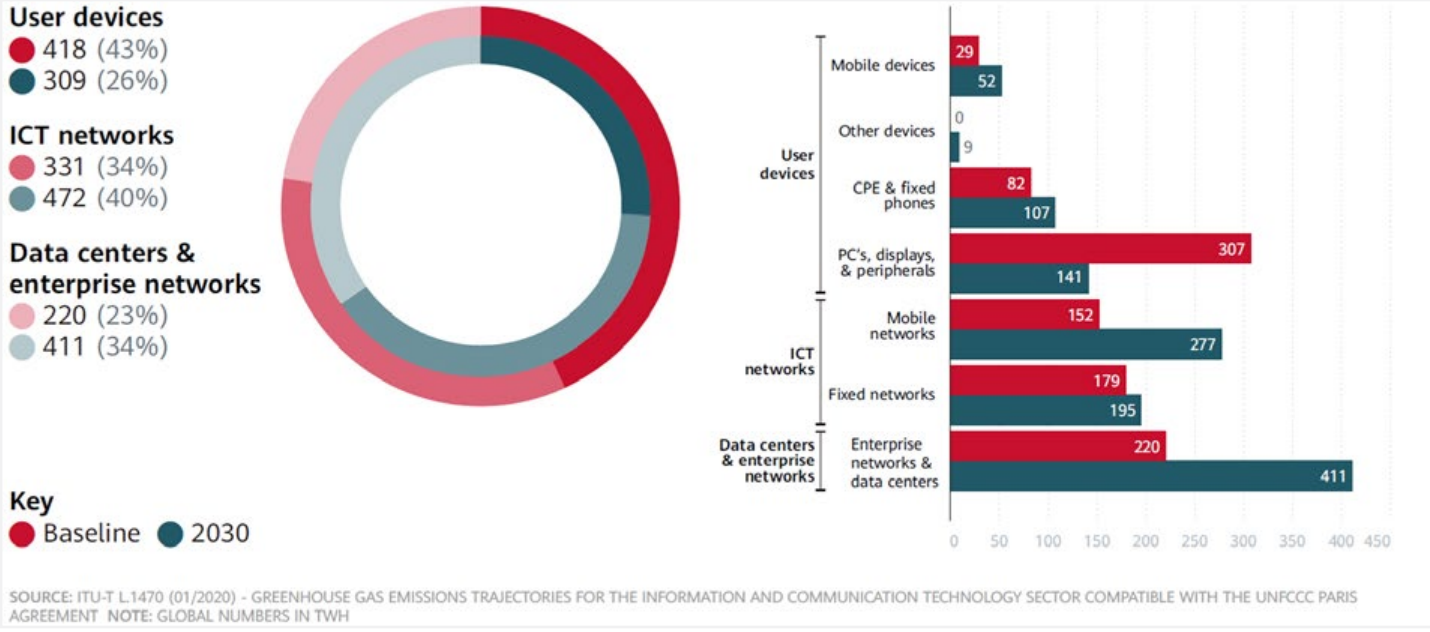
The Net Zero Campus

Though global carbon emissions from the information and communications technology (ICT) sector are still in low single digit numbers, it is anticipated that the proportion of global energy consumption from enterprise and data center networks will nearly double by 2030 from the 2020 baseline. Technology can also provide avoidance of carbon footprint, this is known as the carbon handprint. According to figures from the Global e-Sustainability Initiative (GeSI), the carbon handprint of ICT could be ten times (10x) that of its footprint by 2030.

The net zero campus leverages technology to address three dimensions. Abatement of energy and carbon through what we call 'Carbon Conscious ICT', improved management of energy & carbon through 'Carbon Conscious Energy Intelligence' and improved distributed renewable energy generation and storage through Digital Power solutions.

Innovations across these three domains can allow campuses to balance their energy and carbon books. For example, a move from a traditional three tier ICT network design to a two tier one can save up to 30% in energy use. It also reduces the number of components and materials required hence reducing the overall carbon footprint. One the other end, the use of AI in rooftop solar solutions can enhance the yield of energy from the same area, advances in battery storage technology also allow greater yields, all together giving each campus a greater ability to reach net zero and therefore our cities and nations too.

ICT Load Expected to Grow Even With Systems Becoming More Efficient Over The Decade (All Numbers Shown In Twh)



SOURCE: ITU-T L.1470 (01/2020) - GREENHOUSE GAS EMISSIONS TRAJECTORIES FOR THE INFORMATION AND COMMUNICATION TECHNOLOGY SECTOR COMPATIBLE WITH THE UNFCCC PARIS AGREEMENT NOTE: GLOBAL NUMBERS IN TWH

To learn more about the net zero campus, scan the code to download the white paper.

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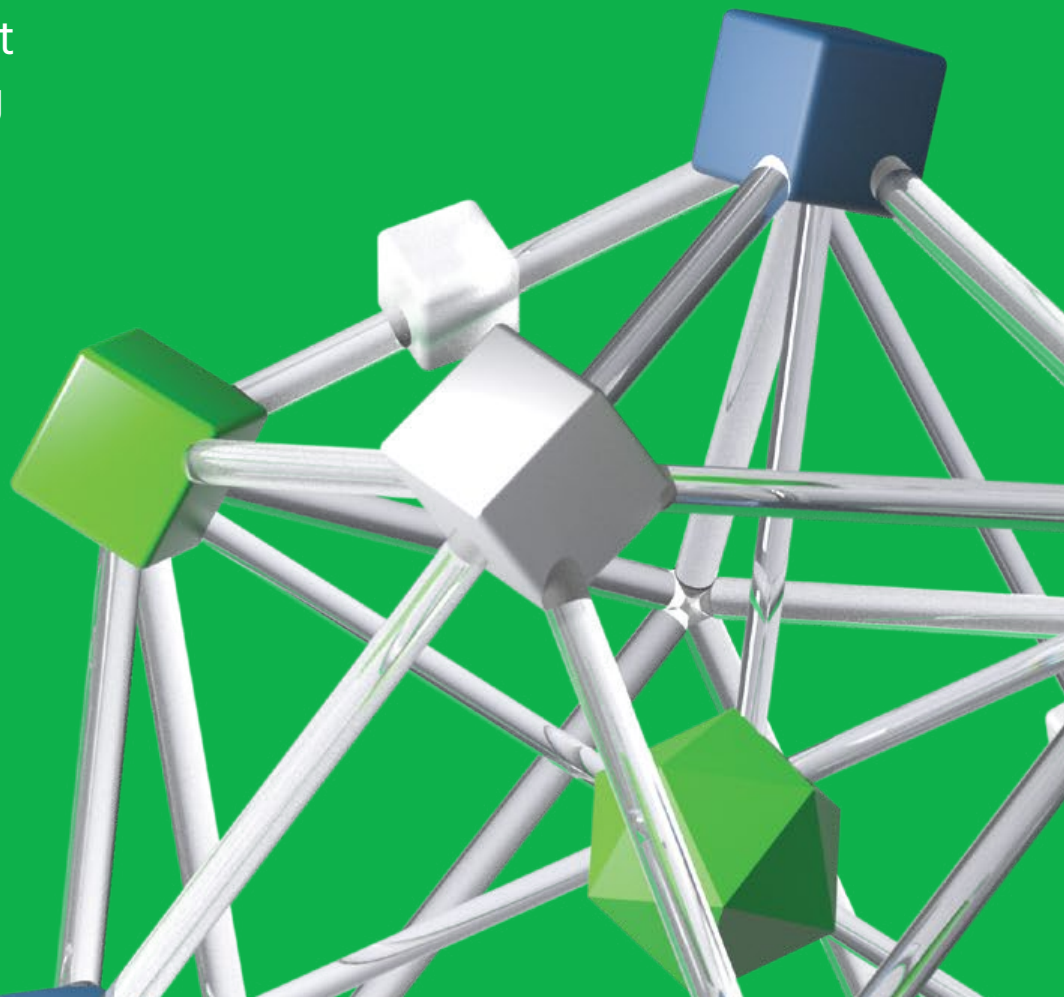
Complete M2M business process coverage:

- product catalog
- sales management
- real-time charging
- invoicing



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SATELLITE NEWS

Egypt's Satellite Launch to Advance Climate Research

Egypt has launched its second earth observation satellite, the MisrSat-2, also known as EgyptSat-2, to study the impact of climate change on the environment, which, in turn, serves Egypt's efforts to achieve the 2030 United Nations Sustainable Development Goals (SDGs). Launched on 4 December from the Taiyuan Satellite Launch Centre in China, EgyptSat-2 was assembled and tested at the Egyptian Space Agency's (EgSA's) Satellite Assembly, Integration, and Testing Centre (AITC) – the largest of its kind in Africa and the Middle East, that was established within the framework of a partnership between Egypt and China, according to EgSA's statement. Under the Egypt-China technical cooperation agreement, a team of Egyptian engineers from EgSA collaborated with a team of Chinese experts in every stage of the satellite's design and manufacture. EgyptSat-2 aligns with China's broader ambition of expanding its influence in the field of space exploration and satellite technology around the world, along with its presence in space and satellite-based services, according to a September 2023 report, Why is China Giving Satellites to Egypt?. According to the report, the Egyptian satellite supports China's Belt and Road Initiative and enhances its strategic interests in Africa through its involvement in the global landscape of satellite communication and connectivity. But, according to the EgSA statement, the Egyptian team "successfully developed one of the components of the satellite completely, marking Egypt's first domestically produced space product". EgyptSat-2 is one of the initiatives of the Egyptian space program. Its work focuses on building human resource capabilities for space sciences fields and establishing a scientific research base for utilizing the space technologies and applications to serve the national development plans. It also aims to launch another satellite, the National Experimental Satellite (NExSat-1), a remote-sensing microsatellite designed for urban planning, by the end of 2023.

CRTC to Support High Speed Satellite Internet for All Nunavut Communities

The Canadian Radio-television and Telecommunications Commission (CRTC) announced on 20 December that its Broadband Fund will support high speed satellite internet services for all communities in the Far North territory of Nunavut for the first time. Funding is being provided to SSi Micro to upgrade its satellite internet service across Nunavut, whilst further funding was earmarked for Keewaytinook Okimakanak to maintain satellite internet connectivity in two First Nations communities in Northern Ontario, and also additional funding for Northwestel to deliver fiber-based internet services to Atlin, an underserved Indigenous community in Northern British Columbia. Together, these projects will help 28 Indigenous communities access communications services, and are part of the CRTC's ongoing commitment to better support reconciliation with Indigenous Peoples.

MTN Group Collaborating with Four Satellite Operators to Expand Africa's Internet Connectivity

African regional operator MTN Group is teaming up with the likes of SpaceX (Starlink), AST SpaceMobile, OneWeb and Lynk Global to develop satellite-based internet connectivity across rural parts of the continent. In developing its Low Earth Orbit (LEO) exploration, Techpoint Africa notes that MTN Group has already initiated pilot trials with AST SpaceMobile (Nigeria, South Sudan), Lynk Global (Ghana, South Africa) and Starlink (Rwanda and Nigeria) to test standard and direct-to-device satellite services. It is understood that MTN's contracts with satellite service providers 'are based on a shared revenue model, even though each agreement is negotiated separately'.

Hughes Rolls Out New Internet Plans with Jupiter 3 Capacity

Hughes Network Systems has introduced new high-speed satellite internet plans using capacity from its recently launched Jupiter-3 satellite. The company now offers new plans with speeds up to 100 Mbps, and all plans include unlimited data. Hughes also has the Hughes Fusion plan which combines satellite and wireless technologies for a lower latency experience. This is a milestone for Hughes as the company was maxed out on capacity for its fleet before Jupiter 3 launched in July. The ultra-high-density satellite features more than 300 spot beams and brings 500 Gbps of capacity over the United States, Canada, Mexico, and parts of South America. The company has lost subscribers in recent years as it was capacity-constrained while Starlink began commercial service. According to parent company EchoStar's most recent financial results, Hughes ended the third quarter with approximately 1,063,000 broadband subscribers — down 17% year-over-year. Hughes said these new plans and speeds are a "fundamental reinvention" of what satellite internet can be. "Customers expect to be able to stream, videoconference and play games online," said Peter Gulla, senior vice president, Hughes. "The new Hughesnet is designed to enable these applications with fast speeds, unlimited data and new low-latency Fusion plans. Since inventing satellite internet in the 1990s, Hughes has been dedicated to constantly innovating our service to meet the needs of customers beyond the reach of cable and fiber connectivity."

Satellite Operator Lynk Signs LoI With A-Rod's Slam to Create Publicly-Listed Company

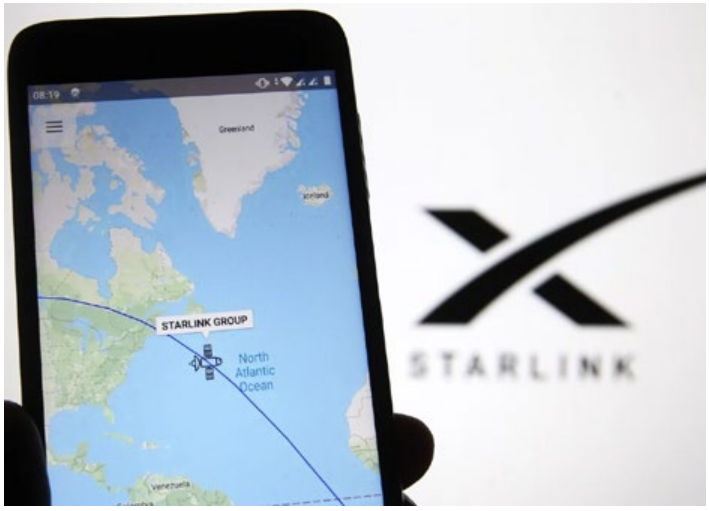
Lynk Global, a satellite-direct-to-standard-phone ('sat2phone') provider, and Slam Corp., a special purpose acquisition company (SPAC), have signed a non-binding Letter of Intent (LoI) for a potential business combination. Under the terms of the LoI, the combined company would operate as Lynk Global, Inc. and its common stock and warrants are expected to be listed on NASDAQ under the ticker symbols 'LYNK' and 'LYNKW'. Lynk, which was founded in 2017, designs, builds, and operates proprietary 'cell-tower-in-space' satellites that provide direct-to-standard-phone connectivity and global coverage. Lynk believes it operates the world's only patented, proven and commercially-licensed sat2phone system, which allows commercial subscribers to send and receive text messages to and from space, via standard unmodified mobile devices. Lynk's service has been demonstrated in over 25 countries to date and the company has 35 commercial service contracts in place with mobile network operators (MNO) serving around 50 countries. For its part, Slam was created by former baseball star Alex 'A-Rod' Rodriguez to pursue 'investment opportunities with companies that have large and growing addressable markets, significant revenue growth, defensible business models and superior market share'.

Rogers, Lynk Readying Commercial Satellite-to-Mobile Service for 2024

Rogers Communications and Lynk Global have announced Canada's first successful satellite-to-mobile phone call, and also tested SMS, data and emergency alerting services. Using Samsung S22 smartphones, the call was made between Andrew Furey, Premier of Newfoundland and Labrador, and a member of the Newfoundland and Labrador Search and Rescue Association utilizing US-based Lynk's Low Earth Orbit (LEO) satellites and Rogers' national mobile spectrum. Rogers says it will launch satellite-to-mobile phone technology in 2024, starting with SMS texting, mass notifications and machine-to-machine AI applications, and then expand the service to include voice and data services quickly thereafter. The new technology will deliver mobile services to the country's most remote wilderness, national parks and rural highways. Rogers CEO Tony Staffieri said: 'We're bringing coverage to Canada's most remote areas to improve public safety and to connect communities that aren't connected today. We're proud to work with Lynk to bring Canadians the very latest global technology that will give them access to 911 and wireless services.'

SpaceX Cleared to Test Satellite Phone Service Via Starlink

SpaceX has got approval to run tests of a proposed service that allows unmodified smartphones to make calls via a satellite link. The Federal Communications Commission (FCC), which regulates all things network in the US, has permitted Elon Musk's space biz to pilot direct-to-cellular communications between everyday cellular phones and its Gen2 Starlink satellites. The space-faring company said in its application that "experimental" authority was needed to carry out tests as the FCC is still processing SpaceX's application "to enable supplemental coverage from space for consumers on a permanent basis." SpaceX has 180 days to carry out its trials, and said in its application these will involve approximately 840 satellites with direct-to-cellular payloads, approximately 60 of which will be serving handsets in the US under this experimental authorization at any given time. The tests are set to be conducted using frequencies in the 1910-1915 MHz and 1990-1995 MHz bands, otherwise known as the PCS G Block, with the cooperation of T-Mobile USA, which is the licensee of these bands. T-Mobile and SpaceX announced plans last year to use satellites in low Earth orbit to provide a cellphone service, claiming this would extend coverage to remote locations across the US and its territorial waters. Starlink even started advertising a Direct to Cell satellite phone service on its website in October, claiming this would include a text messaging service starting in 2024, with voice and data features added in 2025. SpaceX reckons it will expand coverage via agreements with carriers in other regions, listing potential candidates as Rogers in Canada, Optus in Australia, One NZ in New Zealand, Salt in Switzerland, and KDDI in Japan. This experimental authorization follows an earlier partial authorization from the FCC for SpaceX to deploy and operate the Gen2 Starlink satellites themselves, which was granted only at the start of this month. The FCC said that action would allow SpaceX to begin rolling out Gen2 Starlink, ultimately bringing high-speed satellite broadband to Americans nationwide, and it would protect other satellite and terrestrial operators from harmful interference and maintain a safe space environment.



Thuraya Upgrades Satcoms/Cellular Phone to Offer LTE Functionality

Proof of the continuing importance of the handheld satellite phone market comes with the announcement that Thuraya has launched what it calls an enhanced generation of its popular XT-PRO DUAL satellite and cellular feature phone. Thuraya Telecommunications Company, the mobility arm of the UAE's flagship satellite solutions provider Yahsat, says it is releasing the upgrade to one of Thuraya's top-selling and most popular phones as demand for dual-mode communications soars worldwide. The XT-PRO DUAL is a dual-mode, dual-SIM satellite-cellular phone that allows users to move in and out of terrestrial coverage and seamlessly connect with ease, regardless of their location. The upgrade means it can support terrestrial 4G LTE networks for flexible connectivity. Of course, the phone also caters for users in harsh environments, and thus the ingress protection has been increased to the IP65/IK05 standard, which makes the phone dust and water-resistant as well as shockproof. Both ingress protection (IP) and impact resistance (IK) codes relate to standards prepared and published by the International Electrotechnical Commission (IEC). The target market for the satellite phone is a wide one that includes fire brigades police forces, officials managing disaster relief efforts, border controls and coast guards. Not surprisingly, Thuraya says it is also ideal for the oil and gas, mining and infrastructure development sectors.

Indonesia's SATRIA-1 Satellite is Connected and Ready for 2024

Indonesia's new internet satellite, SATRIA-1, has reportedly been successfully tested and should be ready to begin operations in early 2024. According to a report in Jakarta Post, the Telecommunication and Information Accessibility Agency (BAKTI) announced last Friday that SATRIA-1 is now connected to the internet. Connectivity trials were successfully conducted last week in Manokwari, Jayapura, Ambon, Batam, Kupang and Banjarbaru. BAKTI, which operates under the Communication and Information Ministry (Kominfo), announced the test results on a Zoom call that was itself connected via SATRIA-1. Adi Rahman Adiwoso, CEO of satellite operator Pasifik Satelit Nusantara (PSN), said that the Zoom call made it "evident that everything is starting to run smoothly," the Post reported. SATRIA-1 is a public-private project between the Indonesian government and a consortium led by PSN. The US$550 million satellite project, which has been in the works since 2019, aims to provide high-speed internet access to schools, medical centers and thousands of public and government facilities across the archipelago via VSAT connectivity. SATRIA-1 was built by Thales Alenia Space. It was launched via SpaceX in June and reached its orbital slot last month. The satellite has a total capacity of 150 Gbps. PSN's Adi said he was confident that the final technical aspects and administrative procedures could be completed before the end of the year, paving the way for SATRIA-1 to begin full operations early next year, the report said.

DISH and EchoStar Secure FCC Approvals for Merger

FCC divisions the Office of Engineering and Technology, the Space Bureau, and the Wireless Telecommunications Bureau have approved the merger of US pay TV operator DISH Network and satellite communications outfit EchoStar, a move seen as crucial to keeping DISH in business over the coming year. Both DISH and EchoStar are controlled by Charlie Ergen, and were part of the same company – EchoStar – before splitting in 2008. The pair announced their agreement to merge in August in a move that DISH said would combine DISH Network's satellite technology, streaming services and nationwide 5G network with EchoStar's premier satellite communications solutions, creating a global leader in terrestrial and non-terrestrial wireless connectivity. Ergen described the combination as "a strategically and financially compelling combination that is all about growth and building a long-term sustainable business".

The agreement was amended in October to make DISH a wholly-owned subsidiary of EchoStar on completion. Analysts are divided on DISH's prospects as it seeks to build a sustainable business while servicing a large debt pile in the face of ongoing subscriber losses. DISH saw its revenues slide to US$3.7 billion in the quarter to September, down from US$4.1 billion for the same period in 2022. Net income dropped from US$412 million to a loss of US$139 million. The company closed the quarter with 8.84 million pay TV subscribers, including 6.72 million DISH TV subscribers and 2.12 million Sling TV streaming subs. Pay TV losses failed to offset a streaming increase. Sling added 214,000 subscribers, a low number than for the prior year period, which the company attributed to strong competition in the pay video sector. DISH TV's rate of loss – 181,000 in the quarter – was actually lower than its prior year rate of loss. Retail wireless net subscribers decreased by approximately 225,000 in the third quarter, compared to a net increase of 1,000 in the year-ago quarter.

New Zealand Gives Starlink a Bye on Telecoms Fees

New Zealand's Commerce Commission finalized the amount each telecoms operator will pay to the government's Telecommunications Development Levy (TDL), which increased to NZD11.3 million ($6.9 million) for the fiscal year ending 30 June 2023 from NZD10.5 million the previous year. Spark, One New Zealand, Chorus and 2degrees will collectively pay about 87 per cent of the total levy, with 21 smaller companies responsible for the remainder. But the Commission declined to levy fees on Starlink, deciding it did not meet the minimum annual revenue threshold of NZD10 million needed to be subject to the levy. Submissions on the Commission's draft proposal from the country's Internet Service Providers Association and the Wireless Internet Service Providers Association called for Starlink to be classified as liable to be assessed for the levy and included in the final allocation of payment. The Commission stated it would engage with Starlink and others as part of the fiscal 2023 to 2024 TDL process. One NZ has an agreement with Starlink to boost rural coverage using LEO satellites. Spark and 2degrees are working with Lynk Global, which was also excluded from the Commission's assessment. The Commission increased Spark's payment from NZD3.4 million to NZD3.5 million, with the operator accounting for 31.1 per cent of industry revenue in fiscal 2022 to 2023. One NZ is liable for NZD2.7 million compared with NZD2.6 million the previous year and 2degrees NZD2.2 million (NZD2.1 million). The funds are used to pay for infrastructure and services which are not commercially viable, including a relay service for the hearing-impaired, broadband for rural areas and improvements to the 111-emergency service.

Globalsat Group to add Rivada LEO Connectivity to Its Americas Coverage

Globalsat Group, a provider of mission-critical satellite and wireless connectivity solutions is partnering with satellite network operator Rivada Space Networks to provide access to a next-generation data network for customers in the energy, government, NGO, agriculture, utilities and transportation sectors throughout the Americas and beyond. Rivada's OuterNET, as the forthcoming Rivada service is known, will, say the partners, offer high-speed, low-latency and highly secure connectivity with full global coverage. The first satellite launch of Rivada's OuterNET is set for 2025, with global service starting in 2026. Globalsat is an industry leader in mobile and other satellite services, providing specialized voice, data, M2M/IoT, software, and hardware throughout the Americas since 1999. Most customers use its services where life or infrastructure are at stake or in exceptional circumstances when or where other connectivity networks cannot operate reliably or at all. Globalsat says increasing demand for resilient connectivity is fast outpacing the current infrastructure used to carry it in terms of latency, bandwidth, speed and security. Which, it seems, is where Rivada comes in. Rivada's global low-latency point-to-point connectivity network of 600 low earth orbit (LEO) satellites, the OuterNET, is described as a unique next-generation architecture combining inter-satellite laser links with advanced onboard processing that provides unique routing and switching capabilities to create an optical mesh network in space. This approach to 'orbital networking', in which data stays in space from origin to destination, is described as creating an ultra-secure satellite network with global coverage, offering end-to-end latencies much lower than terrestrial fibre over similar long distances. And by routing traffic on a physically separated network, it provides a layer of defence for any organization that needs to securely share data over a large distribution of sites. Globalsat Group says it will add Rivada's OuterNET seamless connectivity to its diverse roster of mission-critical solutions, as an option to ramp up performance and increase customer efficiency. This connectivity is particularly well suited to remote geographic installation use cases requiring real-time applications and monitoring regardless of location, when high bandwidth, reduced latency and improved security are required.

Starlink to Make Entry to Bangladesh

The government has decided to award a license to Starlink, operated by American aerospace company SpaceX, the brainchild of billionaire Elon Musk, in a development that could create some competition in the internet business in Bangladesh. Starlink is a satellite internet constellation which provides broadband connections to people in over 60 countries. "In principle, I have told the Bangladesh Telecommunication Regulatory Commission (BTRC) to provide a license to Starlink," Zunaid Ahmed Palak, state minister for telecom and ICT, told The Daily Star. "We want to provide equal internet services for people in cities and villages. This will ensure internet connection to remote areas, especially villages, chars and islands," he added. The decision came at Palak's first meeting with the BTRC after he was entrusted with the responsibilities of the Posts and Telecommunications Division following Mustafa Jabbar's resignation from the post last week. Starlink's arrival in areas with traditional telecom and cable internet will foster competition, potentially leading to improved service quality and expanded access. As the satellite-based infrastructure enables connectivity in regions where traditional telecom and cable services struggle to reach, it can empower people in remote locations by providing them with high-speed internet, thereby unlocking educational, economic, and communication opportunities. However, as mobile internet and broadband have already permeated almost all areas of Bangladesh, commercial success is likely to be limited. The cost of the Starlink internet is also prohibitively high in the context of Bangladesh, costing about $120 per month in most locations while the initial hardware costs reach up to $599, according to its website. From local ISPs, 5mbps broadband costs about Tk 500 per month while mobile internet cost between Tk 400-500 per 30GB. Earlier, SpaceX expressed its intention to launch Starlink services in Bangladesh and its officials met with multiple government entities to this end in June this year. Joel Meredith, manager for global government affairs at SpaceX, and Parnil Urdhwareshe, manager for global licensing and activation, made presentations on its features. In a demonstration to the Bangladesh Satellite Company Ltd (BSCL), Starlink's internet and download speeds reached about 500mbps, according to chairman Shahjahan Mahmood. Download speeds reached 150mbps in another demonstration to the ICT Division. The BSCL collected five Starlink terminals (Starlink Kits) to analyze the technology and analyze how they work during rain, fog and inclement weather. "We have seen the test results and they are good. Now they have to apply for a license," Palak added. One of the major hurdles to getting the license was the government's 'lawful interception requirement', which SpaceX officials were asked to ensure. In Bangladesh, the law permits some government agencies to access or surveil telecommunication technology to monitor criminal activities. "We are positive. We have already given them permission for testing," BTRC Chairman Shyam Sunder Sikder said. Asked about the lawful interception law, he said the BTRC would ensure that all conditions under the law had been met before awarding the license. As of October, there were 13.18

crore internet subscribers in Bangladesh, with 1.25 broadband internet connections and 11.94 crore mobile internet connections. Md Emdadul Hoque, president of the Internet Service Provider Association of Bangladesh (ISPAB), urged the government to consult all stakeholders before taking this decision. "Our services are now everywhere in Bangladesh, except some islands. So, why do we need satellite internet," he said. Shahed Alam, chief corporate and regulatory officer at Robi Axiata Ltd, welcomed Starlink's entry, hoping hoped it would provide services to areas without access to fiber-based internet services. "We also hope that the regulator would ensure principles of 'same rule for the same service', including regulations and taxation, as applicable to all wireless service providers," he added. Fahim Mashroor, CEO of Bdjobs.com, said any new technology should be welcomed. "But, it's very costly and very few people are likely to use it," he said. Palak said the decision was taken to welcome new technology but added that prices had not yet been discussed. SpaceX, currently worth about $150 billion, provides satellite internet coverage to more than 60 countries with about 4,519 Starlink satellites currently in orbit. The company has said Starlink has more than 2 million active customers and is available on all seven continents. On May 11, 2018, the Bangabandhu Satellite-1, Bangladesh's first and lone satellite, was launched into orbit at a cost of Tk 2,765 crore. In September this year, Bangladesh signed a letter of intent with France for its second satellite, which will be an earth observation satellite. "The BSCL's satellite, the cost of which was borne by public funds and commercial loans, has evidently failed. But the government has to answer where it has failed, necessitating the entry of Starlink," Abu Saeed Khan, a senior policy fellow at LIRNEasia, said.

Mascom to Offer Satellite Connectivity with Q-KON

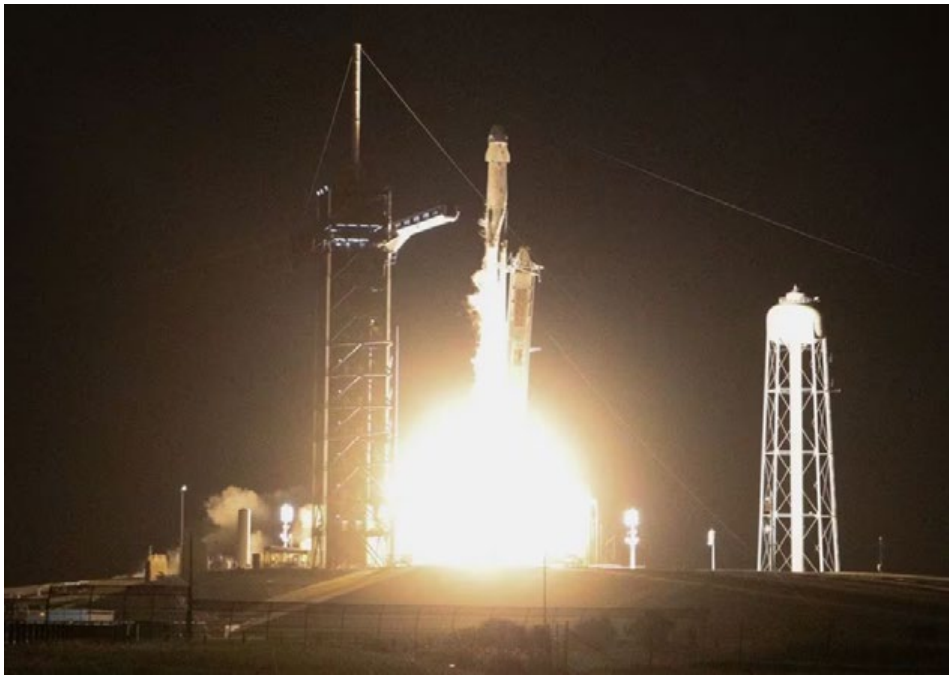
Mascom, the largest mobile operator in Botswana, has teamed up with Q-KON Africa to offer the Twoobii Smart Satellite Service. The solution will provide connectivity for communities and businesses in remote areas, with a particular focus on industries such as agriculture, mining, telemedicine and finance. The partnership includes full turn-key delivery of services throughout Botswana.

TASL and Satellogic Collaborate on Space Technology

Tata Advanced Systems Limited (TASL), India's leading private sector player for aerospace and defence solutions, and Satellogic, a major name in sub-meter resolution earth observation (EO) data collection, have announced a collaboration for establishing and developing local space technology capabilities in India. This collaboration is described as a first step in TASL's satellite strategy and a significant milestone for Satellogic as it enters the fast-growing Indian market. The project will commence with comprehensive training, knowledge transfer, and local assembly of optical sub-meter resolution EO satellites, the first of which is planned to be launched as TSAT-1A. The focus will be on manufacturing satellites and developing imagery in India for national defence and commercial applications, towards which TASL is commissioning a satellite AIT plant at its Vemagal facility in Karnataka, a state in southwest India. Sukaran Singh, Chief Executive Officer and Managing Director, TASL, says: "Space is important to TASL not just as a business but also due to its culture of precision that will help other activities in TASL. We are pleased to announce our collaboration with Satellogic, a company with best-in-class technology and an entrepreneurial mindset. Additionally, TASL will also work with local SMEs for payloads and other technologies to bolster India content." TASL and Satellogic will collaborate on the development of a new satellite design and work together to integrate multiple payloads on a single satellite that will generate a diverse range of data over India. "This collaboration will accelerate space capacity building for one of the largest nations in the world with the goal of enabling the advancement of commercial space capabilities and greater access to critical information for a range of applications such as security, sustainability, and energy," says Emiliano Kargieman, Chief Executive Officer and Founder at Satellogic.

Amazon Taps SpaceX's Falcon 9 Rocket to Help Launch Kuiper Satellites

Amazon said it booked three Falcon 9 launches with Elon Musk's SpaceX to help deploy the ecommerce giant's Project Kuiper satellite network, tapping a rival in the satellite internet business for its multi-billion dollar launch campaign. Amazon aims to build Kuiper as a constellation of 3,236 satellites in low Earth orbit to beam broadband internet globally and compete with SpaceX's Starlink network, which already has some 5,000 satellites providing nearly global coverage. Amazon, which vowed in 2019 to invest $10 billion into the project, will put an unspecified number of Kuiper satellites on three Falcon 9 rockets from SpaceX beginning in mid-2025, the company said Friday. The Falcon 9 missions add to 83 rocket launches it had already procured from Jeff Bezos' space company Blue Origin, the Boeing-Lockheed (BA.N), (LMT.N) joint venture United Launch Alliance and Europe's Arianespace in a multi-billion dollar launch deal. Amazon was sued by a shareholder in August for not adequately considering SpaceX as a launch provider when it was selecting most of the 83 other rides to space in late 2021 and 2022. The company said the lawsuit's claims "are completely without merit." Cleveland Bakers and Teamsters Pension Fund, a fund that lodged the suit in a Delaware court, said in its complaint the launch contracts were the second-largest capital expenditure in Amazon's history at the time. Amazon's largest acquisition is its $13.7 billion deal to buy Whole Foods in 2017. Amazon's announcement that it added SpaceX rockets to its launch campaign comes just three days before its deadline to lodge a substantive defense against the shareholder lawsuit, according to a court scheduling order. Amazon in September filed a motion to dismiss the lawsuit, saying it would detail its defense in a later briefing. On Friday, the same day as Amazon's SpaceX announcement, the court set a deadline of Dec. 4 for Amazon to outline its motion to dismiss. SpaceX's partially reusable Falcon 9 rockets have been a crucial advantage over rivals in its rapid deployment of Starlink, a fast-growing internet network that made the Musk-owned company the world's largest satellite operator. Eutelsat's OneWeb, another satellite internet rival, relied on Russia's Soyuz rocket for deploying the bulk of its network. But OneWeb turned to SpaceX when Russia invaded Ukraine and seized $50 million worth of the company's satellites. U.S. regulators require Amazon to deploy half of the Kuiper network by 2026. The company launched its first two prototype satellites in orbit in October and announced successful tests last month. Amazon expects to deploy enough satellites for "early customer pilots" in the second half of 2024. It plans to use United Launch Alliance's Atlas 5 and the yet-to-launch Vulcan rocket for the first few batches of satellites.



ARTICLE

10Gbps Society: A Catalyst for Digital Transformation in the Gulf

Dr. Mohamed Madkour
VP, Marketing & Solutions Sales
Huawei Global Carrier Business Group

HUAWEI

Digital productivity, fueled by the in-depth application of innovative technologies like cloud computing, artificial intelligence (AI), 5G, and ultra-broadband, is emerging as a key driver of economic growth. Enterprises and homes are witnessing rapid adoption of new digital services, accelerating the pace of digital transformation.

Behind this progress is the evolution of ultra-broadband from a limited focus on connectivity to delivering enhanced multi-dimensional digital experiences. In this emergent intelligent era, the emphasis is on unleashing the full potential of digital services, ensuring easy and efficient access for everyone, everywhere and all the time.

Ultra-broadband solves existing challenges that limit productivity by providing massive computing power for digital services, offering guaranteed connectivity for concurrent users, and ensuring ubiquitous access with a high-quality and reliable experience.

The vision involves achieving ubiquitous 10-gigabit access by accelerating mobile and home broadband, intelligent and secure enterprise campus networks, and private line services to 10Gbps. This ambitious goal aims to provide ubiquitous, high-quality, 10-gigabit connections to people and organizations, fostering the widespread adoption of digital services.

The rise of the gigabit society

At the recent Ultra-Broadband Forum (UBBF 2023), Huawei, with its partners, the UAE Telecommunications and Digital Government Regulatory Authority (TDRA), Omdia, etisalat by e&, MTN South Africa, and others, released 10Gbps City Initiative as a use case for the 10-gigabit era.

The 10Gbps City Initiative advocates for the construction of fully connected 10Gbps cities to provide a ubiquitous network experience, accelerate the digital-intelligent transformation of industries, and boost overall digital productivity. This program envisions an ultra-fast broadband infrastructure that can deliver sustainable 10 gigabits per second (Gbps) of data to individuals, homes, enterprises, and campuses. It is a new type of infrastructure that aims to boost the digital economy and enable new applications and services that require high bandwidth and low latency.

Major cities worldwide, including Riyadh in the region and Beijing, Shanghai and Hangzhou in China, are actively exploring implementation of 10Gbps City and 10Gbps Society to drive the digital economy's growth momentum.

These cities already have extensive fiber connectivity, facilitating the shift from F5G to F5.5G, driven by the twin engines of new network technology developments and growing application demand. These communities will be able to derive the true value of optical fiber to deliver unprecedented home and enterprise digital experiences including the integration of optical fiber sensing.

A key driver for these applications is video. We have been pursuing a better video experience, steadily moving from standard and high definition to 4K and 8K, as well as real-time, interactive, and immersive experiences delivered by XR and glasses-free 3D video. Metaverse and AR/VR applications are set to change consumer habits and raise higher requirements for communications networks. Excellent broadband quality and low-latency connectivity are required to deliver superior experiences. For example, light-field, glasses-free 3D display requires about 1 Gbit/s of bandwidth and a network latency of less than 5 ms for immersive interactions. Optical reconstruction-based glasses-free 3D display has even higher requirements, requiring about 10 Gbit/s of bandwidth and a latency between 1 and 5 ms. Home networks with 1 to 10 Gbit/s bandwidth and 1 to 5 ms latency are basic requirements for satisfying glasses-free 3D experiences.

Furthermore, apart from speed, ultra-broadband initiatives should prioritize transmission efficiency. A seamless transition from 1 Gbps to 10 Gbps, for example, should not incur a cost increase in the same proportion. Therefore, innovations must focus on achieving higher bit efficiency at these high speeds to limit operational expenses. This approach will also contribute to a greener ultra-broadband medium, aligning with environmentally friendly principles.

In the enterprise, industrial applications are often characterized by low latency, deterministic communications, and accurate positioning, while high security and reliability are prerequisites for most vertical applications. An excellent example is the energy sector. As renewable energy accounts for an increasing percentage of all power generated, different services must be strictly isolated while scheduling frequency using a supervisory control and data acquisition (SCADA) system must be 10 times higher to ensure stable power supply. This, in turn, requires a network availability of 99.9999%, meaning an annual outage time shorter than 30 seconds. Traditional networks cannot deliver these capabilities.

Huawei's commitment to advancing ultra-broadband technology is evident in the technical upgrades announced at UBBF 2023. These upgrades, aimed at achieving F5.5G innovation, include advancements in optical network solutions, premium broadband deployment , fiber-to-the-room (FTTR), 10G PON & 50G PON port deployment, all-optical switching modules, and 400G/800G non-blocking ultra-broadband. Leveraging new materials and structures, the power consumption per Gbit will be reduced by up to 65%. The continuous innovation and deployment of these technologies contribute to the industry's evolution towards F5.5G, with the vision of achieving "10Gbps Everywhere."

Governments: from regulators to facilitators

While governments have an essential regulatory role in creating a level playing field and setting best practices, the 10Gbps city calls for new levels of engagement and collaboration, requiring that governments transform from a purely supervisory role to also being facilitators. Authorities should seek to provide the necessary digital infrastructure, future-looking policies, regulations, and incentives to support the development and adoption of smart technologies and solutions. They can also create favorable conditions for innovation and collaboration among stakeholders, such as the private sector, academia, civil society, and citizens. A facilitator role can help governments enhance the efficiency, effectiveness, and responsiveness of public services and foster economic growth and social inclusion.

Governments can also act as leaders by setting the vision, goals, and strategies for intelligent city development and transformation. They can also initiate and coordinate large-scale projects and programs that address the most pressing urban challenges and opportunities, such as climate change, mobility, health, education, and security. A leadership role can help governments demonstrate their commitment and accountability to the public interest and inspire and mobilize other actors to join the 10Gbps city movement.

Collaborating with global carriers and industry partners is vital to promote the industry's development. The focus on F5.5G-oriented technological innovations demonstrates Huawei's commitment to improving network capabilities, efficiency, and overall industry transformation eying better life for people, higher productivity for organization and prosperous economy for countries.

In conclusion, the evolution of the ultra-broadband industry, exemplified by initiatives like the 10Gbps City, is a transformative force in the Gulf region and beyond. As governments, industry players, and technology leaders collaborate to overcome challenges and implement ultra-broadband infrastructure, the digital economy in the Gulf Cooperation Council (GCC) countries is set to thrive. The 10Gbps City Initiative, focusing on ubiquitous connectivity and digital transformation, is a testament to the commitment to shaping a future where digital productivity knows no bounds.

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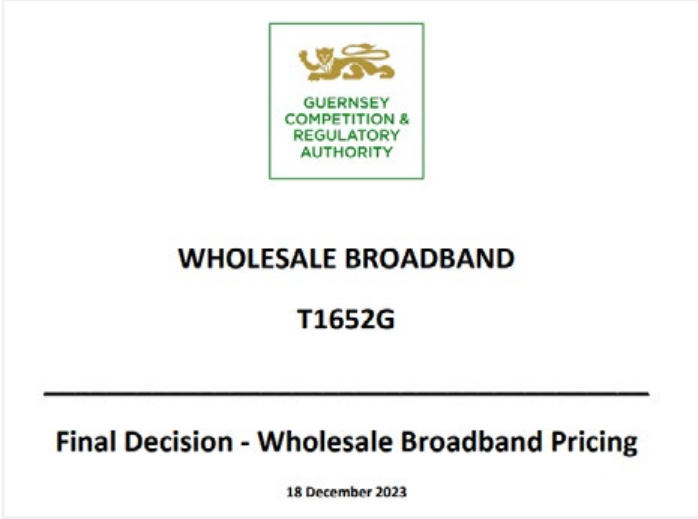
WHOLESALE NEWS

GCRA Issues Final Decision On Wholesale Fixed Broadband Pricing

The Guernsey Regulatory and Competition Authority (GCRA) has issued its final decision on wholesale broadband pricing under which the average charge for local fixed line incumbent Sure Guernsey's wholesale broadband services will be reduced to GBP26.40 (USD33.4) per month – a figure equating to a 31% reduction from the current average charge level. As per the regulator's decision, the new rate will be applicable from 1 April 2024 to 31 December 2028. According to the GCRA, it estimates that the reduction in Sure's wholesale broadband revenues for the first full year of the price control in 2025 will be GBP2.9 million. Should these price reductions be passed on to consumers, the watchdog has suggested they could see an annual average saving of GBP116 in 2025. Summarizing the reasoning behind its decision, the GCRA claimed that Guernsey's fixed broadband customers currently 'face some of the highest prices in Western Europe', with it saying that a 'significant contributor' to this situation is the fact that access to fixed broadband is controlled by Sure's network business, 'which sets high prices to retailers of broadband with little competition'. By intervening in the market, the GCRA has suggested a wholesale price reduction will enable retail ISPs to lower their prices 'significantly', in turn making the Bailiwicks' charges for such services more comparable to other western European countries. Meanwhile, the GCRA has said that, despite the reduction in charges, it has sought to ensure that Sure can fund its ongoing fiber investment program and still earn 'a reasonable return'. In this area the regulator noted it had conducted an extensive review, accounting for Sure's costs and revenues in the coming years as it rolls out its full fiber network, with this done to ensure that the reduction in charges would still enable the telco to recover its efficient costs and would not undermine the financing of the infrastructure deployment.



NCC Outlines Proposed Retail and Wholesale Tariff Adjustments for 2024-28

Taiwan's National Communications Commission (NCC) has issued a draft notice regarding proposed adjustments to tariffs for the wholesale fixed broadband markets. In a press release regarding the matter, the regulator said that it was proposing for retail fixed broadband retail prices to be reduced by '3.32% minus the annual growth rate of the consumer price index' for those operators deemed to hold significant market power (SMP). Of note, the NCC specified that the price reduction would not apply to ADSL-based services offering downlink speeds below 12Mbps nor those FFTx tariffs offering downlink rates of more than 300Mbps. With regards to wholesale fixed broadband, meanwhile, the NCC has suggested a tariff reduction of '5.09% minus the annual growth rate of the consumer price index', though here the reductions will not apply to those connections offering downlink speeds of 2Mbps or less.

DIGI, Vodafone Agree to Spectrum Usage Rights, Wholesale Fiber Access

DIGI Portugal and Vodafone Portugal have entered into a framework agreement, under which DIGI Portugal will gain spectrum usage rights to 2×10MHz in the 1800MHz band and 2×10MHz in the 3400MHz-3800MHz band, in addition to wholesale bitstream access to Vodafone's own proprietary optical fiber network. The deal, subject to approval by the Portuguese Competition Authority, is part of a remedy package submitted by Vodafone in connection to its acquisition of Cabonitel/Nowo Communications. Vodafone entered into an agreement with Llorca JVCO, the owner of Spanish operator MasMovil Ibercom (trading as Grupo MASMOVIL), to acquire Cabonitel, the holding company which controls Portuguese operator Nowo, In October 2022.

Dutch Regulator Finalizes Decision Refraining from Regulating Wholesale Local Access

The Netherlands Authority for Consumers & Markets (ACM) has finalized its previously-announced decision to refrain from further regulation of the Wholesale Local Access fixed broadband internet market, after the European Commission (EC) confirmed that it had no comments on the matter. The market analysis decision was adopted on 12 December 2023. ACM reiterated that there 'is currently sufficient competition in the telecom market' and confirmed its previous position that 'further regulation of the market is not necessary at this time'. The watchdog added, however, that it 'remains vigilant and will annually analyze the competition in the telecom sector to ensure that providers continue to deliver the best price-quality.' In particular, ACM noted that it will annually check whether incumbent national telco KPN and its fiber joint venture Glaspoort are adhering to the commitment decision which makes their fiber-optic networks open to various providers of telecom services. ACM will also monitor whether fibre rollouts announced for the coming years are actually realized by various parties. ACM says it is also alert to takeovers in the telecom sector, 'because this can also lead to a deterioration of the competitive situation'.

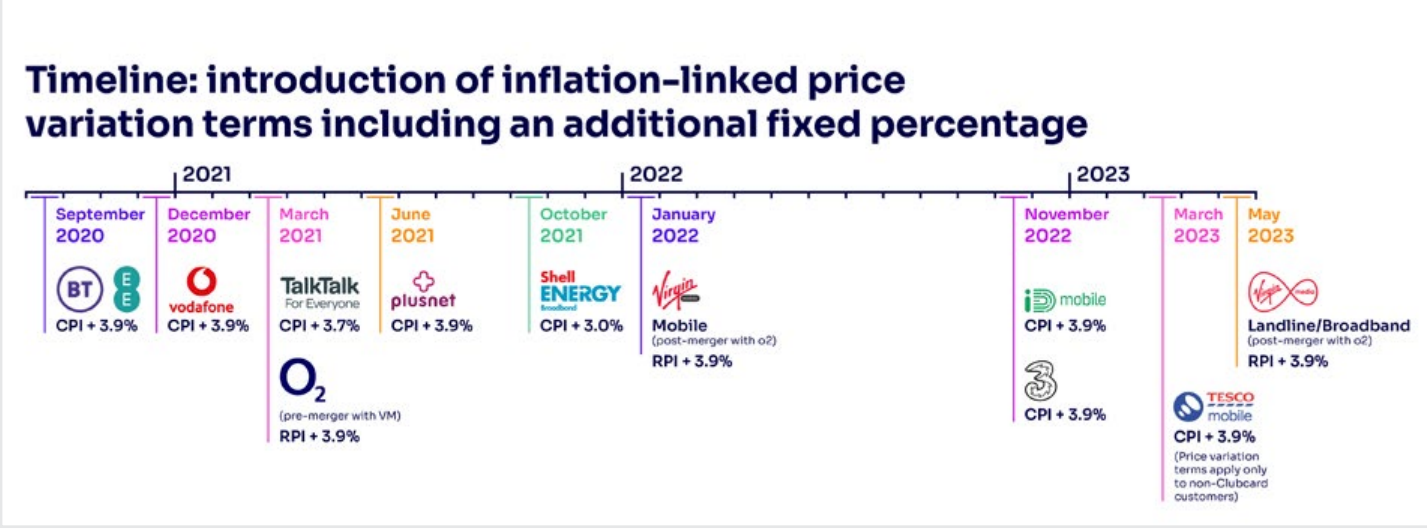
AI to Curtail Revenue Leakage in 5G Roaming Connections

According to Juniper Research, AI solutions will curtail "revenue leakage" in 5G roaming connections. The research suggests that average revenue leakage per 5G roaming connection will decrease from $1.72 to $1.20. This significant reduction is attributed to the strategic implementation of AI-based segmentation by telecom operators, marking a pivotal advancement in monetizing data-centric users. Revenue leakage pertains to the value of services provided but not adequately monetized, a challenge that the telecoms industry has grappled with. Juniper Research's latest findings indicate that AI-based segmentation solutions play a crucial role in addressing this issue by enhancing the allocation of resources and introducing new pricing models, particularly in the realm of 5G standalone networks. The key driver behind this reduction is the ability of AI-based segmentation to discern and categorize traffic types and segments in real-time, thus enabling operators to better monetize emerging roaming services. By leveraging machine learning models, operators can differentiate enterprise traffic by use case and facilitate premium billing for mission-critical 5G standalone connections. According to research author Alex Webb, AI-based segmentation "will differentiate enterprise traffic by use case; enabling premium billing of mission-critical 5G standalone connections, thus reducing revenue leakage." The report, titled 'Global Roaming Clearing Market: 2023-2028,' recommends that operators adopt AI segmentation tools to combat revenue leakage from 5G roaming on standalone networks. As 5G standalone networks utilize the 5G core – as opposed to the 4G infrastructure relied upon by 5G non-standalone networks – individual pricing strategies must be employed for each type of network. This ensures that the pricing accurately reflects the Quality of Service (QoS) offered by these networks, considering factors such as higher throughput and lower latency.

In essence, the adoption of AI-driven segmentation tools emerges as a critical strategy for telecom operators to optimize network resource distribution, identify enterprise traffic suitable for use case-dedicated network slices, and ultimately curb revenue leakage in 5G roaming connections.

Ofcom Orders Clearer Broadband Tariffs, Proposes Ban on Inflation-Linked Mid-Contract Price Hikes; Social Tariff Take-Up Doubles

UK telecoms regulator Ofcom has issued new guidance to fixed broadband providers to ensure consumers are given clear information when signing up to a service. Operators must now tell consumers about the network that underpins their service using only terms that are clear and unambiguous, specifically confirming whether the network they use is a 'full-fiber' network, i.e. fiber-to-the-premises (FTTP) – with fiber all the way to a customer's home or business premises – or a 'part-fiber', copper (xDSL), or cable access network. Ofcom notes that some providers currently use the term 'fiber' ambiguously, referring variously to fiber-to-the-cabinet (FTTC), FTTP or cable (HFC) technologies. Ofcom added that its research showed only 46% of customers who reported being on 'full-fiber' broadband were living in areas where it is actually available. The new guidance will apply from 16 September 2024. Ofcom has also proposed a ban on 'inflation-linked' mid-contract price rises for mobile/fixed phone, fixed broadband and pay-TV services. The regulator provisionally concluded that these price hikes 'can cause substantial amounts of consumer harm by complicating the process of shopping for a deal, limiting consumer engagement, and making competition less effective as a result,' adding: 'These terms also require customers to unfairly assume the risk and burden of financial uncertainty from inflation, with tangible impacts on their ability to manage costs at a time when household budgets are already stretched to the limit.' Ofcom proposes to require any price written into a customer's contract 'to be set out in pounds and pence, prominently and transparently, at the point of sale' including 'being clear about when any changes to prices will occur.' A consultation period on this proposal ends 13 February 2024, with a final decision scheduled for 'spring 2024', and Ofcom expects the ruling to take effect four months after the decision's publication. Separately, Ofcom reported that take-up of social tariffs – cheaper packages for people claiming Universal Credit, Pension Credit and certain other benefits – for fixed broadband and/or mobile/fixed phone services increased to 380,000 in September 2023, up from 147,000 a year earlier. However, the watchdog added that awareness among eligible customers 'remains a challenge': its research showed 55% of eligible households remain unaware of social tariffs, and while take-up is improving, it remains low as a proportion of qualifying homes, at 8.3%.



Kenyan MPs State Termination Rates Should Be Cut Further

Kenyan MPs have called on the Communications Authority (CA) to reduce fixed and mobile termination rates (FTRs and MTRs) further, claiming that the recently announced cut in costs did not go far enough, reports Business Daily. Last month the telecoms regulator published Determination No. 4 of 2023, under which the FTR and MTR will drop from the current level of KES0.58 (USD0.0038) per minute to KES0.41 on 1 March 2024 for a period of two years. In a press release, the CA said the new rate was informed by the prevailing economic environment, ICT market dynamics and the need to strike a balance between the promotion of investment and the protection of consumers. However, members of the National Assembly's Communication, Information and Innovation Committee have questioned why CA failed to cut the rates to KES0.06 as recommended by a study it commissioned.

NBN Co Outlines Details of New Wholesale Broadband Agreement for Retail Providers

Australia's NBN Co has announced that it will implement a new Wholesale Broadband Agreement ('WBA5') for the nation's retail service providers (RSPs) on 1 December 2023. In a press release regarding the matter, NBN Co said that the revised three-year agreement reflects the wholesale price terms of the Special Access Undertaking (SAU) Variation which was accepted by the Australian Competition and Consumer Commission (ACCC) last month. According to the operator, the new agreement will see 'significant' reductions in the wholesale prices of entry level and higher speed tiers, while supporting fast internet speeds and improved cost certainty for retailers and customers. Among the improvements highlighted by NBN Co for the new wholesale agreement is the implementation of flat-rate prices with the immediate removal of CVC (capacity) charges for the 'Home Fast' wholesale service at downlink speeds of 100Mbps or higher. With regards to price reductions, NBN Co singled out an AUD10 (USD6) discount which will be applied to the entry-level 12Mbps/1Mbps 'Basic Bundle', making that available for a wholesale price of AUD12 per month. A 25Mbps/5Mbps tariff will receive an AUD11 discount, meanwhile, reducing its monthly wholesale charge to AUD26. Counter to that, NBN Co's 50Mbps/20 Mbps product will actually see an AUD5 wholesale price increase, to AUD50 per month, but the operator claims to have 'incorporated greater value into the plan' with a 34% increase in the data allowance. To date, a total of 38 RSPs, including 'Australia's largest internet retailers', are said to have signed up to WBA5.

Mali Signs Two Roaming Agreements, with Benin and Togo

Mali has entered into two mobile roaming agreements with fellow West African countries Benin and Togo, with implementation expected before the end of February 2024, Agence Ecofin reports. The Malian Authority for the Regulation of Telecommunications/ ICT and Post (L'Autorite Malienne de Regulation des Telecommunications/TIC et des Postes, AMRTP) signed bilateral memorandums of understanding (MoUs) with its Beninese and Togolese regulatory counterparts on 9 December with the aim of eliminating roaming charges to reduce communication costs for mobile phone users travelling between the respective countries. Under the terms of the agreement, roaming users will be able to receive calls free of charge during the first 30 days of their visit. In addition, local calls will cost a maximum of XOF79 (USD0.13) per minute; calls to the roamers' home country will be capped at XOF150 per minute; and mobile internet will be billed at a maximum XOF2.2 per MB. The Mali/Benin/Togo regulators' joint statement said: 'Regulatory authorities will continue, with the support of their respective governments, efforts to eliminate roaming charges between ECOWAS [Economic Community of West African States] countries through the multiplication of similar agreements to achieve the objective of mobility and community digital integration.' Previously, Benin and Togo signed a bilateral roaming agreement in October this year, before Togo reached a roaming pact with Cote d'Ivoire on 6 December. Earlier, at the end of June Cote d'Ivoire and Ghana launched mutual roaming without surcharges via ECOWAS regulations, while Ghana and Togo are in the process of finalizing a similar arrangement under the ECOWAS framework. Furthermore, according to the latest report, a roaming agreement should also become effective between Cote d'Ivoire and Burkina Faso from 15 December 2023.

Another Roaming Deal Signed in West Africa

The telecoms regulators of Cote d'Ivoire and Togo have signed a mobile roaming deal which will cut costs for travelers between the two countries. The agreement is the latest among members of the Economic Community of West African States (ECOWAS), an organization which includes 15 West African nations. Under its Regulation 21/12/17 of December 2017, ECOWAS has called on member states to implement free cross-border roaming. The first such agreement was signed in July this year between Cote d'Ivoire and Ghana.

ARTICLE

Borderless Innovation and Sustainability to Pave the Way for the Most Vulnerable Entrepreneurs

Gabriela Eguidazu Villota
Innovation for Inclusive Growth Director
FBBVA

Innovation and sustainability in today's world are at the top of the agenda in all regions of the world. In the Middle East, for example, these issues are particularly relevant because, according to the United Nations, the region has the highest youth unemployment rate in the world and many countries in the region are considered to be among the most water-stressed in the world. Aware that climate change and water scarcity are closely related to unemployment and migration patterns, the model and its consequences are easily extrapolated to other regions such as Latin America where, as in other parts of the world, there has been little widespread innovation in the water and sanitation technology sector.

In view of this panorama, the BBVA Microfinance Foundation has made a series of innovations available to the 3 million entrepreneurs it supports in Latin America, such as insurance that assess compensation in the event of natural disasters from a satellite, facial and voice identification and a mobile banking service in chat format. These technologies allow BBVAMF's financial and non-financial solutions to support the progress of the entrepreneurs to be taken to any corner of the five countries in which it is present, while at the same time reducing the digital divide.

"For the BBVA Microfinance Foundation (BBVAMF), innovation is a lever for economic, social and digital inclusion. Technology helps us to serve more vulnerable entrepreneurs and facilitate their day-to-day management," explains Gabriela Eguidazu, director of Innovation and Inclusive Growth at BBVAMF.

Today, the entrepreneurs served by the Foundation can choose how they want to operate with their institution, in person or virtually, from onboarding - which can be 100% digital thanks to facial and voice biometrics - to carrying out any transaction or signing digitally.

This path began years ago, when the Foundation began to digitalise the tools used by advisors (employees of the BBVAMF' microfinance institutions) to assist entrepreneurs. The first step was to create an app, which also works offline, so that they could carry out all operations from their tablets and thus avoid the need for entrepreneurs to travel to the bank branch.

This app has become the essential working tool for advisors. So much so that today more than 90% of loans are granted using the advisor's app. Moreover, thanks to its geolocation capacity, advisors can locate entrepreneurs who live in remote and difficult-to-access areas.

> *"For the BBVA Microfinance Foundation (BBVAMF), innovation is a lever for economic, social and digital inclusion. Technology helps us to serve more vulnerable entrepreneurs and facilitate their day-to-day management,"*

Since then, the Foundation has continued to innovate with advances such as facial recognition and the Voice Fingerprint tool recently launched by Financiera Confianza, BBVAMF's Peruvian microfinance institution, which allows the identity of customers to be authenticated very easily and quickly in the various channels available.

The voiceprint allows entrepreneurs to use the language of their choice (it can be an indigenous language) for voice validation while maintaining high security standards, thus boosting inclusion.

Another of the most successful functionalities is the mobile banking application, designed in an intuitive format, similar to WhatsApp, which all microfinance institutions of the BBVAMF use to communicate with their customers. The aim was to find a simple and easy-to-use system for these populations, who are familiar with this type of chat but not so familiar with financial transactions. Today, more than 800,000 entrepreneurs already use it.

These efforts, in addition to trying to facilitate their day-to-day management, have been a way of boosting digitalisation in remote and vulnerable places, and reflect the Foundation's commitment to contributing to closing the digital divide. Small neighborhood shops act as BBVAMF Institution's banking correspondents and more than 80 if them, in remote villages have been equipped with satellite (and other) connections to bring internet, banking services and training. In these establishments, customers can withdraw money, make deposits or complete a credit application.

The Foundation, aware of the importance of digitalisation for the progress of its entrepreneurs' businesses, also works to improve their inclusion in the digital economy by organising free courses both in person and through its open digital platforms.

Satellites to speed up insurance payouts for natural disasters

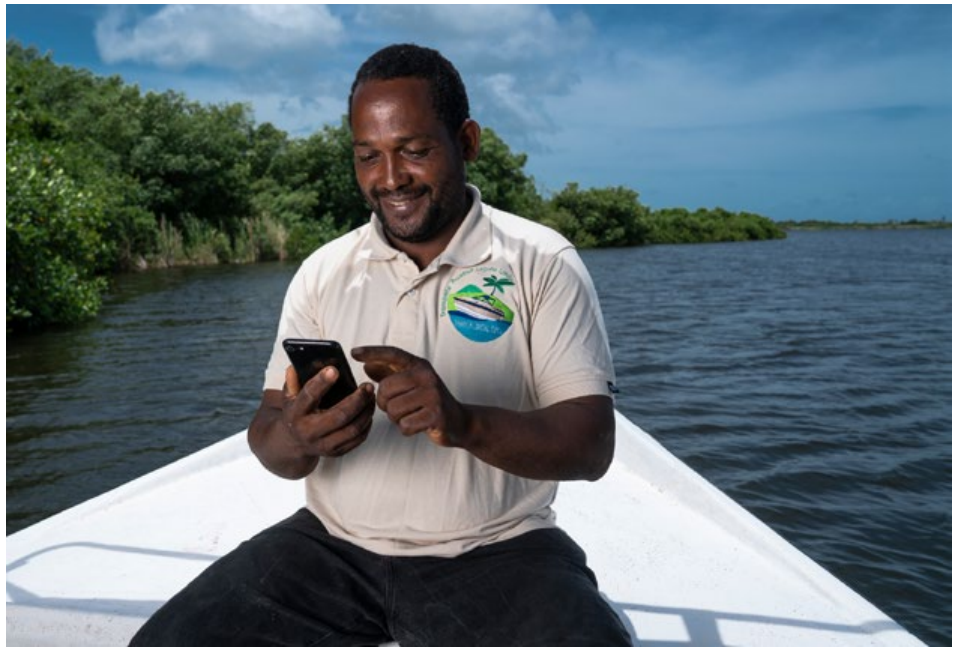
Environmental sustainability is another strategic priority for BBVAMF, which relies on technology to create climate vulnerability maps. The information provided by these maps is cross-referenced with geolocation data and complements the information on the economic and social situation of entrepreneurs, in order to design and offer solutions tailored to their needs (frost, floods caused by El Niño, droughts, etc.).

Another example of how these technologies are used is parametric insurance, which covers businesses against natural disasters associated with climate change and whose payment is automatic and varies according to the level of force of the climate event monitored by satellite (the more serious the phenomenon, the higher the payment). In this way, compensation is recognised without the insured having to make a claim, notify of the loss, or provide proof of the loss.

This insurance provides entrepreneurs with coverage that protects them against possible damages or losses that could affect their agricultural, livestock, forestry, aquaculture or fishing production, against risks such as excessive rain, drought or earthquakes that occur in the place of their business, according to predefined parameters or levels of force.

In the event of any of the insured risks exceeding the established minimums, they will be paid according to the level of force they have had, which is determined through scientifically predefined indices or parameters based on measurements made by international experts (geological and climatological reporting agencies).

Supporting entrepreneurs in any corner of the planet, especially the most vulnerable ones, and accompanying them on their way to a more hopeful future deserves the full effort of the public and private sectors; it is essential to continue our efforts to design joint strategies to implement initiatives capable of at least beginning to change the forecasts and, of course, the facts of a reality that gives no respite and that invites us to continue working together, for the good of all.



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TECHNOLOGY NEWS

Dialog Unveils Sri Lanka's First Ever Online SIM-to-eSIM Conversion

For the first time in Sri Lanka, Dialog Axiata PLC, Sri Lanka's premier connectivity provider, introduced the facility for customers to conveniently and seamlessly transition from traditional SIM cards to more secure eSIMs using any eSIM-compatible Android or iOS device. To determine if a device is eligible for the eSIM service, customers can visit www.dialog.lk. If a device is listed as compatible, customers can proceed to upgrade to an eSIM facility or purchase a new eSIM with a new connection number through the MyDialog App or https://www.dialog.lk/esim With all the latest Android and iOS devices being launched with the eSIM facility, Dialog recognized the need to offer the convenience of effortlessly upgrading to the highly secure eSIM facility via dialog.lk and MyDialog App. eSIM technology offers streamlined device management where swapping physical SIM cards between phones is eliminated. It also enables dual SIM capability on the latest iPhone models. The Introduction of eSIM technology makes tracing a lost device easier in case it's stolen as the SIM cannot be removed and discharged. This advancement also contributes to a plastic-free environment, aligning with Dialog's ESG (Environmental, Social, and Governance) ambitions while eliminating the SIM getting damaged. To use this service, customers simply need to visit https://www.dialog.lk/esim or MyDialog App, select the relevant device, conduct the OTP (one time password) verification of the SIM, enter their email address to receive the QR verification and the guide document, and conclude the confirmation as per the instructions provided.

Kymeta Hawk u8 is the First Flat Panel Antenna to Be Approved on Eutelsat OneWeb's LEO Network for Land Mobility

World-leading flat panel satellite antenna company Kymeta (www.kymetacorp.com) and satellite communications company Eutelsat Group (eutelsat.com) today announced that the Kymeta electronically steered Hawk u8 LEO terminal is now approved for land mobility on the Eutelsat OneWeb LEO network, becoming the first flat panel antenna to be approved on its LEO network for land mobility. This offering unlocks a new era of connectivity for customers who require exceptional performance and reliable connectivity while on the move. Kymeta's deep roots in providing mobility extend back to the launch of its first product in 2017. By tapping into Eutelsat OneWeb's enterprise-grade connectivity network, all vehicles can now connect easily and seamlessly on the pause and on the move. "This is an exciting time as we see every major industry such as emergency management, on-road fleets and rail operators wanting to tap into mobile broadband as an efficient and effective means to transform their operations," said Walter Berger, President and Co-CEO, Kymeta, "As a proud partner of Eutelsat Group, today marks a milestone for Kymeta because it represents the fulfillment of our joint commitment to enable satellite communications on the move globally." Massimiliano Ladovaz, Chief Operations Officer at Eutelsat Group, said "Kymeta offers a high-bandwidth, low-power, fully integrated family of high throughput mobile terminals. Eutelsat OneWeb's LEO satellite network will give Kymeta customers access to high-speed, low-latency broadband connectivity while on the move or while stationary even in the remotest parts of the world."

HK and Macau Operators Test 5G+VoNR

China Mobile Hong Kong (CMHK), Companhia de Telecomunicacoes de Macau (CTM) and CITIC Telecom have teamed up to conduct roaming trials of 5G Standalone (SA) and Voice over New Radio (VoNR) technologies between Hong Kong and Macau. The firms say the trials will lead to an enhanced 5G roaming experience for customers in the Guangdong–Hong Kong–Macau Greater Bay Area.

New Partnership Aims to Revolutionize Satellite Imagery Capabilities in Asia

A satcoms collaboration described as "groundbreaking" has been signed in the past few days. Its aim is said to be to evolve the landscape of satellite imagery capabilities and geospatial services in Southeast Asia. Uzma, a leading energy and technology company, and Satellogic, a leader in sub-meter resolution earth observation (EO) data collection, announced the agreement late last week. It includes leveraging both a state-of-the-art EO satellite designed and manufactured by Satellogic that is planned to be launched in the second half of 2024 as UzmaSAT-1 aboard a SpaceX Falcon 9 rocket, and extensive tasking access to the Satellogic constellation. Through its wholly owned subsidiary, Geospatial AI, Uzma will leverage access to high-temporal and high-resolution satellite imagery from Satellogic's commercial fleet of sub-meter resolution EO satellites, which is described as the largest in the world. Through this collaboration, Geospatial AI says it is positioning itself to accelerate the

development of valuable geospatial applications, providing actionable insights for a rapidly growing market. A pivotal aspect of this collaboration is the tasking capacity made available to Uzma, empowering it to capture precise satellite imagery on demand, including frequent revisits, maximum responsiveness and extensive collection capacity especially suited to scale its business. This, says Uzma, will enable it to swiftly respond to market trends and opportunities, allowing its customers to access up-to-date and accurate geospatial data for informed decision-making. Matt Tirman, Satellogic President, says: "By integrating Satellogic's cutting-edge satellite constellation with Uzma's robust data analytics and expertise, we are setting a new benchmark in geospatial intelligence. We believe this is the beginning of a new era in satellite imagery and geospatial services in Malaysia and Southeast Asia." The partners point out that this collaboration has the potential to address critical global and domestic challenges, including environmental, social, and governance (ESG)-related matters – from food security to border security, disaster response, and more.

Fujitsu, KDDI Deploy Large-Capacity Multiband Wavelength Multiplexing Solution

Fujitsu and KDDI Corp's KDDI Research facility have announced the development of a large-capacity multiband wavelength multiplexing transmission technology using installed optical fiber. In a press release dated 4 December, the two companies noted that the new technology 'enables transmission of wavelength bands other than the C band, which has not been used in medium- and long-distance commercial optical communications, using a batch wavelength conversion and multiband amplification technology'. The development work was reportedly undertaken as part of the 'Research and Development Project of the Enhanced Infrastructures for Post-5G Information and Communication Systems' commissioned by Japan's New Energy and Industrial Technology Development Organization (NEDO). 'The optical fiber communications network introduced with this technology enables wavelength transmission at 5.2 times the wavelength multiplicity of current commercial optical transmission technology … The technology makes it easier to expand the transmission capacity in urban areas and densely populated residential areas where installation can prove challenging, and offers the potential to significantly reduce the time required to start the service and reduce costs.'

TPG Telecom Migrates 4G/5G Data Services onto Consolidated Core Network

Australia's TPG Telecom, which offers services under a range of brands including Vodafone Australia, has successfully migrated its consumer and business 4G and 5G data services onto a single, consolidated core network provided by Ericsson dual-mode 5G Core solution. In a press release announcing the development, Ericsson said it had partnered with TPG Telecom to build and deliver its consolidated network, which it is claimed will increase operational efficiency of the telco's network, enabling the delivery of new services and improved mobile performance in shorter timeframes. Commenting, TPG Telecom's Chief Technology Officer, Giovanni Chiarelli, said: 'The successful migration of TPG Telecom's 4G LTE data services to our existing Ericsson cloud-native dual-mode 5G Core network marks an important milestone in our efforts to build Australia's most innovative and advanced mobile network.'

Edotco Teams with Zeta IOS to Create Rural Connectivity Solutions

Telecoms tower company edotco announced a new partnership with integrated network solutions provider Zeta IOS to provide satellite-based solutions to boost rural connectivity in Malaysia. Under the partnership, edotco and Zeta IOS will develop an integrated solution that combines fixed wireless access (FWA) and Super Wi-Fi connectivity on the ground with satellite backhaul. The proposed solution will be designed to use LEO satellite systems covering Malaysia, such as Starlink and Eutelsat OneWeb. It will also support geostationary satellite broadband services such as MEASAT's CONNECTme service. Edotco CEO Adlan Tajudin said that it chose Zeta IOS for its track record in end-to-end integrated connectivity solutions. "Through our partnership with Zeta IOS, we are taking a significant leap in connecting the most remote areas of Malaysia, where connectivity infrastructure under the National Digital Network (JENDELA) initiative may not reach," he said in a statement. The Malaysian Communications and Multimedia Commission's (MCMC's) JENDELA initiative aims to provide 100% internet coverage in the country by the end of 2025, with broadband speeds of at least 100 Mbps, and 9 million homes passed with gigabit fiber access. In June this year, the MCMC declared the first phase of JENDELA a success, achieving its goals of 96.9% 4G mobile coverage and 7.5 million premises passed with gigabit fiber. Phase 2 will focus on extending 5G coverage to 100% of populated areas and 85% of the rural population, and deploying FWA and satellite broadband solutions to fill in the remaining gaps.

Smart, DOCOMO Complete Successful Open RAN RIC Test

Smart Communications, the mobile arm of PLDT Inc., has announced the successful completion of a full-blown Open Radio Access Network RAN Intelligent Controller (Open RAN RIC) proof of concept (PoC) in partnership with Japan's NTT DOCOMO. Claiming a first for the Philippines, Smart said the PoC tests were conducted at the PLDT-Smart Technolab in Makati City featuring various use case scenarios. The mobile operator was also the first Filipino company to test Open RAN in Q1 2023, having previously explored the possibility of using the technology starting back in 2019.

ARTICLE

Connectivity Outlook in 2024: Soaring Bandwidth Consumption Expected in the Middle East

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SVP, Enterprise & Cloud, EMEA & APAC
SES

In the four years prior to June 2023, bandwidth consumption in the Middle East grew at a compound average growth rate (CAGR) of just over 30%. Three big drivers fuelling this growth are: 5G, cloud migration and the increasing demand of customers on the move. Many of the applications being used are latency sensitive. Historically, this sensitivity has limited the ways in which satellite could help.

This is no longer the case. With the launch of O3b and O3b mPOWER satellites operating in medium earth orbit (MEO) by SES, Luxembourg-headquartered provider of satellite services for enterprises, broadcasters and governments, satellite is capable to serve even the most latency sensitive applications. Equally important, given the ever-increasing bandwidth consumption, is the high capacity offered by O3b mPOWER, coming into service in 2024.

5G

Led by the Gulf countries (UAE, Saudi Arabia and Qatar), 5G rollout has accelerated in the Middle East. Earlier this year, SES and du (Emirates Integrated Telecommunications Company) demonstrated 5G backhaul via SES's O3b constellation. This proved that O3b can extend du's 5G coverage to remote and offshore locations. With O3b mPOWER, du will be able to serve enterprise customers like offshore oil and gas platforms.

Cloud

As the amount of data handled by enterprises and governments increases, many of them are migrating that data to the Cloud. Gartner predicts that by 2027 over 70% of enterprises will use industry cloud platforms (up from 15% this year) to handle and accelerate business initiatives. The Middle East is no exception to this migration. PwC found 85% of Middle Eastern companies surveyed have already implemented cloud platforms in at least one area of operation. Anticipating this move to the cloud, SES joined forces with Microsoft Azure in 2020 to provide a managed service, enabling operators and enterprises to process data and scale operations directly in the cloud.

In the UAE, e& is hosting an O3b mPOWER and Microsoft ground station at Ras Al Khaimah to facilitate a one-hop connection to Microsoft's Azure cloud from remote sites, enabling companies in the region to accelerate digitisation plans.

> *SES is well-positioned to serve the Middle East thanks to the ubiquitous connectivity delivered by its unique multi-orbit fleet of MEO and Geostationary (GEO) constellations.*

Mobility

The days when being on a flight or cruise meant disconnecting from work and entertainment are long gone. Passengers expect the same connectivity when traveling as they get in the office or at home. But it's not just passengers; always-on connectivity is also a must for aero, cruise and maritime operators to bring efficiencies in their fleet operations. Connectivity allows these operators to optimise their business operations in real-time. SES is already a leader in providing connectivity to the cruise industry.

SES is well-positioned to serve the Middle East thanks to the ubiquitous connectivity delivered by its unique multi-orbit fleet of MEO and Geostationary (GEO) constellations. Additionally, the strategic local partnerships fostered by SES in the region and a consistent strong financial performance mean SES can easily elevate the level of connectivity services.

Let's advance together digital transformation for all!
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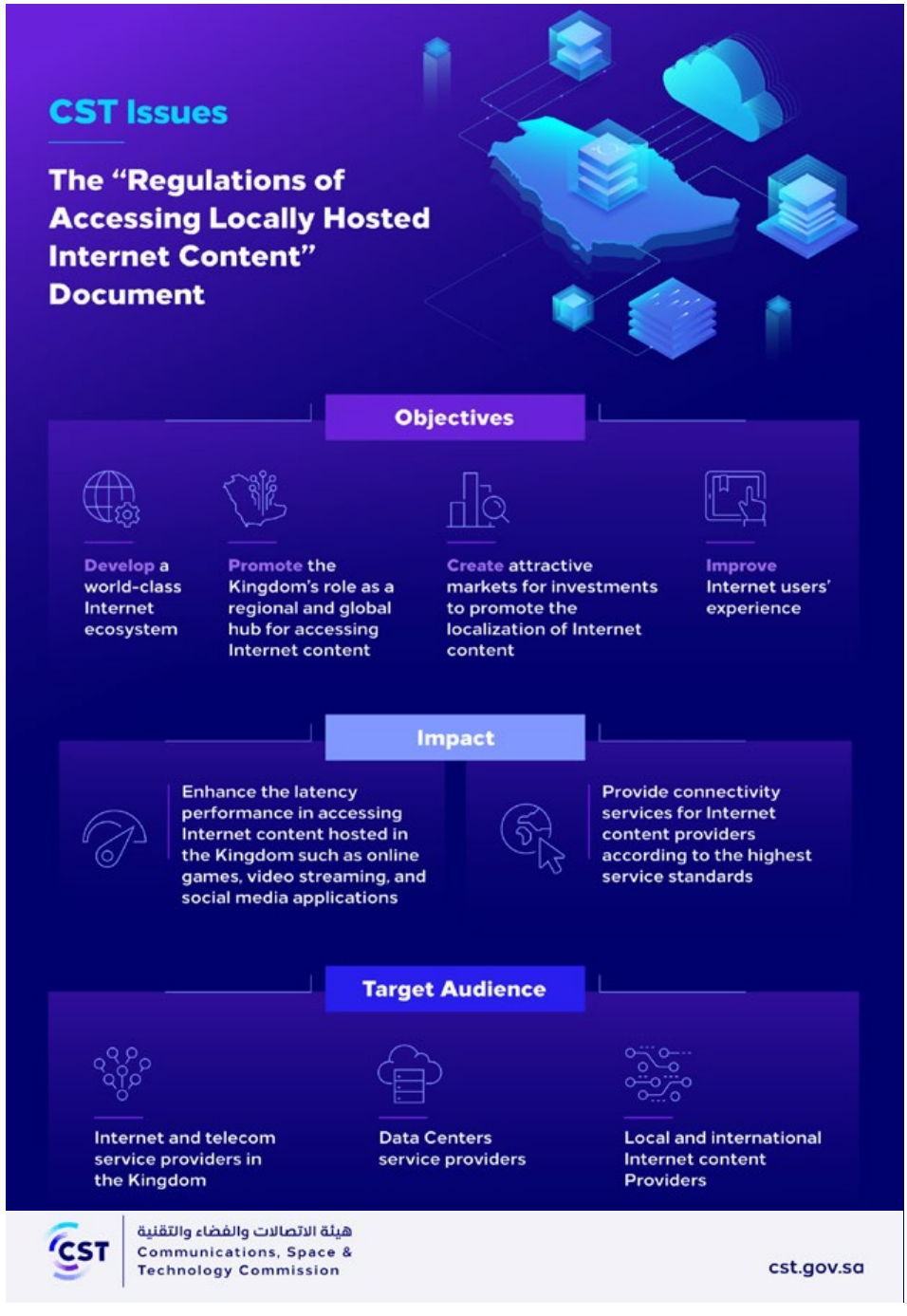
REGULATORY NEWS

CST Issues the "Regulations of Accessing Locally Hosted Internet Content" Document

The Communications, Space and Technology Commission (CST) issued the "Regulations of Accessing Locally Hosted Internet Content" document, which aims to develop a world-class Internet ecosystem to promote the Kingdom's role as a regional and global hub for accessing Internet content, elevate services reliability, and enhance the user's experience. CST highlighted that the Internet content covered includes all forms of data and services that are accessible via the Internet and are hosted inside the Kingdom such as video streaming, online games, content provided through social media applications, and more. These regulations aim to contribute to enhancing access to Internet content hosted in the kingdom, in addition to facilitating the provision of connectivity services according to the highest service standards. These regulations will contribute in accessing locally hosted internet content in the Kingdom, as well as the provision of connectivity services. The document applies to facilities-based unified license service providers and fixed telecommunication service providers. This regulatory document is part of the CST's regulatory role in the ICT sector to raise the efficiency of infrastructure and services, as well as to improve the Internet users' experience and provide them at the highest quality levels in accordance with the best international practices.



TDRA Obtains the International Public Sector Accounting Standards Certification (CERT IPSAS)

The Telecommunications and Digital Government Regulatory Authority (TDRA), represented by the Human Capital Department, obtained the International Public Sector Accounting Standards (CERT IPSAS) certification from the Association of Chartered Certified Accountants (ACCA), one of the leading and globally recognized international organizations in the field of accounting. TDRA is the first federal entity to obtain such certificate, which reflects the advanced capacities and expertise within TDRA's workforce in the field of finance. It also underscores TDRA's leadership, its dedication to excellence in financial management, and its preparedness to establish new benchmarks for financial transparency and accountability in the public sector. Commenting on this achievement, H.E. Mohammad Al Kitbi, TDRA Deputy Director General for Support Services Sector, said: "At TDRA, we adhere to the directives of our wise leadership, recognizing that the pursuit of excellence is a continuous journey. Thus, we at TDRA strive to instill a culture grounded in the principles of leadership and excellence across all operational domains. Our success in this endeavor is attributed to the robustness of our national workforce, the teamwork, and an unwavering commitment to realizing TDRA's highest objectives, in line with "We the UAE 2031" vision, which emphasizes a Forward Ecosystem." The International Public Sector Accounting Standards Program (IPSAS), which TDRA has successfully adopted, aims to enhance and support employees' skills in the field of finance by providing comprehensive guidance on the practical implementation of International Public Sector Accounting Standards, reaching a mastery stage that helps improve financial operations and enhance comprehensive financial management. The program strives to offer a hands-on understanding of the application of these standards, globally acknowledged as benchmarks for financial reporting excellence. Objectives encompass explaining the functions of the International Public Sector Accounting Standards Board (IPSASB) and detailing the developmental methodology. Participants will gain a comprehensive perspective on the widespread utilization of IPSAS across the globe. This global perspective will enable TDRA to align its financial procedures with international best practices, fostering transparency and credibility. It underscores TDRA's dedication to implementing best practices and upholding the utmost standards of financial integrity within the public sector. It is noteworthy that TDRA's embrace of the "IPSAS" program is part of its steadfast dedication to fostering a culture of ongoing learning and aligning its procedures with international best practices. This commitment extends to the integration of innovation and excellence in financial management, driven by TDRA's recognition of the essential role of financial practices in fulfilling its mission of promoting a prosperous and transparent digital ecosystem.

State Selling 25% in Yettel Hungary to PPF, Enabling e& to Take Control Next Year

Hungarian state-owned Corvinus International Investment has signed agreements to sell its 25% stake in mobile operator Yettel Hungary and 20% in infrastructure company CETIN Hungary to Czech-backed, Netherlands-based private investment company PPF Group, the Economic Development Ministry announced. As reported by the Budapest Times, the ministry did not disclose a sale price, whilst it underlined that Corvinus will continue to hold a 29.5% stake in Yettel's rival Vodafone Hungary. Yettel Hungary is currently 75% owned by PPF Telecom Group, part of PPF Group, although the latter has agreed to sell a 50% plus-one-share interest in its Central and Eastern European telecoms division (excluding the Czech Republic) to UAE-based telecoms group e& (formerly Etisalat Group) in a deal expected to close in or before Q1 2024. This deal would already give e& local majority stakes in PPF's Bulgaria, Serbia and Slovakia divisions, and with this week's news of the Corvinus-PPF agreement it appears that e& can take majority control in Hungary too.

NTRA Hosts First Regulatory Forum for Citizen Services

The National Telecom Regulatory Authority of Egypt (NTRA) hosted the first Regulatory Forum for Citizen Services, with the participation of six regulatory authorities: the Egyptian Environmental Affairs Agency (EEAA), the National Organization for Social Insurance (NOSI), the Egyptian Water and Wastewater and Consumer Protection Regulatory Authority (EWRA), Gas Regulatory Authority (GASREG), Waste Management Regulatory Authority (WMRA), and Land Transport Regulatory Authority (LTRA). The forum aimed to share expertise, achieve cooperation among regulatory authorities, and improve the quality of life and service level for citizens. It also aimed to maximize the use of digital services and ensure citizens can access them smoothly. The forum was organized to support and enhance the State's efforts to achieve digital transformation and provide high-quality digital services for citizens. The forum addressed three major axes: raising social awareness of digital services and how to obtain them, the importance and role of cybersecurity in securing critical infrastructure, and the regulatory and governing role of the State's different regulatory authorities to preserve the rights of users. It also discussed ways to achieve participatory regulation among entities to ensure citizens are satisfied with the services provided. Hossam El-Gamal, Executive President of NTRA, emphasized the importance of cooperation among regulatory authorities to have a unified vision of providing digital services smoothly and quickly. He also highlighted the importance of participatory regulation among all regulatory agencies and authorities, as the cornerstone of digital transformation and the provision of integrated digital services in different scopes. He said that participatory digital services depend mainly on coordination between various sectors. He added that it was necessary to achieve integration and cooperation among regulatory authorities to create an effective regulatory environment for governing services and addressing the challenges raised by emerging technologies and integrated digital services. He also stressed the importance of participatory regulation among regulatory authorities and institutions as a major global trend in service regulation and provision, and one of the most important mechanisms and criteria for evaluating and ranking countries on the global indicators set by international organizations. He noted that the International Telecommunication Union (ITU) chose Egypt as a model for successful countries in implementing participatory regulatory frameworks for telecom services provided to users, in a study conducted by ITU on many countries. This was a result of the progress made by Egypt in moving up to a higher level of digital technologies in the Global Connectivity Index. The report issued by ITU praised the NTRA and the Egyptian experience for using participatory regulation as a tool to achieve an integrated digital economy and create an active regulatory environment that efficiently provides digital services.

Ofcom Opens Consultation on Allocation of Expiring Spectrum

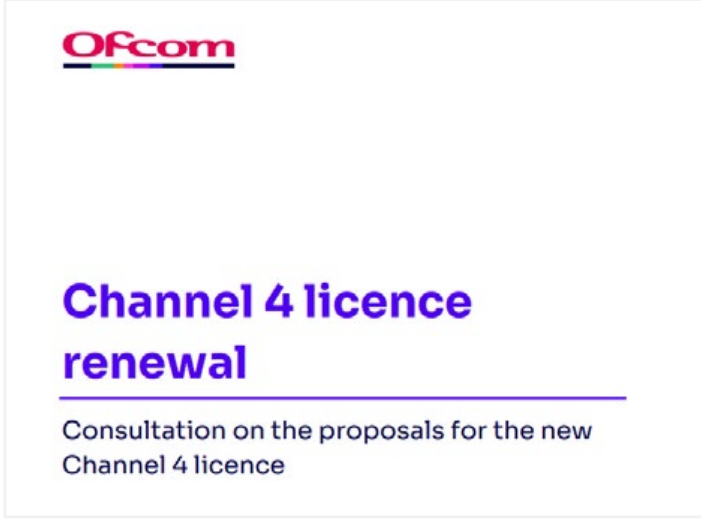
Switzerland's Federal Office of Communications (Ofcom, or Bundesamt fur Kommunikation, Bakom) has opened a public consultation on the allocation of mobile spectrum that will become available from 2029, when existing licenses expire. The consultation looks to determine the needs of operators and level of demand for the spectrum, as well as obtaining the opinions of interested parties on the allocation process. The consultation primarily concerns airwaves in the 800MHz, 900MHz, 1800MHz, 2100MHz and 2600MHz bands that are currently assigned to operators Swisscom, Salt and Sunrise until the end of 2028. Ofcom is also seeking opinions and feedback on the allocation of additional spectrum in the 6GHz, 26GHz and 40GHz ranges. The regulator notes that the 6GHz band is currently assigned to radio relay links and partly to satellite communications and has already been partially allocated. As such, use of the range for mobile communications would be restricted. Similarly, the mmWave is also partially assigned to radio relay links, satellite communications and other telecom services, but the government has ruled out the allocation of mmWave frequencies for mobile communications until there is sufficient demand and the necessary environmental legal framework has been established.

Spain's Govt Acquiring 10% Shareholding in Telefonica Amid National Interest Concerns Following stc Stake Purchase

The government of Spain, acting through the sovereign wealth fund Sociedad Estatal de Participaciones Industriales (SEPI), is acquiring up to 10% of telecoms giant Telefonica in response to Saudi Telecom Company's (stc's) acquisition of 9.9% of the telco's equity for EUR2.1 billion (USD2.3 billion) back in September. Madrid's decision, which was first mooted in late October, is a statement of intent that it will protect the country's security and defence interests – given Telefonica's strategic involvement in this area. The Financial Times quotes Spain's outgoing deputy prime minister, Nadia Calvino, as saying the move is 'in line with other large European countries, such as France and Germany, which have and are increasing their shareholdings in big and strategic telecommunications operators'. Whilst no mention was made of stc, SEPI revealed the acquisition would enable Telefonica to 'achieve its objectives' and 'contribute to safeguarding its strategic capabilities'.

Ofcom Consults on Channel 4 License Renewal

UK media regulator Ofcom has opened a consultation on advertising-funded public broadcaster Channel 4's license renewal. The broadcaster's current license is set to expire at the end of next year. Channel 4 has requested changes to certain obligations to support it becoming a digital-first organization. Ofcom said the proposals for the new licenses "aim to strike a balance between allowing [Channel 4] greater flexibility in the future to develop its content and distribution strategy in support of its digital transformation, while continuing to safeguard its investment in distinctive UK content and protect delivery of the core elements of its linear output on Channel 4." The consultation comes ahead of the passing of the new Media Bill, which is expected to grant the broadcaster some of the flexibility it says it needs, including granting it the ability to produce its own programming and retain IP, rather than outsource all production to the independent sector. Among the changes in the Ofcom consultation are a reduction in the current requirement that at least 56% of the hours of programmes included in the service in each calendar year are originally produced or commissioned for the service to at least 45% of hours each calendar year. Aspects relating to changes brought in by the Media Bill, such as in-house productions, will be reviewed later. For now Ofcom has retained an independent production quota of 25% total broadcasting hours, although this could be raised to 35% under the new rules to safeguard the independent sector, in the event that the broadcaster goes ahead with plans to develop its own production capability.



JCRA Proposes Renewing Home Net's License

The Jersey Competition and Regulatory Authority (JCRA) has proposed renewing HomeNet's Class II operating license, which is currently set to expire next month, issuing an initial notice regarding the matter, the regulator noted that HomeNet's Class II license – which applies to operators which do not possess significant market power – is set to expire on 26 January 2024. With the operator having now applied to renew the license and paid the necessary fee, the JCRA has said the proposed new concession will carry the same terms as the old one, 'save for necessary updates and corrections. As part of the regulatory process for renewing the concession, however, the JCRA has called for any representations regarding the matter; should no responses be received by 25 January 2024, the regulator has said it will issue the new concession to commence on 27 January.

FCC Reaffirms Decision to Reject Starlink Application for Nearly USD900m in Subsidies

The Federal Communications Commission (FCC) has reaffirmed the Wireline Bureau's prior decision to reject the long-form application of Starlink to receive public support through the Rural Digital Opportunity Fund program, based on the applicant's failure to meet the requirements. The program, which uses 'scarce universal service funding collected from consumers', seeks to expand access to broadband networks in rural areas. The agency qualified Starlink at the short form stage, but at the long form stage, the FCC determined that Starlink failed to demonstrate that it could deliver the promised service. In the initial auction results announced on 7 December 2020 Space Exploration Technologies Corp. (Starlink) was the winning bidder of USD885.51 million worth of funding. In a statement dated 12 December FCC chairwoman Jessica Rosenworcel commented: 'The FCC is tasked with ensuring consumers everywhere have access to high-speed broadband that is reliable and affordable. The agency also has a responsibility to be a good steward of limited public funds meant to expand access to rural broadband, not fund applicants that fail to meet basic program requirements. The FCC followed a careful legal, technical and policy review to determine that this applicant had failed to meet its burden to be entitled to nearly USD900 million in universal service funds for almost a decade.' In total, the RDOF program has authorized more than USD6 billion in funding to bring primarily fiber-optic gigabit broadband services to 3.458 million locations in 49 states and the Northern Mariana Islands.

Italian Government Wants to Be Part of Sparkle Deal

The Italian government is looking at ways to gain control of Sparkle, the undersea cable division of Telecom Italia (TIM), which is seen as a strategic national asset. A report from Bloomberg says the Rome administration is looking to become an investor in Sparkle alongside Optics Bidco, a bidding vehicle led by US investment fund Kohlberg Kravis Roberts & Co (KKR). Government planning is still at preliminary stage, the report cites a source as saying, and a final decision has not been taken. Sparkle is valued at around EUR700 million (USD755 million). TIM's board recently approved an offer from Optics Bidco for its fixed line business NetCo, but a separate non-binding bid for Sparkle was rejected. The KKR-led consortium then requested more time to consider its bid, with a revised offer for Sparkle now expected by end-January.

CTI Towers Acquires 525 Cell Sites from Conterra

CTI Towers, which claims to be one of the largest private tower companies in the US, has agreed to acquire 525 towers located in Louisiana, Texas, North Carolina, South Carolina and California from Conterra Ultra Broadband Holdings. Via this acquisition, CTI Towers now has a portfolio of more than 1,800 towers spanning 48 US states. CTI was acquired by alternative asset manager Palistar in 2020 and currently leases space on its towers to the likes of AT&T, DISH, T-Mobile US and Verizon Wireless.

Europe Agrees Landmark Draft AI Legislation

European Union (EU) lawmakers reached a provisional agreement on draft legislation to govern the use of AI, with authorities set to finalize the details in the coming weeks. The European Council stated it had agreed with the European Parliament and the European Commission (EC) on the landmark draft AI Act following three-days of negotiation aimed at ensuring systems used in the bloc adhere to fundamental human rights. It stated the rules would not apply to AI deployments in military and defence, research and non-professional applications by consumers. The authorities settled on a format whereby AI systems would be classified as being of minimal, high or unacceptable risk. Technologies including spam filters or intelligent recommendations will be classed as minimal risk, while AI used in critical infrastructure; medical devices; work or educational institutions; border control; and administration of justice and law enforcement are rated high-risk. AI systems considered "a clear threat" to the public's fundamental rights will be banned under "unacceptable risks", including systems allowing predictive policing, social scoring and manipulation of human behavior. Some uses of biometric identification or monitoring will also be prohibited, with "narrow exceptions" for policing public spaces. The EC noted there would be "additional binding obligations" for the most-powerful general purpose AI models "that could pose systemic risks". Fine Various levels of financial penalties are planned for companies which fail to comply with the proposed rules: €35 million or 7 per cent of global annual revenue "for violations of banned AI applications"; €15 million or 3 per cent for breaching "other obligations"; and €7.5 million or 1.5 per cent "for supplying incorrect information". The authority pledged "more proportionate" caps for SMEs and start-ups technology industry group Digital Europe maintained previous criticism of the plan, stating Cecilia Bonefeld-Dahl, director general of technology industry group DigitalEurope, maintained the organization's critical line on the draft, asking "at what cost" the agreement came. She argued the proposal would "take a lot of resources for companies to comply with, resources that will be spent on lawyers instead of hiring AI engineers". The law is unlikely to come into force until at least 2025.

Taiwan Mobile, Taiwan Star Conclude Long-Running Merger

台灣大哥大 Taiwan Mobile

T STAR 台湾之星

The long-running merger between Taiwan Mobile and Taiwan Star closed on 1 December 2023, with Taiwan Mobile the surviving entity and Taiwan Star now dissolved. Via the deal – which was first agreed on 30 December 2021 – Taiwan Mobile has inherited more than 2.5 million mobile subscriptions and gained access to Taiwan Star's spectrum holdings in the 900MHz, 2.6GHz and 3.5GHz bands. The enlarged entity will serve more than ten million mobile subscriptions and occupy second place in the Taiwanese mobile market.

5G SALE Act Cleared by House Energy and Commerce Committee

The 5G Spectrum Authority Licensing Enforcement (5G SALE) Act was passed unanimously by the House Energy and Commerce Committee on Tuesday 5 December and will now be considered by the House of Representatives. If approved by the House, the legislation would grant the Federal Communications Commission (FCC) a one-time, temporary authority to issue licenses purchased in auctions that were held before 9 March 2023 (i.e. when the FCC's spectrum auction authority was allowed to lapse). Controversially, in March the US Senate allowed the FCC's spectrum auction authority to lapse for the first time since 1994. A bill that would have extended the regulator's spectrum authority to 19 May was passed by the lower house but objections in the Senate (upper house) delayed the legislation, resulting in the lapse. To date, the FCC has held more than 100 auctions and has raised more than USD233 billion in revenues. Auction 108 drew to a close on 29

August 2022 after 73 rounds of bidding. Participating companies successfully bid on 7,872 2.5GHz licenses, generating gross proceeds of USD427.790 million. T-Mobile US secured the bulk of the available licenses, bidding USD304.325 million for 7,156 regional concessions.

FCC Approves Transfer of all DISH Licenses to EchoStar

The Federal Communications Commission (FCC) has approved the transfer of all licenses, authorizations and special temporary authorities (STAs) held by DISH Network Corporation and its subsidiaries to sister company EchoStar ahead of the planned merger of the two companies. DISH and EchoStar were previously part of the same company, EchoStar Communications Corp., but split apart in 2008. Charles W. Ergen owns over 90% of the voting stock of DISH and over 51% of the equity. He also owns approximately 93.5% of the voting stock of EchoStar and approximately 60% of the equity. DISH and EchoStar entered into a merger agreement to recombine on 8 August 2023. Pursuant to the terms of the proposed transaction, DISH Network will be merged into Merger Sub, a newly incorporated direct and wholly owned subsidiary of EchoStar, with DISH Network Corp. surviving the merger as a wholly owned subsidiary of EchoStar. Ergen will beneficially own more than 90% of the voting stock and approximately 54% of the equity of the recombined company. According to FCC records, the DISH subsidiaries holding FCC licenses are: Aevergreen; Alta Wireless; American AWS-3 Wireless I; American H Block Wireless; Crestone Wireless; DBSD Corporation; dishNET Wireline; DISH Broadcasting Corporation; DISH Network; DISH Operating; DISH Wireless; DISH Wireless Puerto Rico; EchoStar 77 Corp.; EchoStar Broadcasting Holding Corporation; EchoStar BSS Corporation; Gamma Acquisition; Little Bear Wireless; Manifest Wireless; New

DBSD Satellite Services; Northstar Wireless; ParkerB.com Wireless; SNR Wireless LicenseCo; South.com; Weminuche; Wetterhorn Wireless; and Window Wireless. DISH provides direct broadcast satellite (DBS) services throughout the US and offers post-paid and pre-paid mobile services primarily through its Boost Mobile brand. EchoStar, meanwhile, provides worldwide global satellite communications services under its own name and through Hughes Network Systems.

EU Gives Green Light For €1.2 Billion Cloud Computing Funding

The move aims to increase the EU's presence in the global cloud computing market

The European Commission has this week agreed to provide €1.2 billion in state funding for cloud computing. The funding will support a European cloud computing project in an attempt to increase the EU's presence in the global cloud computing ecosystem. Currently, the international cloud market is dominated by US firms, such as Amazon Web Services and Microsoft Azure. The project, which is named IPCEI (Important Projects of Common European Interest) Next Generation Cloud Infrastructure and Services (IPCEI CIS) has so far been backed by seven counties: France, Germany, Hungary, Italy, the Netherlands, Poland, and Spain. As part of the project, 19 companies including Deutsche Telekom, Telefónica Spain, Orange, and Telecom Italia will undertake 19 projects, working closely together to develop together the first EU-wide and interoperable multi-provider cloud edge continuum in Europe. "The participating Member States provide up to €1.2 billion in public funding, expected to unlock an additional €1.4 billion in private investments," said Commissioner Didier Reynders (who is in charge of competition policy) in the European Commission's statement. "The IPCEI will provide for highly ambitious research, necessary to enable the uptake of innovative data processing applications and services for European businesses, public administrations, and citizens," he continued. The Commission stated that at least 1,000 jobs are set to be created during the research and development phase of the project, which will run between 2023 and 2031. The image below highlights the structure of the project. IPCEIs are designed to boost the economic growth and competitiveness of the EU by combining research, finances, and business acumen across member states. The European Commission has approved six IPCEIs since 2018, with the projects covering batteries, hydrogen, and microelectronics and communication technologies. The first results of the project are expected around 2027.

FCC Chairwoman Urges U.S. Congress to Renew Funding for Affordable Connectivity Program

Federal Communications Commission (FCC) Chairwoman Jessica Rosenworcel has urged lawmakers to renew funding for the Affordable Connectivity Program (ACP). Rosenworcel made the comments when she addressed the Congressional Subcommittee on Communications and Technology. "Across the country, I have met with people who have been able to get online and stay connected thanks to this program," Rosenworcel said, according to published opening statements. "Our current projections indicate that our appropriated funds to continue this program and keep these households connected will run out by April of next year." The ACP is described as an FCC benefit program that helps ensure households can afford broadband, according to the FCC's website. "The benefit provides a discount of up to $30 per month toward internet service for eligible households and up to $75 per month for households on qualifying Tribal lands," the commission's website stated. Households are eligible for the ACP if their income is at or below 200 percent of poverty guidelines set by the government, according to the FCC's website for the ACP. In addition, households participating in the ACP can also receive a one-time discount of up to $100 to purchase a laptop, desktop computer, or tablet from participating providers if they contribute more than $10 and less than $50 toward the purchase price, according to the FCC's program summary, which said households in the ACP are limited to one monthly service discount and one device discount per household. "I strongly support funding the Affordable Connectivity Program into the future to help more families get and stay connected to the high-speed internet they need to participate in modern life," Rosenworcel told the subcommittee. She said the ACP is the largest broadband affordability program in the nation's history. Rosenworcel isn't alone in urging Congress to renew funding for the ACP. In October, the Biden Administration announced a request for additional funding to bolster the ACP by extending free and discounted high-speed internet for eligible households through December 2024. According to the White House, Biden requested the money be allocated as an emergency request as part of the Balanced Budget and Emergency Deficit Control Act of 1985. "The world is watching and the American people rightly expect their leaders to come together and deliver on these priorities," the president previously said in a statement. "I urge Congress to address them as part of a comprehensive, bipartisan agreement in the weeks ahead."

Regulatory Approval Process for Telia Sale Moves to Phase 2

Telia Company has been informed by the Danish Competition and Consumer Authority (DCCA) that the clearance process for the intended sale of Telia Denmark to Norlys is not yet finalized and that the DCCA has decided to extend the approval process timeline as it needs more time to reach a decision. Telia and Norlys are in dialogue with the DCCA and are continuing to work towards closing the transaction during Q1 2024. In April 2023 Telia Company entered into an agreement to sell 100% of its operations and network assets in Denmark to Norlys (formed in June 2019 by the merger of energy and telecoms group Syd Energi [SE] and regional utility Eniig) for an expected enterprise value of DKK6.25 billion (USD924.3 million), on a cash and debt-free basis. The valuation is equivalent to 8.9x Telia Denmark's 2022 reported EBITDA.

A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION

Afghanistan

The Ministry of Communications and Information said that the Afghanistan Telecom Regulatory Authority (ATRA) will create 450 telecommunications sites soon. Enayatullah Alokozi, the spokesperson of the Ministry of Communications and Information, told TOLOnews that these sites are created in remote parts of the country where people are deprived of telecommunication services. According to him, among these sites, the Afghan Telecom company is supposed to create about 280 sites in 18 provinces and 320 districts worth 27.5 million US dollars. "We have announced 450 telecommunication sites and these sites have been designed in specific areas, which are in places where there is no telecommunication service and the majority of regions (320 districts) were deprived of telecommunication services," said Enaytullah Alokozai. Some residents of the capital have praised the establishment of telecommunication sites in the country and demanded the interim government reduce the price of telecommunication services. "The rates should be controlled, they should set the same rate for all the devices, because they sell the internet to the customers as much as they want for each device," said Rashidullah, a Kabul resident. Some economists consider the installation of new telecommunications sites in remote areas to be beneficial in speeding up the work and business processes of citizens. "The convenience of internet and telecommunications can also have positive social and economic effects, including the simplification of the work and business process, and the result is conducive to economic prosperity," said Abdul Zahur Mudabir, an economist. Earlier, the Ministry of Communications and Information set the price of one GB of Internet access to telecommunications networks at 110 afghani. and one minute of phoning at 1 afghani and 85 pol. (December 11, 2023) www.tolonews.com

Bangladesh

The 4G penetration in Bangladesh has steadily risen over the past few years, surpassing the 10-crore mark for the first time. According to data from Bangladesh Telecommunication Regulatory Commission (BTRC), there were about 18.96 crore mobile subscribers as of October. Of them, 10.05 crore use 4G. That means more than half the users, or 53 percent, are now using 4G SIMs, showcasing a positive trend in the adoption of high-speed mobile internet. Industry people attributed the growth to the expansion of 4G infrastructure, increased investment by telecom operators, and growing demand for faster and more reliable connectivity. The telecom regulator awarded 4G licenses to operators in February 2018, taking Bangladesh into the era of fourth-generation data services. The number of 4G subscribers reached 5 million in June that year. The 4G subscriber base shot up to 1.87 crore in June the following year before hitting 3.53 crore in the same month of 2020. There were 5.92 crore 4G subscribers in the country in June 2021, 7.91 crore in June 2022 and 9.39 crore in June 2023. But despite these advancements, Bangladesh finds itself trailing neighboring countries in the South Asian region, which have witnessed more rapid and extensive 4G network development. In 2022, more than 72 percent of mobile users in India were equipped with 4G while it was 57 percent in Pakistan and an average of 70 percent across the Asia Pacific region, according to GSMA's The Mobile Economy Asia Pacific 2023. (December 13, 2023) www.thedailystar.net

Mr. Md Mohiuddin Ahmed has been appointed as the chairman of Bangladesh Telecommunication Regulatory Commission (BTRC). Prior to the appointment, Ahmed has been serving the commission as its vice chairman. Ahmed will replace Shyam Sunder Sikder, who joined BTRC chairman on December 14 in 2020. Ahmed will hold the position until May 29 of 2025, according to a government notification issued today. (December 11, 2023) www.thedailystar.net

Egypt

The National Telecommunications Regulatory Authority of Egypt (NTRA) imposed a fine of EGP 20 million on Telecom Egypt upon monitoring a breakdown in telecom infrastructure and disconnection of voice and internet services across different areas on Tuesday, December 5, 2023. Operators were also directed by NTRA to provide compensations for affected customers, in accordance with the public compensation rules issued by NTRA to operators, to ensure that users' rights are protected in case of service-breakdowns. NTRA had urgently formed a technical committee once the breakdown occurred, to determine its causes, range of impact, time duration, as well as the areas affected, until service was properly restored to all areas. Meanwhile, the decision of imposing a fine was made based on a report drafted by the committee. Furthermore, the technical committee will carry on work with internet service providers to have a clear image about how impactful such a breakdown was on services, and take whatever actions necessary to protect users' rights. It's worth noting that NTRA affirmed it's important that all measures must be taken to ensure services are seamlessly provided and avoid any network breakdowns that put users at the risk of being harmed. As pointed out by NTRA, measures should be also taken to meet the users' needs, protect their rights and raise their level of satisfaction with the services utilized.

(December 8, 2023) www.tra.gov.eg

Jordan

Chief Commissioner of the Telecommunications Regulatory Commission Bassam Al-Sarhan has said that the three main telecom operators in the Kingdom had been referred to the Public Prosecutor, an action initiated by the Minister of Industry, Trade, and Supply. Al-Sarhan indicated that the action follows allegations of anticompetitive behavior, specifically a purported implicit collusion to elevate prepaid cellular service plan rates, coupled with the introduction of additional fees for cash top-up services at their respective retail outlets. This referral action is a response to the operators' non-compliance with previous directives to amend these practices, constituting a potential breach of antitrust regulations as stipulated in the Competition Law. Reinforcing the Commission's commitment to consumer protection and competitive fairness in the telecom sector, Al-Sarhan underlined the imperative of ensuring access to high-quality telecommunications services at equitable prices. He further indicated the Commission's strategy to introduce regulatory reforms, including proposed amendments to the existing telecommunications law. These amendments, intended for legislative review in the upcoming Parliamentary session, aim to intensify market competition and address prevailing regulatory challenges, ultimately facilitating superior service offerings to end-users. In light of the initial tariff increments initiated by these companies, the Commission, adhering to its regulatory mandate, had formally requested a reversal of these price hikes. Despite the Commission's efforts focused on safeguarding consumer interests and ensuring market stability, compliance from the telecom operators was not forthcoming. This prompted a collaborative investigation with the Ministry of Industry and Trade into potential antitrust violations. After a comprehensive review, the decision to proceed with a formal referral to the Public Prosecutor was finalized. Al-Sarhan reiterated the Commission's unwavering dedication to enhancing competitive dynamics among telecom providers, advocating for a market environment that upholds service excellence and price reasonability. He affirmed the Commission's readiness to engage in open dialogue with all relevant entities, striving to establish a robust, competitive landscape that propels the telecommunications sector forward.

(December 25, 2023) www.petra.gov.jo

Kuwait

The Public-Private Partnership Projects Authority, in collaboration with the Ministry of Transportation, has invited specialized companies and alliances, both local and international (excluding entities licensed by the Communications and Information Technology Regulatory Authority or its affiliates), to submit qualification applications for the fixed telecommunications network development project. This initiative aligns with the provisions outlined in Law No. 116 of 2014, which pertains to partnerships between the public and private sectors, and its accompanying executive regulations. The fixed telecommunications network development project seeks to establish a collaborative venture between the public and private sectors with the overarching

goal of enhancing fixed telecommunications networks. It encompasses various facets, including the design, financing, construction, operation, maintenance, and transfer of ownership of the fixed telecommunications network within the State of Kuwait. Furthermore, the project company is entrusted with the responsibility of operating the existing fixed telecommunications network associated with the Ministry of Transportation, with a focus on its improvement and expansion into regions that are currently underserved.

(December 25, 2023) www.zawya.com

Nepal

The Nepal Telecommunications Authority (NTA) has revoked the Rural Telephone Service license held by CG Telecom, after the latter failed to apply for the renewal of its concession. CG Telecom – part of Nepalese conglomerate Chaudhary Group – has held a mobile license since May 2017, but has been thwarted by the watchdog at every turn and has been unable to progress to a commercial launch. The development coincides with the NTA's revocation of ISP licenses held by United Telecom Limited (UTL), Max Net Solution and Chitwan Network. UTL, which became Nepal's first privately owned telco in July 2003, was previously one of the country's most notable players, before running into financial difficulties. As such, its license revocation feels like more of a formality. (December 21, 2023) www.commsupdate.com

The Public Accounts Committee (PAC) of Nepal's House of Representatives has ordered the government to halt Axiata's efforts to sell Ncell Axiata until a detailed investigation into the matter has been completed. Describing the process to sell the 80% stake in the Nepalese telco as suspicious, non-transparent and unrealistic, the parliamentary body instructed government agencies to conclude an independent investigation within 30 days. Axiata announced on 1 December that it had entered into an unconditional agreement with Spectrlite UK for the sale of Reynolds Holding, which controls the Malaysian telecommunications group's equity stake in Ncell Axiata. The UK-registered purchasing company reportedly belongs to Satish Lal Acharya, a Singapore-based businessman of Nepalese origin. The remaining 20% stake in the Nepalese telco is held by Sunivera Capital Ventures, owned by his wife Bhavana Singh Shrestha. Local media sources claim the Nepal Telecommunications Authority (NTA) was not informed of the deal, despite the Telecommunication Act 1997 making it mandatory for a licensed company to obtain prior approval for the sale or purchase of more than 5% of its capital. Following a request for information, Ncell advised the regulator earlier this week that it was assembling documents relating to the sale and purchase agreement and would submit these for approval. 'Non-compliance of legal provisions, unrealistically maintained very low value of the shares, efforts made to avoid paying capital gains tax, bringing uncertainty to government ownership of the company after six years, and spreading misinformation about Nepal's investment climate suggest the transactions are suspicious, non-transparent and unreal,' the PAC's decision states. (December 8, 2023) The Kathmandu Post

Pakistan

The Pakistan Telecommunication Authority (PTA) has issued its Cyber Security Strategy for Pakistan's Telecom Sector, a comprehensive and ambitious plan set to span from 2023 to 2028. This strategy is a significant step in the implementation of the National Cyber Security Policy - 2021, and marks a monumental stride towards bolstering digital security in the country's rapidly evolving telecom sector. The strategy is built on six foundational pillars, each targeting a specific aspect of cyber security, such as legal framework, cyber resilience, proactive monitoring and incident response, capacity building, cooperation and collaboration, and public awareness. Collectively, these pillars represent a holistic approach, ensuring a resilient and secure digital infrastructure across Pakistan's telecom sector. At its core, the strategy emphasizes a multi-stakeholder approach, fostering active collaboration between public and private sectors, regulatory bodies, telecom operators, private security firms, academia, and civil society. This inclusive strategy aims to create a united and comprehensive front against cyber threats. PTA is dedicated to progressively enhance the cyber security posture of Pakistan's telecom sector over the next five years. This initiative is not just a step forward in cybersecurity but it is also a leap towards a more digitally secure and resilient Pakistan. The strategy is available at https://pta.gov.pk/en/media-center/single-media/cyber-security-strategy-for-telecom-sector-2023-2028-121223.

(December 12, 2023) www.pta.gov.pk

In order to measure the performance and quality of Cellular Mobile Operators' (CMOs) services being provided to their customers, Pakistan Telecommunication Authority (PTA) has carried out an Independent Quality of Service (QoS) Survey in seventeen (17) x cities of Khyber Pakhtunkhwa, Punjab and Sindh. Additionally, a joint QoS survey along with CMOs was carried out in seven (07) x cities of Gilgit Baltistan during 3rd quarter i.e. July~ Sep 2023. During the survey, Mobile Network Coverage along with QoS KPIs of Voice, SMS and Mobile Broadband were checked using state-of-the-art automated QoS Monitoring & Benchmarking Tool to ascertain conformance with Next Generation Mobile Service (NGMS) licenses and Cellular Mobile Network Quality of Service Regulations 2021. Based upon the compliance level of each KPI against threshold defined in the respective licenses and QoS Regulations, CMOs have been ranked between 1st to 5th position in Mobile Network Coverage and Voice Services as per compliance level in surveyed cities. Similarly, in Mobile Broadband Speed segment, the ranking is with respect to the highest data download and upload speed, network latency and webpage loading time. The performance of the CMOs was also benchmarked using Ookla ® Speed Test mobile application to gauge the performance of Upload & Download Throughputs and Network Latency. The survey results revealed that CMOs are compliant with respect to upload and download speed to a great extent, while improvement is observed in network latency and webpage loading time as compared to earlier surveys. Similarly, some of the Voice KPIs have also been found below the licensed threshold in few areas. Necessary instructions have been issued to the operators for taking corrective measures so as to ensure improvement in the service quality up to the standards. The survey results are available at PTA's website (https://pta.gov.pk/en/consumer-support/qos-survey/qos-survey). The service quality monitoring activity is being carried out by PTA field teams with the ultimate aim to pursue the operators for provision of better mobile services and to promote a healthy competition among the operators.

(December 8, 2023) www.pta.gov.pk

Qatar

The State of Qatar, represented by the Communications Regulatory Authority (CRA), and the Republic of Korea, represented by the Central Radio Management Service (CRMS) of the Korean Ministry of Science and ICT, signed a Memorandum of Understanding (MOU) for the development of radio spectrum management. The MOU was signed by Eng. Ahmad Abdulla AlMuslemani President of CRA, and Mr. Jeongsam Kim, Director General of CRMS. The MOU reflects the two parties' recognition of the significance of cooperation for the efficient use of radio frequencies and the development of quality radio communication services. The MOU also shows the two sides' desire for fruitful, solid partnership in the field of Information and Communications Technology (ICT). Per the MOU, Qatar and Korea will cooperate in radio spectrum management field according to the changes of radio spectrum environment, joint response to radio spectrum monitoring methods including satellite radio monitoring, and exchange education and training experience to promote human resources in the radio spectrum management field. The MOU also covers the cooperation of both parties in conferences related to radio spectrum management hosted by the International Telecommunication Union (ITU) or other international organizations and the exchange of experience and information on radio spectrum management of international events hosted by both parties. (December 20, 2023) www.cra.gov.qa

The Communications Regulatory Authority (CRA) has adopted a policy on Private Mobile Networks Using the Fifth Generation (5G) Technology in light of its 2022 public consultation about the subject, to which CRA invited all stakeholders to share their views and comments. Responses to the consultation were received from various stakeholders, including telecommunications Service Providers, Information and Communication Technology (ICT) equipment vendors, government entities, and large Enterprises in the State of Qatar. CRA has taken into consideration the views and comments of the stakeholders and issued its final position about this subject in a Policy Statement. As per the Policy Statement, CRA encourages Enterprises (businesses as well as government organizations) to use the 5G networks and services of the two public mobile operators in Qatar (Ooredoo Qatar Q.P.S.C. and Vodafone Qatar P.Q.S.C.). However, if an Enterprise wants to establish and operate its own 5G private mobile network and requests a spectrum license from CRA to be able to do so, CRA would be willing to examine such exceptional cases provided that the spectrum license application of the Enterprise must include a set of specific requirements, as mentioned in the Policy Statement.

(December 12, 2023) www.cra.gov.qa

Saudi Arabia

The Communications, Space and Technology Commission (CST) announced joining the Green Digital Action with the International Telecommunication Union (ITU), which includes several international entities and agencies. The Green Digital Action aims to enhance collaboration, fast-track industry-wide commitments to addressing climate challenges, and put digital solutions at the forefront of climate action., by transforming to a digital infrastructure that enables environmental and sustainable solutions during the COP28 held in Dubai, with the presence of the Secretary-General of ITU, Ms. Doreen Bogdan – Martin. CST revealed that it will be leading the "Foster a circular ICT industry" track as part of the Green Digital Action which consists of six tracks including: reducing ICT sector emissions, advancing climate solutions through open environmental data and technologies, implementing green standards, facilitating a green transition across all industries through digital technology, and leveraging digital systems for disaster alerts and early warnings. By joining this initiative, CST seeks to harness its efforts to provide digital and sustainable solutions to address climate challenges, help improve and implement regulations that enable circular economy which contribute to reducing carbon emissions and climate change, and transfer to an eco-friendly digital infrastructure through collaborating with public and private sectors, as well as the UN organizations. On the sidelines of COP28, CST is organizing a panel discussion entitled "Circular Economy" to highlight the Saudi Arabia's efforts in leading digital sustainability, with the participation of ITU Deputy Secretary-General Thomas Lemanoskas, and representatives from countries that will apply the "E-Waste Management Regulations", which was launched by Saudi Arabia in partnership with the ITU. This initiative aims to implement the regulations in Zambia, Rwanda, and Paraguay, which will contribute to providing innovative regulatory solutions to the challenges facing the treatment of e-waste globally, along with raising awareness among policymakers and industry owners on the critical role of fair and practical economical regulations in reducing e-waste production and carbon emissions. CST participated in the COP28 to promote Saudi Arabia's endeavors in leading international efforts to enable digital sustainability, in line with its directions in support of the circular economy. Saudi launched on many initiatives that contributed to raising awareness and educating the public on the best practices for leveraging technology to create a sustainable future for all.

(December 5, 2023) www.cst.gov.sa

Sri Lanka

The government of Sri Lanka has reportedly extended the deadline for submission of Request for Qualification (RfQ) for the purchase of a 50.23% stake in Sri Lanka Telecom (SLT-Mobitel) from 18 December 2023 to 12 January 2024. Further, with the country's SOE Restructuring Unit (SRU) having ruled out any further extensions, it now aims to issue its Request for Proposal (RfP), including the opening of pre-qualified bidders' due diligence, in Q1 2024. The sale of the government's 50.23% stake SLT-Mobitel has run into problems due to a legal challenge instigated by its mobile arm Mobitel against the national regulator, the Telecommunications Regulatory Commission of Sri Lanka (TRCSL), concerning the sharing of spectrum via the proposed merger between Dialog Axiata and Bharti Airtel Lanka. That court case will take place on 12 December 2023. (December 11, 2023) www.commsupdate.com

United Arab Emirates

The Telecommunications and Digital Government Regulatory Authority (TDRA) unveiled the latest version of the digital participation platform in the UAE, Sharik.ae, aligning with cutting-edge concepts in digital participation, incorporating global best practices, and anticipating future requirements in this domain.

This announcement took place at a ceremony organized by TDRA, featuring the participation of representatives from federal government entities. These entities have collaboratively worked over the past years to enhance digital participation practices within the broader framework of digital government enablers overseen by TDRA as the catalyst for digital transformation in the UAE. In its latest version, the platform strives to elevate digital participation as an integral component of the methodologies employed by government entities to refine their services and solutions in alignment with the perspectives and expectations of their audience. Digital participation also plays a pivotal role in enhancing decision-making processes, supporting government entities in the design and redesign of services based on the evolving needs of both individual and corporate clients. The celebration started with a speech by H.E. Eng. Mohammad Al Zarooni, TDRA Deputy Director General for the Information and Digital Government Sector, wherein he commended the endeavors of the digital transformation and dig-

ital participation team, acknowledging the accomplishments realized in recent years. He said: "Today, the UAE ranks first in the Arab Region in the Digital Participation Index and is a global leader in this domain. The launch of the updated version of the digital participation platform marks a significant milestone in our ongoing digital transformation journey, representing a pivotal moment towards attaining further milestones aligned with the 'We the UAE 2031' vision, emphasizing the transition from one pinnacle of success to another. Our emphasis on digital participation aligns with future trends, aiming to drive key indicators of digital transformation, including the E-Government Development Index, the Online Service Index, and others." Al Zarooni added: "Participation has always been integrated in our cultural fabric, woven into the tapestry of our national journey. As we transition into the age of e-government and subsequently embrace the era of comprehensive and integrated digital living, digital participation has emerged as a pivotal indicator that we are committed to nurturing and advancing with each passing year." The launch event included a workshop organized by TDRA, designed to address the challenges encountered by federal entities in digital participation. The workshop aimed to establish a cohesive and standardized approach for digital participation within federal entities. Key aspects included the imperative of planning and monitoring participation at the entity's internal level, fostering awareness about participation components, standardizing practices across entities, broadening the scope of topics related to participation, and reinforcing the principle of public participation by presenting topics of interest to the customers. The workshop delved into various digital participation initiatives in the UAE, addressing the establishment of a digital participation team and defining its responsibilities. The discussion addressed different types of digital participation campaigns, ranging from publications and opinion polls to blogs. Additionally, the initiatives covered guidelines stipulated in the Digital Participation Guide, offering comprehensive insights into the effective application of digital participation through the shared platform. It emphasized utilizing UAE Pass for logging in to leverage the interactive features available on the platform. The ceremony, organized by TDRA, concluded with the acknowledgment of the members of the digital transformation and digital participation teams. It's noteworthy that Sharik.ae platform stands as the official digital participation platform for the UAE Government. It is committed to aiding government entities in implementing participation across its three stages: digital information, digital consultation, and digital decision-making.

(December 20, 2023) www.tdra.gov.ae

The Telecommunications and Digital Government Regulatory Authority (TDRA), in collaboration with the International Telecommunication Union (ITU), organized a ceremony to celebrate the Network of Women in the Telecommunications Sector. The event was witnessed by hundreds of women from delegations of 193 countries participating in the World Radiocommunication Conference 2023. This celebration is one of the international traditions followed by the ITU in significant global events, including WRC-23 organized in Dubai from 20 November to 15 December 2023. The conference aims to review radio regulations and the international treaties governing the use of radio frequency spectrum and satellite orbits. The Network of Women in the Telecommunications Sector is an initiative originating from the efforts of the International Telecommunication Union. Its primary focus is to promote gender balance. It highlights the significant role of women in the broader telecommunications sector, including ITU-affiliated areas like radio communications. The Network aims to encourage women to actively and effectively participate as delegates, presidents, and vice presidents in ITU's events, including WRC-23. In his speech to the Network, His Excellency Engineer Mohammed Al Ramsi, Deputy Director-General of TDRA for the Telecommunications Sector, and the President of the World Radiocommunication Conference 2023 (WRC-23), highlighted the crucial role played by women in the global telecommunications sector. He noted that the UAE is among the leading countries in supporting and empowering women in this sector, recognizing their capabilities in achieving milestones and propelling forward the digital transformation based on the latest ICTs. He stated, "As the World Radiocommunication Conference approaches its conclusion, we can affirm that this edition marks a new milestone in the accomplishments of women in the telecommunications sector. It is important to highlight that the woman leadership of the WRC and the ITU, exemplified by Secretary-General Her Excellency Doreen Bogdan-Martin, serves as a testament to this progress. Throughout the conference duration, we observed the distinguished involvement of women in study committees, discussions, and the management of participating delegations. This involvement makes us feel a sense of pride. In the UAE, we are pleased with this achievement, which resonates with the UAE's esteemed status, as a result of limitless support from the leadership since the establishment of the ITU. The event featured a speech by His Excellency Mario Maniewicz, Director of the ITU Radiocommunication Bureau. He praised the role of women in humanitarian issues related to the ICT sector, with a focus on radio communications and their significance in the era of the 4th Industrial Revolution. The women members in the Network belong to delegations from 193 countries participating in the World Radiocommunication Conference 2023. The event included honoring the regional group leaders of the Network of Women in the Telecommunications Sector who took part in this year's conference. Honoring included female members of the Radio Advisory Group (RAG) concerned with gender equality, acknowledging their steadfast efforts in advancing the success of the conference agenda. The guidance program of the Network of Women, both in a general sense and specifically at the World Radiocommunication Conference (WRC-23), involves providing support to direct and guide female participants, helping them get nominated and actively participate in various committees and teams. This is based on accomplishments of numerous participants throughout the ITU's history and its diverse conferences. Prominent instances include the appointment of Her Excellency Doreen Bogdan as the Secretary-General of the ITU, being the first time a woman holds this position in the ITU's history. Additionally, Mrs. Carol Wilson assumed the role of the elected President of the Radiocommunication Assembly (RA-23). She is the first woman to hold this position in history of the ITU. TDRA's involvement in the Network of Women in the Telecommunications Sector (NOW) event signifies its commitment to the UAE Government's strategy for the overall empowerment of women and TDRA's strategy for empowering women in the telecommunications and digital government sectors. This commitment is realized through the improvement of policies and the implementation of initiatives that prioritize gender equality. It is worth noting that the percentage of female employees at TDRA is 42% out of the total workforce.

(December 13, 2023) www.tdra.gov.ae

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

Angola

The State Assets & Participations Management Institute (Instituto de Gestao de Activos e Participacoes do Estado, IGAPE) has indicated that a planned part-privatization of mobile market leader Unitel has been delayed to 2025. In April 2023 Unitel was among twelve firms earmarked by the government for initial public offerings (IPOs) on the Angolan Debt & Stock Exchange (Bolsa de Divida e Valores de Angola, BODIVA) under processes set to begin by the end of the year. Furthermore, Unitel's 50% shareholder, Angolan state oil firm Sonangol (which itself also wholly owns fixed broadband operator MSTelcom), was expected to begin IPO preparations in 2024, but the latest IGAPE disclosures indicate that the parent group's IPO is currently scheduled for 2026. IGAPE is the trustee for the other 50% of Unitel's shares. Another planned telecoms sector IPO, that of TV Cabo Angola, remains earmarked to be completed in 2024. (December 1, 2023) Expansao

Austria

The Regulatory Authority for Broadcasting & Telecoms (RTR) has published the terms and conditions for its planned auction of nationwide frequency usage rights in the 26GHz band and regional usage rights in the previously unassigned 3410MHz-3470MHz range, which went unsold for seven regions in 2019. Operators interested in participating in the spectrum allocation procedure have until 12 February 2024 to submit an application, with the auction expected to begin in March. Under the terms and conditions, the 26GHz spectrum will be divided up into seven 1×200MHz blocks, ranging from 25.5GHz-25.9GHz and 26.5GHz-27.5GHz with a minimum bid price of EUR1.9 million (USD2.0 million) per block, while the 3.6GHz spectrum is to be divided into seven regional blocks, including two lots of 1×10MHz, one block of 1×40MHz and four of 1×60MHz (with the minimum bid price ranging from EUR50,000 to EUR1.36 million, depending on the block). The usage rights to the frequency blocks in the 25.5GHz-25.9GHz will be valid from 1 January 2025 to 31 December 2046, while the 26.5GHz-27.5GHz spectrum is valid from the assignment date to 31 December 2046 and the 3600MHz spectrum will be valid from assignment until 31 December 2039. Depending on the amount of spectrum acquired, license holders will be required to fulfil certain network coverage requirements, for example operators with 200MHz of 26GHz frequencies must supply service to at least ten locations by the start of 2027, 30 by 2030 and at least 100 areas by the start of 2034, while licensees with 400MHz or more are required to cover 20, 60 and 200 locations by those dates. (December 8, 2023) www.commsupdate.com

Brazil

The National Telecommunications Agency (Anatel) has formally cancelled the award of 46 pending spectrum licenses in the 1900MHz and 2.5GHz bands that were auctioned back in December 2015. Due to a number of withdrawals, the aforementioned concessions were still awaiting adjudication by the watchdog eight years on. The licenses will no longer be reauctioned as planned, and no financial penalties will be incurred from companies that did not use their frequencies. Anatel advisor Artur Coimbra said: 'It cannot be ignored that [the auction process] gave rise to very complex and challenging technical solutions, potentially incompatible with the financial capacity of the providers. We placed PPPs [Prestadoras de Pequeno Porte/small providers] front and center in the telecom sector. Much of the success of the 5G auction was due to the wisdom brought by this 2015 [auction process].' Coimbra noted that more than 20,000 regional spectrum lots were put up for sale, which led to more than 100,000 bids and a 'tangle of resources. The so-called leftovers auction generated BRL762.67 million (USD190.33 million), with the now-defunct Nextel Brasil making the highest financial commitment of all of the bidders, pledging BRL455 million for a block of 1800MHz spectrum covering Sao Paulo and Greater Sao Paulo.

(December 13, 2023) TeleTime

The National Telecommunications Agency (Anatel) has confirmed that 3.5GHz licensees are able to activate 5G services in a further 623 municipalities from 4 December, as per the recommendations of the Group for the Implementation of Solutions for Interference Problems (GAISPI). The decision means that a total of 3,079 towns and cities have now been approved for 3.5GHz Standalone (SA) 5G use, equating to 172 million Brazilians, or 81% of the population. Going forward, the authorities are targeting 3,678 municipalities by June 2024, while all 5,570 municipalities should have 5G access by 2026. (December 1, 2023) www.commsupdate.com

Bulgaria

The Communications Regulatory Commission (CRC) has concluded its procedure for granting use of radio frequency spectrum in the 700MHz and 800MHz bands, pursuant to Decision No. 699 of 4 October 2023. The regulator has adopted Decisions No. 343/28.11.2023, 344/28.11.2023 and 345/28.11.2023 granting spectrum in the two bands to A1, Vivacom and Yettel Bulgaria for a period of 15 years. The trio secured 10MHz of paired spectrum in the 700MHz band and 2×10MHz in 800MHz band each, as follows:

A1: 703MHz-713MHz/758MHz-768MHz and 832MHz-842MHz/791MHz-801MHz

Vivacom: 713MHz-723MHz/768MHz-778MHz and 842MHz-852MHz/801MHz- 811MHz

Yettel:723MHz-733MHz/778MHz-788MHz and 852MHz-862MHz/811MHz-821MHz

Provision of spectrum in these frequency bands will provide an opportunity to build new generation networks and provide innovative broadband services in sparsely populated areas, the CRC said. With the issuance of the permits, the prerequisites will be created for the fulfilment of one of the goals of the 'Digital Decade' initiative to cover all populated areas with high speed 5G mobile networks, in accordance with the principle of technological neutrality.

(December 1, 2023) www.commsupdate.com

Canada

Innovation, Science & Economic Development Canada (ISED) announced the conclusion of the country's 3800MHz 5G spectrum auction, resulting in 4,099 licenses awarded to 20 bidders, including 870 licenses to small and regional providers. ISED stated that when combined with the previous 3500MHz auction of 2021, small and regional providers have doubled their spectrum holdings, further strengthening their ability to offer competitive services, adding that 3800MHz licenses will support faster deployment of high quality 5G network services in every part of the country so consumers and businesses, including those in rural and remote regions, can enjoy the transformative benefits of the latest mobile and fixed wireless broadband technologies. The auction began on 24 October 2023 with 22 qualified bidders, and bids ended on 24 November with winners purchasing licenses valued at CAD2.16 billion (USD1.59 billion) in total, which will be paid into the Consolidated Revenue Fund administered by the Receiver General of Canada. 95% of licenses on offer were sold, including licenses in all service areas classed as 'rural/remote'. Concessions permit mobile or fixed wireless services and carry deployment obligations that require companies to 'use or lose' the spectrum within set timelines.

The list of 3800MHz license winners includes:

- Telus, which bought 1,430 licenses, paying CAD619.64 million
- Bell Canada (939 licenses, CAD518.07 million)
- Rogers Communications (860 licenses, CAD474.77 million)
- Videotron (305 licenses, CAD298.90 million)
- Cogeco (bidding via Elite General Partnership) (99 licenses, CAD190.29 million)
- Wightman Telecom (bidding via NE&W SPC) (38 licenses, CAD17.65 million)
- SaskTel (45 licenses, CAD10.19 million)
- Eastlink (Bragg Communications) (187 licenses, CAD9.95 million)
- Novus (one license, CAD6.34 million)
- Sogetel (16 licenses, CAD4.39 million)
- Cooptel (eight licenses, CAD2.44 million)
- HuronTel (six licenses, CAD2.03 million)
- Bruce Telecom (two licenses, CAD1.19 million)
- Tbaytel (26 licenses, CAD791,000)
- CityWest (71 licenses, CAD381,000)
- Ecotel (46 licenses, CAD347,000)
- ABC Internet (15 licenses, CAD250,000)
- NWIC Inc. (two licenses, CAD49,000)
- Indigitel (two licenses, CAD24,000)
- MPVWIFI (one license, CAD3,000).

(December 1, 2023) www.commsupdate.com

Central African Republic

The government of the Central African Republic is looking for a firm to provide technical assistance to the Regulatory Authority for Electronic Communications and Postal Services (Autorite de Regulation des Communications Electroniques et de la Poste, ARCEP), reports Digital Business Africa. The successful applicant will notably help the telecoms watchdog operationalize the Universal Access Fund (UAF). The call for tender is being financed by the International Development Association under the Public Sector Digital Governance (PGNSP) project. Amongst other things, the selected consultant will be required to assess the regulatory framework and implementation of the universal service strategy; identify issues hindering implementation of the UAF; perform an inventory of the country's mobile network coverage and infrastructure; identify projects to further universal service and propose a multi-year plan to operationalize the fund; and define a new UAF strategy adapted to the country's electronic communications market. Expressions of interest must be submitted no later than 15 December 2023.

(December 12, 2023) www.commsupdate.com

Colombia

The ICT Ministry MinTIC has confirmed that the country's 5G spectrum auction raised more than 1.5 billion pesos (US$380 million). The total falls short of the $500 million initially expected. Claro, Partners Telecom Colombia (WOM), and Union Temporal Colombia Móvil-Telefónica (a network-sharing JV between Tigo and Movistar) all secured 5G licenses in the auction which lasted nine rounds. Each telco secured a block of 80MHz in the 3.5GHz band, while Claro secured an additional block of spectrum in the 2.5 GHz band. However, the frequencies in the 700 MHz, 1.9 GHz, and the AWS (Advanced Wireless Services) band between 1.695 and 2.2 GHz remained unsold. The auction result was confirmed via a post on X, formerly Twitter, by Mauricio Lizcano, the information technology and communications minister. Lizcano called the auction "historical" and said that the operators will begin the deployment of 5G from February, while he expects investment in 5G to reach 28 trillion pesos (around $7.11 billion) in the next decade. (December 4, 2023) www.developingtelecoms.com

The telecoms regulator confirmed four operators will compete at auction for 5G spectrum. The communications ministry (MinTic) revealed participating at auction will be Claro, WOM, Movistar and Tigo partnership Union Temporal Colombia Movil-Telefonica, and Brazil-based provider Telecall Colombia. Movistar and Tigo have joined forces to share infrastructure in a move seemingly to keep costs down. The Colombian government is aiming to raise around half a billion dollars from the auction which will take place on December 20. Neighboring Latin American nations have already conducted trials and auctions with commercial services already seen in Argentina and Mexico. Up for auction in Colombia is 700MHz, 1900MHz, 2,500MHz and 3,500MHz. Other spectrum between from 1,700MHz to 2,100MHz which is suited for Advanced Wireless Services will also be up for grabs. (December 4, 2023) www.developingtelecoms.com

Cote d'Ivoire

The government has begun the construction of a new data center in Abidjan under a contract which is valued at XOF36 billion (USD60 million). The 20,000 square meter Tier 3 facility will house 800 cabinets with an overall storage capacity of 2,200TB. Authorities have planned a total investment of XOF2 trillion between 2021 and 2025 to support the country's digital transformation as it looks to become the digital hub of West Africa. (December 19, 2023) Ecofin

Czech Republic

The Czech Telecommunications Office (CTU) has issued a call for comments on the proposed use of the 71GHz-76GHz (70GHz) and 81GHz-86GHz (80GHz) E-band for point-to-point fixed broadband services. In a press release, the regulator noted that – having last revisited the licensing process back in 2013, the current system is outdated and in need of modernization. 'However, before carrying out the modernization, the Office intends to evaluate not only the user's point of view (the functionality of the portal and its development), but also the effectiveness of this portal, or the effectiveness of the notification obligation in the frequency bands 71GHz–76GHz/81GHz–86GHz,' it said. In order for the CTU to evaluate the existing regulatory measures fully and correctly, it has created an electronic questionnaire, the feedback from which will be used to 'set the conditions for further use of the affected bands so that their use continues to be effective'. The CTU will subsequently publish its intention for the two bands, including an evaluation of the responses, it noted. (December 4, 2023) www.commsupdate.com

Germany

1&1 has become Germany's fourth mobile network operator following the launch of its first smartphone tariffs last week. 1&1's fully virtualized mobile network is based entirely on Open RAN technology. Initially, where there is no dedicated coverage during the rollout phase of the new 1&1 mobile network, customers automatically have access to Telefonica Deutschland's 2G/4G/5G network as part of national roaming now expanded to include 5G. From 1 July 2024 1&1 will use national roaming from Vodafone as planned and reduce, step by step, upfront services from Telefonica. Unlike traditional networks, which are based on proprietary technology from specialized network suppliers, the 1&1 O-RAN has a large number of standardized interfaces, allowing software and hardware components from different suppliers to be flexibly combined and eliminating 1&1's dependence on individual suppliers. (December 11, 2023) www.commsupdate.com

Hungary

The Hungarian Government Informatics Development Agency (KIFU) held a presentation marking the completion of national broadband development projects under the EU-assisted Superfast Internet Program (SZIP) which began in 2016 and received more than HUF3 billion (USD8.7 million) in EU grants under KIFU's management. KIFU noted that today nearly 97% of households in Hungary are covered by high speed fixed internet networks. The Digital Agenda of the EU set the goal that by 2020 every household should have access to internet access at a speed of at least 30Mbps, with at least half of households to be covered by services capable of 100Mbps-plus speeds. Hungary's 30Mbps fixed network coverage exceeded 95% by 2020, with the remainder of homes offered special mobile internet tariffs made available under the government program, while by end-2022 the proportion of Hungarian households capable of 1Gbps access exceeded a two-thirds threshold. 3,800 public institutions, schools and municipalities received modern optical network connections within the framework of the program. Under the SZIP initiatives, a national electronic communications database was created for handling tenders for network development and for supervisory engineering support for the implementation of grant-winning projects, and in the framework of the state-subsidized tenders nearly 350,000 'places of need' were covered in 196 district tenders, while about 300,000 places of need were covered under independent commitments of Hungarian telecoms service providers.

(December 1, 2023) www.commsupdate.com

India

The Department of Telecommunications (DoT) has issued a decision to scrap paper-based customer registration and verification process with effect from 1 January 2024. The switch to a digital Know Your Customer (KYC) system for mobile customer enrolment is expected to help lower customer acquisition costs for operators and reduce SIM fraud. The paper-based framework is lengthy and time consuming, requiring sellers to fill in a Customer Acquisition Form and attach a photograph plus documents providing proofs of identity and address. The government tightened restrictions on SIM sales earlier this year in a bid to reduce fraud and cybercrime.

(December 6, 2023) www.commsupdate.com

Jersey

A call for information has been published by the Jersey Competition Regulatory Authority (JCRA) as it commences a review of the Bailiwick's telecoms market. According to the local regulator the review is expected to conclude in early 2025 with the aim of 'further develop[ing] a robust and enduring regulatory framework, enabling the Authority to continue to deliver effective regulation of telecoms services. According to the JCRA, its review will be framed by three main themes, those being: government telecoms policy framework and action plan; regulatory and economic policy; and consumer policy. At this stage, the watchdog said it is seeking views on these main themes, as well as responses to questions posed in its call for information document. Submissions have been requested by a deadline of 2 February 2024. Commenting, Peter Hetherington, Chief Economist at the JCRA, said: 'The Authority's aim is to maintain well-functioning markets, supporting both competition and investment in connectivity … The review will be overarching, to test the current operating and regulatory environment and ensure both are fit for purpose for the future benefit of both the telecoms companies and their customers.'

(December 1, 2023) www.commsupdate.com

Madagascar

As part of efforts to promote competition and increase service availability, Madagascar's telecom watchdog the Agency for Regulation of Technology and Communication (ARTEC) has launched a call for applications from candidates seeking a license to operate satellite-based broadband services. Interested parties will have until 28 March 2024 to make their submissions. In April 2023 the government announced major policy changes designed to fully liberalize the telecoms sector, including specific measures to remove barriers to entry, create a level playing field for operators, encourage investment to expand access to services, and ultimately lower prices for end-users. The measures also introduced two additional licenses, namely: a satellite license authorizing the deployment of public GMPCS, broadband satellite or VSAT networks; and a unified license permitting the operator to offer the full range of fixed, mobile and data services via all authorized networks, as well as to lease infrastructure and provide wholesale capacity.'

(December 6, 2023) www.commsupdate.com

Malaysia

Following a review considering the performance evaluation of mobile broadband systems for 4G and 5G networks, the Malaysian Communications and Multimedia Commission (MCMC) has published a Public Inquiry Report regarding the mandatory standards for quality of service (MSQoS) for 'Wireless Broadband Access Service'. In its report, the MCMC set out plans to revise the MSQoS by establishing two sets of 'Key Quality Indicators' (KQI), namely the 'Mandatory KQI' – which monitor and enforce the parameters in the standards – and the 'Monitoring KQI' – which keep track of the parameters for improvement purpose. According to the regulator, generally the Monitoring KQIs apply specifically to 5G network operating in the IMT frequency band 703MHz-743MHz, 3.4GHz-3.6GHz and 26.6GHz-28.1GHz, which are currently undergoing migration from a single wholesale network (SWN) model to a dual network model. Having launched a consultation on its plans with regards to MSQoS back in October, the regulator has said it is now of the view that the proposed revision of the MSQoS for Wireless Broadband Access Service 'will ensure enhancements to existing levels of quality of service by the service providers and further improve consumers' experience'. A final determination on the revised standards are now expected to be published within 45 days from the conclusion of the public inquiry report, and will come into effect from 1 April 2024.

(December 21, 2023) www.commsupdate.com

Mexico

The Federal Telecommunications Institute (IFT) has disclosed plans to stage a consultation regarding its long-awaited 5G spectrum auction next month. Alejandro Navarrete Torres, Director of the IFT's Radioelectric Spectrum Unit, noted that the watchdog is keen to auction airwaves in the 600MHz, 850MHz and 3.5GHz bands, while the 1.5GHz L-band is still under consideration. The official continued: 'None of the proposals were taken into account, and that is why we are working on another bidding scheme that allows a lot of flexibility, so that all possible interested parties can participate, not just the two usual big network companies, because there are other very small ones that are also providing services. Other operators have expressed their interest in the spectrum, but they cannot obtain large blocks of spectrum in large geographic areas, due to the level of payment.

(December 13, 2023) El Economista

Moldova

The National Regulatory Agency for Electronic Communications and Information Technology (ANRCETI) has awarded spectrum in the 2100MHz band to Orange Moldova, Moldtelecom and Moldcell. The three operators were granted the following blocks:

- Moldcell: 2×20MHz (FDD) block, 1920MHz-1940MHz/2110MHz-2130MHz
- Moldtelecom: 2×20MHz (FDD), 1960MHz-1980MHz/2150MHz-2170MHz
- Orange Moldova: 2×20MHz (FDD), 1940MHz-1960MHz/2130MHz-2150MHz

The licenses are valid for a period of six years and expire in December 2029. ANRCETI granted the concessions in accordance with the provisions of the Radio Frequency Spectrum Management Program 2021-2025. The fee for the allocated spectrum will be paid in two instalments due by 31 March 2024 and 31 May 2024; payment of the license fee (which will be calculated in proportion to its general terms of validity) will be made in Moldovan lei at the official EUR exchange rate set by the National Bank of Moldova on the date of payment.

(December 19, 2023) www.commsupdate.com

The Netherlands

The Ministry of Economic Affairs & Climate Policy (MEACP) announced that a court in Rotterdam has ruled in favor of the ministry in all eight lawsuits against the government's 5G 3.5GHz spectrum band licensing plans, clearing a major hurdle to begin preparations for an auction to take place in 2024 – although the statement adds a cautionary note that plaintiffs may appeal the decisions. Details of proposed changes to the national frequency plan were opposed by the three main Dutch mobile operators KPN, Odido and VodafoneZiggo alongside prospective users of 3.5GHz local private networks including Amsterdam's Schiphol Airport and the Port of Rotterdam Authority. Minister Micky Adriaansens stated: 'It is good news for entrepreneurs and consumers that we can now continue with our ambitions in the field of digital mobile infrastructure. Because the Netherlands is now the very last EU country that can auction frequencies for 5G and that has frustrated technological progress and digital opportunities for all Dutch people.' The statement added that concerned companies, organizations and telecoms operators have filed court cases against the MEACP's 5G policy decisions based on 'various interests' which 'vary so much that meeting everyone's individual preferences is impossible', and the MEACP has had to weigh up these interests, with the court agreeing that '[the ministry's] choices and considerations are understandable and well substantiated'. In advance of

next year's auction, two 50MHz blocks of 3500MHz spectrum are available from 1 December for localized private networks of companies and organizations, separate from the 300MHz tranche of 3.5GHz airwaves earmarked for the Netherlands' 5G nationwide mobile licensing process, which the government hopes to launch in Q1 2024 having recently reached an agreement to relocate satellite services occupying the band. (December 1, 2023) www.government.nl

Poland

The Office of Electronic Communications (Urzad Komunikacji Elektronicznej, UKE) in Poland has issued 3.5GHz spectrum to the winning bidders from its 5G frequency auction in October this year. Mobile network operators (MNOs) Orange, Play, T-Mobile and Plus were all successful in gaining 3.5GHz licenses and have now been issued 100MHz of spectrum. The first base stations supporting the new band are expected to go live early next year.

(December 21, 2023) www.commsupdate.com

Telecoms regulator, the Office of Electronic Communications (UKE), is preparing to allocate 700MHz spectrum next year which will be used to support 5G networks. A report cites UKE president Jacek Oko as saying that the award of 40MHz of spectrum will be one of the authority's main tasks in 2024. There has been discussion over the past few years regarding the deployment of a single nationwide 700MHz 5G network which could be utilized by all operators on an open access basis. (December 4, 2023) Inwestycje.pl

Reunion

Arcep has revealed that four companies submitted applications for assignment of frequencies in the 900MHz band in Reunion before the deadline, namely: Orange, SFR, Free Reunion (Telco OI) and Zeop Mobile. Once the regulator has examined the applications, it will release the list of applicants eligible to participate in the auction. The 900MHz spectrum will be awarded via a tender that will take place in the coming weeks, with licenses scheduled to be issued in the second quarter of 2024 at the latest. Arcep launched a call for applications for the award of spectrum in the 900MHz band in the French overseas territory of Reunion in September 2023. The regulator highlighted that 2×5MHz in the band is currently available for allocation, while an additional 2×30MHz will be available from 1 May 2025. Arcep will put up for auction seven blocks of 2×5MHz each, valid until 23 May 2037; the spectrum will come with an obligation to cover all highways and main roads by 1 May 2028.

(December 8, 2023) www.commsupdate.com

Senegal

The Regulatory Authority for Telecommunications and Posts (ARTP) announced that it has awarded a 5G license to Saga Africa Holdings (operating under the Free band), after the company agreed to pay XOF13.5 billion (USD22.5 million) for the extension to its concession. Free becomes the country's second operator to be granted a 5G license, five months after Sonatel (Orange Senegal) bid a total of XOF34.5 billion for its authorization during the regulator's tendering process. Free and rival Expresso had submitted bids of XOF3 billion and XOF2 billion – far below the reserve price of XOF19.5 billion set by the ARTP. Speaking at a press conference, ARTP Director General Abdou Karim Sall revealed the regulator had opened negotiations with other operators 'to allow them, depending on the means at their disposal, to be eligible for 5G', with the cost determined by the quantity and quality of the frequencies awarded. Free had agreed to pay XOF13.5 billion for 90MHz of 3500MHz spectrum, he explained, whereas Sonatel had successfully bid a total of XOF34.5 billion to secure 10MHz in the more expensive 700MHz band and five additional blocks of frequencies. The regulator also revealed Sonatel is planning to launch a pilot 5G service in February 2024, ahead of a commercial launch the following May.

(December 19, 2023) www.commsupdate.com

Switzerland

The Federal Council has approved the release of spectrum in the 3400MHz-3500MHz band for mobile private networks (MPNs – also known as campus networks) from 1 January 2024. The council noted that it had taken into account developments elsewhere in Europe and was responding to the demands and needs of the economy. In particular, the council recognized the 'valuable role' that private networks have in the optimization and automation of internal company processes and the benefit that such systems can have in sectors including logistics, retail, manufacturing and healthcare.' (December 1, 2023) www.commsupdate.com

Thailand

The National Broadcasting and Telecommunications Commission (NBTC) determined True Corp met the two major conditions set before its tie-up with dtac in March, with the operator lowered tariffs and improved coverage. NBTC found in random checks True reduced prices by an average of 12 per cent and maintained the same number of base stations it operated before the merger, with signal quality unchanged. Last month True said it aims to decommission 1,800 sites where there is duplication of coverage by year-end. The operator claimed both 4G and 5G coverage improved to above 99 per cent and 90 per cent, respectively. The regulator added a number of conditions aimed at protecting consumers to the controversial deal, which created the largest mobile operator in the country with 51.4 million subscribers. Previous market leader AIS ended September with 44.4 million. True faces a lawsuit filed by a consumer group, after the country's highest court ordered a lower bench to accept the case against the regulator for allowing the merger to proceed.

(December 20, 2023) Bangkok Post

United Kingdom

A record-breaking 17 million UK homes now have access to full-fiber broadband, according to Ofcom's latest Connected Nations report. Analysis indicates that providers experience fewer faults on their fiber networks, contributing to a smoother online experience for users engaged in activities like gaming, working, and video calling. Notably, full-fiber broadband is now available to over half of homes in all four UK nations. Northern Ireland leads the pack, with 91 percent of homes capable of accessing full fiber. The adoption of full-fiber broadband is not uniform across regions. Rural areas are outpacing their urban counterparts, with a nearly double take-up rate (49% compared to 25%). This surge in availability bodes well for millions of people and businesses, ensuring faster, more reliable, and future-proof internet connectivity. "The rapid rise in availability of full-fibre broadband is good news for people and businesses across the UK, with millions more able to benefit from fast, reliable and future-proof internet," said Lindsey Fussell, Ofcom's Network and Communications Group Director. "When the time comes to take out a new broadband contract, we encourage people to shop around and find out what options are available to make sure they are on the best package for their needs." However, some experts highlight the need to read between the lines. "The reported 1.7 million new full-fiber consumer connections suggest growing demand, but take-up rates of 28 percent are still relatively modest. The industry needs to take a closer look at why that might be and uncover the reasons behind this slow adoption," comments Alex Tofts, broadband expert at Broadband Genie. "We know that some full-fiber packages can be expensive, and in a cost-of-living crisis, this is a big factor. There may also be a lack of awareness of the speeds available in different areas. "Full-fiber coverage of 57 percent means we are lagging behind other European countries such as Portugal, Spain, Sweden, Norway, and France. Further progress is needed to support the nation's current and future digital demands." Ofcom's report also notes a significant reduction in the number of homes and businesses lacking access to 'decent' broadband, dropping by 27 percent to 61,000 premises. Approximately 11,000 of these are expected to be connected through publicly funded schemes next year, demonstrating ongoing progress in connecting the nation. "While the reduction in premises without access to decent broadband has fallen, 61,000 homes without access to even the most basic speeds is still too many. The devil is also in the details when it comes to the definition of 'decent' broadband. Speeds of just 10Mb can be frustratingly slow in the modern age of remote working, HD streaming, and online gaming," adds Tofts. "The Universal Service Obligation should be reviewed to better understand the needs of broadband customers and push towards closing the digital divide between urban and rural locations. Superfast speeds of at least 30Mb should be considered the new normal." Satellite broadband is also on the rise, with around 42,000 UK customers now connected to Starlink's satellite service. Outside of premises, 5G coverage by at least one operator has surged to over 85 percent—a notable increase from the previous year's 67 percent. While 5G traffic has experienced 140 percent growth, 4G remains dominant, representing over 80 percent of total mobile traffic and offering coverage outside more than 98 percent of UK premises.

(December 19, 2023) www.telecomstechnews.com

United States

The House of Representatives passed Senator John Kennedy's 5G Spectrum Authority Licensing Enforcement (SALE) Act on 11 December. The bill grants the Federal Communications Commission (FCC) a one-time, temporary authority to issue licenses purchased in auctions that were held before 9 March 2023 (i.e. when the FCC's spectrum auction authority was allowed to lapse). Previously, the Senate passed Kennedy's legislation this September. Senator Kennedy commented: 'I'm thankful that the House has sent this bill to the president's desk so that the job providers who depend on wireless communications in Louisiana and across America can continue to support rural economies. My 5G SALE Act provides Americans with

access to broadband by giving the FCC the authority to finish transferring previously auctioned spectrum to companies that offer 5G coverage.' Controversially, in March the US Senate allowed the FCC's spectrum auction authority to lapse for the first time since 1994. A bill that would have extended the regulator's spectrum authority to 19 May was passed by the lower house but objections in the Senate delayed the legislation, resulting in the lapse. To date, the FCC has held more than 100 auctions and has raised more than USD233 billion in revenues. Auction 108 drew to a close on 29 August 2022 after 73 rounds of bidding. Participating companies successfully bid on 7,872 2.5GHz licenses, generating gross proceeds of USD427.790 million. T-Mobile US secured the bulk of the available licenses, bidding USD304.325 million for 7,156 regional concessions. (December 13, 2023) www.commsupdate.com

The FCC has denied Elon Musk's Starlink a hefty $886 million subsidy from the Universal Service Fund, allocated for expanding broadband services in rural areas. The rejected bid, originally intended for the Rural Digital Opportunity Fund (RDOF) program, faced criticism as the FCC deemed Starlink incapable of proving its ability to deliver the promised broadband service. This decision echoes a similar move by the FCC last year, prompting an appeal from SpaceX, Musk's aerospace company behind Starlink. SpaceX had previously secured a bid to deploy a 100Mbps download and 20Mbps upload "low-latency internet" across 642,925 locations in 35 states, funded by the RDOF. FCC Chairwoman Jessica Rosenworcel justified the rejection, stating that the applicant failed to meet the burden required for nearly $900 million in universal service funds—emphasizing the FCC's commitment to ensuring reliable and affordable high-speed broadband for consumers nationwide. "The FCC is tasked with ensuring consumers everywhere have access to high-speed broadband that is reliable and affordable. The agency also has a responsibility to be a good steward of limited public funds meant to expand access to rural broadband, not fund applicants that fail to meet basic program requirements," said Rosenworcel. "The FCC followed a careful legal, technical, and policy review to determine that this applicant had failed to meet its burden to be entitled to nearly $900 million in universal service funds for almost a decade." However, FCC commissioner Brendan Carr dissented, arguing that the FCC has never previously demanded award winners to demonstrate meeting service obligations years in advance. Christopher Cardaci, head of legal at SpaceX, defended Starlink's bid in a letter to the FCC, asserting that Starlink remains the most viable option for connecting Americans in rural and remote areas "where high-speed, low-latency internet has been unreliable, unaffordable, or completely unavailable, the very people RDOF was supposed to connect."

(December 13, 2023) www.telecomstechnews.com

Zambia

The Zambian government is planning to phase out 2G mobile technology in the near future. Speaking at an awards ceremony to celebrate the ICT, postal and courier sectors, Felix Mutati, Minister of Technology and Science, commented: 'We are eliminating 2G because we want all towers to be internet-enabled. Every tower from now on will only be 4G and upwards internet-enabled. We have a duty to use ICT as an enabler to deliver change to the people of Zambia.' With reference to Beeline Telecom Zambia (Zedmobile) – which was issued a mobile license in February 2021, but has yet to stage a commercial launch – Mutati commented: 'I remain hopeful that Beeline, which is a Zambian majority-owned company, will take advantage of several efforts by government to establish an enabling environment for them to commence operations within a reasonable timeline, as committed.'

(December 12, 2023) The Zambia Monitor

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