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# SAMENA TRENDS

FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

BUILDING DIGITAL ECONOMIES

## SAMENA Council's Leaders, Committed to Sustainable Digital Development in the Region

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SAMENA

THIS MONTH  
**A RESILIENT, SUSTAINABLE DIGITAL FUTURE**

# SAMENA TRENDS

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### SAMENA COUNCIL ACTIVITY



Rising for Industry Sustainability & Efficiencies



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

## A Resilient, Sustainable Digital Future

Sustainable ICT development in the future requires access to new financial resources, innovative funding approaches, new financial instruments for creating investor confidence, and an overhaul in the way cooperation across industries is built and sustained. Incentives, complemented by only resilient and evidence-based regulation, would play a critical role in this regard. Moreover, the role of leading financing institutions, such as the Islamic Development Bank, can help timely boost ICT development, digital enablement, and fulfilling the global goal of achieving universal access.

The Telecom/ICT Industry is creating new opportunities, digitally enabling business and societal functions, and is enabling new experiences. Interestingly, as Digital Economy expands forward and crosses paths with the likes of Space Economy – defined by OECD to encompass a wide range of activities and resources for creating value and benefits for humans with respect to exploration, research, management, sustainable utilization of space resources – the role of the ICT Industry gets ever more engraved in how the society and business work in the current times. It has also become an integral determinant of success for new modes of educational delivery, financing services and digital financial inclusion, and improved city-management processes – as highlighted by the New York City Mayor’s Office in the SAMENA Council’s RISE conference earlier this year.

Any meaningful, inter or intra-industry collaborations to work, requires creating a sustainable ICT environment as the enabler of sustainable digital transformation and ICT development, which is both a challenge as well as an opportunity area and has direct

impact on the sustainability of the planet’s health and the environment we live in. Already, having approached the end of the first quarter of the year 2023, we have numerous imperatives to work on, new approaches to devise, and difficult challenges to overcome. For all collaborations and intra and inter-industry initiatives to yield good outcomes for socio-economic transformation and service delivery, adequate underlying ICT infrastructure is crucial, well-supported by Telecom Operators and financially sustainable to absorb and maintain all future energy efficiency and sustainability needs.

It is important to recognize how digital solutions and ICT infrastructure can help our region in achieving digital-economy goals as well as in realizing green, low-carbon and high-productivity based economic transformation, which should be human-centric, digitally-powered, and be mindful of the needs of the next generations and the environment.

Advancing a truly, inclusive, sustainable digital economy is a necessity and requires accelerated digitalization. It does also require innovation, partnerships, participation of a diverse group of stakeholders, ranging from Academia to a complex chain of investors, services providers, regulators, and vision-setters.

Ultimately, all aspirations to digitally and sustainability transform should also be directed to meeting sustainability goals, relating to how digital communications are carried out and protected; how investments are made; and how adverse impact of digitalization is successfully mitigated across environmental, social, and governance planes. 🌱



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

فول FULL  
5G

GO  
FULL 5G

The first and only network to take 5G further

#go\_full\_5G

stc



## SAMENA COUNCIL ACTIVITY

### Rising for Industry Sustainability & Efficiencies

Recent policy and regulatory developments in Saudi Arabia and the GCC region – particularly with respect to digital transformation, the need to enable cross-border data flows, adopting technology and regulatory sandboxes, making beneficial use of 5G investments, 5.5G/5G-Advance development, emergence of Open RAN, rising discussion on 6 GHz in view of WRC-23, cybersecurity imperatives led by the likes of GCF, a metaverse-driven world of new opportunities, the role of new verticals and economic sectors, and the critical requirement of ICT ecosystem sustainability – are serving as catalysts to rethink investment, sustainable operations, sustainably developing future information-communication technologies that are greener, end-user digital experience, and enterprise service delivery. While accelerating progress on globally-agreed digital development expectations, rising synergies among ICT Industry and other Industries are giving way to new planning, collaboration, and cooperation-building efforts.

To address the Industry's and its adjacent sectors' complex, multifaceted needs, in strategic collaboration with stc Group, Mobily, China Mobile International, the Communication, Space & Technology Commission (CSTC) of Saudi Arabia, and the 193 Member States and private-sector driven UN premier ICT agency, the International Telecommunication Union (ITU), SAMENA Telecommunications Council held its "Rising for Industry Sustainability & Efficiencies (RISE)" Conference on 11th January 2023 at Fairmont Riyadh, Saudi Arabia.

RISE, inspired by accelerated digital transformation in Saudi Arabia, which has secured G5 regulatory classification with its progressive policy-making and regulatory approaches, also brought under focus new needs of the businesses, economic sectors and industries, particularly ICT and Financial Services, and the society, at large.

RISE was focused on the need for ICT ecosystem sustainability, to assist proactive engagement and industry discourse with respect



to priorities, challenges, and opportunities being addressed by regional policymakers and regulatory authorities, and the private sector. RISE was also set as an important industry milestone for starting the year 2023, the precede and complement the Saudi LEAP conference in KSA, the SAMENA Council Leaders' Summit 2023 in UAE, the ITU GSR-23 in Egypt and WRC-23 in UAE later in the year.

The RISE conference began with exploring what the future looks like for all stakeholders, including Operators, in a meshed world where economic, social and business activities require advanced, resilient and secure telecom networks. Keynotes and discussion

*From Saudi presidency of G20, to setting a new trend in the availability of spectrum, to setting up new international platforms such as the Global Cybersecurity Forum (GCF), and to being a host of iterative successes in digital development, Saudi Arabia's progress in fulfilling its national ICT objectives ("Vision 2030") has been exemplary.*



sessions examined various aspects of a sustainable digital future, and the types of policies, strategies and measures required to ensure, for example, that ICTs are transformed to become greener, enabling a truly sustainable digital future.

RISE brought together leading Private-Sector leaders from across the industries, including from the financial services and terrestrial connectivity providers as well as space ecosystem key players, to further the dialogue on sustainable ICT development.

At a time when Saudi Arabia's MCIT, under the leadership of H.E. Eng. Abdullah AlSwaha, Minister of Communication and Information Technology, is leading key digitalization efforts across



*"If we are not inclusive, and if we are not truly multi stakeholder in our approach, governments alone will not be able to deliver the goods. We need the full participation of the private sector and Civil Society, Academia and Technology Community to make this happen. We have an ambitious goal. We want to achieve near Universal connectivity by 2030. This would require full involvement of the private sector in terms of innovative financing arrangements, innovative mix of technologies, and in working with those who can enhance the demand side of the equation."*



**Amandeep Gill**  
Under-Secretary General & Special Envoy  
on Technology - United Nations



the public sector and as a robust and cutting-edge digital architecture has been created in Saudi Arabia in alignment with the national Vision 2030, the RISE Conference aimed to extend knowledge support on multiple areas.

The Saudi Communication, Space & Technology Commission (CSTC, formerly CITC), led by H.E. Governor Dr. Mohammed Altamimi, who delivered a keynote during the opening of RISE, also has been a decisive force that has empowered the Saudi ICT ecosystem to progress and grow in the desired national policy direction. The Commission continues to emphasize on the need for regional regulatory authorities to enhance strategic cooperation in developing the digital economy and is pursuing a long-term vision of digital transformation and sustainability at its heart.

The United Nations' specialized agency focused on ICT





**H.E. Ms. Doreen Bogdan Martin**  
Secretary General  
ITU

*"As Bocar BA rightly said at the first annual meeting of the ITU's Partner2Connect Digital Coalition, held in Geneva: "Digital transformation is a must-have. It's a necessity." The Partner2Connect Digital Coalition is action-oriented - no more words but actual commitments. We've received close to 600 pledges and they're valued at nearly US\$30 billion, and they come from the private and public sector entities like yourselves. My message to you is simple: Together we can turn the new challenges facing our industry into new opportunities for our people and our planet...and can unlock the opportunities of digital transformation for the benefit of all."*

development throughout the world, ITU, with H.E. Ms. Doreen Bogdan-Martin having taken office as the first woman Secretary-General in over a century, and who also delivered a strong message during RISE as the first main conference of the year 2023, has been promoting the need for collaborations and partnerships, and the necessity to address challenges and opportunities offered by ICTs in the areas of innovation, governance, education, job creation and economic growth.

Eng. Olayan AlWetaid, Group CEO of stc and Chairman of the Board of Directors of SAMENA Council, who delivered a welcome message during RISE, had earlier stated that "As the Kingdom's maturity shifts into a world-class digital nation driven by Vision 2030, among the many initiatives now taking place within the Kingdom, the RISE Conference is structured to address the emerging needs and challenges of the digitally transforming businesses, economic sectors, telecom industries and the society at large becoming a platform toward sustainability in investment and improved collaborations."

Eng. Alhamed Alanezi, CEO of Arabsat and board member of SAMENA Council, stated that "The future of sustainable innovation and development in the ICT field has to be anchored on complementarity between the terrestrial and satellite industries with the objective of not only empowering urban communities but to also not leave anyone behind. Alhamed added that a robust digital economy is not resilient and sustainable enough without bridging the digital divide."

Eng. Salman Al Badran, CEO of Mobily and board member of SAMENA Council, who was among the key partners to make RISE possible, had stated that "We support SAMENA Council's initiative to address ICT sustainability challenges and various other issues." Mr. Colin Wang, Managing Director of China Mobile International Middle East & Africa remarked that "Sustainability and collaboration are the keys to a better digital future... We at CMI are committed to shaping a better and greener digital future by driving technological innovation and adoption through cooperation with carriers, enterprises and industry peers worldwide."





**Mr. Edward Mermelstein**  
 Commissioner  
 New York City

*"I am honored to join you to discuss the importance of digitalization in the context of municipal services. Not all local governments have the resources or infrastructure to fully embrace digitalization. This issue can lead to a widened digital divide and fractured access to resources and services by constituents. However, digitalization is not a one-size-fits-all solution. Local governments must carefully consider the needs of their communities. New York City is a smart city. We have embraced digitalization because it is the best way to increase equity, public safety, quality of life, and positive economic outcomes across the five boroughs. Mayor, Eric Adams is committed to using technology and data to lead New York City through challenges."*

Mr. Bocar BA, CEO and also member of SAMENA Council's board, expressed that "The RISE Conference aimed to add a new dimension to how key stakeholders from within the ICT Industry, including terrestrial and satellite segments and beyond, and now also from leading financial institutions,

need to work together to overcome the challenge of building next-generation digital infrastructure, which should ensure digital inclusion and sustainability in investments and in ICT development. Moreover, There now exists urgency to focus on sustainability as a key principle of socio-

economic transformation around the world. This places the role of ICTs and those who build & operate ICT infrastructure and bring technological innovations to us in the form of new services and applications, at the forefront of revival, digital transformation, and future development.

## SAMENA RISE in Riyadh 2023 Participants



The RISE Conference focused on fostering understanding of the complex notion of "ICT sustainability", and on rising to new challenges and making progress as new digital applications, services, platforms, and business and operating models surface, including for terrestrial and satellite service providers.

RISE is a new flagship leaders-centric industry meeting by SAMENA Council to assist in proactively institutionalizing sustainability in ICT investment, development, and to help larger sustainability goals with respect to the climate. RISE is also designed to foster industry discourse among the SA-ME-NA region's policymakers, regulators, and private sector across different industries.



## Findings & Key Messages from the RISE 2023 Conference

- RISE helped create new understanding of the need to pursue sustainability in ICT development, include the need for sustainable investment in ICT infrastructure development, while fostering greater collaboration on sustainable development as a global goal.
- Perspectives from the United Nations and the ITU's new leadership reinforced the need for countries at higher levels of digital to take the leadership role in helping other countries adopt the right policies, the right regulations and the right ways of incentivizing public-private sector cooperation while maintaining momentum in achieving universal connectivity and sustainable digital transformation as a part of the ITU's new strategy.
- New inter-governmental organizations, such as Digital Cooperation Organization, utilized the RISE platform to reiterate digital cooperation-building endeavors in the region.
- Perspectives shared by the office of the mayor of New York City, a top-ranking technology city in the world, brought forth new ideas on how the 5G era is enabling development of smart cities, helping to catalyze new innovative municipal processes in sustainable city operations and municipal service delivery. For transforming existing cities towards sustainability, digital transformation of public infrastructure is a prerequisite. This starts at the municipal level as a key driver based on collaboration between network operators, governments, and other sectors.
- Key message delivered by many speakers during RISE focused on the need for ICT sustainability to move to center stage to create the right fundament for a resilient and sustainable digital future.
- Key levers to achieve sustainable ICTs were highlighted to include collaboration and partnership along ICT supply and value chains, financial incentives and enabling regulation.
- Sustainable digitalization can help on the road to net-zero. As a precondition, universal connectivity is key.
- While participants acknowledged that there is a big adoption gap and much needs to be done in this area, connectivity infrastructure is still key and a level-playing field needs to be created and preserved, to support network operators to enable them to cater to increased future demands on networks (e.g., through development of the metaverse and its many applications and implications for data)
- Collaboration between satellite and terrestrial network operators is essential going forward to foster synergies stemming from complementarity in capabilities
- The ICT industry needs to accelerate adoption of steps to adopt ICT sustainability as a key pillar of our work and a priority going forward.
- Sustainable investments in ICT infrastructure, sustainable ICT development with greener technologies





at the forefront, and an environmental protection mindset will allow for forge new partnerships with new players.

- Universal connectivity is still not achieved and key barriers are still in place, with lack of affordability still the frontrunner. Big disparities persist in Internet use and connectivity: 3.6 billion people that do not use the Internet, coverage gap is the smallest gap whereas the usage gap is the largest gap.
- Data centers need to become more

energy efficient, e-waste needs to be reduced, and ICTs need to be greener.

- Digital services from an investment sustainability perspective are not “sustainable”, there is no perpetual “status quo” because of changes in infrastructure.
- Society is a key factor for pick up - Digitization should not only be used for “consumption”, but also for “creation”
- Public Sector needs to be an “early” adopter – standards, platforms, setting up rules – digital government

- Satellite can help here to move towards more sustainable infrastructure
- Need to drive complementarity and interoperability is key to ensure that complementarity in networks can be achieved
- Regulation is not fast enough – need to be much more agile – Saudi is doing great with including Space in the Regulatory Authority
- Synergies among infrastructure builders, digital service providers, and governments are key in sustainable



digital transformation

- For sustainable ICT development and digital transformation, regulation needs to support optimal use of infrastructure and must match investment capacity
- Regulators must become enablers of the Digital Economy
- Changes need to be bold, including incentive packages to operators to further digital development and provide certainty and stability as a precondition for investment
- Consumers, Technology, Service providers, tech providers – these pillars need to be aligned to ensure that the right foundation and incentives to invest are in place
- Countries’ aspirations to be first and best at everything have to be grounded in what is available and possible in terms of capacity and included in future planning
- Much pressure is created on infrastructure providers from hypes around different technologies and applications such as AI

- Consolidation of infrastructure is increasingly discussed and applied across all spheres of networks, such as BS consolidation, cell site consolidation, data center consolidation, etc.
- With AI application on the rise, it is important to regulate it, as AI is being used on data and users need to understand this before open data-sharing between platforms runs wild. While we have an understanding on how to leverage AI, its unintended consequences can pose major risks.
- Financial sector is a major enabler of sustainable ICT development, especially in the 57 least developing countries, considering huge untapped potentially continues to be hindered due to digital service affordability issues.
- Regarding resources required for countries, need at least 2 GHz per country for 5G and this needs to be harmonized
- For partnerships, including on sustainability initiatives, we need to assess each different stakeholder

group and determine what each needs and where to build the partnership

- In the emerging world of metaverse, interoperability and standards are key to connecting different metaverse worlds.
- To meet universal connectivity goals, regulators need to step in here and provide incentives for partnerships between Satellite and Telecom operators. Space-based cellular connectivity may materialize in the near future.
- The diversity and complexity of choices that each regulator faces in the Middle East, was apparent in the perspectives shared by the various panelists, even given the relative level of maturity we are fortunate to be enjoying. What also surfaced was the need for a shared consensus and the leading role which governments, acting through the regulators, have as a responsibility in shaping that consensus 🌍



## SAMENA COUNCIL ACTIVITY

### stc Group to Continue Chairmanship of the Board of Directors of SAMENA Council

SAMENA Telecommunications Council announces that its Board of Directors will continue to be spearheaded by stc Group; a founding Member of the Council. In strategic collaboration with stc Group, Mobily, China Mobile International, the Communication, Space & Technology Commission (CSTC) of Saudi Arabia, and the 193 Member States and private-sector driven UN premier ICT agency, the International Telecommunication Union (ITU), SAMENA Telecommunications Council held its Rising for Industry Sustainability & Efficiencies (RISE) Conference on 11th January 2023 at Fairmont Riyadh, Saudi Arabia. Following the RISE conference, the Board of Directors of SAMENA Council congregated at Fairmont Riyadh, preceded by General Assembly of the other Members of the Council. Through consensus, Chairmanship of stc, represented by Eng. Olayan Alwetaid, Group CEO of stc, was renewed for the 2023-2024 term. The Board indicated confidence in stc's leadership, and Chairman Alwetaid expressed his commitment to deliver on the expectations of the Board and the SAMENA Council. From Saudi Arabia, Eng. Salman Al Badran, CEO of Mobily and Eng. Alhamed Alanezi, CEO of Arabsat, are also among the Board Members of SAMENA Council. 📍



## Innovation and Entrepreneurship Alliance for Digital Development

### ITU launches the Innovation and Entrepreneurship Alliance for Digital Development

ITU has launched the Innovation and Entrepreneurship Alliance for Digital Development. The new Innovation and Entrepreneurship Alliance for Digital Development, initiated by the BDT Director, will build critical local enablers to lead in the changing digital environment. It will also enable BDT to develop new organizational and human excellence capabilities, deliver new products and services for ITU Membership and strengthen the engagement of the private sector and academia in the critical work of BDT. BDT and ITU-D Membership need new, more resilient, and forward-thinking approaches to guarantee they can safely navigate a digital world that is increasingly Volatile, Uncertain, Complex and Ambiguous (VUCA) and achieve outcomes of the Kigali Action Plan. This Alliance offers a

new framework that will build critical local enablers to bridge the digital innovation gap and empower International Telecommunication Union membership to overcome challenges in navigating our changing digital environment. The goals of the Alliance are aligned with the UN Secretary General's Roadmap for Digital Cooperation, the Global Digital Compact, and the 2030 Agenda for Sustainable Development. The Alliance offers a new approach to bridging the Digital Innovation Divide and empowering ITU-D membership to overcome challenges on their path through digital transformation – unlock their digital potential, build local capabilities in innovation and entrepreneurship, and accelerate their ecosystems' impact on cross-cutting sectors for an inclusive and sustainable society. The Alliance



**Dr. Cosmas Luckyson Zavazava**  
Director  
Telecommunication Development  
Bureau

*The Alliance offers a new approach to bridging the Digital Innovation Divide and empowering ITU-D membership to overcome challenges on their path through digital transformation – unlock their digital potential, build local capabilities in innovation and entrepreneurship, and accelerate their ecosystems' impact on cross-cutting sectors for an inclusive and sustainable society.*

will also help strengthen countries' capabilities to integrate ICT innovation into national development agendas and build human and institutional capabilities at the country level where it is most relevant and sustainable. The Alliance will operationalize the needed capabilities through three main vehicles: A Digital Transformation Lab, a Network of Acceleration Centers, and a Digital Innovation Board. Through partnerships with governments, private sector, United Nations Agencies, and academia, ITU BDT aims to build local innovation and entrepreneurship capabilities. 🌱

## Innovation and Entrepreneurship Alliance for Digital Development

## Featured SAMENA Council Member

### stc spots the light on A2G (Air to Ground) IFC (In-Flight Connectivity) in collaboration with SkyFive Arabia

stc Group, the leading digital enabler in the region and the leading provider of Air-to-Ground (A2G) based solutions and services, exhibited its in-flight connectivity (IFC) through A2G-based solutions to airlines in Saudi Arabia in collaboration with SkyFive Arabia. With plans to expand the A2G services further across the MENA region, the partnership will deliver unparalleled connectivity that will enrich airlines and passengers' travel experiences. As stc Group is committed to contributing to the Kingdom's vision and digitalisation goals while providing unrivalled connectivity, whether on the ground or in the air, the group enhanced its Air to Ground services after its intense research and development. Along with its digital transformation blueprints, the group once again offers a proof of concept about inflight connectivity through A2G-based solutions as the technology successfully enhanced airline passengers' experience, allowing them to access high-speed connection, conduct their business and enjoy high-quality (up to 4K) video streaming, web browsing, and social media usage. Saudis' internet usage rocketed by more than 92% in 2021 versus 2020, which proves that customers' needs and requirements to remain connected are evolving. The partnership with SkyFive Arabia will accordingly enable



the rapidly growing demand for high-speed and superior-quality connections. Moreover, it will introduce innovative technologies that improve the customers' experience. stc is paving the way as the Kingdom's digital transformation accelerates, and the group will introduce more services and enable A2G further. Eng. Mohammed Alabbadi, Group Chief Carrier & Wholesale Officer at stc Group, commented: "This agreement with SKYFive Arabia aims to explore the new possibilities that A2G technology has to offer, as part of the group's efforts to enable innovative NTN (Non-Terrestrial Network) technologies in alignment with the stc group's daring strategy and the Kingdom's ambitious vision". "Our partnership with SKYFive Arabia will reinforce the Kingdom's position in the region as the first country to introduce A2G-based inflight connectivity, which provides faster and more reliable internet connection for local and international flights. As the Kingdom's digital transformation accelerates, stc is paving the way for our customers and business partners to connect in more ways than ever," he added.

Through this collaboration, Skyfive Arabia aims to enhance and contribute to developing the Kingdom's aviation industry and beyond. The company is confident it can achieve a milestone with its partner, stc Group. Eng. Mohamed AbdelRehim, Chief Executive Officer, Middle East Africa at SkyFive Arabia said: "This partnership aims to offer high-speed connectivity in aircrafts, allowing airline passengers to enjoy (up to 4K) video streaming, web browsing, social media usage, as well as IoT applications which will improve travel experience of passengers; thereby contributing to the digital transformation of the aviation sector." stc Group and SKYFive Arabia have already tested this state-of-the-art technology on a flight between Riyadh and Jeddah in collaboration with the Communications, Space and Technology Commission (CST) and Saudia Airlines. stc continues to extend new solutions supported by its proven network to enable and optimise aviation and other industries. 📍

## Featured SAMENA Council Member

# NOKIA Refreshes Brand to Demonstrate Focus on Intelligent Networks and Industrial Digitalization

Nokia has revealed its new brand identity—the first major redesign of the firm’s logo in nearly 60 years.

Nokia continues to execute against its three-phased company strategy to deliver sustainable, profitable growth. Having completed the reset phase, NOKIA is now accelerating while laying the foundation for the scale phase, delivering strong growth and stable profitability while broadening its customer base.

NOKIA has six strategic pillars:

- Grow market share with service providers, driven by continued technology leadership
- Expand the share of Enterprises within its customer mix
- Continue to manage its portfolio actively, to ensure a path to a leading position in all segments
- Seize opportunities from sectors beyond mobile devices to monetize its IP and continue to invest in R&D for Nokia Technologies
- Implement new business models, such as as-a-Service
- Develop ESG into a competitive advantage and become the “trusted provider of choice” in the industry

These will be underpinned by four enablers: future-fit talent, long-term research, digitalizing our own operations, and a refreshed brand.

As the world increasingly relies on



connectivity, the qualities of traditional networking will be required to integrate with the flexibility and scalability of cloud. NOKIA’s updated company strategy is supported by a new technology strategy, which details how networks will need to evolve to meet the demands of the

*“Our new visual identity captures Nokia as we are today, with renewed energy and commitment as pioneers of digital transformation. We built on the heritage of the previous logo, but made it feel more contemporary and digital, to reflect our current identity.”*

**Pekka Lundmark**  
President & CEO, NOKIA

metaverse era. These are networks that go beyond connecting people and things. They’re adaptable, autonomous, and consumable, with the potential to bring the transformative power of networking to every industry.

NOKIA is uniquely well-positioned to lead this evolution in networks through our technology leadership and best of breed portfolio across fixed, mobile and cloud. The company’s innovation is propelled by Nokia Bell Labs, winner of multiple Nobel Prizes and global leader in disruptive research on networks, software, AI, automation and IoT. And the company has a track record of working in collaboration with our partners, creating networks that sense, think and act. NOKIA’s new visual identity captures how the company is today, with renewed energy and commitment as pioneers of digital transformation. It’s about NOKIA’s strength in networking, innovation, collaborative partnerships and technology leadership. It’s also about its value propositions in current and prospective markets. 🌱

## MEMBERS NEWS



## For the First Time Ever, stc Group Exceeded US\$17 Billion Total Revenue

stc announced the company's annual consolidated financial results for the period ending at 31 December 2022:

- Total revenue for the year 2022 reached SAR 67,432m with an increase of 7.02% as compared to year 2021.
- Gross profit for the year 2022 reached to SAR 37,393m with an increase of 10.65% as compared to the year 2021.
- Operating profit for the year 2022 reached to SAR 15,088m with an increase of 14.93% as compared to the year 2021.
- Earnings before Interest, Taxes, Zakat, Depreciation and Amortization (EBITDA) for the year 2022 reached to SAR 25,079m with an increase of 9.80% as compared to the year 2021.
- Net profit for the year 2022 reached to SAR 12,171m with an increase of 7.60% as compared to the year 2021.

In accordance with the dividends distribution policy for three years period starting from the 4th quarter of 2021, which was ratified during the Ordinary General Assembly Meeting on 30-11-2021. In addition to the amendment on the dividends distribution policy, which was ratified by the Extraordinary General Assembly Meeting on 30-8-2022, by distributing an amount of SAR 0.40 per share per quarter, stc will distribute a total of SAR 1,992.87 million in cash dividends to the shareholders for the 4th quarter of 2022, representing SAR 0.40 per share as the total number of Treasury shares related to the Employees Stock Incentives Plan stood at 17,821,798 shares at the end of the fourth quarter 2022 and those shares are not entitled for any dividends distribution. The eligibility of dividends shall be for the shareholders at the close of trading on Sunday 26-02-2023 and as per the registered shareholders in stc's shareholders registry in the Depository Center at the end of the 2nd trading day following the eligibility date. Dividend distribution date will be on Thursday 16-03-2023. Commenting on these results, Eng. Olyan Mohammed Alwetaid, stc Group CEO, stated that 2022 was a year of successes and achievements, as the Group delivered on many initiatives and investments that had a positive and clear impact on increasing and diversifying the Group's revenue through expanding its business in the Kingdom and the region, in addition to entering into promising and new domains. The Group sought to diversify its investments portfolio by launching a number of companies in the fields of cloud computing, internet of things and digital infrastructure. These investments are in line with the Kingdom's Vision 2030, which will contribute to strengthening the Kingdom's position as a main digital



hub in the region and the world, and will support the Group's profitability and growth in a sustainable manner, and in line with the Group's vision and ambitious strategy (DARE 2.0). Alwetaid went on to say that, stc's recent capital increase is considered one of the largest capital increases in the Saudi stock market. This increase aims to support the Group in achieving its strategy that aimed at expansion and growth, along with maximizing the return for its shareholders, by increasing and diversifying investments and seizing the expected growth opportunities in the telecommunications and information technology sectors in the kingdom and the region. In light of the Group's role as a leading digital enabler in the kingdom and the region, stc Group announced that it has committed an additional \$300 million on top of its original \$500 million investment in STV, the largest independent technology investment firm in the MENA region. This additional investment reflects stc's future vision and its significant contribution to the digital transformation in Saudi Arabia and beyond, as well as, it deepens the Group focus on innovation and technological development in the Kingdom and the MENA region. As a continuation of stc's leadership, the Group has succeeded in maintaining the first rank as the most valuable brand in the Middle East in the telecommunication sector for the third year

in a row, according to Brand Finance's Global 500 2023 report. Over the last five years, the brand's value has increased by almost twofold, from \$6.2 billion in 2017 to \$12.3 billion in 2022. This achievement results from the brand's outstanding performance in maintaining its leadership position and enhancing its commercial strength in the

Kingdom and the region. Lastly, we are in stc Group as the leading digital enabler in the kingdom and the region and due to the infinite support provided to the communication and information technology sector by our visionary government, will continue to achieve our ambitious strategy (DARE 2.0) and seek to enable the

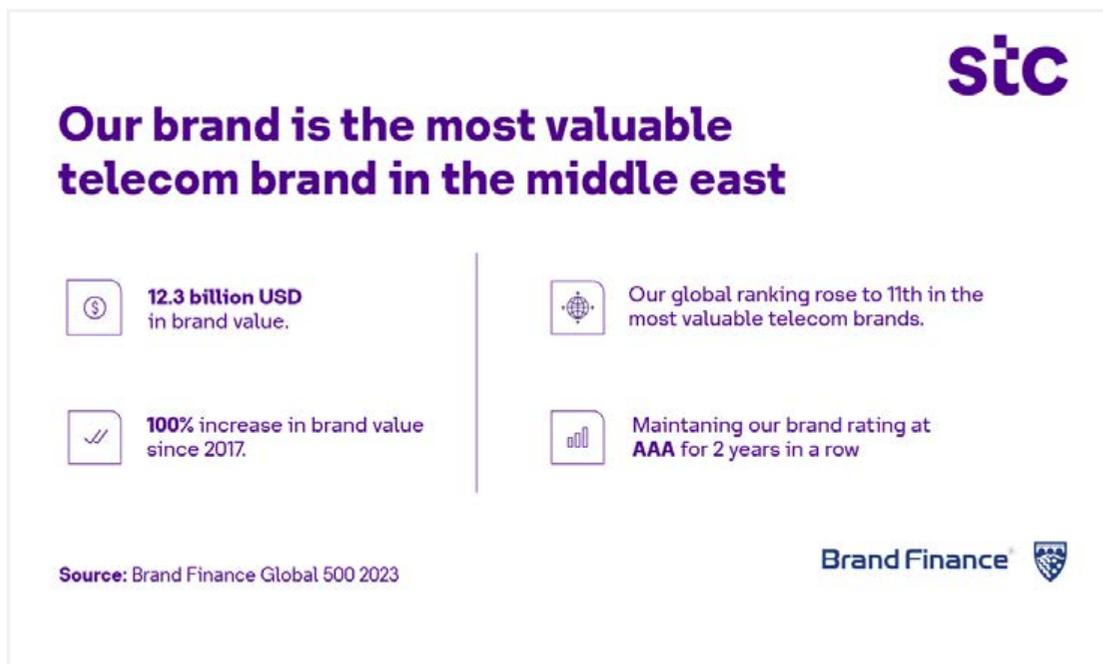
digital transformation in various sectors and grow in new paths. The Group's diversified investments is a testimony of stc's commitment to its strategy and our aspiration to create an integrated digital system to enrich our customers' experience and contribute to achieving vision 2030 goals.

## stc is the Most Valuable Telecom Brand in the Middle East, with a Value of \$12.3 Billion, According to Brand Finance

stc Group, the leading digital enabler in the region, has succeeded in maintaining the first rank as the most valuable brand in the Middle East in the telecommunication sector, for the third year in a row, according to Brand Finance's global 500 2023 report. Thanks to the group's success, continuous expansion, and growth since the "Dare" strategy launch in 2017. Over the last five years, the brand's value has increased by almost 100%, from

\$6.2 billion in 2017 to \$12.3 billion in 2022. This achievement results from the brand's outstanding performance in maintaining its leadership position and enhancing its commercial strength in KSA and the region. In addition to being the most valuable brand, stc Group ranked among the fastest-growing brands in the region with a growth rate of 16.7% stc Bank also increased by 27.5%, climbed 25 places in the Global 500 ranking, the most by any

Middle Eastern brand in the study, profiting from the robust future growth given its dominance in its home market. The "Brand Finance" report also classifies brands worldwide by measuring brands' strength globally, using the "Brands Strength" index, external factors, and business performance. It also includes an evaluation of all companies' activities regionally and internationally. stc Group is considered to be the strongest brand in the Kingdom of Saudi Arabia, Bahrain, and Kuwait. It is worth noting that, Brand Finance is a world leader in brand valuation, and every year it ranks the strongest and most valuable brands. It evaluates more than 5,000 brands in all sectors and regions every year. Moreover, the report "Brand Finance Global 500 2023" includes the 500 most valuable brands worldwide.



## stc and solutions by stc Validates AWS Snowball Edge Computing to deliver PMN & MEC offerings to enterprise customers

stc, the leading digital enabler in the region, announced the successful validation of AWS Snowball Edge in stc Lab, a device with on-board storage and compute power for select AWS capabilities. Snowball Edge can do local processing and edge-computing workloads to help stc, to deploy Mobile Private Networks (MPN) and MEC offerings at the edge, in a fully

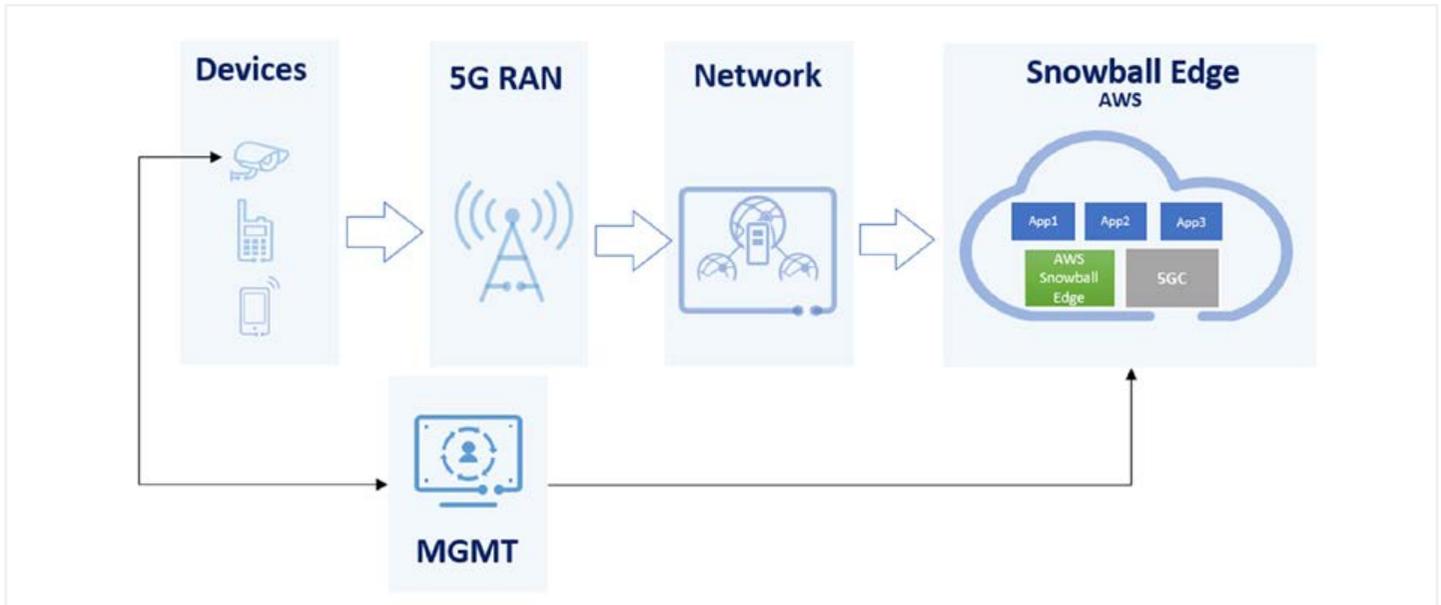
disconnected and transportable fashion. stc, in collaboration with solutions by stc, validated the solution powered by AWS to provide MPN and cloud computing services at the edge of stc 5G network. By locating AWS compute and other select services at the edge of the communications service provider network, operators can bring their enterprise solutions offerings closer

to the enterprise customers. Private edge computing provides an integrated platform that enables connected world applications and services to be deployed across private wireless networks. Private 5G network, is a service that enables telecom operators to help enterprises set up and scale private mobile networks in their facilities to augment or as an alternative to existing

solutions such as WiFi and wired networks. stc in partnership with solutions by stc and AWS deliver a private 5G network spanning the small cell radio units, Compute functions delivered on AWS Snowball Edge, 5G core and radio access network

(Nokia 5G RAN) software, and subscriber identity modules (SIM cards) required to set up a private 5G network and connect devices. AWS together with ISV Partner Network members provide a verified and tested blueprint for the setup and

deployment of MPN to support enterprise digitization needs and their increased network traffic needs. stc can now deploy, and scale their own 5G mobile network in matter of days instead of months.



## stc Group and Alaian partner during MWC 2023 to bring best practices and success cases in the open innovation



stc Group, the leading digital enabler in KSA and the region and Alaian signed an MOU during MWC 2023 to bring several objectives into their collaboration, including identifying new solutions developed by start-ups through international scouting activities and sharing the deal flow of innovative solutions with successful business models with the telco industry, sharing best practices, lessons learnt and success cases in the Open Innovation field, and gaining joint visibility worldwide in the entrepreneurial ecosystems by launching joint comms in media and gaining visibility in global innovation events. stc Group settled its agreement with Alaian as the latter is a global alliance for innovation that brings together eight of the world's leading telcos and will be connected to share expertise on innovation and seek out start-ups where they are present. In addition, the Alaian members have a total of 700 million customers in Europe, Africa, the Middle East, and Latin America. Moreover, the alliance has already opened a global search for start-ups based on use cases that enrich existing and new telco technologies, such as 5G and Fibre, with offerings that generate additional customer value. Selected start-ups can access the best resources that telco members make available to them. stc Group continues to support start-ups, part of its strategy to grow the local talents in Saudi Arabia. As a digital enabler in KSA and the region, stc has supported 92 digital start-ups where financial transactions reached more than 10 billion SAR total market value of these incubated start-ups.

## stc Group to Deploy Cloud Gaming Solution Across MENA



### stc Group joins forces with Blacknut to democratize Cloud Gaming across MENA



#### Agreement Highlights

- Promote cloud gaming solutions in the MENA area.
- Support our strategy in bringing gaming into its entertainment ecosystem in a seamless, personalized & secured manner.
- The agreement extends to include all of our subsidiary companies.
- Leverage our expertise to co-create new gamer-centric and social features integrated into a unified media experience.
- Allow us to benefit from our Group experience and existing user base, and expand our functionality, to provide new and exciting ways for people to play and engage with one another.



stc Group will deploy Blacknut’s B2B/B2B2C cloud gaming solution across the Middle East and North Africa (MENA) region, following its successful collaboration with cloud infrastructure provider Radian Arc in Bahrain and Saudi Arabia. stc Group said that the partnership with Blacknut will allow the company to “bring gaming into its entertainment ecosystem in a seamless, personalized and secured manner.” For Blacknut, working with stc Group not only represents an important expansion in the MENA region, but also mean the opportunity to co-develop new gamer-centric and social features. “Partnering with such a prestigious company as stc Group to develop the MENA Cloud Gaming ecosystem is the logical next step in our growth as we see exponential demand in the region,” said Olivier Avaro, CEO at Blacknut. “The partnership will allow us to leverage stc Group experience and existing user-base, as well as to expand our functionalities to offer new exciting ways to play and interact together.” The promise of cloud gaming, which refers to running a game on a nearby server and streaming it to the player, is that it frees the player from the confines of relying on a computer or console with powerful, expensive graphics and hardware. This promise, though, depends on delivering a console-like experience, and therefore, the quality and reliability of a gamer’s connectivity is paramount. 5G is expected to offer the required low latency and high-speed connectivity, as well as the ability to handle the high data demands expected from gaming platform subscribers, that this segment needs. According to Fortune Business Insights, the global cloud gaming market is projected to grow from \$3.24 billion in 2022 to \$40.81 billion by 2029. The firm cites the COVID-19 pandemic as a contributing factor to the higher-than-anticipated demand for this service, which it says is present across all regions.

## stc Enables Future Technologies with Global Investments and Partnerships at LEAP23

The global technology conference "LEAP23" concluded its functions by announcing significant global partnerships and a billion investments to support future technologies, digital entrepreneurship and technology startups to achieve the Kingdom’s Vision 2030 in diversifying the economy, localizing technology and progressing industries. stc group had the most significant portion of the conference, as it concluded its participation in the LEAP 2023 conference by signing more than 40 agreements and showcasing several innovative services and technologies that contribute to accelerating the digital transformation of the public and private sectors. During the event, the group presented advanced and secure technology solutions contributing to the digital empowerment of various business sectors. stc announced its cooperation with major global and local companies, including Huawei, Ericsson, Samsung, Telefónica, Motorola, Airbus, Go Telecom, Sky Five for Air to ground internet services, and Oracle to update database technologies and accelerate the cloud transfer operation. Moreover, stc signed an agreement with Lucid, the electric car manufacturer, to provide customer communications services. It also signed a strategic partnership with Blacknut to increase awareness of cloud gaming solutions among individuals and businesses. The

agreements included the signing of several partnerships with the government sector, most notably an agreement for strategic cooperation in digital transformation & infrastructure, investment, and development of wireless communications with the Ministry of National Guard, and an additional agreement with the Royal Commission for Al-Ula Governorate to cover Wadi Ashar with 5G technologies and an agreement with King Abdullah Economic City



to work on developing digital products and solutions enabling the easy transformation into smart cities. At the same time, it signed an agreement with SDAIA to develop a platform for labelling data and encouraging innovation in the field of artificial intelligence. In addition to its agreement with the Fourth Industrial Revolution Center to govern the applications of emerging technologies, as well as an agreement for stc's inspireU program with the National Program for Information Technology Development, which aimed at supporting emerging technology companies and entrepreneurs. stc Group, represented by stc Academy and King Abdullah University of Science and Technology, signed a strategic partnership for research and

innovation. And iot squared, owned by the Public Investment Fund and stc, signed several MoUs with Software AG and Ossia to enable companies and sectors to digitally transform and use advanced Internet of Things technologies in line with the Kingdom's Vision 2030. Furthermore, stc had announced the stc Corporate Investment Fund (CIF), through which it aims to invest in emerging projects in the early stages in several fields; Among them are financial technologies, cyber security, artificial intelligence, digital games, the Internet of Things, blockchain and other promising areas. stc implemented the fastest fiber internet experience in the Middle East in partnership with the integrated Dawiyat company. The

experiment was carried out in one of the villas in the Sidra residential project in Riyadh, which is affiliated with the "Roshan" company, the leading real estate developer in the Kingdom. Finally, stc Group presented in its booth, metaverse technologies, satellite communication technologies, and Air to ground internet services, the booth also included a display of the uses of IoT technologies and health digital solutions such as the Holo Doctor for telemedicine consultations, health robots and drone used to deliver medical equipment, and smart ambulance, stc reviewed smart port solutions that include smart monitoring, crane automation, and the use of smart cameras to support the automation of operational processes in ports.

## stc Launches Mobile Podcasting Workshop

Kuwait Telecommunications Company – stc, a world-class digital leader providing innovative services and platforms to customers, enabling the digital transformation in Kuwait, launched a Mobile Podcasting workshop in collaboration with the Youth Public Authority in Kuwait. The initiative falls in line with stc's corporate social responsibility (CSR) framework, while especially focusing on two of the program's key pillars: education and entrepreneurship. The workshop also serves as an innovative concept launched under the Company's February celebrations in commemoration of Kuwait's National and Liberation Days. Led by social media and digital expert Hind Al-Nahedh, the Mobile Podcasting workshop aimed to provide attendees with a comprehensive introduction to storytelling and audio talk shows. The workshop covered the various stages in launching a podcast which include the planning and preparation, production and recording, and finally the publishing and marketing stage. Aside from

the different stages of launching a podcast, Al-Nahedh showcased the attendees how to identify the target audience, effectively use voiceovers, how to upload and manage the podcast page through a mobile device, as well as additional tips and tricks that can assist the aspiring journalists to master their craft. During the workshop, Ahmad Al Nowaibet, PR and Social Media Manager at stc, informed the attendees regarding stc's entertainment platform, stc TV. The platform offers a variety of entertainment features and programs that can inspire the attendees as they learn more about Mobile Podcasting. Furthermore, stc organized several contests for the participants with valuable prizes and free subscriptions to stc TV. stc indicated in a statement that the workshop comes under stc's social responsibility program as well as the February celebrations initiated by the Company. The Company's February celebrations campaign kicked off at the start of the month with the first initiative being a professional photography workshop

organized in collaboration with the leading online e-learning platform, dawrat. In continuation of its activities and programs under the campaign, stc plans to continue hosting such initiatives that empower the younger generation throughout the month of February. As a digital pioneer, stc highlighted that it is committed to empowering the younger generation by evolving their understanding of how to utilize the technology available today to tap into their creative potentials. Embracing the digital tools and platforms available to the public can positively influence the younger generation in pursuing a productive path that can ultimately enhance their lifestyles. The primary objective behind this workshop was to help equip aspiring podcasters and journalists with the necessary tools they need to develop digital projects that are relevant and engaging. Through hands-on training workshops like these, stc hopes to further its mission of fostering innovative thinking within society and promoting social engagement through technology-focused initiatives such as podcasts. In this regard, stc thanked Hind Al-Nahedh for delivering the workshop in an engaging and inspiring way that strongly appeals to those who are interested in starting their own podcasts. To find out more about stc's events, promotions, and sponsorships, follow stc's official social media platforms, visit one of stc's branches, download mystic mobile application, visit [www.stc.som.kw](http://www.stc.som.kw) or contact the customer service center by dialing 102 for around the clock assistance.



## stc Launches Venture Capital Fund

stc announced the launch of its corporate investment fund (CIF). The Fund aims to invest in early stages startups in various domains including fintech, cybersecurity, artificial intelligence, digital games, Internet of Things, blockchain, and other promising areas. The CIF will make strategic investments to accelerate growth, enhance innovation and support the KSA Vision 2030 in terms of economic diversification through tapping into new sectors and supporting stc's strategy-related entrepreneurs and startups at the local, regional and international levels. The fund will also explore new technologies and business models in digital sectors. It will also predict new areas in the communication industry, which would

have a positive impact on stc business. "The launch of this fund is in line with stc Group's strategy and our aspirations to work at an accelerated pace to contribute to the diversification and growth of the digital economy. Through CIF, we seek to enable distinguished entrepreneurs and startups to grow and expand at the local and regional levels and benefit from global investment opportunities," Eng. Olayan Alwetaid, stc Group CEO, commented. "stc will not only provide the targeted startups with financial support and investment but will also link the startups with Group's services. This is to help those startups to grow and benefit from the stc Group digital ecosystem in several areas, such as cloud services, cybersecurity, and several

other services, focusing on the strategic dimension and the return on investment", he added. Motaz Alangari, Group Chief Investment Officer, also pointed out that the CIF reflects the stc directions for investing in startups that adopt new technologies and digital business models that cover 9 different industries. "The launch of this fund is a continuation of the stc's distinguished journey in supporting startups that play an important role in developing Kingdom's digital economy. This fund will allow stc to tap into increasingly emergent and cutting-edge areas at the local and international levels and invest in transformative products that align with our group's strategy", he added. The current entrepreneurship ecosystem is witnessing many entrepreneurial ventures, innovations and business models with favorable investment opportunities emerging at the local and regional levels. The launch of the CIF is a continuation of the company's role and efforts in supporting entrepreneurs and digital startups through several initiatives and investments, such as launching the inspireU program, which incubated and supported 92 startups through 9 intakes with a market value exceeding \$2.6B. Also launching STV fund and stc venture fund, which have made investments in several successful businesses across the region, which has contributed to achieving economic diversification and growth during the last years and supports the KSA Vision 2030.



## Huawei and stc Accomplish the First 50G PON Live Trial in the Middle East

stc (The Saudi Telecom Company) Group, the regional digital champion, has announced the completion of the first 50G PON (Passive Optical Network) trial in the Middle East on a live optical network in partnership with Huawei. 50G PON is the latest in broadband technology offering both consumers and businesses upgraded and secure broadband usage. The live trial comes at a pivotal time as stc continues to invest in technological innovation to deliver world-class connectivity. It is the latest milestone in the long-term joint innovation between stc and Huawei. The industry has quickly moved towards broadband networks adopting all-optical access



to increase data security and reliability, predominately through the implementation of the mainstream technology, GPON/10G PON. In recent years, the rapid development of various new services, such as Augmented Reality (AR) and Virtual Reality (VR), has promoted the evolution of optical access technologies. Currently, 50G PON [1] is considered the next-generation PON technology across the industry, including operators and equipment vendors. Bader Allhieb, Infrastructure VP of stc Group, said: "As a digital champion in the Middle East, stc has been active in adopting the industry's leading technology solutions to

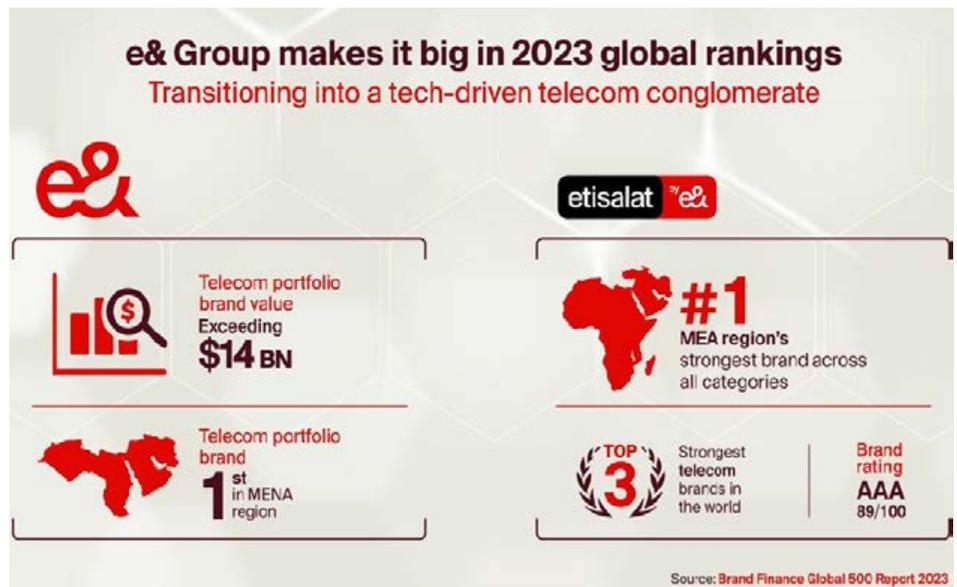
drive digital transformation regionally. In partnership with Huawei, we are now laying the foundations for the next-generation of connectivity via 50G PON, ensuring we continue to improve user experience and accelerate digital transformation with leading networks." Feng Zhishan, President of Optical Access Network Product Line at Huawei, said, "Huawei will leverage its continuous R&D investment in 50G PON technologies to help stc Group build advanced optical access networks, provide premium network connections for homes and enterprises, and lead the industry development." The 50G PON technology

and service verification completed by the stc Group and Huawei is based on the existing access platform and wavelength specifications that comply with industry standards. The service can coexist with the 10G PON on stc's live optical network, proving its stable high rate and low latency. This signifies a seamless evolution of the PON network, laying solid foundations for large-scale deployment of 50G PON in the future. This verification test is a key step in leading the way to the next generation of the industry and joint technology innovation.



e& (formerly known as Etisalat Group) has consolidated its position as the most valuable portfolio of telecom brands in the Middle East and Africa (MEA), according to the 2023 Brand Finance Global 500 Report released at the World Economic Forum (WEF) in Davos. Highlighting its transformation efforts into a global technology and investment conglomerate, e& has achieved remarkable business growth and unwavering stakeholder confidence in 2022, with its portfolio of brands now exceeding a total value of US\$14 billion. This reflects the success of the Group's business strategy over the past year, which has introduced further improvements in customer service, more people-focused products and new digital services across its specialist business verticals. etisalat by e&, the Group's largest telecom brand, also retained its position as the strongest telecom brands across all categories in the MEA region, achieving a score of 89.1 out of 100 and a AAA rating, according to the report. It was also rated one of the top three telecom brands in the world, due to its market reach, operational capabilities, and outstanding customer service record. Hatem Dowidar, GCEO of e&, said the Group's endorsement by the Brand Finance was both humbling and a worthy reflection of the UAE's unstinting commitment to unlock economic growth and potential through its investment in state-of-the-art infrastructure and digital transformation. "Guided by our 46-year legacy of

## e& Named MEA's Most Valuable Portfolio of Telecom Brands, by Brand Finance



pushing the boundaries of technology and service excellence, we have emerged as an inspiring global technology conglomerate; this international recognition makes us extremely proud," he said. "We will continue to earn the trust of our customers and stakeholders by developing and innovating cutting-edge products and services that meet the needs of our 162 million subscribers in 16 countries across the Middle East, Asia and Africa," Dowidar added. Dowidar said that e& had made significant strides in Artificial Intelligence (AI), blockchain, Virtual Reality (VR), Augmented Reality (AR), the Internet of Things (IoT), cloud computing, and technologies supporting

the emergence of the metaverse. "As we help usher in the next wave of digital tech transformation, we will continue exploring new business models in the digital space. Our strategic priority is to drive new partnerships and investment opportunities that will accelerate the growth of all our business verticals." "With sustainability at the heart of everything we do, the e& ESG framework has become an integral part of the Group's business model. We have successfully created an ecosystem in which we operate, communicate and deliver our products and services to stakeholders and customers, enabling us to be a key player in the search for clean and green solutions.

The Group's efforts were recently crowned by the declaration of e&'s net zero targets by 2030, marking a further step in confirming our commitment to reduce carbon emissions across our business and to step up our efforts for global climate action." Etisalat Group changed its brand identity to e& in February 2022, as part of a wider strategy to accelerate resilient long-term growth. Successfully aligning all its business verticals and subsidiaries, e& raised its brand profile globally through impactful communi-

cations and international partnerships with such admired brands as Etihad Airways, the Abu Dhabi Formula 1 Grand Prix, Manchester City Football Club, and African football giants Al Ahly SC. Commenting on e&'s ranking in this year's report, David Haigh, CEO and Chairman of Brand Finance, said: "As the telecommunication industry faces commoditization, e& has taken bold steps to reposition its brand identity to unlock new opportunities. This transformation has enhanced the competences of e& to pro-

vide innovative digital-centric services that add to its journey as a global brand." Brand Finance is the world's leading independent branded business valuation and strategy authority. Founded in 1996 and headquartered in London, it aims to 'bridge the gap between marketing and finance.' Brand Finance evaluates over 5,000 brands across all sectors and geographies every year. The 500 most valuable brands are included in the Brand Finance Global 500 report.

## etisalat by e& launches the MENA region's first enhanced 5G Standalone network for consumers and businesses, building on the success of its 2018 5G Non-Standalone launch

etisalat by e& today announced the first commercial deployment of comprehensive 5G Stand-Alone (SA) network in the Middle East and North Africa (MENA) for consumers and businesses. This marks a significant improvement over the previous generation of 5G Non Stand Alone (NSA) currently available in the market. etisalat by e& first launched the previous generation of 5G NSA commercially in 2018, which was the first of its kind in the region. With this deployment, etisalat by e& has transitioned from using a 5G radio access network on an existing 4G LTE network to a more advanced 5G network. The latest version of the 5G network will provide customers with access to a dependable nationwide standalone network that can support a wide range of applications. These applications include massive machine-to-machine communication solutions, real-time device-to-device networking, ultra-reliable, low-latency functionality for autonomous devices and next-generation Internet of Things (IoT) devices. Standalone 5G technology offers additional capacity and significantly lower latency, making it essential for innovative use cases such as Industry 4.0, industrial IoT, commercial augmented and virtual reality, and large-scale digital sensing. The etisalat by E& 5G Stand Alone (SA) service is designed to offer a more satisfying and productive user experience. Users can enjoy high-speed broadband connectivity comparable to fibre-optic connections, which provides an enhanced experience for high-demand applications such as 4K video streaming, high-quality music streaming,

and cloud gaming. In addition to providing individuals with a more efficient broadband experience, the service can also serve as an alternative broadband option for businesses. By leveraging the advantages of 5G SA Fixed Wireless Access (FWA), companies can improve their operations and customer experience. Khalid Murshed, Chief Technology & Information Officer of etisalat by e&, said: "We are pleased to announce our successful investment in 5G Standalone technology. This is a significant milestone as we look to deliver end-to-end 5G solutions in UAE, providing our customers with the latest digital innovations and superior experience and laying the foundation for new revenue streams. The 5G Standalone network will

allow us to offer our customers the latest in high-speed and low-latency connectivity. Our recent collaborations have enabled us to increase the quality of our services, while creating a more reliable and cost-effective experience for our customers. We are proud to be leading the way in 5G technology and are committed to continuing our efforts to provide the best services in the industry." This commercial deployment of a comprehensive 5G Stand-Alone network is based on Service Based Architecture (SBA), including the capability of edge computing, network slicing, 3GPP SA (defining standard for 5G) guided network orchestration and service-based architecture. Launching the 5G Stand-Alone Fixed Wireless Access (5G SA FWA) as the first service will open a new



era of commercial use cases with a multi-vendor 5G Dual Mode network to enhance the broadband offering to customers. The technology of 5G SA will enable subscribers to enjoy higher uplink bandwidth with special case scenarios for enterprise applications where uplink throughput is equally important as downlink. In other cases, requiring lower user-traffic latency, it will address critical gaming issues and

experience futuristic technologies like Virtual Reality (VR) and cloud gaming. The technology also has high-security levels that utilise best industry practices to maintain a robust network. The solution is further enriched with network exposure, slicing, edge computing and orchestration. Network slicing is a way of virtualising the 5G network, allowing it to be partitioned into multiple, logically isolated networks for

different customers based on their needs. It allows for greater efficiency and flexibility in the deployment of 5G networks. Edge computing is a way of bringing computing resources closer to the users, reducing latency and improving the performance of applications. The 5G SA will co-exist efficiently with existing networks using dual-mode 5G core technology.

## e& Successfully Completes the Acquisition of ServiceMarket to Expand Range of Digital Services in Smiles Online Marketplace

Etisalat UAE, branded as etisalat by e&, has completed the acquisition of Service Souk DMCC "ServiceMarket", acquiring 100 percent of shareholding of the online marketplace. This acquisition is in line with the Group's strategy to empower consumers, strengthen Smiles online marketplace presence and drive diversification of our business. ServiceMarket is a leading online marketplace for household services. It currently offers more than 40 services under several segments across the UAE. It enjoys a strong market position that will complement etisalat by e&'s existing marketplace services under the brand 'Smiles' which already includes online food and grocery delivery, lifestyle offers and the ability to earn and redeem points at more than 10,000 outlets across the UAE. etisalat by e&'s commitment has always been to stay aligned with the UAE's digitalization

ambitions by providing best-in-class innovative solutions and harness advanced technologies, increasing penetration of digital services, this acquisition contributes to the growth of the country's ambitions of becoming a digital economy. Khaled ElKhouly, Chief Consumer Officer of etisalat by e& said: "The online household services market has demonstrated strong growth over the past few years with an increasing number of consumers preferring to access a broad range of services at the comfort of their homes, and through digital platforms they can trust. As a pioneer in the digital transformation journey for all UAE citizens, we have been expanding our portfolio of lifestyle services on the Smiles platform, including the recent addition of food and grocery delivery services. This acquisition is in line with our strategy to continue enriching the lives of our customers with

convenient range of services, within the Smiles ecosystem and drive diversification of our business." Bana Shomali, Chief Executive Officer of ServiceMarket said: "We are excited to join the etisalat by e& family which will enable ServiceMarket to leverage e&'s digital capabilities and customer base to accelerate our growth and unlock significant synergies. As part of the Smiles ecosystem, we will continue to provide best-in-class services to consumers in the UAE and enrich our portfolio with new services to offer greater convenience every day." Etisalat Group has changed its brand identity to e&, effective on February 2022. Its strategy aims to accelerate growth through the creation of a resilient business model represented by Group's main business pillars. The telecoms business currently continues to be led by etisalat by e& in the Group's home market and e& international markets, upholding the Group's rich telecoms heritage, bolstering the strong telecoms network and maximizing value for the Group's various customer segments. Ramping up the digital services for individuals to elevate their digital-driven lifestyle, e& life brings next-generation technologies through smart platforms in entertainment, retail and financial technology. e& enterprise focuses on maximizing value through its end-to-end solutions in cybersecurity, cloud, Internet of Things (IoT) and Artificial Intelligence (AI), as well as deploying mega projects, in order to enable the digital transformation of governments, large-scale enterprises and corporates. e& capital allows the Group to focus its efforts on driving new investments while maximizing shareholder value and strengthening the Group's global presence.



## e& Boosts Stake in Vodafone Group Once Again

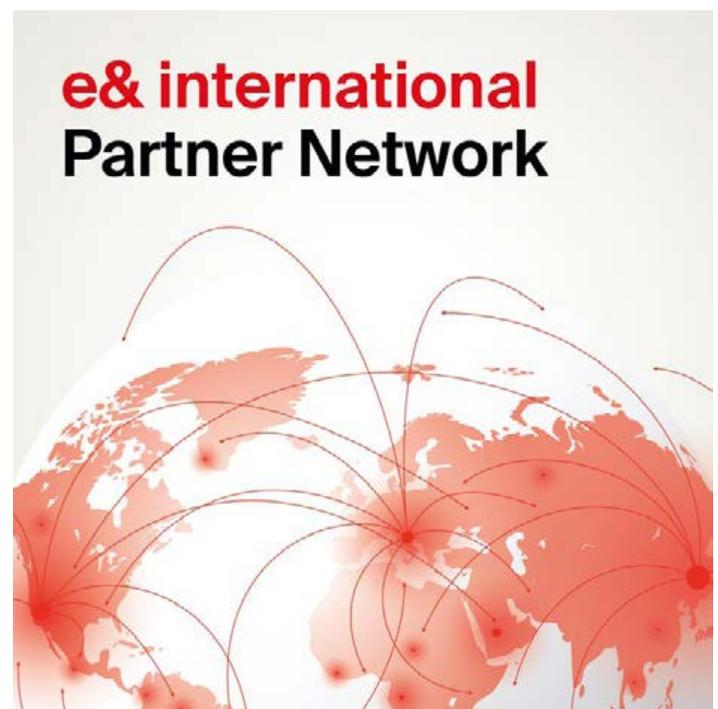


Building on last month's announcement it had boosted its stake in Vodafone Group to 11%, UAE-based e& (formerly Etisalat Group) has now confirmed the acquisition of additional shares in the British telecoms giant to increase its holding to 12%. Although e& stopped short of confirming exactly how much it had paid for its new shares in Vodafone Group, it noted the transaction had been 'executed at what we believe is an attractive valuation', while adding that its investment rationale remained unchanged, that being: 'to obtain significant exposure to a global leader, and leverage potential commercial partnership and realize future return on our investment'. Back in May 2022 the UAE-based group announced it had acquired 2.766 billion shares in Vodafone Group, equivalent to 9.8% of its issued share capital. e& spent around USD4.4 billion on acquiring that initial stake.

## e& International Launches 'e& Partner Networks'

e& international announced the launch of its new business program, the 'e& partner networks', leveraging e&'s position as one of the world's leading telecom providers to support telecom operating companies in regional markets. Capitalizing on the Group's continued growth in international markets, with over 162 million subscribers in 16 countries, the program invites independent telecoms operating companies from around the world to partner with e&. Partners will benefit from e&'s superior expertise across a range of business verticals, with a focus on adding measurable top and bottom-line meaningful business impact. Mikhail Gerchuk, Chief Executive Officer of e& International, said: "The world has opened up to opportunity again, allowing us to adopt a resilient business growth mindset, create a future-ready operating model and focus on value creation. Our strategic partnerships remain one of our key priorities and, through the 'e& partner networks', we will be able to strengthen these partnerships. "The scale of the opportunity available to us through the 'e& partner networks' is enormous. With e& international at the forefront of the new strategy, 'e& partner networks' will be able to leverage the privilege of the e& brand and benefit from a value-added engagement with telecoms-related business objectives. "e& can support these independent partners who currently may be facing challenges in terms of matching the scale and expertise of their competitors, talent recruitment, and high operating costs. Together, we can create a business proposition for consistent growth with value-added benefits from operational savings and uplifting topline revenue growth for our partners". Obaid Bokisha, Group Chief Operating Officer of e&, said: "As a trusted industry leader with decades of experience, we understand the importance of reliable and efficient networks for connecting communities and driving economic growth. Through this program, we are looking forward to working with telecom operators across markets and empowering them with the resources and expertise necessary to drive sustainable development and enhance customer experiences." The program will support operators in

customer engagement and value management, sales channels and customer experience, pricing and proposition support, Artificial Intelligence and Machine Learning modelling, international carrier and wholesale channels, network procurement and overall Capex and Opex optimization and digital and mobile finance services, and many other opportunities. Each partner will be allocated the necessary resources and additional staff. Selected teams from e& international will be seconded to the offices for future support and close collaboration with the partner's management team. e&'s partner networks will enable e& international to share e&'s cutting edge expertise and apply e&'s best practices, tools and models to a wider customer base in new geographic markets.



## e& Enterprise Recognized as a Leader By IDC in Business and Industrial IoT

e& enterprise, part of e& was recognized by International Data Corporation, a premier global provider of market intelligence, for its positioning in the 'Leaders' category of the GCC IDC marketscape for business and industrial IoT (Internet of Things) consulting and system integration services. This industry-wide acknowledgement was mainly for its capabilities that are in line with global counterparts and its unique approach to delivering IoT services and solutions to enterprises and government customers by bringing 5G connectivity and IoT/AI capabilities to offer end-to-end solutions. e& enterprise offers IoT solutions and services through the newly formed company e& enterprise iot & ai (previously known as Smartworld). e& enterprise iot & ai brings the combination of Internet of Things and artificial technologies to transform companies into data driven organizations in order to make better decisions, offer efficient services, and remain sustainable. "We are honored to be recognized in the global leadership quadrant and attribute this success to our customers and partners who play a critical role in encouraging us to push the boundaries of innovation and success. Thanks to our team of experts, having both technical and business knowledge across various industries and verticals, who enabled us to accelerate growth and become validation of our vision, strategy and solutions in the IoT segment," said Alberto Araque, CEO, e& enterprise iot & ai. "This is also in line with our commitment to providing our customers with innovative services to adapt and navigate a changing business environment. We have continued to invest significantly in our people and resources to be well equipped to provide this impactful growth, now and into the future." The company's IoT solutions include connected assets, surveillance, smart and sustainable cities, retail and payments, smart and safe home, Industry 4.0, and digital health solutions. "e& enterprise has



created the necessary tools to automate some of its delivery processes, along with methodologies and frameworks to deliver end-to-end IoT projects. It is implementing a plan to significantly increase its capabilities around data analytics and AI, and to improve its user interface development and delivery capabilities. Additionally, the company plans to venture into new markets through both organic and inorganic means to deepen its capabilities and increase its footprint across the wider MEA region. Due to the relative strengths of its delivery capabilities and its strategic vision, the company is positioned in the "Leaders" category of GCC IDC MarketScape for business and industrial IoT consulting and systems integration services vendor analysis, 2022." Krishna Chinta, Program Manager, Telecommunications and IoT, IDC Middle East and Africa. The company also has an IoT partner program to bring new partners into its ecosystem to co-create IoT solutions and explore joint sales opportunities. e& enterprise has opened innovation centers and co-creation labs in Dubai and Abu Dhabi to showcase its digital services delivery capabilities and co-create IoT solutions with its customers. The company is differentiating itself by offering

a variety of pricing models, including OPEX models and joint-investment models with customers. Etisalat Group has changed its brand identity to e&, effective on February 2022. Its strategy aims to accelerate growth through the creation of a resilient business model represented by Group's main business pillars. The telecoms business currently continues to be led by etisalat by e& in the Group's home market and e& international markets, upholding the Group's rich telecoms heritage, bolstering the strong telecoms network and maximizing value for the Group's various customer segments. Ramping up the digital services for individuals to elevate their digital-driven lifestyle, e& life brings next-generation technologies through smart platforms in entertainment, retail and financial technology. e& enterprise focuses on maximizing value through its end-to-end solutions in cybersecurity, cloud, Internet of Things (IoT) and Artificial Intelligence (AI), as well as deploying mega projects, in order to enable the digital transformation of governments, large-scale enterprises and corporates. e& capital allows the Group to focus its efforts on driving new investments while maximizing shareholder value and strengthening the Group's global presence.

## e& International Signs MOU with Tunisie Telecom as Part of 'e& Partner Networks' Program

e& international signed a Memorandum of Understanding (MOU) with Tunisia-based Tunisie Telecom to join the 'e& partner networks' business program developed to collaborate with telecom-operating companies in regional markets. Tunisie Telecom is the first company to join the e& partner networks business program, providing Tunisia's national fixed and mobile operator with unparalleled access to best practices, cutting-edge expertise, and services. Tunisie Telecom acceded to the Group's scale and efforts in supporting regional and global operators in achieving sustainable growth and best-in-class customer experience and service solutions. The MoU, signed by Mikhail Gerchuk, Chief Executive Officer of e& international, and Lassaad Ben Dhiab, CEO of Tunisie Telecom, outlines the collaborative framework for both parties to synergize and share knowledge, including full support in commercial, procurement, wholesale and roaming capabilities and access to innovative technologies. Hatem Dowidar, Group CEO of e&, said: "The signing of this MOU marks a significant milestone in e& Group's collaborative vision to create value and connect global communities. Leveraging our position as one of the world's leading telecom providers, we have opened our doors to support telecom-operating companies in regional markets with the e& partner networks program. We are proud to be providers of the most advanced technology and next-generation solutions within the telecom industry." As part of the MoU, Tunisie Telecom will have access to services, including

outsourcing international voice traffic, customer value management services, and future expansion and investment opportunities. Lassaad Ben Dhiab, CEO of Telecom Tunisie, said: "We are proud to be the first company to join the e& partner networks business program and share valuable resources and support. This will expand our reach, increase our customer base, and drive more innovation within our business. e&'s transformation inspired us, and we look forward to inaugurate this partner program with one of the most reputable leaders in the industry, building a strong, lasting relationship that will benefit our customers." Mikhail Gerchuk, Chief Executive Officer of e& international said: "We are happy to welcome Tunisie Telecom into our e& partner networks program as

our first partner. We created the e& partners network to support independent telecom operators facing challenges in matching their competitors' scale and expertise, talent recruitment, and high operating costs. By working together, we will kick-start a valuable and successful relationship in which we will create a consistent service support to grow revenue and subscribers market share, streamline operations, and find cost saving solutions while driving growth." The e& partner networks program spearheaded by e& international, invites independent telecom companies from around the world to collaborate with e& and benefit from the superior expertise across a variety of business verticals, with a focus on adding measurable top and bottom-line meaningful business impact.



## e& Enterprise Joins Snowflake Partner Network to Drive Data Analytics in the UAE



e& enterprise, part of e& (formerly known as Etisalat Group) announced it has joined the Snowflake Partner Network to support customers in the UAE to get the most out of their data by using Snowflake's Data Cloud. The Snowflake Partner Network unlocks the potential of the Data Cloud with a broad array of tools and partners. Certified partnerships and integrations

enable customers to leverage Snowflake's flexibility, performance, and ease of use to deliver more meaningful data insights. e& enterprise and Snowflake, the Data Cloud company, will help mobilize the world's data by providing customers with trusted and validated experts and services around implementation, migration, data architecture, and data pipeline design.

Additionally, further services can be unlocked, including Business Intelligence (BI) integration, ETL (Extract, Transform and Load) / ELT (Extract, Load and Transform) integration, performance, running Proof of Concept (POCs), performance optimization, and training. "Our collaboration with Snowflake exemplifies our commitment to guiding our customers through their data transformation journey by providing customer centric solutions. Together, we will empower government entities, large corporations, and enterprises to fully realise the potential of their data with Snowflake's unparalleled scalability, concurrency, and performance. We are eager to simplify the adoption process and empower our customers to become AI-driven organizations through our partnership with Snowflake," said Alberto Araque, CEO of e& enterprise IoT & AI. In 2022, e& enterprise launched Enterprise AI as a Service (AlaaS) to help customers become AI driven – the Snowflake partnership will

further strengthen this offering by building the data foundations to better scale AI. e& enterprise will also address the challenges and opportunities of multiple industries, including healthcare, finance, retail, government by creating vertical solutions directly on top of its platform, to monetize their data-intensive applications, and deploy them directly on Snowflake's Data Cloud. "Partners, like e& enterprise, enable our customers to benefit from leading-edge technologies with valuable industry and business experience on Snowflake's single, integrated platform," said Mohamed Zouari, General Manager for the Middle East, Turkey, and Africa, Snowflake. "We look forward to continued collaboration with e& enterprise to ensure our customers get even more value from Snowflake's Data Cloud." Etisalat Group has changed its brand identity to e&, effective on February 2022. Its strategy aims to accelerate growth through the creation of a resilient business model represented by Group's

main business pillars. The telecoms business currently continues to be led by etisalat by e& in the Group's home market and e& international markets, upholding the Group's rich telecoms heritage, bolstering the strong telecoms network and maximizing value for the Group's various customer segments. Ramping up the digital services for individuals to elevate their digital-driven lifestyle, e& life brings next-generation technologies through smart platforms in entertainment, retail and financial technology. e& enterprise focuses on maximizing value through its end-to-end solutions in cybersecurity, cloud, Internet of Things (IoT) and Artificial Intelligence (AI), as well as deploying mega projects, in order to enable the digital transformation of governments, large-scale enterprises and corporates. e& capital allows the Group to focus its efforts on driving new investments while maximizing shareholder value and strengthening the Group's global presence.

## e& Enterprise IoT & AI Partners with Stella Technologies

e& enterprise IoT & AI, a specialized company within e& enterprise (part of e&) announced its partnership with Silicon Valley based Stella Technologies, a leading digital healthcare company, to expand and explore new opportunities in the digital healthcare space in the GCC region. The new affiliation will give e& enterprise IoT & AI the opportunity to leverage on system integration expertise of Stella Technologies

to develop a comprehensive go-to-market strategy targeting healthcare regulators, hospital enterprises and small to medium sized businesses in the healthcare industry. The company's flagship product, Equinox, is a cloud-based electronic medical record (EMR) and virtual care platform, specifically designed to meet the needs of the global market. Alberto Araque, CEO, e& enterprise IoT & AI said: "This partnership Aims

to enable enterprises in the healthcare sector, with the combination of IoT and AI solutions, to elevate to data-driven and highly automated organizations, tying back to our ambition to empower societies through digital transformation. Stella's solutions will help create the necessary tools to automate many of the delivery processes, along with methodologies and frameworks to deliver end-to-end AI and IoT projects." Lalo Valdez, CEO, Stella Technology, says, "We are thrilled to expand our partnership with e& enterprise IoT & AI to revolutionize the healthcare industry and to make healthcare accessible to all populations of the world. We will combine the power of e& enterprise IoT & AI cutting-edge technologies with our own cloud solutions and proven systems integration expertise to make a positive impact on people's lives, and create a healthier, more equitable world." Stella Technologies is a cutting-edge digital healthcare company on a mission to improve people's health and well-being through innovative solutions. With its advanced features and capabilities, Equinox has the potential to revolutionize the way healthcare is delivered, making it more accessible and efficient for patients and providers alike.





## Mobily Records a 54.6% Increase in Net Profit in 2022

Saudi Arabian mobile network operator (MNO) Etihad Etisalat (Mobily) has published its financial results for the twelve months ended 31 December 2022, reporting a 5.63% year-on-year increase in revenues to SAR15.669 billion (USD4.2 billion), up from SAR14.834 billion in 2021. The company claims that the positive result was driven by the growth of all revenue streams, coupled with a 'healthy growth' in its overall subscription base. Further, EBITDA increased to SAR6.161 billion in 2022, up by 10.4% y-o-y, while interest and financial charges grew 20.2% y-o-y to SAR607 million in the period under review, reflecting the increase in interest rates. Net profit, meanwhile, improved by 54.57% y-o-y from SAR1.072 billion to SAR1.657 billion in 2022. CAPEX for 2022 amounted to SAR2.093 billion, flat when compared to the previous year (SAR2.092 billion).



## Mobily Expands Mobily Pay in Partnership with Ericsson

Mobily has launched Mobily Pay in partnership with Ericsson providing contactless payments, money transfers, international remittance, digital card payments, cash-back, bill payments and mobile top-up. Mobily made the announcement at Leap23, the international technical conference in Riyadh from February 6 to 9, of which it is the leading digital partner. As per the agreement signed last year between Mobily and Ericsson, Mobily Pay is built on the Ericsson Wallet Platform, a fintech platform that provides secure, simple, functional, and relevant financial management by delivering easy-to-use financial services to Mobily's customers. Ayman Abdullah AlEissa, Chief Executive Officer at Mobily Pay says: "Mobily Pay is live and we have already witnessed its fast adoption in the Saudi market. It will improve the lives of Mobily Pay users by making financial services personalized, quick, secure, and easy for everyone. Deploying the Ericsson Wallet Platform solution, Mobily is actively contributing to the Digital Transformation Vision in line with Saudi Vision 2030 by advancing from cash to a cashless digital transaction's society." As part of this partnership, Ericsson will also evolve and enhance the Mobily Pay platform with futuristic roadmap leading to a full-service

Digital services and Financial capabilities supported by smooth operations and maintenance with managed services for the fintech solution. Ekow Nelson, Vice President at Ericsson Middle East and Africa says: "This is a step-change in the evolution of the Ericsson Wallet Platform that enhances Mobily Pay's contribution to the introduction of innovative financial

services for its consumers, anytime, anywhere. The launch of Mobily Pay will enhance the kingdom's move towards digital transformation." At present, more than 342 million people worldwide currently use Ericsson Wallet Platform solutions delivered by communications service providers and processes over 2.6 billion transactions every month.



## Mobily Showcases Its Innovations and Technical Solutions as Leading Digital Partner in LEAP 2023

Ethiad Etisalat "Mobily" is participating as a leading digital partner in the second edition of LEAP 2023 International Technology Conference, which will take place in Riyadh from February 6 to 9 2023 under the theme "Towards New Horizons". The conference brings together more than

100,000 technological innovators and experts from all over the world to discover pioneering ideas, build new partnerships, communicate with investors, and thought leaders, and fly towards new horizons to build a more innovative future. Through its participation in the international conference

of community's decision-makers and technology enthusiasts, Mobily seeks to discuss the most critical challenges that our world is witnessing at the present time and how to overcome them considering the unmatched revolution of the digital innovation and artificial intelligence sector. These efforts are in line with the company's objectives to enable the digital economy in the Kingdom and provide capabilities and opportunities for individuals to achieve their ambitions. Engineer Salman Al-Badran, CEO of Ethiad Etisalat "Mobily" said: "LEAP conference is the most important event of its kind in the region, as it brings together technology industry experts, decision makers, and stakeholders under one roof to exchange ideas and discuss mutual objectives that lead to a better technological future for all." He added: "Mobily is keen to reaffirm its leading role in supporting the Kingdom's ambition and its 2030 Vision for a brighter and more innovative digital future. During the conference, Mobily will also offer a range of distinguished services and advanced digital solutions that meet the needs of users and provide them with an exceptional experience."



عمانتل  
Omantel

## Five Start-Ups Selected for CBO's Fintech Accelerator Powered by Omantel

The Central Bank of Oman and Omantel, the leading provider of integrated telecommunication services in the Sultanate of Oman, have joined hands to deliver a six-month accelerator program dedicated to nurturing and empowering fintech start-ups. The accelerator program seeks to support innovative fintech start-ups through the challenges of the highly competitive fintech industry through mentorship, training, networking, and fundraising support. The program targets promising, high-potential local start-ups with fintech solutions in debt-based crowdfunding, buy now pay later, microfinancing and ROSCA system, a rotating savings and association system. The five start-ups selected for the accelerator are Al-



Jumaeiah, an application that helps create, manage and organize different jamaeiahs (groups) on a single platform; Hal Capital, a Sharia-compliant embedded fintech offering alternative financing products and services to SMEs and individuals; TasHeel Financial Solutions that provides financial ease to clients through a Buy Now Pay Later solution; Wadiaa, an equity-based crowdfunding and peer-to-peer lending solution for start-ups and SMEs; and Zumr Fintech which provides micro financing opportunities by encouraging the habit of saving. HH Sayyida Ghada Al Said, Senior Manager, Omantel Innovation Labs, said

“It has been a pleasure to work with the Central Bank of Oman to create a valuable fintech program for the local start-up ecosystem that combines the expertise of Omantel and the Central Bank of Oman. The partnership leverages our shared vision and strengths to contribute to the growth of fintech start-ups in the country and we look forward to doing our part in accelerating these promising start-ups.” Ghada Al Kharusi, Acting Manager at the Innovation Department, Central Bank of Oman, said, “Fintech is vital to the future of the Sultanate of Oman’s financial sector, and we are committed to supporting fintech

start-ups in the country. We are delighted to be working with Omantel on this program that we believe will be a catalyst for accelerating fintech start-ups in Oman.” In addition to receiving free desk space at the Omantel Innovation Labs, a 1,100 sqm facility in the heart of the Omantel Headquarters at Madinat Al Irfan, selected start-ups will also gain access to a network of over 100,000 investors, corporates and mentors and will be eligible for perks worth over USD 250,000 in cloud computing, legal services, accounting and other areas.

## Omantel Innovation Labs Announces Startups for Accelerator Cohort 2

Omantel, the leading provider of integrated telecommunication services in the Sultanate of Oman, has announced the names of the Omani startups selected for the 2nd cohort of the Omantel Accelerator program managed by the Omantel Innovation Labs. Cohort 2 of the Omantel Accelerator will include three startups that were selected from more than 100 startups that applied online after a public call for applications. These startups were selected after a rigorous selection process that included bootcamps and interviews with experts from within and outside Omantel. The selected startups are: AirGo, iON and Touchpoynnts which helps technology professionals enhance the customer journey. AirGo is a modern high-tech enterprise founded in 2020 to lead the drone industry in the Sultanate of Oman by offering intelligent services and products. AirGo provides an Unmanned Traffic Management System named Tahleeq in Oman. It operates as a platform-as-a-service that enables businesses, governmental entities, and educational institutions to avoid the operating risk, regulatory challenges, and capital expenses associated with drone operations. iON is a social commerce platform that helps sellers achieve higher conversion rate by providing them with the ability to post products/services on social media, create and customize private online stores, manage product inventory, manage payments and shipping from multiple sales channels and manage a customer chat center under different social media platforms. Touchpoynnts provides smart



retail technology solutions that enhance customer experience and increase loyalty including digital signage, big data & analytics, facial recognition & audience measurement, programmatic advertising and smart retail implementations. The 2nd cohort will also include two startups that were selected from Omantel’s recently launched internal innovation program, Fikra: Sayyad, a one-stop shop for the fishing industry where sellers and buyers from across Oman can connect, trade and deliver goods and services and Zabonex, a CX management software provider that uses data insights to create opportunities. “Congratulations to the startups for being selected as part of the Omantel Accelerator. The selection process was intensive and each of these startups has demonstrated the strength of their foundation by making

it through. We are looking forward to working closely with them over the next few months to accelerate their solutions and provide them with some of the best of international and local mentorship and support,” said H.H Ghada Al Said, Senior Manager of the Omantel Innovation Labs. In addition to the Omantel accelerator, Omantel Innovation Labs also works with the Central Bank of Oman in accelerating Fintech startups for the Central Bank of Oman’s Fintech Accelerator and manages the incubation of startups for the national UPGRADE program. To support the wider ecosystem, Omantel Innovation Labs also hosts hackathons, bootcamps, and multiple free workshops on topics related to technology entrepreneurship throughout the year.

## Omantel walks away with two awards for Covid initiatives at OSHRM 2023 Awards

Omantel, the leading provider of integrated telecommunication services in the Sultanate of Oman, won awards in two categories at the prestigious OSHRM 2023 Awards – the 'business/professional' award for bringing e-learning closer to employees and the runner-up award for the best human resources safety initiatives during the Covid-19 pandemic. Omantel, represented by the Human Resources Unit, worked on special initiatives during the Covid-19 pandemic to ensure the safety of employees and encourage them to use their time to upgrade their skills through reputed online learning programs. This resulted in great benefits as Omantel succeeded in boosting employee satisfaction and job security, while ensuring business continuity and customer satisfaction. The unprecedented situations triggered by Covid-19 presented the utmost test for HR people around the

world. Omantel was able to accept the challenge and move into top gear to limit the spread of the virus among employees and devise ways to keep productivity running through digital tools and remote working. The results were as reflected in the awards won by Omantel at OSHRM 2023." The award for online learning recognised Omantel's move to enable employees to join courses from LinkedIn, Coursera and Udemy. In all, Omantel's campaign resulted in 750 users joining LinkedIn Learning, 100 users on Udemy and 250 users in Coursera. Towards the end of the pandemic, Omantel succeeded in covering more than 50% of the organization for technical trainings through digital learning. Omantel's HR section excelled itself by launching the "New Normal" initiative for curbing the number of infections among employees through inhouse free vaccination that

covered 98% of the employees. Further, Omantel devised new channels and introduced smart platforms to manage business digitally, remotely and from home. The OSHRM Awards are presented annually by the Omani Society for Human Resource Management (OSHRM) to reward excellence in the field of Human Resources Management. 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.





## Zain 'Best Telecom Company' and 'Best Digital Transformation Telecom Company' in Kuwait 2022

Zain, Kuwait's leading digital service provider, was named 'Best Telecom Company' and 'Best Digital Transformation Telecom Company' in Kuwait for the year 2022 during the annual excellence awards hosted by business magazine International Finance in Dubai. Zain participated in the awards ceremony held in Jumeirah Emirates Hotel, attended by H.E. the Consul General of Kuwait in Dubai and the Northern Emirates Ali Salem Al

Thaidi and Zain Kuwait's Chief Corporate Affairs and Relations Officer Waleed Al Khashti. This is the fourth recognition from International Finance Magazine, highlighting Zain's leadership in the local market and its continuous efforts to empower digital transformation within the nation's most vital industries in both the public and private sectors. The awards come to shed more light on the company's outstanding success, innovation, and

relentless pursuit of excellence to serve its customer base, the biggest in Kuwait. Zain is proud of this recognition from International Finance Magazine, which also reflects the achievements of Kuwait's private sector organizations in contributing to national economy. This year's awards, which celebrated its 10th anniversary, honored top companies and institutions that have delivered success, innovation and excellence, as well as those that have made a vital contribution to the vibrancy of business within Kuwait and the region. This recognition further strengthens Zain's role as a leader in the Kuwaiti private sector and reinforces the company's commitment in maintaining the values of its brand. Zain will continue its pledge to provide exclusive services to meet the needs of its customers and facilitate their personal and professional needs. Zain always aspires to new levels of excellence in all services it offers to its customers. The company affirms its continuous efforts in meeting customers' needs and aspirations to deliver its promise and offer the best services and latest technologies.

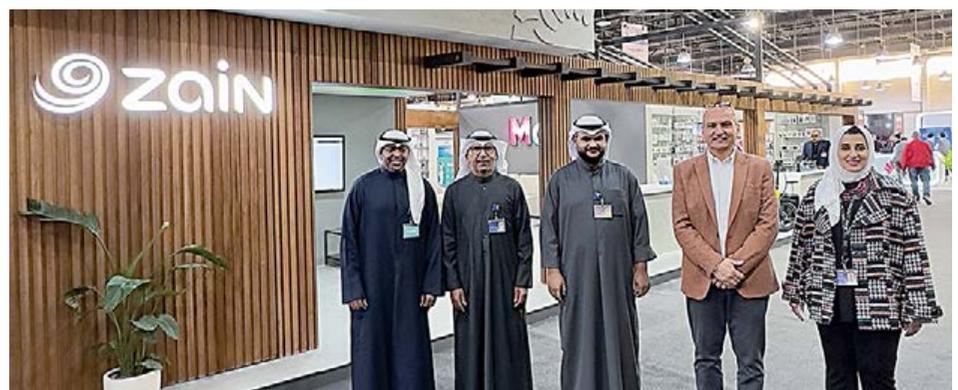


## Zain Strategic Sponsor of Kuwait Tech Expo 2023

Zain, Kuwait's leading digital service provider, announces its strategic sponsorship of the third edition of Kuwait Tech Expo & Summit 2023, the biggest technology event of its kind in the nation. The expo runs from 8-11 February at Kuwait International Fairground in Mishref and features the some of the biggest local and global ICT companies and government entities. Zain is always present at the biggest projects that contribute to pushing the national economy wheel and achieve the country's developmental goals, especially those centered around the ICT sector. Companies and government institutions around the world are undergoing digital transformation and focusing more on digital channels, and the third edition of this unique expo aims at providing a space for local entities to network, connect, and share experiences, while also attracting shoppers and tech enthusiasts. Zain has set up its own booth at the expo, where it

showcases its latest and most advanced digital solutions from the world's biggest tech brands. Zain's solutions include Internet of Things (IoT) devices like CCTV cameras, smart lights, smart smoke detectors, and more, as well as the latest gaming consoles and accessories for gaming enthusiasts. Zain also showcases its latest digital products and services, original ac-

cessories, and latest offers, including the all-new MAX Internet plans that feature the biggest library of entertainment and sports content from 6 leading streaming partners on Kuwait's biggest 5G network. Kuwait Tech Expo 2023 is considered Kuwait's biggest ICT-dedicated event, offering effective tech and digital solutions to the country's governmental bodies as well as serving the



community's needs. The expo is divided into two events held simultaneously; the first event, 'Kuwait International Technology Show', is the largest B2B show that offers companies the opportunity to showcase their latest products and applications, paving the way to discuss and exchange ideas and information about the telecommunications and technology industry's key

topics. This includes information systems, smart applications, the latest strategies, as well as building partnerships with the major participating companies through face-to-face meetings with leading decision makers, researchers and professionals within the sector. The second event, the 'Kuwait Tech Shopper', is the only exhibition of its kind that specializes in direct sales of gad-

gets, smartphones, electronic devices, and their accessories. This event provides a unique opportunity for all companies to be present and interact directly with the public to present exciting offers. In addition, attendees will experience a unique platform to compare between brands and benefit from special and exclusive offers.

## Zain Kuwait, ZainTech, and Microsoft Collaborate to Launch the National Cloud Initiative, Empowering Organizations in the Country

Zain Kuwait, the leading digital service provider in the country, and ZainTech, the one-stop digital and ICT solutions powerhouse of Zain Group, announce a joint collaboration initiative with Microsoft to introduce a national cloud offering for public and private sectors in the country. All three entities have impressive cloud offerings regionally, and this latest alliance will see the development of a cloud environment combining Microsoft's extensive portfolio, Zain's private cloud infrastructure, and ZainTech's expertise, enabling data and applications to be shared between them. The solution will give businesses in Kuwait greater deployment options and the ability to easily scale computing resources while still maintaining interoperability with their on-premises systems. The cloud offering is being introduced as a solution for Kuwaiti clients, as full adoption of the hyperscale cloud is not currently possible due to data residency and sovereignty regulations. With a clear data classification strategy in place, the national cloud offering in Kuwait can help organizations modernize their data centers by bringing cloud techniques, such as software-defined data centers, self-service, and elasticity based on virtualization, into their data centers. Using a single centralized perspective, the national cloud offering can enable organizations to efficiently manage compliance with proliferating standards and infrastructure that is expanding across on-premises, public cloud, and multi-cloud implementations. The collaboration is also set to encourage entities in Kuwait to integrate innovative techniques and technology into their applications, including Artificial Intelligence (AI) and machine learning, the Internet of Things (IoT), mobile, and security at speed without complex hardware procurement and configuration



hassles. The national cloud offering is capable of supporting companies across industries in handling emergency needs or cyclical demands without overprovisioning large amounts of hardware, allowing for a flexible utilization of resources. Commenting on this collaboration, Hamad Al Marzouq, Zain Kuwait Chief Enterprise Business Officer said, "Cloud offerings are driving efficiencies that have never been experienced before, and the Kuwait government has been quick to realize its benefits and has been investing in cloud infrastructure accordingly. Our alliance with Microsoft and ZainTech is geared towards supporting and accelerating these developments further and comes from a shared vision of the benefits the flexibility of cloud offerings has on driving digitization in our country." Dr. Ammar Alhusaini, Deputy Director General at the Central Agency for Information Technology highlighted the importance of this launch in accelerating the country's cloud adoption and digital transformation journey, a main pillar of the new Kuwait vision (Kuwait 2035). He said, "Such investments and initiatives are key to enabling organizations across sectors in Kuwait to drive efficiencies, optimize operations, deliver better services, and accelerate the pace of innovation." "Kuwait's forward-looking leadership has laid the foundation of the country to become a digitally advanced society through the early adoption of technology, and through our partnership with Zain and ZainTech we will deliver on our commitment to enabling

businesses across Kuwait to leverage the power of the cloud to accelerate their digital transformation in line with Kuwait Vision 2035," said Alaeddine Karim, Country Manager of Microsoft Kuwait. "Microsoft trusted cloud services will deliver unprecedented opportunities for organizations of all sizes and across all industries to innovate, better serve their customers and achieve their business goals – ultimately supporting continued economic growth in Kuwait." Andrew Hanna, CEO of ZainTech, commented, "Kuwait has been an early adopter of enterprise cloud solutions, which has helped successfully drive the economy forward for many years. The cloud market remains nascent and rapidly developing, with strong competition from both local and international cloud providers. Our collaboration with Zain and Microsoft offers a combination of the best technical products and solutions, client relationships, subject matter experts, and experience that has never before been available in Kuwait, and we believe it is the right collaboration necessary to supercharge the cloud ambitions of organizations in Kuwait." ZainTech supports private and public organizations in regulated and non-regulated industries in leveraging the power of the cloud to deliver transformational IT outcomes. It provides high-quality capabilities to customers, as well as outcome-driven engagements with flexible pricing that helps optimize and reduce businesses' total cost of ownership.

## Zain Strategically Partners with V-THRU

Zain, Kuwait's leading digital service provider, announces a strategic partnership with V-THRU, the leading Kuwait-based online platform for virtual drive-thru services. Through this partnership, both companies present a new professional internship program for students and fresh graduates, giving them the opportunity to prepare for their future careers by gaining and developing invaluable skills within the catering and technology industries. The announcement was made during an event at the Zain Innovation Campus (ZINC) in the company's headquarters in Shuwaikh, attended by Zain Kuwait's Corporate Relations Department Manager Hamad Al Musaibeeh, V-THRU co-founder and CEO Abdullah Al Shalabi, and executives from both companies. The partnership comes in line with Zain's comprehensive corporate sustainability and social responsibility strategy, which closely focuses on contributing to the nation's education and youth sectors. The program aims at upskilling the youth by allowing them to experience a hands-on approach while working within the catering and technology industries, which are two of the most vibrant sectors in the local market. The new three-month program offers a unique opportunity for students, fresh graduates, and youth who are about to start their new careers to join a paid part-time job at the projects and sites V-THRU operates. The trainees will take part in tracking, coordinating, and operational management tasks on the ground, in addition to dealing



with staff and customers and receiving/delivering orders to some of the biggest and most notable business towers in Kuwait, as well as to Kuwait University facilities. Zain and V-THRU's new internship program seeks to empower ambitious Kuwaiti youth and support them with the proper training resources so they may gain invaluable skills in technology, catering, operations management, and more. The program also features a number of training courses and workshops that cover some of the most essential business topics like marketing, branding and designing, operations, technology, and others. Each participant will receive a certificate after successfully completing the program. The internship program complements Zain's Future University Network (FUN) program, a youth-tailored social program

for students that bridges the gap between studying and a unique work experience at Zain by recruiting youth as the brand's ambassadors. FUN is considered one of the largest sustainable projects that Zain has been actively investing in since its first edition back in 2008. It offers university students with a valuable opportunity to benefit from an actual work experience to develop many skills and gain expertise for the job market on both professional and personal levels. Zain is committed to exerting more efforts into offering similar programs that enrich human resources development in all areas. The company spares no efforts in making its capabilities and resources available as well as reinforce its collaboration with entities and organizations that provide such initiatives and actively develop Kuwaiti talents.



## AT&T Returns Unused Mexican Spectrum, Report Says

AT&T Mexico has reportedly returned certain blocks of spectrum to the Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT), due to concerns over the high price of the frequencies. According to El Economista, the telco informed the watchdog of its plans via a video conference on 20 December 2022. It has subsequently emerged that AT&T has returned a 10MHz block of

AWS spectrum covering Regions 1 and 2, and 3MHz in the 850MHz band covering Mexico City and Guadalajara. With Movistar returning its entire spectrum allocation back in 2020, in favor of a capacity deal with AT&T, and wholesale operator ALTAN Redes (Red Compartida) requiring a government-led bailout last year, AT&T's actions will be a cause for concern at the IFT, ahead of its planned 5G spectrum

auction this year. Mexico is understood to have some of the highest spectrum prices in Latin America. Successful bidders pay an upfront fee as well as an annual frequency usage fee for the duration of the concession; with licenses generally valid for 20 years the prices of the licenses are far higher than the equivalent concessions in other markets.

## AT&T Reports 4Q and Full-Year Results

AT&T Inc. reported fourth-quarter results that showed sustained momentum in customer additions across 5G and fiber and solid growth in wireless service and broadband revenues. “We’re committed to connecting people to greater possibility, and our results demonstrate that our customers are responding to this,” said John Stankey, AT&T CEO. “Our consistent go-to-market strategy and the simplicity of our offerings drove continued robust, high-quality wireless and fiber customer additions in the fourth quarter. Over the last 10 quarters, we’ve demonstrated sustainable momentum in growing customer relationships, with 7.5 million postpaid phone net adds and 2.9 million AT&T Fiber net adds. “We met or surpassed all of our profitability targets for the year all while investing at record levels to bring the benefits of our 5G and fiber technologies to even more people. As we enter 2023, I’m confident in the trajectory of our business and in our team’s ability to deliver profitable and durable growth for our shareholders.”

### Consolidated Financial Results

Revenues from continuing operations for the fourth quarter totaled \$31.3 billion versus \$31.1 billion in the year-ago quarter, up 0.8%. This increase primarily reflects higher Mobility, Mexico and Consumer Wireline revenues, partly offset by lower Business Wireline revenues. Operating expenses from continuing operations were \$52.4 billion versus \$26.2 billion in the year-ago quarter. Operating expenses increased primarily due to non-cash goodwill impairments and asset abandonments and restructuring charges in the current quarter totaling \$26.8 billion. Goodwill impairments of \$24.8 billion were associated with our Business Wireline, Consumer Wireline and Mexico reporting units and were driven by higher interest rates consistent with the macroeconomic environment, with secular declines also impacting Business Wireline growth rates. Asset abandonments of \$1.4 billion were associated with certain wireline conduits no longer required to support our copper and fiber networks. To a lesser extent, the year-over-year increase also reflected higher bad debt expense and increased depreciation, partly offset by lower wireless equipment costs from lower volumes and the lack of 3G network shutdown

costs in the fourth quarter of 2022. Operating income (loss) from continuing operations was (\$21.1) billion versus \$4.9 billion in the year-ago quarter. When adjusting for the asset impairments and abandonments, and other items, adjusted operating income\* from continuing operations was \$5.7 billion versus \$5.0 billion in the year-ago quarter. Equity in net income of affiliates of \$0.4 billion primarily from the DIRECTV investment. With adjustment for our proportionate share of intangible amortization, adjusted equity in net income from the DIRECTV investment\* was \$0.7 billion. Income (loss) from continuing operations was (\$23.1) billion versus \$5.2 billion in the year-ago quarter. Earnings per common share from continuing operations was (\$3.20) versus \$0.66 in the year-ago quarter. Adjusting for (\$3.81), which includes asset impairments and abandonments, an actuarial loss on benefit plans, our proportionate share of intangible amortization from the DIRECTV equity method investment and other items, earnings per diluted common share\* from continuing operations was \$0.61 compared to \$0.56 in the year-ago quarter. Cash from operating activities from continuing operations was \$10.3 billion, up \$2.3 billion year over year. Capital expenditures from continuing operations were \$4.2 billion in the quarter versus \$3.5 billion in the year-ago quarter. Capital investment\* from continuing operations, which includes \$0.5 billion of cash payments for vendor financing, totaled \$4.7 billion. Free cash flow\* from continuing operations was \$6.1 billion for the quarter.



## AT&T Turns to Frontier for 5G Fiber Boost

AT&T moved to bolster its fiber backhaul coverage by tapping Frontier Communications’ network, a move which involves the operator deploying mobile equipment at the latter’s facilities. The



agreement enables AT&T to expand its network into areas not covered by its own fiber network in all 25 states where Frontier Communications has a presence. A representative for AT&T told Mobile World Live it will “strategically begin to centralize” baseband units “where it makes sense to do so for operational efficiencies”. Frontier Communication’s footprint is complementary to AT&T’s existing network, which could accelerate its 5G deployment. AT&T is the first customer to rent space in Frontier’s central offices. The backhaul move builds on an agreement struck in 2021 involving Frontier Communications delivering fiber connectivity to large enterprise customers outside AT&T’s footprint. In 2022, Frontier Communications announced it was halfway through a move to deploy fiber to 10 million locations by end-2025. AT&T executives have continually stressed fiber expansion is one of their top priorities, as the company aims to cover 30 million locations by end-2025.

## South Carolina Broadband Office Announces Plans to Deliver AT&T Fiber-Powered Broadband to More Than 9,000 Customer Locations in Charleston and Greenville

The South Carolina Broadband Office announced a project with AT&T\* to expand AT&T Fiber to more than 9,000 additional customer locations in Greenville and Charleston. In Greenville, AT&T has been selected to build AT&T Fiber to nearly 2,500 customer locations in a project valued at \$12.3 million. In Charleston, the plan calls for AT&T Fiber to be delivered to nearly 6,900 customer locations in a project valued at \$10.5 million. "For South Carolina to remain competitive, especially in our rural areas, we must ensure that high-speed internet is a possibility for every South Carolinian, said. Gov. Henry McMaster. "Thanks to the partnership between the South Carolina Broadband Office and our private partners,

like AT&T, we continue to make great progress and ultimately improve the quality of life for thousands of South Carolinians." Plans call for residents and businesses to have access to the fastest internet delivering up to 5-Gig speeds<sup>1</sup> and 25X faster upload speeds<sup>2</sup> and more upload bandwidth than cable.<sup>3</sup> Faster speeds 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. Extensive planning and engineering work for this project will begin immediately. The network buildout is expected to be complete by the end of

2024. "Bringing fast and reliable AT&T Fiber to Greenville and Charleston is a prime example of how we're helping to close the digital divide through public-private partnerships," said AT&T South Carolina President Jane Sosebee. "With AT&T Fiber, we're connecting more South Carolinians with blazing fast internet that will help enhance education, telemedicine and entrepreneurship in the Palmetto State." AT&T has extensive experience deploying fiber-optics across South Carolina. In fact, more than 400,000 locations in the state have access to AT&T Fiber today. AT&T is working to roll out AT&T Fiber through public-private partnerships in communities across the country and to further close the digital divide by encouraging adoption and offering affordable internet solutions. One of those ways is through 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 lands) to reduce the cost of broadband 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 you confirm your ACP eligibility, call us at 866-986-0963 or visit us online to review your options and order service. Be sure to have your ACP application ID handy when you do this.



## China Mobile International and Zain KSA Sign MoU to Enhance Collaborations in Providing All-round Carrier Services

China Mobile International (CMI) and Mobile Telecommunications Saudi Company (Zain KSA) signed a memorandum of understanding in Riyadh, Saudi Arabia to establish an all-around partnership. The signing ceremony was held at LEAP Tech Conference, the largest tech event in Saudi Arabia and the region, attended by Mr. Colin Wang, Managing Director of CMI Middle East and Africa,

and Eng. Sultan AlHadlag, Executive General Manager of Zain KSA. CMI and Zain KSA will work together on developing competitive products and solutions and carrying out high-level collaboration. Both parties will strive to implement key projects to contribute to the development of the Saudi ICT sector. Based on CMI's global network resources, carrier service brand iConnect, and technical capabilities, both

parties will further enhance cooperation in empowering 5G development and carrier service transformation and geographic expansion to better serve individual users as well as organizations and enterprises across the Kingdom with world-class services. Mr. Colin Wang, Managing Director of CMI Middle East and Africa, said: "CMI is dedicated to serving the Middle East market, providing comprehensive services

under iConnect brand to local carrier partners and contributing to local social and economic development. The partnership with Zain KSA will further promote the transformation of KSA's telecom industry and facilitate high-quality projects under Saudi Vision 2030." Commenting on the MoU, Eng. Sultan AlHadlag, Executive General Manager of Zain KSA stated: "Zain KSA and CMI have a long-term partnership in many areas. The MoU will further enhance our collaboration in market exploration and product innovation, which serves Zain KSA's strategic goals of improving our service capabilities and product offerings to individuals and enterprises to accelerate nationwide digital transformation and support the national ICT goals." CMI has invested heavily in the Middle East region to connect carriers to the reliable, scalable and resilient network via its extensive global infrastructure. This includes over 80 cable resources and 230 PoPs, with international transmission bandwidth of over 122T. CMI strives to create a partner ecosystem with regional and global carrier partners and empower local operators to provide convenient services and solutions based on



China Mobile's leading 5G solutions. CMI's carrier-specific service, iConnect, offers comprehensive professional services including Voice, SMS, Mobile, Data, and Professional Services to global operators. Zain KSA is a leading telecom service provider in Saudi Arabia, establishing itself as a digital partner covering 5G networks, digital payment services, cloud computing, IoT solutions, fiber services, drones, and

many others. CMI and Zain KSA have been cooperating in data, voice, roaming, and innovative IoT solutions for years. The strategic cooperation under this MoU between both parties will further bring closer collaborations and promote digital transformation across Saudi Arabia to support its transition to a digital economy and society.

## Chairman of China Mobile Yang Jie attended 2023 Mobile World Congress (MWC) and gave a keynote speech via "Digital-intelligent Self"

On February 27, 2023 Mobile World Congress (MWC) was held in Barcelona, Spain. Chairman of China Mobile Yang Jie attended the conference and gave a keynote speech via "Digital-intelligent self". "Digital-intelligent self" was created by China Mobile using face modeling, expression transfer, speech synthesis and other technologies. It can simulate human appearance and behavior, and even realize "digital reproduction" of thoughts in the future. It was the first time chairman of China Mobile Yang Jie appeared at a major event with this image. Mr. Yang Jie stressed that this year marks the 50th anniversary of the invention of mobile phones. Over the past five decades, the ICT industry has achieved rapid growth while making historic contributions to the development of human society. Looking ahead, under the ever-faster digital transformation of the economy and society, more extensive growth opportunities are underway for the ICT industry. Firstly, the integrated



innovation of information and energy has become the main driver of human civilization advancement. Now as information deeply integrates into the whole process of energy conversion and usage, the fusion of "Watts×Bits" has been triggered. And our human society is ushering into a brand new era led by information, and characterized by the integrated development of information and energy. This inspires us to further broaden our horizon, follow the integrated

innovation of information and technology as a pattern of our times, explore the value and responsibility of our industry, and work together to play a bigger role in the development of human society. Secondly, the integrated innovation of the next-gen information technologies has profound influences on the trajectory of industry development. The next-gen information technologies are shifting as a chain with multiple breakthroughs

in a mutually reinforcing manner. The application of data sensing, transmission, storage and computing through the whole process requires higher level of integration and systemic innovation of next-gen information technologies, which makes it difficult for conventional communications technology to address complex issues at scale by itself. This compels us to further broaden technology roadmaps by enhancing coordination and joint development of CT, IT and DT in their theories, standards and architecture, in order to enable organic integration of next-gen technologies on AI, Block chain,

Cloud, Big Data, Network, Edge computing, Terminals, Security (i.e. ABCDNETS), and further unleash the potential of information. Thirdly, the integrated innovation of information service system and the social system incubates extensive blue-ocean opportunities. The accelerated integration of next-gen information technologies into the whole process and all aspects of the economic and social development are driving profound changes in production methods, and the way of living and social governance. It also makes the new type of information services system of "Connectivity + Computing Force

+ Capability" a common demand of the whole society in technology and application innovation. This requires us to further broaden the scope of services by shifting the focus from meeting conventional communications demands to leading and creating demands for information services in areas including production, living and governance, strengthening deep cooperation and joint innovation with various industries, and cultivating new industries, business formats and models such as the industrial Internet, Metaverse, and smart cities.



## Cisco Advances the Hybrid Work Experience with Audio and Interoperability Innovations

At Integrated Systems Europe (ISE) 2023, Cisco showcased its new range of collaboration devices for Microsoft Teams and unveiled the new Cisco Table Microphone Pro, a digital and multi-directional table microphone for hybrid workspaces, along with audio interoperability advancements. The innovations meet the needs of hybrid workers, delivering more inclusivity and choice for meetings, while improving the manageability, configuration, and security required by IT. "The future of work is now and it's hybrid, which requires a truly exceptional and inclusive experience that's not confined by location, device, or meeting platform," said Jeetu Patel, EVP and GM, Security & Collaboration, Cisco. "Cisco is bringing true audio intelligence to its best-in-class devices and software with interoperability, flexibility, and security." Customers deserve more choice in how they do hybrid work, which is why Cisco and Microsoft partnered to bring more choice, flexibility, and capabilities to customers. The industry-first solution is available in beta now for enterprise customers and partners, and expected to be certified and available for Cisco Board Pro, Room Bar, and Room Kit Pro in March 2023. It will deliver immersive, intelligent, and inclusive meetings experiences to Microsoft Teams customers, leveraging Cisco's experience in designing award-winning, reliable, and secure video collaboration systems.

Cisco is the first vendor to offer devices with Microsoft Teams Rooms as the default experience with support to join Webex meetings with all the features and functionality customers enjoy today – without rebooting or reconfiguration by IT. Powered by the RoomOS and Microsoft Teams Rooms platform, mutual Cisco and Microsoft customers will benefit from the option to run fully-featured Microsoft Teams and Webex meetings natively on their Cisco devices, while leveraging advanced device management and analytics in Control Hub. Cisco offers a

comprehensive lineup of purpose-built video devices for all workspaces and collaboration scenarios. Additionally, the company offers a rich set of camera and audio intelligence capabilities available in the market today. Cisco collaboration devices to be certified for Microsoft Teams will include the Cisco Board Pro 55 and 75, Cisco Room Bar, Cisco Room Kit Pro, Cisco Room Kit EQ, Cisco Room Navigator, and Cisco Desk Pro, alongside remote work peripherals such as the Cisco Desk Camera 4K, the Cisco Headset 320 and the Headset 720.



# Cisco Connects and Protects with New Cloud Tools Across Networking, Security and Operations to Provide Greater Visibility and Control Over Networks

Cisco announced new innovations in cloud-managed networking, delivering on its promise to help customers simplify their IT operations. With powerful new cloud management tools for industrial IoT applications, simplified dashboards to converge IT and OT operations, and flexible network intelligence to see and secure all industrial assets, Cisco delivers a unified experience that provides true business agility. "The most effective way to manage growing complexity and provide more insight into business operations is through reliable connectivity and complete visibility across an organization's operations and assets," said Vikas Butaney, SVP/GM, SD-WAN, Cloud Connectivity, and Industrial IoT Networking, Cisco. "A strong partnership between all technology teams – security, networking, and operations – is essential. With these new innovations, we're excited to equip organizations with the tools needed for a unified, cloud-delivered approach that brings the power of the enterprise IT network to scale and secure the industrial edge."

## Simplified IT/OT for Industrial Networks

Organizations are extending their networks to new places. They need to connect core enterprise operations to industrial spaces, spanning utility grids, manufacturing facilities and transportation networks. They are also prioritizing sustainability and resiliency in their operations, driving the need for greater visibility across their environments. The distributed nature of these operations makes these networks complex to manage, and as these industries digitize their assets, the cybersecurity attack surface grows. Cisco is introducing new cloud services in its IoT Operations Dashboard to increase industrial asset visibility and securely manage assets from anywhere.

- Cisco Cyber Vision is now integrated with Cisco IoT Operations Dashboard to grant IT and operations teams full visibility into IT and OT devices to manage threats across the organization, providing a



unified security posture across the entire network.

- Secure Equipment Access Plus makes it easier for IT and OT teams to remotely deploy, manage, and troubleshoot connected equipment. This service now provides access to any connected equipment with IP connectivity, so operations teams can run native applications on their workstations to access remote assets more easily.

These innovations, along with Cisco's extension of its portfolio of its Catalyst industrial wireless and switching portfolio, provide more common tooling and data so IT and OT teams can work more efficiently together to reduce downtime of critical infrastructure, drive greater business productivity and efficiencies, and enhance overall safety and security.

## ThousandEyes OpenTelemetry Simplifies IT Data Intelligence

Having the relevant data at the right time is necessary to optimize users' digital experiences, but data may not always be easy to collect and correlate. To help customers tackle this challenge, Cisco ThousandEyes now supports OpenTelemetry, the open-source framework and industry standard that partners, customers and providers rely on to generate, collect, process and export cloud-native and distributed telemetry

data. As the first network visibility solution to support OpenTelemetry, ThousandEyes is making it possible for customers to interconnect cloud and Internet intelligence across a wide range of solutions for unmatched data correlation and insight. With ThousandEyes OpenTelemetry, Cisco is enabling true end-to-end correlated insights across multiple domains, from user to application, for optimal digital experiences.

## Unified SASE Solutions for all Cisco SD-WAN customers

To simplify network security and policy management, Cisco's unified SASE solution, Cisco+ Secure Connect, now supports integration into Cisco SD-WAN fabrics using Viptela technology. Cisco SD-WAN customers now have access to fast, secure private applications and internet access, enabling them to deliver a secure experience to their employees anywhere. This unified solution converges networking and security to provide customers with a single platform and a streamlined operational model that simplifies and scales the visibility, management and control over a hybrid work environment. This converged operating model also provides IT teams with enhanced visibility and control over the network, making the experience easy for them to manage.

## Cisco Doubles Down on Frictionless Security to Protect Hybrid Work and Multi-Cloud Environments

Cisco customers can now access new risk-based capabilities across Cisco's security portfolio to better protect hybrid work and multi-cloud environments. These advancements demonstrate progress towards realizing the full vision of the Cisco Security Cloud which will protect the integrity of an organization's entire IT ecosystem. "Security products should provide a frictionless user experience while minimizing risk for the organization," said Jeetu Patel, Executive Vice President and General Manager of Security and Collaboration at Cisco. "At the same time, organizations need to look at their security resilience holistically. This is why Cisco is building an end-to-end portfolio of security solutions and integrating them into a single platform. We're excited to share the latest innovations across zero trust, application security, and secure connectivity as we build towards our vision." Cisco also introduced initial findings from the first-ever Cybersecurity Readiness Index focused on five core pillars of security protection – identity, devices, network, applications, and data. While technology to secure devices is widely adopted, more progress is needed to protect identity, networks and applications. Respondents ranked identity and device management as two of the three top cybersecurity threats. Alongside the widespread adoption of technology like multi-factor authentication (MFA), criminals are increasingly targeting the solutions protecting users and

devices. Unfortunately, while we are seeing impressive levels of adoption when it comes to device protection, there is still much work to be done when it comes to identity. The highest level of readiness that companies have across the globe is in securing devices, with nearly half of companies placed in either the 'mature' (31 percent) or 'progressive' (13 percent) stages of adoption. On the other hand, significant progress is needed to meet the challenge of identity verification, with only 20 percent of organizations in the 'mature' category, and more than half falling into the 'beginner' (20 percent) or 'formative' (38 percent) stages. Not only are these attacks becoming more frequent and current risk-based signals are failing, but authentication controls are also inflexible, creating too much friction. Security gets in the way, creating usability issues. Several features of Duo Risk-Based Authentication designed to reduce user friction and increase security efficacy in a hybrid work world are now available: Users can now authenticate less often in trusted situations without compromising privacy. Remembered Devices and patent-pending Wi-Fi Fingerprint allow users to stay logged in when using familiar applications, devices and networks – without collecting personal or private location information. Protect against authentication phishing attacks with the new Verified Push capability. In risky situations where Duo can recognize behavior from known attack patterns, it requires the user to enter a code, instead of

just pushing a button to confirm. Expanded Single Sign On (SSO) capabilities that cater to modern enterprises and improve productivity by notifying and enabling users to reset their passwords before they expire. According to the Cybersecurity Readiness Index, companies urgently need to act on the security posture of their applications and related workloads. Only 12 percent are in a state of mature application-security readiness, while 65 percent are in the early or formative stages. Cisco's application strategy aims to ensure greater resilience against the growing attack surface of the experience economy where applications are no longer an adjunct, but rather they are the business itself. A significant advancement in its applications strategy, Cisco has announced the introduction of industry-first Business Risk Observability, an enhancement of Cisco's Full-Stack Observability application security solution. Available through Cisco Secure Application, which is integrated into Cisco AppDynamics, it provides a business risk scoring solution which brings together Kenna Risk Meter score distribution and Business Transactions from Cisco AppDynamics, and also integrates with Panoptica for API security and Talos for threat intelligence. IT complexity, and the complexity of managing a highly distributed workforce has introduced risk to the organization and increased operational costs. Most enterprise networks can't support the change in traffic patterns driven by SaaS and hybrid work. Only 19 percent of companies are placed in the mature stage of protecting the network, while more than 50 percent are in the formative or beginner stages. To provide secure access to anything from anywhere - organizations are increasingly adopting Secure Access Service Edge (SASE) architectures. Cisco is thrilled to announce that Cisco+ Secure Connect, the industry's first and leading unified single-vendor SASE solution, is extending support to Cisco SD-WAN powered by Viptela. Cisco+ Secure Connect uniquely converges Cisco SD-WAN fabrics and Cisco's leading cloud security services to provide secure access to anything from anywhere.





## du and SES Demo First Satellite-enabled 5G Mobile Backhaul Network in the Middle East

SES and du from Emirates Integrated Telecommunications Company (EITC), a leading telecom operator in the United Arab Emirates, have successfully demonstrated the first satellite-enabled 5G backhaul in the Middle East utilising SES's Medium Earth Orbit (MEO) satellites, the two companies announced today. The aim of the live demonstration was to demonstrate how SES's current O3b constellation could extend 5G coverage to remote locations and support du's enterprise customers including offshore energy sites with highly reliable, high throughput and low latency network connectivity. The live Proof of Concept (POC) saw numerous tests conducted over an SES's O3b satellite, including voice and data scenarios to measure quality of service performance and stress test load capacity. The low latency and high throughput 5G backhaul link showed O3b is an ideal solution for 5G satellite-enabled networks with Quality of Experience (QoE) at par with terrestrial backhauling technologies. "du has vast experience using satellites for its own cellular backhaul, as well as for delivering satellite-enabled data communications services to our enterprise customers, but we need much better throughputs

and low-latency performance to support our enterprise, cloud, and data growth applications. O3b mPOWER promises to provide the dedicated multi-gigabit per connection scale with cloud-optimised and low-latency performance to provide the required Quality of Experience (QoE) with the flexibility of satellite," said Saleem AlBlooshi, Chief Technology Officer, du. John-Paul Hemingway, Chief Strategy & Product Officer of SES, said, "We appreciate the opportunity to collaborate with du on this demonstration of high-performance MEO services and how we can jointly deploy the Middle East's first satellite-enabled 5G backhaul network. du can leverage more guaranteed-SLA

bandwidth, with greater flexibility, via O3b mPOWER to rapidly generate new revenue streams by expanding high-quality 4G/5G to remote areas and by cost effectively connecting its enterprise customers." SES has already started deploying O3b mPOWER technology which will enable high-performance services with superior throughput, predictable low latency, and unmatched flexibility to meet traffic demand. The start of service for O3b mPOWER expected in 2023 will enable du and its customers to experience secure, carrier-grade performance supporting business-critical, cloud-based applications over the public internet or via a dedicated, private connection.



## Eutelsat Successfully Decommissions EUTELSAT 5 West A Satellite

Initially designed for a 15-year lifetime, the EUTELSAT 5 West A satellite has retired after an impressive 20+ years of fruitful in-orbit operation. The satellite was successfully re-orbited as planned to more than 400km above the geostationary arc, the propulsion system depressurized and the electrical equipment on board passivated. The final operation to de-activate the remaining Radio Frequency source (telemetry transmitter) was performed from the Issy-les-Moulineaux Satellite Control Centre on 13 January at 09:57 UTC (10:57 Local time). The End-of-Life activities operated by mission control teams placed the

satellite in safe conditions with an orbit and configuration fully compliant with French Space Law and international Space Traffic Management recommendations. Based on a Spacebus 3000B3 platform manufactured by the then Alcatel Alenia Space (now Thales Alenia Space), the satellite was originally built on behalf of Stellat. Shortly after its launch in July 2002, the satellite was bought by Eutelsat and renamed Atlantic Bird-3, operating from the 5° West orbital position where it remained for its entire operational life. It was given the name EUTELSAT 5 West A in 2012 and operated in an inclined orbit since the

end of 2019, which enabled an extended lifespan of the satellite. A progressive transfer of services to the new EUTELSAT 5 West B satellite, as well as other satellites of the Eutelsat fleet, was started in January 2020, ensuring seamless continuity of operations for customers. The EUTELSAT 5 West A continued to operate until its decommissioning, notably providing maritime connectivity. A disruptive satellite for the Group, EUTELSAT 5 West A enabled the transition to digital television, notably in France in the early 2000s, when analogue television technology was converted to and replaced by digital broadcasting.

Eva Berneke, Eutelsat Chief Executive Officer, commented: "The impressive extended lifespan of EUTELSAT 5 West A showcases the first-rate satellite control expertise of the Eutelsat teams. The satellite provided an overall service availability of 99.999%, a figure that stands as a testament to the hard work and dedication of all the Eutelsat teams who have worked together throughout the years on this mission." James Matthews, Eutelsat CSR Director, added: "The decommissioning of EUTELSAT 5 West A satellite is a perfect example of our commitment to the responsible use of space, a fundamental element of the Group's CSR mission. This operation shows how the Space Traffic Management expertise of Eutelsat is being used to mitigate the risk of space debris for both security and environmental concerns, ensuring the long-term sustainability of space for all operators".



## GO Telecom signed cooperation agreement with stc Group

Saudi Arabia's stc Group has signed a cooperation agreement with Saudi telecoms operator GO Telecom (Etihad Atheeb) enabling the latter to provide IoT services throughout stc's networks including access to 5G and low power wide area (LPWA) technologies. stc Group Chief Carrier & Wholesale Officer Mohammed Alabbadi said: 'Our partnership with GO Telecom further cements our commitment to supporting virtual network operators in the Kingdom expand their reach and develop their services. We are focused on ensuring all sectors can benefit from IoT technologies as part of the Group's efforts to empower the digital transformation process in the Kingdom.'



## Huawei and China Unicom Guangdong Win GSMA's "5G Productivity Challenge"

China Unicom Guangdong and Huawei's 5G Digital Fishing project won GSMA's "5G Productivity Challenge" Award. The award recognizes the two companies' innovative capabilities in 5G, in this case for extending first-class wireless coverage to fishermen at sea. "Along more than 450 km of coastline near the Chinese city of the Yangjiang, 5G is quite literally transforming the lives of workers in the fishing industry by enabling

them to monitor the weather, market their catch, and keep in touch with families, while up to 60 km offshore. Already serving more than 4,000 boats, China Unicom's digital fishing vessel system is also helping the authorities reduce the risks posed by typhoons, while clamping down on illegal operations that might result in over-fishing," said David Pringle, one of the judges on the GSMA panel. The 5G digital fishing vessel

system jointly developed by China Unicom Guangdong and Huawei is based on China Unicom's 5G Private Network PLUS. Incorporating data provided by China's BeiDou positioning system as well as data from various sea-based sensors, the solution uses cloud computing to provide dynamic monitoring of fishing vessels at sea in all weather conditions. With 5G MetaAAUs' extremely large antenna array,



the system fully utilizes the large bandwidth of 3.5 GHz to achieve the uplink and downlink access rates of 2 Mbps and 60 Mbps, respectively, even at 61 km offshore.

Before the MetaAAU was developed, such long-range coverage was only possible at sub-gig frequencies that provide lower bandwidth. Fishermen on vessels within the coverage area now need nothing more than their smartphone to monitor news and other information such as weather forecasts, and keep in touch with their families through HD video calls. In case of emergency, they can make calls for rescue promptly with a 5G app designed for fishing vessel use. In addition, the app can assist them in selling their catch before they come back to shore. Looking forward, China Unicom Guangdong will further extend the digital fishing vessel system's coverage, to serve an expected 40,000 to 50,000 fishing vessels along the entire Guangdong coast.

Furthermore, as partners working under the framework of "U-Joy Cities" announced in May 2022, China Unicom Guangdong and Huawei will also work with other industry partners in fields such as offshore wind power, offshore farms, and island tourism and extend the benefits of 5G to a growing range of industries. So far, China Unicom Guangdong and Huawei have implemented 5G "U-Joy Cities" projects at Foshan Manufacturing City, Yangjiang Marine City, and Guangzhou Gigabit City, fully unleashing the value of 5G for smart life and smart industry. In coming years, the two parties will continue to explore new 5.5G application scenarios and develop pioneering experience that could help cities and rural areas around the world.

## Huawei to Showcase Its Latest Technologies at Digital Bangladesh Mela

Huawei is going to showcase its latest technologies at Digital Bangladesh Mela 2023 scheduled to be inaugurated on January 26 at the Bangabandhu International Conference Center at Agargaon in Bangladesh capital Dhaka. The three-day fair will introduce latest innovations and future technological trends with industry partners and visitors, said a press release. Huawei, as the titanium sponsor of this event, is designing the best pavilion with attractive solutions, quiz and prizes. The Huawei pavilion will be equipped with multiple breakthrough innovations in different frontiers like 5.5G, Enterprise Business Solutions, Huawei cloud, and digital power, the release said. 'Demo sites of Smart port and digital power solutions will also be available for the audience, along with video illustrations and success stories on the latest innovations on the topics mentioned earlier. Apart from these, the visitors can join the quiz in every two hour and win attractive prizes. Huawei Bangladesh facebook page has also announced a separate quiz campaign for its fans,' it read. Majian, Chief Technical Officer of Huawei Bangladesh says, 'Huawei has been working in this industry as an enabler of ICT ecosystem. We are always there with our world-class innovative solutions to bring digital to every person, home and organization and build a fully connected, intelligent Bangladesh. On the other hand, carbon neutrality has also been an important matter for us

and Bangladesh government. With that agenda, our pavilion; themed as Stride to 5.5G, will bring diverse cutting-edge technologies to the mela that include 5.5G, Robotics, Smart port, Smart Education, Huawei Solar PV solution, Cloud service and many more. I welcome all the visitors to our pavilion.' Bangladesh is moving forward in great strides and on its way to becoming a Smart Bangladesh by 2041. To expedite this journey, the country needs to maximize the power of digitalization and technological innovations, including 5G, digital energy, cloud, smart education,

and smart healthcare. Digital Bangladesh Mela 2023 will help all the stakeholders get insights into all these aspects. Huawei has a massive portfolio of over 100,000 patents globally. It is one of the top patent holders in 5G technology, which is next-generation ultra-fast mobile internet seen as key to underpinning future industries such as artificial intelligence and autonomous cars. This fair is a good opportunity for the industry to learn and apply those solutions for their growth and development. Last time Huawei provided the 5G experience to the visitors.



## Stride to 5.5G era, extending business frontiers

At MWC Barcelona 2023, Huawei showcases leading technologies, new business opportunities, and industry progress in the 5.5G era. The company aims to work with carriers and industry partners around the world to further the evolution of ICT infrastructure, lay the foundation for the 5.5G era, and build on the success of 5G for even greater prosperity. At the event, Huawei presents five major characteristics of the 5.5G era: 10 Gbit/s experience, all-scenario IoT, integrated sensing and communication, Level 4 autonomous driving network, and green ICT. Technological innovation in the 5.5G era will bring operators a 10-fold increase in network performance over 5G in terms of speeds, connections, accuracy and reliability, efficiency, and intelligence. 5.5G can help operators open up five new business frontiers and drive a 100-fold increase in new business opportunities. At the event, Huawei Carrier BG President Li Peng, delivered a keynote speech on reimagining 5G business, reinforcing 5G coverage, and reinventing 5G technologies. In his speech, Li shared insights into user experience and recent 5G development. He said that the industry must work together to accelerate 5G prosperity. He stated that 5G has developed rapidly since it entered commercial use three years ago. By the end of 2022, over 1 billion 5G users had watched high-definition streams of major international sports events, and more than 10 million households had access to 5G broadband. As 5G network capabilities improve, users are able to watch videos in higher definition and from more viewpoints, creating a new standard for next-generation experiences. 70% of users are already willing to pay for better 5G experiences. Li also highlighted that deeper 5G coverage is helping carriers better monetize experience. This is well evidenced by the world's top 20 carriers in 5G network rollout, who achieved significantly higher ARPU and revenue growth than the global average last year. Innovation in 5G base station equipment would also be required to provide deeper coverage. Along this line, in 2022, Huawei launched MetaAAU, its third-generation AAU for 5G base stations. Compared with its previous generation counterpart, MetaAAU offers about 30%



higher capacity and coverage, making it a prime choice for carriers pursuing deeper 5G coverage. Huawei has also convened the 5G Business Success Summit at MWC. Peng Song, President of Huawei's ICT Strategy & Marketing, delivered a keynote speech titled "Diverse Paths to 5G Monetization, Accelerating 5G Business Success". In his speech, he noted that the achievements made by 5G in its first three years are equivalent to those that 4G made in its first five years, and that leading operators are already celebrating the success of the first round of 5G development, which has instilled a sense of certainty and confidence in the industry. 5G will thus sustain this success if its value can be further unleashed in ToC, ToH, and ToB sectors. During his speech, Mr. Peng noted that the global user penetration rate of 5G in its first three years amounts to that of 4G in its first five years. Operators reporting over 20% 5G user penetration during the first round of deployment have seen significant growth in mobile revenue. In the meantime, devices, content, experience, and business models are diversifying as more operators and partners embrace 5G. This is evidence of a market shift from risk-based to revenue-based decision-making for even more assurance of business success.

### Frontier 1: Explosion in services with immersive and interactive experiences

3D applications, such as 3D online malls, 24K VR gaming, and glasses-free 3D video, will become mainstream. Services with immersive experiences emerged in the 5G

era, but in the 5.5G era, services with both immersive and interactive experiences will become commonplace. With continuous breakthroughs in device technologies and a boom in content, the number of online users of immersive and interactive services in the 5.5G era is expected to exceed 1 billion, a 100-fold increase.

### Frontier 2: Further enabling industry digitalization

As 5G private networks become increasingly capable, their scope of application will expand by 10 times, and the value of each connection in key applications will increase by even more than that. We predict that the number of 5G private networks deployed will increase from 10,000 today to 1 million by 2030. Fiber connections are extending from homes and enterprises to production lines and even production equipment.

### Frontier 3: Cloud applications entering a new era, creating new opportunities for network connectivity

Cloud-based and multi-cloud enterprise applications are becoming a new trend. The cloud applications will need real-time, reliable, and easily-accessible connectivity, bringing new opportunities to transmission networks, whether they are between edge cloud nodes, between edge cloud nodes and central clouds, or between enterprises and the cloud.

### Frontier 4: Cellular networks cover all IoT applications and passive IoT enables 100 billion connections

Passive IoT technology is extending mobile connectivity from high-speed active

solutions to ultra-low-speed passive ones. Passive IoT tags can transmit data, and can also be used for positioning and on temperature sensors. Such tags can be used in a wide variety of scenarios, such as automated inventory of warehouse items, agriculture and livestock development, and positioning of personal items. Currently, more than 30 billion passive IoT tags (based on technologies like RFID) are consumed a year. As more industries go digital, the number of passive IoT tags used every year is expected to reach 100 billion.

**Frontier 5: From communication to**

### **integrated sensing and communication, facilitating new services**

5.5G networks with the sensing capability can be used extensively in scenarios like smart city road traffic services and perimeter sensing, making urban infrastructure more efficient and intelligent. For example, in rainy or foggy weather, 5.5G networks can automatically detect obstacles or abnormalities on the road and notify drivers through the maps in their cars one kilometer in advance, making transportation safer. MWC Barcelona 2023 runs from February 27 to March 2 in

Barcelona, Spain. Huawei showcases its products and solutions at stand 1H50 in Fira Gran Via Hall 1. Together with global operators, industry professionals, and opinion leaders, we dive into topics such as 5G business success, 5.5G opportunities, green development, digital transformation, and our vision of using the GUIDE business blueprint to lay the foundation for 5.5G and build on the success of 5G for even greater prosperity. For more information, please visit: <https://carrier.huawei.com/en/events/mwc2023>.

## **Huawei Held 2023 Regional Headquarter Annual Meeting in the Kingdom of Saudi Arabia**

Huawei held its 2023 Middle East and Central Asia (ME&CA) Annual Meeting Awards Giving Ceremony in Riyadh, Saudi Arabia, on Saturday 18 February, bringing together Huawei representatives from 21 countries. His Excellency Haytham Al Ohali, Vice Minister in the Ministry of Communications & Information Technology, graced the event, held in the Kingdom for the first time. Huawei used the meeting to align on 2023 objectives while recognizing staff for excellence in driving business objectives and differentiated customer experiences. Executives, led by Steven Yi, Huawei President for Middle East and Central Asia, led discussions on business development for the year ahead. HE. Haytham Al Ohali said: "We realize the benefits of working with the private sector to enhance our ICT capabilities in support of Saudi Vision 2030. This partnership marks another important phase in our ongoing collaboration with Huawei, whose outcome will elevate the Kingdom's competitiveness and help to nurture the country's digital economy." Steven Yi said: "This is a significant milestone for the first time in our history, in Riyadh, where Huawei CEOs and regional management teams from 21 countries gathered in the Kingdom of Saudi Arabia. Huawei will continue to invest in Saudi Arabia and support the growth of local Saudis. At the same time, we will perform more and more regional management functions in Saudi Arabia

and comply with the laws and regulations of the Saudi government. This event was, therefore, an ideal opportunity to celebrate these individual and collective triumphs while formulating another fruitful year ahead. In 2023 and beyond, we remain committed to helping build a connected, intelligent world while inspiring our partners to deliver differentiated services to their customers." The ME&CA Annual Meeting and Awards Giving Ceremony is the culmination of another highly successful year for Huawei in the region. In February last year, Huawei announced it would build a cloud region in Saudi Arabia during the inaugural LEAP event, a boost for local businesses and governments' ability to access more robust and secure cloud

services. Later in the year, the Kingdom signed an MoU with Huawei on advancing cloud computing and building smart cities. In June last year, Huawei, in partnership with the Saudi Space Commission, unveiled 'Future Space', its first technology experience center in Saudi Arabia. Then in December 2022, The Saudi Ministry of Communications and Information Technology (MCIT) and Huawei signed an MoU to enhance cooperation in ICT on the sidelines of the historic visit of His Excellency President of China Xi Jinping to the Kingdom. MCIT and Huawei pledged to collaborate to realize a '10Gbps Society', seeking to build a superfast broadband infrastructure to support the digital transformation goals of Saudi Vision 2030.



## Huawei Regional President Reiterates Support for Saudi Arabia's Digital Transformation Goals

Steven Yi, President of Huawei Middle East and Central Asia, gave a keynote on the second day of LEAP, Saudi Arabia's largest and most comprehensive ICT exhibition. In his speech, Yi highlighted how Huawei works with partners to help the Kingdom build a more robust infrastructure to achieve its global computing power goals, including green and efficient data centers, AI platforms, and future computing architecture research. Under the theme of 'Unleash Digital', Huawei is participating in LEAP 2023 as a Strategic Partner. At the event, Huawei is exhibiting its end-to-end innovations, focusing on 5.5G, cloud computing, AI, digital power, cybersecurity, and industry applications designed to meet the needs of various sectors, including government, utilities, oil and gas, health, energy, and more. Steven Yi took note of Saudi Arabia's rapid digital transformation, particularly the government's pursuit of innovative e-government strategies. In parallel, he stated that Vision 2030 includes increasing the share of non-oil exports from 16% to 50% and improving the Kingdom's GDP ranking in the global league table. "Global GDP growth has fluctuated dramatically over the last three years, owing to numerous uncertainties such as the COVID pandemic and high inflation. The digital economy, on the other hand, has remained strong; and the Kingdom of Saudi Arabia, as one of the world's largest economies, has maintained

positive GDP growth throughout the uncertain period and thrives on economic diversification." Yi added that driving the economy's expansion was the industry's urgent demand for advanced digital technology to improve productivity, achieve industrial evolution, and promote economic development. "Huawei has always been committed to supporting the Saudi government and industry sectors in their digital transformation to achieve the Kingdom's vision. In Saudi Arabia, Huawei is actively cooperating with the government and industry partners to promote the evolution of the latest connectivity technology that will empower connectivity, allow ubiquitous uninterrupted giga internet access everywhere and meet industry requirements for reliability and ultra-low latency," he said. To continue on this successful path, Yi mentioned that there is a continuous need to strengthen the country's digital infrastructure. Today, late starters and early adopters expect more from connectivity and computing. In terms of connectivity, Yi noted that Huawei is actively leading the evolution towards the 5.5G era, dramatically increasing network capacity, ensuring pervasive 10G speeds, and meeting the industry's requirements for reliable and low latency connectivity. In parallel, enterprises need to make the most of cloud and achieve leapfrog development. "There is no doubt that the cloud is the future, especially in accelerating the

industry's digital transformation. In Saudi, an increasing number of enterprises have included 'cloud first' in their transformation strategy and plan to migrate more than 50% of their businesses into the cloud.," Yi observed. Huawei is building a public cloud node in Saudi Arabia to help customers make the most of the cloud and build AI and IoT solutions based on HUAWEI CLOUD for smart cities, governments, and large enterprises. Additionally, Yi noted that stronger local digital ecosystems are vital to supporting digital transformation. Towards this end, Huawei promotes open collaboration and shared success across localized digital ecosystems. In December 2022, an MoU was inked between the Ministry of Communications and Information Technology and Huawei for a strategic partnership to realize the 10 Giga Society. He then expressed how adopting Huawei's advantages in Communication, Enterprise Solutions, Cloud, and green energy solutions will support Saudi to build a promising future in the full digital era. Finally, Yi highlighted Huawei's support in cultivating a new generation of digital talent. Huawei has collaborated with governments, academia and industry to enrich the region's ICT talent ecosystem. CSR initiatives such as Seeds for the Future, the annual Huawei ICT Competition, Huawei ICT Academy, joint innovation centers, labs and other CSR initiatives empower thousands of Arab youth annually to supercharge their ICT careers. In the Middle East, Huawei has set up 167 Huawei ICT Academies training over 11,000 local digital talents, while more than 3,500 students have participated in the flagship program Seeds for the Future, helping over 40,000 people obtain Huawei certification. Overall, the company has trained over 120,000 ICT talents for the Middle East and is committed to achieving more in collaboration with partners. Huawei's vision and mission is to bring digital to every person, home, and organization for a fully connected, intelligent world. The company consistently promotes an open approach to innovation, focusing on constructive dialogue, cross-industry cooperation, and exchanging expertise with countries in the Middle East and worldwide.



## Huawei OptiX OSN 9800 Ranked as Leader with the Highest Score in Core Packet-Optical Platform by GlobalData

Huawei OptiX OSN 9800 series has been ranked as a "Leader" with the highest score in Core Packet-Optical Platform by GlobalData in its latest report Core Packet-Optical Platform: Competitive Landscape Assessment. This series of optical products substantially exceeds product class average and can better meet the requirements of new services in terms of traffic, latency, network robustness, and flexibility in addition to supporting the evolution of carrier networks to all clouds. WDM/OTN are gears used behind the scene on communications network backbone & Metro. The OSN 9800 series is an optical-electrical type WDM/OTN that can transmit data carried by optical fiber. Compared with competitors, OSN 9800 series products feature ultra-large capacity, ultra-high integration, and ultra-low power consumption. GlobalData is a leading consulting company in the global ICT field, providing professional market research, forecast, and vendor analysis information for industries. According to the Core Packet-Optical Platform: Competitive Landscape Assessment, Huawei OptiX OSN 9800 series is ahead of products offered by mainstream equipment vendors in terms of line interfaces, switching capacity and features, port capacities, transport features, network management, and physical attributes. Huawei OptiX OSN 9800 series supports single-wavelength 800 Gbit/s and Super C+L band ultra-wide spectrum, and provides 96 Tbit/s line capacity per fiber,

thereby meeting capacity requirements in the next 10 years. It can flexibly process various switching granularities ranging from 2 Mbit/s to 100 Gbit/s, provide a complete range of ports, and support the largest number of client-side services in the industry. This series uses a flexible optical-electrical convergence architecture, supports simplified optical-layer solutions, and provides powerful optical-layer protection capabilities to ensure high service availability and flexible grooming. In addition, Huawei OptiX OSN 9800 P32/P32C is the world's first commercial all-optical cross-connect product ready for large-scale applications. It provides Pbit/s-level optical switching per subrack, achieving efficient

optical switching and easily addressing digital floods. The OptiX OSN 9800 series is comprised of Huawei's flagship WDM products, including U64E, U32E, M24, and P32/P32C subracks. This series is applicable to integrated transmission scenarios such as home broadband, mobile bearer, enterprise private lines, and Data Center Interconnection (DCI). It provides the optimal E2E transmission solution for backbone and metro networks. Looking ahead, Huawei will continue to achieve technological innovations in optical transport solutions and work with global carriers to build future-oriented all-optical networks with optimal service experience and total cost of ownership (TCO).



## Nokia Gets Nod for NOW Telecom 5G SA Network

NOW Telecom has selected Nokia-owned Bell Labs Consulting to design its planned 5G Standalone (SA) network in the Philippines. As part of the plan, the telco will launch a pilot 5G network in parts of Metro Manila backed by its previously announced funding agreement with the US Trade and Development Agency (USTDA). Work on the project will begin next month the vendor said, with the proof of concept (POC) slated to be carried out in July 2023. In addition, Nokia will help NOW Telecom secure funding for the 5G SA rollout as the latter seeks to launch fixed wireless access (FWA) and enhanced Mobile Broadband (eMBB) 5G services by 2024.



## Nokia and Viettel Successfully Complete Deployment of the First DWDM Network Operating at 600G Per Wavelength in Vietnam

Nokia announced the completion of the first DWDM network operating at 600G per wavelength with Viettel, Vietnam's largest telecom service provider and one of the world's top 20 telecom companies. The network uses Nokia's innovative PSE-V super-coherent optical engines (PSE-Vs), transmitting a 600Gb/s channel in the C-band to connect Viettel's main core sites. This new Data Center Interconnect solution will enable Viettel to meet future requirements for low-latency, high-capacity, robust network for 5G, Cloud, and growing consumer demand for online video and internet usage. In this project, Nokia PSE-Vs is deployed in Nokia's 1830 Photonic Service Switch platform, and will enable Viettel to scale total network capacity to 25.2Tbps over C-band. In addition, the existing C-band system can be seamlessly upgraded to C+L band by adding L band components, which will double the network capacity. Rubén Morón Flores, Head of Market Unit Vietnam at Nokia, said: "We are pleased to work with Viettel as a strategic partner. This project was the first in APAC to use our PSE-Vs chipset & implemented during the height of Covid pandemic. Its success showcases our strong partnership and unwavering commitment to maintaining leadership by delivering latest optics technologies and solutions to Viettel." Nguyen Khac Tinh, Optics Principal Architect of Viettel, said: "This project is very important to Viettel to fulfil the high demand for transmission capacity which increases dramatically every day. By using Nokia's industry leading

coherent transport solutions, we'll be able to optimize our cost for both CAPEX/OPEX and stay secured for future expansion. This is truly a network built not just for today, but for tomorrow as well. We wish to work with Nokia to evolve our network even further. Our network is now ready for 800G and we plan to reach 1Tbps/channel and beyond."



## Nokia Extends Manufacture of Fiber Broadband Equipment into India

Nokia announced that it will extend manufacturing PON optical line terminals (OLTs) at its factory in Sriperimbudur near Chennai, India. The decision comes in response to increasing demand from local customers in India, as well as international markets. Shifts in consumer behavior, from home working to data rich entertainment services, are driving demand for broadband. This demand is matched by strong institutional support with significant funding from governments and private equity funds around the world that are driving investments in broadband and fiber connectivity. Nokia is currently a participant in the Government of India's Production

Linked Incentive (PLI) scheme, and is extending its production capacity into Chennai in response to growing demand. Demand for fiber is also shifting to new regions with the Asia-Pacific region seeing strong demand in markets like Japan, India and Southeast Asia. Much of this demand will be seen in the form of fiber to the home (FTTH) but there is also significant demand from mobile network operators (MNOs) as they deploy 5G and need next generation fiber in their transport networks to carry the expected surge in data traffic. Nokia's planned production of PON OLTs in India will give a boost to expand the company's production base and geographic reach. Sandy Motley, President Fixed Networks at Nokia, said: "The importance and criticality of high-speed broadband has never been more pronounced as it is today. As the momentum towards 5G networks and new hybrid usage models push operators towards increasingly distributed network architectures, service providers are investing in fiber to build out and upgrade their existing networks. Nokia is the leader in FTTx solutions globally and is innovating rapidly to introduce next generation PON solutions. We are happy to add the manufacturing capacity in India to better address increasing demand in the region and worldwide. Sanjay Malik, SVP and Head of India Market at Nokia, said: "India is seeing massive demand for fiber connectivity from both fixed and mobile operators. OLT production at our Chennai plant will offer a timely boost to meeting this demand in a timely way.



## Nokia Helps Telia Denmark Achieve Superior Network Performance

Nokia announced that its network technology and services have helped Telia Denmark achieve the number one position for network performance – placing it ahead of the competition - in recent independent drive testing in the country's four largest cities. The tests assessed the quality of the country's mobile radio network coverage and were performed by umlaut, part of Accenture, an industrial and organizational advisory research and benchmarking firm. Nokia provides Telia Denmark with equipment from its latest energy-efficient 5G AirScale portfolio as well as core network and managed operations support, which has strengthened Telia's network performance and enabled the company to drive better service delivery outcomes for its customers. Nokia is the exclusive supplier of 5G RAN (Radio Access Network) to TTN, the joint network of Telenor and Telia in Denmark, covering more than 4,300 sites and serving over three million subscribers nationwide. Nokia is also providing its Cloud Packet Core and Registers in order to deliver advanced 5G services, as well as the network flexibility, scale, and performance to allow Telia Denmark to meet its customer demands. Daniel Askeroth, CTO at Telia Denmark said: "The Telia Denmark and Nokia teams have done a superb job optimizing the performance of Telia Denmark's network in order to provide our customers with important service delivery improvements. These very positive outcomes are also reflected in Telia Denmark's No. 1 network



position in umlaut's recent survey and that is a testament to a lot of hard work and cooperation." Tommi Uitto, President of Mobile Networks at Nokia said: "High-performance radio networks are the key to delivering an outstanding mobile user experience. We take great pride in helping Telia achieve this success with our market-leading AirScale portfolio and efficiencies enabled by Managed Operations. The combined strength of the RAN and Core products and Managed Operations we provide to Telia have really helped them to get the best out of their network. We look forward to continuing this important partnership and strengthening Telia's position as Denmark's best network." Nokia provided TTN with a full network deployment including strategic design, planning, RAN optimization, and implementation. This included products from its latest energy-efficient AirScale product portfolio including 5G Massive

MIMO antennas to deliver enhanced ultra-fast, low-latency, and high-capacity mobile broadband services to Denmark's four largest cities. Nokia's support for Telia's core network includes providing its high-performance Cloud Packet Core, robust Subscriber Data Management, and data consolidation in the Shared Data Layer. Nokia also provided end-to-end optimization services to maintain premium network performance. Nokia Managed Operations support for Telia Denmark included performing network analysis and then mapping improvement areas, particularly in the areas of voice and data. Nokia and Telia Denmark tested and implemented changes, driving efficiencies through AI and quality methodologies that led to across-the-board network quality enhancements. With customers in 55 countries, Nokia Managed Operations supports more than 1 billion subscribers globally in multi-vendor network environments.

## Nokia Introduces New Wavence Microwave Solutions to Extend the Reach of 5G Deployments in Both Urban and Rural Environments

Nokia today announced the availability of the UBT-m XP, the latest addition to its award-winning Wavence product family designed to support mobile operators and enterprises with premium coverage in both dense urban and rural environments. Nokia's newest E-Band radio is a high-capacity outdoor unit with a small, light form factor and the highest transmit power available on the market; ideal for urban microwave transport applications. It is joined in an industry first by the launch of the Nokia SteadEband, a stabilized

three-foot antenna that combats common E-Band issues, which include tower vibrations and movements due to thermal effects. Combined with the UBT-m XP, it can increase the typical E-Band link distance by up to 50 percent, helping mobile operators deliver multi-gigabit 5G connectivity to their customers. These new products address all use cases for improving link distance as well as the energy efficiency of the Wavence portfolio. The UBT-m XP is a single ultra-broadband transceiver with an integrated modem and diplexer, offering best-in-class

energy efficiency with twice the transmit power compared to the industry average. In recent tests, Nokia demonstrated a 12-kilometer-long link using the Nokia UBT-m XP and the SteadEband antenna. Nokia also announced the launch of the Outdoor Channel Aggregator (OCA) to support mobile operators looking to expand the reach and capacity of their networks for rural broadband applications. The OCA aggregates multiple UBT-T XP radios, Nokia's high-capacity, high-power, outdoor dual-band radio, for N+0 operations and

allows for increased throughput with improved system gain of up to 10 dB compared with traditional aggregation methods. This is important in increasing the link distance or to optimize OPEX/CAPEX by removing the requirement for larger antenna or repeater systems. Nokia is also introducing the Carrier Aggregation High Density (CAHD) card, which adds 'single pipe' capacity to the backhaul to support the link distance. The innovative CAHD module enables 10 Gbps backhaul capacity over multiple channels and supports seamless migration from existing low-capacity backhaul to high capacity hence preserving an operator's investment. Nokia's 'Simplified RAN Transport' solution optimizes radio access base station and microwave radio transport hardware to the minimum. This provides enhanced serviceability and operations without the need for dedicated indoor microwave equipment. Nokia's solution saves 30 percent more energy versus a traditional microwave site solution, due to a reduced number of units and less air conditioning requirements. Additionally, it also enables lower TCO and reduced site footprint. Nokia's comprehensive Wavence portfolio provides a complete microwave solution for all use cases covering short-haul, long-haul, E-Band, and SDN-based management both for mobile operators and Enterprises. Its zero-footprint implementation for

full-outdoor architectures can be integrated directly with RAN and IP devices with common management. This contributes to an overall reduction in network energy consumption and its software features and automation help to achieve further energy-saving targets. "It's no secret that capacity and radio efficiency are driving the market, said Emmy Johnson, Chief Analyst, Sky Light Research. "According to Sky Light Research's latest forecast, the high-capacity E-band market is expected to grow north of 60 percent in 2023. Nokia's newest products answer this call but with the added benefit of high power and energy efficiency. The sustainability and power metrics are impressive, as they not only lower TCO but also help meet climate change guidelines." Giuseppe Targia, Vice President, Microwave Radio Links at Nokia, said: "We are further strengthening our industry-leading Wavence portfolio with the addition of these next-generation products. The winning combination of the UBX-m XP and the SteadEband offers our customers a high-performance transport solution with leading capacity and coverage for both urban and rural environments. Microwave links are cost-efficient and fast to deploy, representing a robust alternative to fiber backhaul."

## Nokia Upgrading VodafoneZiggo Network with IP Routing Solutions

Nokia has been selected to upgrade VodafoneZiggo's nationwide IP routing network in the Netherlands, with the aim of enabling new generation fixed and mobile services including 5G, and to provide sufficient scale and quality of service (QoS) for the anticipated growth in network traffic and advanced services over the next decade. Nokia's press release says that this part of the network, which spans 350 locations, reliably and deterministically transports terabytes of communication and entertainment services delivered to VodafoneZiggo's consumer and business customers. VodafoneZiggo will deploy redundant Nokia 7750 SR-1 routers, to enable network convergence with performance certainty for

all service traffic and provide a more than three times capacity increase, with 800GE routing interfaces, and a 75% power saving over previous generations. Backwards compatibility and programmability will extend solution lifespan to support future evolution of network standards and services. Leo-Geert van den Berg, Director of Fixed Networks at VodafoneZiggo, said: "We are now opening a new chapter in the long relationship with Nokia with this IP routing deal. This solution with its product features will allow us to aggregate the traffic from cable, fiber and mobile access services, and help us evolve our IP network to match the growing customer base and capacity requirements."

## Nokia and Telefonica Successfully Test 25G PON Technology for the First Time in Spain

Nokia announced that Telefonica Spain has successfully trialed 25G PON technology. The trial, the first in Spain to demonstrate symmetric speeds of 20 Gbps, showed that the state-of-the-art 25G PON can co-exist with Telefonica's existing GPON solution. Telefonica, with almost 60 million FTTH homes passed already deployed in their multiple business units, has validated with this trial that current GPON and XGS-PON broadband technologies can co-exist seamlessly on the same fiber with the 25G PON. High speeds aligned with low latency, get the network ready for future exciting applications like the Metaverse. 25G PON delivers huge symmetrical bandwidth capacity that will support new use cases and bandwidth requirements. Gonzalo Garzón, Head of Fixed Access at Telefónica España at Telefonica, said: "Telefonica was the first operator in Spain to provide gigabit connectivity, but we are not stopping there. Consumer bandwidth demands never halts and exciting applications, like VR gaming, will always be evolved to make the most of available bandwidth. New FTTH technologies



give us even more opportunities than home connectivity. With their massive uptick in capacity we'll be able to offer new business services on the same network." Bjorn Capens, VP Europe, Nokia Fixed Networks, said: "Thanks to our Quillion chipset, this 25G PON proof of concept with Telefonica has demonstrated that the huge bandwidth-capacity can be easily added to their existing networks, co-existing with their existing PON technologies. This means customers on the same fiber line can be served with GPON, XGS-PON or 25G GPON, making it much easier to manage upgrade cycles."

## Nokia Modernizes Mada's Microwave Transport Network in Kuwait

Mada Communications, a Kuwaiti telecoms provider specializing in enterprise services, has chosen Nokia's Wavence microwave



solutions to modernize its transport network and offer enhanced experiences to its customers, a press release from the Finnish vendor announced. Under the deal, Nokia will replace Mada's existing transport network to boost performance, simplify network operations and improve network economics, including reducing power consumption. Nokia says its Wavence microwave portfolio includes innovative, compact, high-capacity ultra-broadband transceivers, designed to support service providers by providing superior quality wireless backhaul connectivity with high availability and reliability. It added that Wavence 'supports the evolution of both backhaul and fronthaul with multi-gigabit capacity, low-latency characteristics and industry-leading RF output power for deployment flexibility.' Rima Manna, VP, Middle East Market Unit at Nokia, said: 'We look forward to helping Mada modernize its transport network to support advanced packet networking. We believe this project marks the beginning of a new and long-term association with Mada.'

## Nokia Core Networks Portfolio in Full Compliance with All GSMA Security Requirements

Nokia announced that its Core Networks portfolio is in full compliance with all security requirements defined by the GSMA's bi-annual Network Equipment Security Assurance Scheme (NESAS) audit. In contrast to the previous audit, a wider set of Core Networks products were assessed in the most recent audit, including IMS/Voice Core, Subscriber Data Management, Signaling and Policy, Packet Core, Cloud Infrastructure and Security. The latest audit underscores the highest standards that go into Nokia product development, security testing, and software life cycle management. Other Core products which were part of the audit included Shared Data Layer, Nokia Container Services, Network Exposure Function, and NetGuard Endpoint Security. NESAS audits and tests network equipment across the telecommunications industry to ensure it conforms to a security benchmark and the requirements of regulators, governments, and mobile operators. Fran Heeran, SVP & General Manager of Core Networks, Cloud and Network Services at Nokia, said: "This is a reflection of the

exceptional work and focus across the teams here at Nokia, and the rigorous security standards that underpin our Core Networks portfolio. There are no exceptions when it comes to security. Our customers demand it and this audit underlines the security quality that the Nokia Core Networks portfolio delivers."



## SES and Ivanhoe Mines to Continue Deploying Low-Latency Satellite Connectivity in Africa

The Kamoakakula Copper Project in The Democratic Republic of Congo will continue to enjoy high-speed satellite-based connectivity services as part of a new agreement between Ivanhoe Mines and SES, the two companies announced today. The enhanced partnership builds on a successful five-year relationship between SES and Ivanhoe Mines and comes at a time of significant investment in low-latency, high-capacity solutions in the region following the boom in the African mining industry.

The O3b constellation is powering connectivity for leading mining operators, driving a digitalization revolution for the sector that is helping to increase profitability while improving worker safety and accountability. This model enables operators to cost-effectively scale connectivity as needed throughout the lifecycle of a mine, ensuring assets have the right amount of bandwidth at any given time to meet digitalization requirements. Caroline Kamaitha, Vice President, Sales Africa at SES, said: "We're proud



to continue delivering reliable high-speed connectivity to DRC's mining industry through our O3b high-throughput and low-latency connectivity services, enabling mining companies to implement new services and applications that will improve workers' safety, digitalize operations and maximize profitability through increased agility and automation." Anil Udayabhanu, Head of Technology at Kamo Copper,

said: "Our long-standing partnership with SES has already helped us to improve the profitability of our extraction, and supported our goal of improving the safety and welfare of all of our staff. In addition to that, O3b connectivity services will also help us leverage the latest applications, communicate in real time and maximize our productivity."

## SES Secures €300M Financing from European Investment Bank

The European Investment Bank (EIB), the financing institution of the European Union, and leading global content connectivity solutions provider SES announced details of their €300 million financing agreement at a press briefing at the SES headquarters in Betzdorf, Luxembourg. The seven-year term loan will back investments related to the design, procurement and launch of three previously announced satellites that will deliver advanced broadcast and broadband services spanning Western Europe, Africa and the Middle East. The loan is the largest amount ever provided by the EIB to a Luxembourg-based company. The project supported via EIB financing includes the procurement of three satellites from Thales Alenia Space to deliver video broadcasting as well as network services. Operating from SES's prime TV neighborhood of 19.2 degrees East (ASTRA 1P, ASTRA 1Q) and 57 degrees East (SES-26) will enable SES to strengthen its world-class satellite broadcast over Europe and Africa, and support dynamic connectivity needs for companies and governments from the heart of Europe across Africa and the Middle East. Two of the three satellites are next-generation, flexible and fully software-defined satellites that will enable service reconfiguration and instant in-orbit adjustment to SES customers' demands. All three satellites, when launched in 2024, will be operated from SES's headquarters in Luxembourg. EIB Vice-President Kris Peeters said: "Space technology, data and services have become indispensable in the lives of Europeans. I am therefore very enthusiastic about this agreement with SES, which directly supports the EU space policy. It is a big step in the successful launch of a new generation of satellites able to deliver advanced broadcast and

broadband services for the benefit of both the private and public sectors in Western Europe and beyond. Space is a key driver of innovation in Europe and we are eager to support space entrepreneurship. The size of the loan, the largest ever provided by the EIB to a Luxembourgish company, also demonstrates how strategically important the space sector is for the EIB and the European Union." Sandeep Jalan, Chief Financial Officer of SES, said, "We are very happy to have secured this term loan from the European Investment Bank. This diversifies SES's sources of financing on attractive financial terms. The agreement enables us to deliver on our commitment

to broadcast high-quality content from our prime TV neighborhood serving 118 million TV households across France, Germany and Western Europe. These next-generation satellites are also able to support the most ambitious plans for companies and governments across Europe and beyond, enabling them to enter the new era of networked connectivity services." The transaction follows the EU and EIB commitment to strengthen their support for European space companies. It is in line with the Gigabit Society targets of the European Commission that all households in Europe shall have access to at least 100 Mbps internet connectivity by 2025.





## stc Bahrain Awarded “Most Innovative Digital Solutions Brand” at the Global Brand Awards



stc Bahrain, a world-class digital enabler, has been awarded as the “Most Innovative Digital Solutions Brand” at the Global Brand Magazine’s 10th annual Global Brands Awards in Dubai. The award was presented to stc Bahrain for its role at the forefront of driving forward Bahrain’s digital transformation in line with the Kingdom’s Economic Vision 2030. Since its entry into the market, stc Bahrain has been instrumental in revolutionizing the digital landscape by investing heavily in the Kingdom’s digital infrastructure. stc Bahrain has expanded its offerings into new digital areas such as fintech, insurtech, gaming and more to help position the Kingdom as an advanced tech hub in the region.

Eng. Nezar Banabeela, CEO of stc Bahrain, commented: “We are honored to receive this prestigious award in recognition of our efforts to advance the Kingdom’s digital transformation journey by introducing new innovative tech solutions to the market and grow our expanding portfolio. The award is a token of our dedication to diversify our offerings, enable the digital economy, and position Bahrain as a digital hub in the region. We hope to continue to work with stakeholders and government partners to advance the Kingdom’s digital offerings.” stc Bahrain received the recognition due to its continuously expanding portfolio that enables new innovative solutions in the Kingdom. We provide a multitude of

innovative services such as converged Home offerings (Broadband, Content, Connectivity), fintech solutions through stc Pay a platform that provides on-the-go payment solutions offering several digital money opportunities and expanding its usage through collaboration with banks, remittance companies, financial services providers, and big merchants, in addition to Insurtech services through stc protect with motor insurance, extended warranty to travel insurance and roadside and home assistance is introduced, Gaming and more. stc Bahrain made advancements in the cloud services sector by partnering with Radian Arc to deploy a new point of presence in Bahrain to enhance the Kingdom’s cloud services in the region. Our business fintech solutions have evolved to include stc Tاجر and Fleet management and more. Earlier this month, stc Bahrain partnered with Microsoft and cloud solutions provider Crayon to offer Microsoft services to its business customers. stc Bahrain also launched the Kingdom’s first standalone 5G network in partnership with Huawei and launched a dedicated International Network Operations Centre (iNOC), enabling stc to manage wholesale partners’ needs with improved efficiency, quality and SLAs to guarantee shortened response times. Earlier this year, stc Bahrain invested heavily to set up the region’s first data center in collaboration with the Ministry of Transportation and Telecommunications.

## center3 & stc Bahrain to Land the 2Africa Pearls Submarine Cable System in Bahrain, Connecting Arabian Gulf with Europe, Africa and Asia

center3 and stc Bahrain have officially completed the marine survey for 2Africa Pearls in Bahrain, marking a significant milestone in the development of the overall 2Africa subsea cable project. The 2Africa Pearls subsea cable is a unique transcontinental communication system that connects 33 countries through 46 landing locations, spanning across three continents, and positioning the Middle

East at the center of operations. Once completed, 2Africa Pearls will break records as the longest subsea cable ever deployed. Spanning over 45,000 km in length, the cable system will provide reliable connectivity and internet services across a number of vital landing locations in KSA, Bahrain, Kuwait, Oman, UAE, Qatar, Iraq, Pakistan, and India. The landing in Bahrain signifies momentous technological progress for

GCC nations. The cutting-edge technology offers exceptional connectivity speeds that have the potential to transform the regional and international communications sector. The unparalleled speed and reliability of the 2Africa Subsea cable will drive economic growth, encourage innovation, and enhance collaboration in the MENA region. According to Fahad A. Alhajeri, CEO of center3: “Connecting



2Africa Pearls with Bahrain marks another significant accomplishment for center3. The project progress is critical to center3 in linking Asia, Africa, and Europe. center3 is dedicated to investing in communication infrastructure with the aim of offering exceptional connectivity to its customers

and contributing to the realization of the Kingdom's 2030 Vision. The 2Africa subsea cable is a vital step towards achieving this objective and solidifying center3's position as a leading player in the region's connectivity landscape." Eng Nezar Banabeela, CEO of stc Bahrain:

"This is a landmark achievement for us and affirms stc Bahrain's commitment to spearheading digital transformation and solidifies the region's position as a regional ICT hub. Investments in this advanced network infrastructure will drive economic growth for businesses, serve industries that rely on the internet and enhance the living standards in the region. 2Africa Pearls will vastly increase the data backbone of Bahrain by 100x providing high-speed connectivity services that will accommodate the futuristic heavy data-demand." The subsea cable is built through a unique pioneering design that tackles a number of geological complications faced in the region and guarantees unmatched service stability for customers.



## Syniverse Introduces Evolved Mobility for Outbound Roaming to Reduce OpEx for Mobile Operators Retiring 3G Networks

Syniverse, "the world's most connected company,"<sup>®</sup> today announced the availability of a new key feature of Evolved Mobility, the company's Voice over LTE (VoLTE) roaming solution. The new Outbound Roaming feature, a first-of-its-kind solution, connects outbound roamers traveling from operators that have retired their 3G networks. This adds to the existing Inbound Roaming feature already available through Evolved Mobility to help mobile operators sunset legacy networks without sacrificing subscriber experience. With the continued growth of 5G, mobile operators are looking to reallocate spectrum resources and realize OpEx benefits associated with the retirement of their 3G networks. Retiring these networks has become a challenge for operators looking to maintain best-in-class roaming experiences for their subscribers when they travel and must rely on operator networks that have not deployed VoLTE roaming. "Operators need a clearly defined strategy to retire these networks, especially as travel has increased among consumers," said Andrew Davies, Chief Executive Officer of Syniverse. "Syniverse has been at the forefront of guiding operators through network transformations for more than 30 years, and our Evolved Mobility solution has been successfully adopted by leading

**syniverse.**

The world's most connected company™



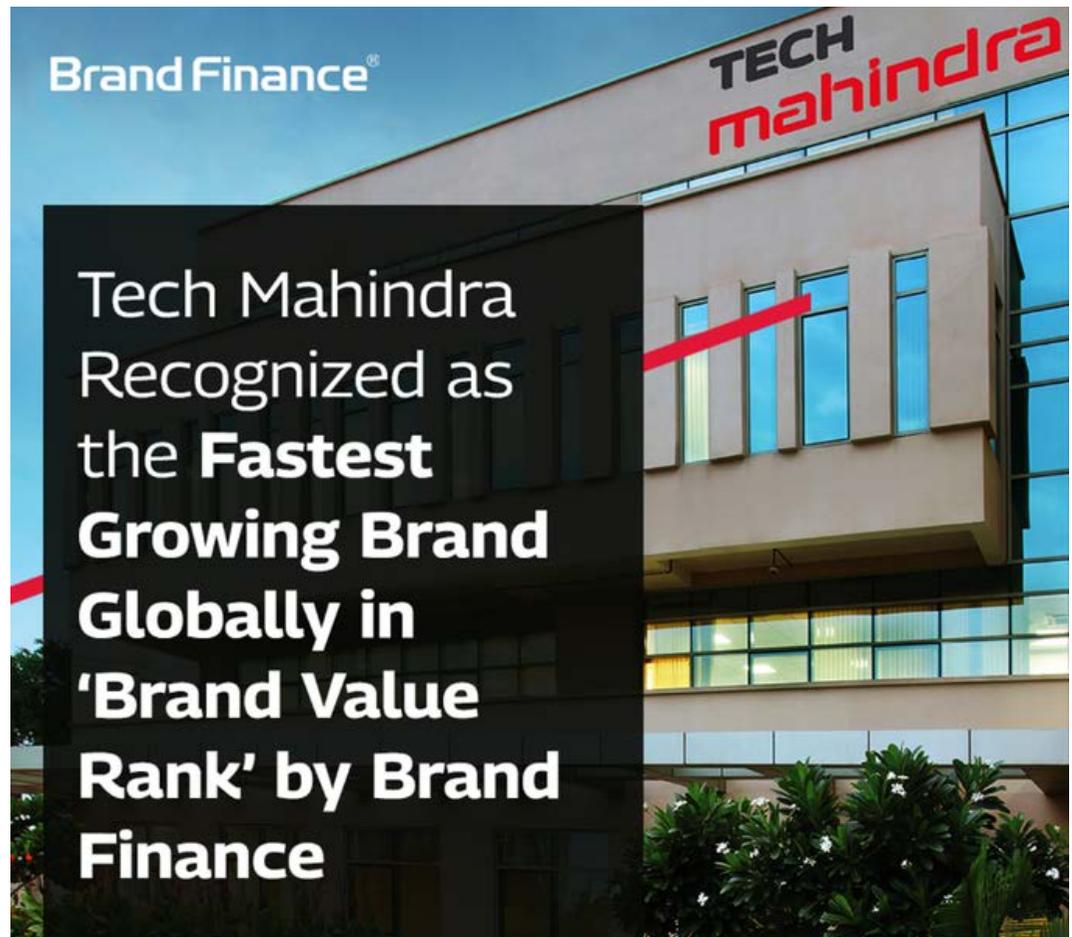
operators such as AT&T and Verizon. With this latest Outbound Roaming feature, we will now also help operators free up millions of dollars associated with maintaining this legacy infrastructure without degrading the customer experience for their own users roaming abroad." Syniverse's Evolved Mobility for Outbound Roaming is a cloud-based feature that recognizes the importance of ensuring reliable outbound roaming connectivity for operators retiring their own 3G networks. Evolved Mobility for Outbound Roaming helps mobile operators transition from their legacy network equipment without sacrificing a subscriber's ability to outbound roam

to non-VoLTE markets. With this feature, 4G and 5G mobile devices can roam onto visited operators that do not have VoLTE roaming in place. This unique feature enables the subscriber to connect when they otherwise could not and delivers a multitude of benefits for the operators and their subscribers, including significant OpEx savings on retirement of legacy network elements and a superior customer experience that drives subscriber loyalty and revenue retention for mobile operators. Evolved Mobility for Inbound and Evolved Mobility for Outbound are available for mobile operators today.



## Tech Mahindra Recognized as the Fastest Growing Brand Globally in 'Brand Value Rank' by Brand Finance

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions, has been recognized as the fastest growing brand in 'brand value rank' amongst the top 25 IT services brands by Brand Finance, the world's leading brand evaluation firm. The organization's brand value ranking improved by four positions since last year. This is the highest rank achieved by Tech Mahindra in the Brand Finance ranking till date. The jump in ranking by Tech Mahindra is also bigger than any other brand. The organization's brand value registered a robust growth of 66% since the beginning of the pandemic, with its value rising by 15% to USD 3.5 billion in 2022. Listed among the Top 7 brands globally in brand strength with AA+ rating, Tech Mahindra has been consistently strengthening its brand presence on a global scale to fulfill its promise of 'Connected World. Connected Experiences'. Harshvendra Soin, Global Chief People Officer & Head of Marketing, Tech Mahindra, said, "Tech Mahindra has always been a brand with a purpose and our people remain our biggest strength. Guided by our refreshed Rise pillars, together we are strengthening our focus on creating a world that is equal, future-ready, and creates value with sustainability at its core. We want to build resilient businesses governed by mindful growth that can not only sustain itself but the communities it exists in. As part of our brand



playbook, we remain committed to doing good for the world by bringing real change on the ground, strengthening partnerships to encourage innovation, and delivering stellar experiences to our customers across industries." Over the last three years, Tech Mahindra's brand activation has enabled significant on-ground impact. The organization is focused on driving data-driven conversations across the C-suite audience through award-winning thought leadership programs. David Haigh CEO & Chairman, Brand Finance said "As the swell of digitization during lockdown eased, IT services brands had to recalibrate their brand building processes and Tech Mahindra has found a great balance. As 5G and Metaverse unfolded globally, Tech Mahindra found itself ahead with its inherent strengths in the Telecom and Communication verticals. I'm

glad to see Tech Mahindra brand value rise by 15% with 4 ranks jump to 11th place in Top 25. The brand must continue to embrace its focus on sustainability and diversity while continuing to be solutions focused and innovative." Tech Mahindra is well positioned to further integrate sustainability with digital transformation, reflected by its strong performance in this year's ranking. It is amongst the 7 Indian companies to be included in 2022 Bloomberg's Gender-Equality Index (GEI). Further, the organization has also partnered with Mahindra Racing, the greenest team in motorsport and the only Indian team to compete in ABB FIA Formula E World Championship, for the fifth consecutive season. It has also consecutively emerged as the Global IT Leader in the Dow Jones Sustainability Indices (DJSI).

## Tech Mahindra Ranked Number 1 in the S&P Global Sustainability Yearbook 2023



Tech Mahindra, a leading provider of digital transformation, consulting and business reengineering services and solutions, announced that it has been ranked number 1 in the S&P Global Sustainability Yearbook 2023. Tech Mahindra has been ranked amongst the top 1% of organizations in the global IT Services segment. The S&P Global Sustainability Yearbook aims to distinguish individual companies, within their industries, that have demonstrated strengths in corporate sustainability. Over 7,800 companies were assessed for the 2023 Yearbook, representing

USD 84 trillion in market capitalization with 708 companies selected for this year's Yearbook. The recognition reflects Tech Mahindra's ongoing commitment to drive its sustainability agenda across Environmental, Social, and Governance (ESG) principles through focused initiatives such as improved processes and policies, audits and assessments, human resources programmes, social engagements, transitioning to net zero, water stewardship projects, adopting circular economy practices, investing in innovation and green technologies and solutions, amongst others. Sandeep Chandna, Chief Sustainability Officer, Tech Mahindra, said, "Sustainability is in the very core of our organization, with our strategy, culture, and future, all aligned towards ensuring a sustainable organization. Our more than a decade-long commitment towards ESG has helped us understand and develop policies that integrate sustainability and business profitability. This recognition by S&P Global is a testament to our ESG culture. It underlines that we are on the right track to becoming an organization focused on environment stewardship, social development, and robust corporate governance." Tech Mahindra has established a decarbonization roadmap to ensure they are net zero by 2035. Tech Mahindra has implemented a carbon price to reduce GHG emissions and invested in various sustainability projects such as increasing renewable energy mix, improving energy efficiency, implementing Environmental Management Systems, and investing in LEED and Green Building Certifications. Tech Mahindra, a pioneer in sustainability and its end-to-end ESG offerings, including consulting and advisory services along with leading digital solutions across value chain, is bringing thought leadership and accelerating customers' journey towards a more sustainable business. Tech Mahindra is offering its strategic IT-based solutions for businesses to manage their ESG KPIs, corporate sustainability framework, and conduct climate risk assessment.

## Tech Mahindra and Retalon Join Forces to Provide Full Spectrum of Digital Solutions for Retail and Consumer Packaged Goods (CPG) Industry

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions, announced a global strategic partnership with Retalon, a leader in retail AI and predictive analytics solutions. The partnership will enable Retail and CPG organizations to gain better customer insights, improve decision-making, and enhance operational efficiency. Together, Tech Mahindra and Retalon will offer a unified common analytic platform to help enterprises unlock significant value in end-to-end planning, inventory management, supply chain network strategy, pricing, and promotion optimization. The joint efforts will also offer an integrated solution to make smarter inventory & fulfilment decisions, which will result in improved gross margins from 9-12% annually. Jagdish Mitra, Chief Strategy Officer and Head of Growth, Tech Mahindra, said, "The Retail and CPG industry is undergoing a significant transformation. With physical and online shopping platforms merging, digital transformation has



become a top priority for retailers today as it helps them increase profitability, streamline new processes, and be agile. We believe that a robust collaborative ecosystem is key to a sustainable foundation in a constantly evolving industry like this. Our partnership with Retalon will empower Retail & CPG businesses to accelerate digital transformation and solve industry challenges such as supply chain risks, operational efficiency and hybrid & omnichannel consumer journeys. We firmly believe our combined efforts will further propel the global retail ecosystem with next-generation technologies." The partnership will bring together Tech

Mahindra's expertise in Retail & Consumer Goods (RCG) and Digital Services with Retalon's Artificial Intelligence (AI) and Predictive Analytics tools to provide superior customer experiences. Mark Canning, Vice President, Business Development & Channels, Retalon said "We are honored and excited to be partnering with Tech Mahindra to help solve the most pressing needs that Retail and CPG companies are facing today. Together, we are building a strong, collaborative ecosystem that will allow Retailers and CPG companies to access all the solutions they need to be a profitable, high-margin, 21st Century business – in one holistic package. Tech Mahindra's global reach, expertise and digital transformation solutions & services will complement Retalon's expertise and solutions for AI driven Retail & CPG planning, inventory, and promotion market to mutually grow each organizations' business."

This strategic partnership will further strengthen Tech Mahindra's market position and expand its global retail portfolio to cater to the evolving and dynamic needs of its customers. The partnership also underlines the company's focus on digital growth under the NXT.NOW™ framework, which is focused on leveraging next-generation technologies to deliver disruptive solutions today and further enable digital transformation. Tech Mahindra and Retalon, Inc. will be present at the Retail's Big Show – NRF 2023 in New York from January 14 - 17, 2023. At the show, Tech Mahindra will highlight its innovative, customer centric digital experiences and its focus on next-generation technologies including Direct-to-Customer (DTC), Digital Supply Chain, 5G, Sustainability, Blockchain, Metaverse, Artificial Intelligence, Virtual Reality/Augmented Reality and more, to enable end-to-end digital transformation for global customers.

## Tech Mahindra Included in Bloomberg Gender-Equality Index for the Fourth Consecutive Year

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions announced that it has been included in Bloomberg Gender-Equality Index (GEI) for the fourth consecutive year. Tech Mahindra is amongst the 8 Indian organizations to be included in 2023 Bloomberg's Gender-Equality Index (GEI). The 2023 GEI reaches globally to represent 45 countries and regions, including firms headquartered in Luxembourg, Ecuador, and Kuwait for the first time. Member companies represent a variety of sectors, including financials, technology, and utilities, which continue to have the highest company representation in the index from 2022. As part of this report, 484 companies are included in the 2023 Bloomberg Gender-Equality Index (GEI), a modified market capitalization-weighted index developed to gauge the performance of public companies dedicated to reporting gender-related data. This reference index measures gender equality across five pillars: leadership & talent pipeline, equal pay & gender pay parity, inclusive culture, anti-sexual harassment policies, and external brand. Tech Mahindra is included in the 2023 list for scoring at or above a global threshold established by Bloomberg to reflect disclosure and the achievement or adoption of best-in-class statistics and policies. Harshvendra Soin, Global Chief People Officer & Head – Marketing, Tech Mahindra, said, "Our consistent recognition in the Bloomberg Gender Equality Index for the fourth year in a row showcases our steadfast commitment to diversity and inclusiveness within our workplace. We firmly believe in the transformative power of gender parity and have demonstrated this through our efforts to offer equitable opportunities, cultivate a diverse and inclusive culture, prioritize wellness, and support the authenticity of all our employees. Our diversity, equity, and inclusion policies not only promote a sense of belonging among our team members but also enable them to flourish in a purpose-driven and empowering environment. As we rise for a more equal world, we remain steadfast in our mission to drive change and advance gender equality within our company and beyond" Tech Mahindra provides equal opportunities for people of all genders, encourages LGBTQ+ through progressive policies, empowers people with

disabilities, and strives to create an inclusive environment for people of all generations. With initiatives like the Women Leaders Program, Junior TechMighty, Sexual Reassignment Surgery Policy, and insurance benefits for same-sex partners, the organization has created an equitable work environment free of discrimination. Peter T. Grauer, Chairman of Bloomberg and Founding Chairman of the U.S. 30% Club, said, "Congratulations to Tech Mahindra and the other companies that are included in the 2023 GEI. We continue to see an increase in both interest and membership globally, reflecting a shared goal of transparency in gender-related metrics." As part of NXT.NOW™ framework, which aims to enhance 'Human Centric Experience', Tech Mahindra focuses on investing in emerging technologies and solutions that enable digital transformation and meet the evolving needs of the customer.



## Tech Mahindra strengthens partnership with Microsoft to deliver Azure Operator Nexus Solutions

Tech Mahindra, a leading provider of digital transformation, consulting and business re-engineering services and solutions, announced an expanded partnership with Microsoft as an Azure Operator Nexus Ready Systems Integrator. The partnership will empower telecom operators and enterprises to build, host and operate Long-term Evolution (LTE)s and 5G networks by using virtualized/containerized network functions leveraging Azure Operator Nexus. As an Azure Operator Nexus Ready Systems Integrator, Tech Mahindra will provide its talent, expertise, comprehensive solutions, and professional managed services offerings. The partnership will leverage a fully cloud-native and blueprinted 5G core running on Azure Operator Nexus that will enable telecom operators to provide enhanced and customized user experiences. It will further provide operators with streamlined business operations through simplified management, policies, and automation delivered through unified cloud management. Manish Mangal, Global Head, 5G & Network Services Business, Tech Mahindra, said, "The world is embracing telco network transformation becoming more open, edge-centric, hybrid, and data-driven. With Microsoft as a strategic partner, Tech Mahindra is helping operators realize the full potential of their networks and providing innovative and agile services. The partnership focuses on reinventing the customer experience with innovation at its core and transforming telco networks by building innovative cloud-native infrastructure solutions in the 5G Core and RAN domains. It will further strengthen our network service portfolio by combining the Microsoft



cloud with our deep expertise and footprint in the telecom industry." Utilizing Azure Operator Nexus, Tech Mahindra will enable operators to run all their workloads (such as core, RAN mobile and voice core, operating support system, and business support system) on a single carrier-grade hybrid cloud platform. This will help meet the security, resiliency, observability, manageability, and performance needs required by operators to achieve meaningful results from digital transformation. Shawn Hakl, Vice President - Azure for Operators, Microsoft, said, "Network operators are looking to adopt cloud technology to modernize and monetize the network - lowering network total cost of

ownership; driving operational efficiency and resiliency; and improving security. Through our expanded partnership, Tech Mahindra will deliver innovative Azure Operator Nexus solutions and services, that will help customers drive business transformation and realize new growth." The expanded partnership is in line with Tech Mahindra's DigitALL philosophy for comprehensive Business Transformation. As part of NXT.NOW™ framework, which aims to enhance 'Human Centric Experience', Tech Mahindra focuses on investing in emerging technologies and solutions that enable digital transformation and meet the evolving needs of its customers.

## Tech Mahindra to Establish Its First Data & AI and Cloud Center of Excellence in Saudi Arabia

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions, has signed a Memorandum of Understanding (MoU) with the Ministry of Communication and Information Technology (MCIT), Saudi Arabia to establish a Data & AI and a Cloud Center of Excellence (CoE) in Riyadh. The CoE will combine academic and socio-economic goals to build national Hi-tech talent capacity, create high quality jobs, promote digital innovation and upscale small & medium enterprises. The MoU was signed between Ibrahim N. Al-Nasser, Deputy Minister for Technology of MCIT, and Ram Ramachandran, Head -Middle East & Africa, Tech Mahindra, in the presence CP Gurnani, MD and CEO, Tech Mahindra. The MoU signing was also attended by Saudi government officials and top management team of Tech Mahindra. Data & AI and Cloud CoE by Tech Mahindra will enable accelerated and sustainable adoption of Data Analytics & Ethical AI. It will further drive cloud-enabled transformation across industries to develop local assets, Intellectual Property (IP) and promote a cognitive approach across smart services to contribute to Saudi Vision 2030's digital-led transformation objectives. Haitham AlOhali Vice Minister at MCIT, Saudi Arabia, said, "Adoption of Cloud, Data and AI will play a major role in Saudi Arabia IT and Digital Growth. We are very pleased to announce this initiative with a digital leader Tech Mahindra, which will bring global



expertise and assets to Saudi Arabia and enable talent and IP creation over the next years." CP Gurnani, MD and CEO of Tech Mahindra, said, "The world of Data & AI and Cloud is rapidly changing with the shifting priorities of public and private sectors globally and locally in Saudi Arabia. Some levers of this change in priorities include building new IPs and assets, bringing innovation and more importantly training & upskilling local talent. Our partnership with MCIT to establish the CoE will help in addressing the fast-changing digital transformation need of Saudi Arabia. In line with Saudi Vision 2030, we look forward to partnering with MCIT and local Universities to create an ecosystem that is diverse

and digital first." Tech Mahindra will host design thinking workshops, hackathons around Data & AI and Cloud to nurture innovation and accelerate the Kingdom's transformation to a digital economy. The partnership will provide training and development for 2500 Saudi nationals by providing project deployment programs that enhance skills and develop careers in Data & AI and Cloud. This partnership is in line with Tech Mahindra's DigitALL philosophy for comprehensive Business Transformation. As part of NXT.NOW™ framework, which aims to enhance 'Human Centric Experience', Tech Mahindra focuses on investing in emerging technologies and solutions that enable digital transformation.



## Telecom Egypt Secures New 1800MHz Spectrum Package

Telecom Egypt has announced that the National Telecom Regulatory Authority (NTRA) has accepted its financial and technical offer to obtain an additional 5MHz of FDD spectrum in the 1800MHz band. In a press release regarding the development, the operator said that its new spectrum allocation – which is valid for ten years – had been 'competitively priced' at USD125 million, when compared with the

2600MHz frequencies it was awarded in late 2020. According to Telecom Egypt, it views its latest spectrum purchases as 'a strategic move to support heavier traffic from a growing customer base while cost-effectively improving service speed and quality'. The additional spectrum will be used to boost voice and data service quality, while also increasing network coverage around the country. The company

has also said it expects its subscribers to be able to benefit immediately, as it claims to be technically ready to utilize its new frequencies. Commenting, Telecom Egypt's CEO and Managing Director, Adel Hamed, said: 'We are delighted that Telecom Egypt's request for more spectrum has been accepted. Together with our current spectrum packages, this additional package will enable us to continue providing

competitive, highly efficient connectivity while accommodating for the rapid expansion of our mobile customer base. We intend to leverage our licenses to deliver value that meets the aspirations

of both businesses and consumers, while also providing cost efficiencies for the company and maximizing shareholder value.'

## Telecom Egypt, Huawei, Put in Service the First Green Tower in Africa

Telecom Egypt, the country's first integrated telecom operator, in cooperation with Huawei Technologies, the world's leading provider of information and communications technology (ICT) infrastructure and smart devices, announced the activation of the first eco-friendly wireless network tower made of Fiber Reinforced Polymer (FRP). Through this cooperation, Telecom Egypt becomes the first operator in Africa to install this green tower. The material used for building the tower emits less CO2 than steel, the alternative. Highly resistant to wind and high temperatures, the tower is approximately 18m high, with a special camouflage fence made of environmentally friendly materials. It supports wireless network antennas and radio units featuring the latest energy-saving technologies and partially powered by solar cells. The Managing Director and CEO of Telecom Egypt, Adel Hamed, said that the implementation of this type of mobile site in Egypt is unprecedented. It underscores the efforts of all those in charge of the project, and their ability to implement the entire site in a timely and systematic manner, as per the highest international green quality standards. Hamed further explained that Telecom Egypt's green sites also feature the latest Radio Access Network technologies, such as radio units optimized to offer top performance with 40% less energy consumption than traditional sites. These new technologies also contribute to improving the signal quality by about 20%, compared to regular antennas, this means that fewer base stations need to be installed resulting in a lower environmental footprint and an additional step towards environmental sustainability, Hamed added. Jim Liu, CEO of Huawei Egypt confirmed that the company is focused on developing the infrastructure of Information and Communication

Technology in Egypt. That is why Huawei has joined hands with Telecom Egypt, one of the largest telecommunications companies in Egypt and the Middle East. Liu added that Huawei is keen to provide suites of innovative technologies to save energy in order to build a sustainable low-carbon future. He also pointed out that recent studies show that FRP poles produce 43% less carbon dioxide emissions, compared to steel, and also reduce end-to-end energy consumption by nearly half during manufacturing and shipping. Liu also explained that energy solutions for green sites depend on passive cooling, which eliminates the need for air conditioning, and thus leads to a 47% reduction in energy consumption compared to sites with equipment rooms. Finally, Liu noted that the site is fitted with solar panels providing about 2 kilowatts, leading to an additional 20% reduction in carbon dioxide emissions.



## Zain Looks at Mobile Satellite Coverage for Saudi Arabia

AST SpaceMobile has signed a memorandum of understanding with a branch of Zain to expand satellite service to mobile phones. The deal is with the Saudi Arabian branch of Zain, the group that has operations in seven countries in the Middle East and north Africa. Zain Saudi Arabia's CTO, Abdulrahman Al-Mufadda, said: "We are committed to expanding our digital services and communications to deliver an inclusive ecosystem that covers the whole kingdom with the highest service quality and reliability, thereby enhancing our role in achieving a more connected and sustainable world." AST SpaceMobile makes it clear that it is a non-binding memorandum of understanding (MoU) that has been signed. But Chris Ivory, the satellite company's chief commercial officer, said: "We hope this collaboration will further access to reliable, space-based cellular broadband for current and future mobile users in the country." The announcement comes days after AST SpaceMobile repeated that it has a non-binding MoU with TIM

Brazil, even though the company made a similar announcement in January. Last year the Nasdaq-listed US company said its initial trials will focus on the Democratic Republic of Congo (DRC), Ghana, Mozambique, Kenya, Tanzania and Ethiopia. Three years ago American Tower, Japan's Rakuten, South Korea's Samsung and UK-based Vodafone all invested in AST SpaceMobile. Al-Mufadda added: "We are confident that our collaboration with AST SpaceMobile could help to potentially provide space based cellular broadband connectivity in the kingdom, particularly in remote areas. In doing that, we reaffirm our commitment to ensuring that every citizen and resident in this precious land is connected wherever they may be." AST SpaceMobile said the MoU would enable the companies to collaborate towards new telecom solutions and satellite-based digital services in Saudi Arabia and aim to increase access to mobile services in remote locations, including on land, at sea and in flight. 📶

## ARTICLE

# Syniverse Environmental, Social and Governance Program - It's Not Just What We Do – It's Also How We Do It.

*Gillie Fairbrother is ESG Manager at Syniverse and explains why ESG is an integral part of Syniverse's overall business purpose.*

Our success as a lynchpin in the global communications technology ecosystem depends on our ability to identify and manage the issues that are most important to our business and to our stakeholders. We therefore focus on our most material sustainability issues and ensure that they are embedded within our ESG strategy and framework. We do this through an annual materiality assessment, which includes considering and integrating stakeholder feedback.

We have examined several different standards, including SASB and GRI, to understand our industry's key issues, ultimately selecting SASB as a reference point as it focuses on the issues that are financially material. We also recognize the importance and relevance of the UN SDGs and believe that goals 3, 5, 8, 12, 13, 16, and 17 are specifically relevant to us. We report our carbon emissions to the CDP on an annual basis, and intend to assess our work in terms of GRI in the future.

In 2021, I was appointed as a dedicated resource to lead our ESG efforts. Housing ESG in our finance division, under the supervision of the CFO, ensures joint responsibility for reporting ESG and financial metrics and adds responsiveness to investor enquiries on ESG topics. I report quarterly to the Nominating and Corporate Governance Committee of the Board on ESG matters.

At Syniverse, we remain proud of the critical role we play in providing the software, protocols, and orchestration capabilities the world needs to transact, converse, and connect. Our powering of almost every person and device on earth is a privilege we do not take for granted. We are also aware of the responsibility that this position brings with it, and consistently strive to work according to the highest standards of integrity and transparency.



*Syniverse leads in creation of new technologies and solutions to ensure the world can enjoy better mobile telecommunication services. We strive to deliver those to be offered sustainably for future generations. We innovate and offer paths to a better tomorrow.*

**Gillie Fairbrother**  
Senior ESG Manager  
Syniverse



# RISE

We call our sustainability strategy and framework RISE. It identifies the four areas that are critical to our long-term sustainability and our ability to create value. These areas are:

Each pillar of our ESG strategy addresses an issue we have identified as having material significance to our ability to conduct our business and meet the needs of our stakeholders. These issues were identified through our annual materiality assessment. You can find out more about RISE and our progress in each of the pillars in 2022 ESG Report here - <https://www.syniverse.com/corporate-responsibility>

*87% participation in our annual employee engagement survey. 93% rated their experience at Syniverse as positive or neutral*

## R Responsibility to promote ethical practices

Syniverse is committed to upholding the highest standards of business conduct. We live by a Code of Business Conduct that includes policies and procedures for conducting business in a legal and ethical manner.

### Relevant material issues

- Business ethics and integrity
- Competitive behavior and tax integrity
- Supply chain management
- Systemic risk management

## I Inclusive culture for employees and global community

We are committed to creating a safe, supportive, and inclusive professional environment that celebrates the diversity of our employees, customers, and suppliers.

### Relevant material issues

- Employee engagement and retention
- Employee safety, health & wellbeing
- Diversity, equity, and inclusion
- Community engagement
- Human rights and modern slavery

## S Service Integrity in performance, security, and privacy

We are committed to superior service integrity, delivering consistent and reliable service to our customers and end users, and protecting their privacy.

### Relevant material Issues

- Customer and data privacy
- Cybersecurity
- Business continuity and growth
- R&D and innovation

## E Environmental performance that protects the world

We are conscious of the impact that our actions and activities may have on the environment, and the impact of environmental change and degradation on our company and communities. We seek to manage, minimize, and mitigate these impacts.

### Relevant material Issues

- Energy management – Data Centers and Operations
- GHG emissions
- E-waste disposal
- Pathway to Net Zero

## Our 2022 ESG Highlights Include:

### Environmental

- Continued focus on energy reduction in operations by 5% from 29,811.60GJ in 2020 to 28,356.24GJ in 2021
- Recognition of climate change: Scope 1, 2 and 3 emissions decreased by 36% to 10,729.59MT
- Committed to reporting progress on environmental goals through CDP since 2011, expecting our next score at the end of calendar 2022
- 100% of our 74.9MT of e-waste disposed of ethically and sustainably
- Designated April 2022 as Earth Month, setting employee challenges to positively impact the environment both inside and outside of work

### Social

- 87% participation in our annual employee engagement survey: 93% rated their experience at Syniverse as positive or neutral
- Increased individual employee training spend from \$185 in 2020 to \$300 in 2021, on track to over double this in 2022
- Began to implement an inclusive recruitment strategy that focuses on attracting a diverse candidate pipeline
- Implemented a performance objective for all employees that supports our efforts to build a more equitable and inclusive culture

### Governance

- Updated our Supplier Code of Conduct to promote responsible ESG actions across our supply chain
- Increased service uptime to 99.98% from 99.85% in 2021
- Net Promoter Score (NPS) increased from 42 in 2020 to 48 in 2021
- Established a new cross-functional Risk and Assurance Council between finance, technology, and operations
- Renewed accession to the UK Modern Slavery Act 2015 (see page 51 of our ESG Report for details)

*"Our work does not exist in isolation. We each have a role to play in reducing our impact on climate change, encouraging and supporting diversity among our employees to complement and create an inclusive culture, and establishing and upholding the standards of governance our employees, customers, suppliers, and shareholders expect of us."*

**Andrew Davies, CEO, Syniverse**



Part of having a sustainable future is having an Inclusive culture for employees and the global community. We champion diversity throughout the organization which enables us to identify better, more innovative, and more inclusive ways of doing things.

Syniverse is committed to being good neighbors to the communities our employees and customers live in and serve and to contribute meaningfully to their development. We are a proud supporter

of minority groups and believe in equal opportunities for all. Further details about our Diversity, Equity and Inclusion work can be found in our ESG Report.

Syniverse leads in creation of new technologies and solutions to ensure the world can enjoy better mobile telecommunication services. We strive to deliver those to be offered sustainably for future generations. We innovate and offer paths to a better tomorrow. We

demonstrate commitment to quality and integrity and instill best practices in all that we do.

We operate sustainably and engage transparently on behalf of our customers and stakeholders. We commit to advancing a collaborative, inclusive and globally diverse culture that creates careers and enables our people to perform at the highest level of satisfaction. 🌱



## REGIONAL NEWS

### Sheikh Hamdan Inaugurates World's Largest Solar Powered Data Center in Dubai

H.H. Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman of Dubai Executive Council, inaugurated the green data center of Data Hub Integrated Solutions LLC (Moro Hub), a subsidiary of Digital DEWA, the digital arm

of the Dubai Electricity and Water Authority (DEWA). This facility was recognized by the Guinness World Records as the world's largest solar-powered data center. It is located at the Mohammed bin Rashid Al Maktoum Solar Park, the largest single-site

solar park in the world. At the inaugural ceremony, contracts were signed between Moro Hub and its most important technology clients and partners, including Dell Technologies, Microsoft, Huawei, VMWare, Emirates NBD, Digital Dubai Authority, and Dubai Islamic Bank. Saeed Mohammed Al Tayer, Managing Director and CEO of DEWA, welcomed Sheikh Hamdan bin Mohammed to the location of the green data center. Sheikh Hamdan bin Mohammed received updates from Saeed Mohammed Al Tayer on the facility's integrated solutions created to deliver next-generation services in the fields of digital transformation, cloud and hosting services, cybersecurity, smart cities, IoT services, professional and managed services, as well as Moro services supported by ChatGPT technology. A video of the inauguration and the tour was also posted on his Twitter account.



### Arab Health 2023, stc Group Showcases the Newest Medical Digital Solutions

stc Group, the leading digital enabler in the region, participates in the "Arab Health 2023" conference and exhibition in Dubai to feature the latest medical and Healthcare digital solutions to increase digital empowerment in the healthcare industry and elevate the caliber of healthcare services. stc is demonstrating a range of digital medical solutions, including the "Holo Doctor" service, to offer remote medical consultations through diagnosis and treatment dispensing by linking the patient to the doctor in the virtual SEHA hospital. In addition to demonstrating how to use a drone to deliver medical supplies in an emergency. The accompanying exhibition also showcases "Mutee" health robots, which can collect primary demographic data on patients and visitors, digitally record vital signs, manage waiting times, and transmit data via connectivity. In smart clinic centers, there is direct connectivity with other medical systems and the call center and a review



of the most recent 5G technologies fitted with ambulances for direct communication with the control center. It also showcases how telemedicine technology connects emergency rooms and intensive care units in more than 21 hospitals to the regional health centre, which oversees command and control in Jazan city. It helps to provide treatment services to patients remotely, which makes it easier for patients and medical practitioners to communicate and rais-

es the quality of medical services, saving the patient and the healthcare practitioner cost, time, and effort. The largest healthcare exhibition in the Middle East, "Arab Health 2023," will take place at the Dubai International Center. It provides a wide variety of products and services provided by more than 3,500 businesses. Moreover, it focuses on healthcare services and products through 56,000 medical specialists from 60 nations.

## CST Signed an Agreement with Tuwaiq Academy on the Sidelines of the International Technical Conference LEAP23

The Communications, Space and Technology Commission (CST) signed an agreement with Tuwaiq Academy on the sidelines of the International Technology Conference (LEAP23) to collaborate on spreading awareness regarding digital knowledge, encouraging investment, as well as helping create innovative business models in the digital economy. The MoU was signed by Mr. Raed AlFayez, Deputy Governor for IT and Emerging Technologies representing CST, and on behalf of Tuwaiq Academy was Eng. Abdulaziz Alhammadi, the CEO of the Academy. This partnership will stimulate innovation, support the development of the Tech sector and emerging technology, and enhance digital skills and capabilities through knowledge-sharing meetups on various topics of emerging technologies, including the Internet of Things (IoT), Metaverse, Smart Cities, data centers and local opportunities in the sector. CST empowers and enables IT and emerging technologies sector, creates regulatory and soft initiatives and tools to support the growth of this promising sector such as the Emerging Technologies Sandbox initiative, while Tuwaiq Academy is considered to be one of the first educational institution for advanced technologies in the Kingdom, offering high-level training programs on advanced technology, programming camps and software engineering, to reduce the gap between the demands of the supply in the market and the individuals' skills in the Technology sector.

**توقيع اتفاقية**  
توقيع اتفاقية بين هيئة الاتصالات والفضاء والتقنية  
وبين أكاديمية طويق

**An agreement signed between**

أكاديمية طويق  
TUWAIQ ACADEMY

CST  
هيئة الاتصالات والفضاء والتقنية  
Communications, Space & Technology Commission

**To increase awareness regarding digital knowledge and create innovative business models in digital economy**

**Objectives**

- Conduct knowledge sharing meetups
- Encourage investment
- Promote innovation
- Empower and develop tech sector
- Create business models in digital economy

CST | هيئة الاتصالات والفضاء والتقنية  
Communications, Space & Technology Commission

LEAP

cst.gov.sa

## Saudi Telecom Starts Operations

A Saudi telecom company TAWAL has started operations in Pakistan with a telecom infrastructure acquired from a Pakistani operator. TAWAL had announced acquisition of AWAL Telecom, a telecom company in Pakistan, as part of its international expansion drive in February, 2022. A delegation led by Emmanuel Leonard, chief international officer of

TAWAL called on Federal Minister for IT and Telecommunication Syed Amin Ul Haque in his office on Wednesday to give a vote of thanks. The minister congratulated the company and appreciated its ambitions for the telecom sector in Pakistan and assured his full support and co-operation. "We hope that TAWAL would play an active role in providing avenues for foreign

investment and job opportunities through present expansion of network and for future networks like 5G and IBS [in-building solutions]," he said. Haque applauded the company over its determination to expand the network across Pakistan with a special emphasis on reaching out to unserved and unconnected masses in far-flung areas in the country.

## dans, MBRSC sign MoU for Aerospace Communications, Navigation and Surveillance Infrastructure

Dubai Air Navigation Services (dans) and Mohammed bin Rashid Space Centre (MBRSC) have signed a Memorandum of Understanding for exploring satellite technology enablers following the ICAO's Aviation System Block Upgrades (ASBUs) framework for the modernization and enhancement of the Aerospace Communications, Navigation and Surveillance Infrastructure. H.H. Sheikh Ahmed bin Saeed Al Maktoum, President of the Dubai Civil Aviation Authority, Chairman of Dubai Airports, Chairman and Chief Executive of Emirates Airline and Group, and Chairman of dans, said, "This MoU endorses the UAE as the leading country for the advancements in aerospace and air traffic management domains. In the long run, this deal achieves the vision of making Dubai 'The World Airport.'" "The rise of the UAE, in particular Dubai, as an ever-advancing global aviation hub connecting

East and West is all about our ambitions for and in the future of air travel. I am certain that this agreement is a significant step towards enhancing our aeronautical infrastructure, contributing to the elevation of global standards, and strengthening our technical efficacy and air traffic management resilience. So, a well-thought-out plan and a number of initiatives will be carried out across the whole 'value chain' of aviation." Regarding the partnership, Hamad Obaid Al Mansoori, Chairman of MBRSC, stated, "We have demonstrated that space technology and research can generate a wide range of economic benefits and fuel growth in various industries, including aviation. We hope with the signing of the MoU with dans to further contribute and accelerate progress in aerospace and air traffic management capability by leveraging and benefiting from our satellite operations in terms of

technology and real-time knowledge." The MoU signing ceremony was attended by senior officials from both organizations. dans is the sole ANSP for four airports, including DXB, the world's top airport for international travelers, which had handled over 1.115 billion passengers on more than 7.47 million flights since its start in 1960. MBRSC is the government organization behind space satellite projects like the Emirates Mars Mission, Emirates Lunar Mission and the UAE astronaut program. The latest collaboration is designed to explore the satellite technology enablers following the International Civil Aviation Organization's (ICAO) Aviation System Block Upgrades (ASBUs) framework for the modernization and enhancement of the Aerospace Communications, Navigation and Surveillance Infrastructure. Both organizations will work jointly to upgrade the horizons of cooperation between them through exchanging practical experiences and developing human resources to facilitate the MoU's implementation. They will also cooperate in all fields, activities and systems for data linkage to serve the general interest of the UAE, one of the world's most vibrant economies and knowledge and technology hubs. According to the 18-Article MoU, Mohammed bin Rashid Space Centre and Dubai Air Navigation Services expressed to cooperate and exchange data and information in the Satellite Technology domain for the Next-Generation of aviation in the region. They are keen to set up an organisational framework for cooperation between them. They also agreed to work together to upgrade their horizons of cooperation through exchanging practical experiences and developing human resources to facilitate the implementation of the MoU. They will also cooperate in all fields, activities and systems for data linkage to serve the UAE's general interest. Both organizations will study the possibility of technical cooperation between them.



## Beyond ONE Buys VMMEA



Beyond ONE, an investment firm a part of Piora Management Holding Dubai, has acquired regional MVNO group Virgin Mobile Middle East–Africa (VMMEA). VMMEA has MVNO operations in Saudi Arabia, Oman and Kuwait under the Virgin and FRIENDi brands, plus a licensing arrangement with Du in the United Arab Emirates (UAE) to allow Du to operate its Virgin Mobile UAE sub-brand. Previous shareholders in VMMEA included Virgin Group, Gulf Investment Corporation, ePlanet Ventures, National Technology Enterprises Company, Dolphin International and Global Telecom. UK-based Virgin Group has retained a minority stake in VMMEA and a seat on its board. VMMEA serves around three million customers across its countries of operation.

## Oman Ranks 4th in UN List for E-Govt Services

Oman is ranked fourth in the 2022 Government Electronic and Mobile Services (GEMS) Maturity Index issued by the United Nations Economic and Social Commission for Western Asia (ESCWA). The index measures the maturity of government services provided through electronic portals and smart applications according to three pillars, which are service availability and development, service use and satisfaction, and the government's efforts to public outreach. Of the 18 Arab countries that participated in the 2022 index, Saudi Arabia was ranked first, followed by Qatar and the UAE. Oman improved its year-on-year score from 64 per cent to 69, a growth of 7.8 per cent, and its ranking by one place, compared to fifth in 2021, through better performance in two pillars. The first is the use of the service and user satisfaction, from 46.35 per cent in 2021 to 58.08 per cent in 2022, and second in the public outreach pillar, from 67.70 per cent in 2021 to 72.14 per cent in 2022. A total of 24 institutions were included in the evaluation in Oman, along with 84 services across several sectors, such as commerce and industry, health, education, transport, traffic, police, tourism, municipal affairs, labor and justice. According to ESCWA, the index is a tool that enables decision and policy makers to monitor digital transformation programmes, and it seeks to bridge the gap in most of the international indicators, related to service maturity, its use, user satisfaction, and public outreach. 'To this end, 84 government services have

been identified, and it is necessary for each country to deliver them electronically for individuals and businesses.' Reliance on e-government services has generally increased in the Arab region compared to 2021, especially in educational and financial institutions, but more efforts must be exerted to digitize services in other sectors such as justice and tourism. These are the key findings of the fourth edition of the GEMS index on the Arab region issued annually by ESCWA since 2019. Nawar al Awa, ESCWA GEMS project lead, said that there is need to promote the maturity of these services at the national level, even in high-assessment states, by keeping pace

with the use of new digital technologies such as virtual reality. He also highlighted the importance of cooperation and shared experiences among countries in order to avoid duplication of effort, particularly since the report indicates that there is a widening gap between Arab countries, causing results to range between one and 87 per cent. In addition, the report highlights the role of digital government services in increasing efficiency, reducing waste and corruption, promoting transparency, providing accountability and achieving economic growth. It also mentions the key role of digital governments in promoting equality among citizens.



## PTCL Reportedly Preparing Bid for Telenor

Pakistan Telecommunication Company Limited (PTCL) is looking to take over

Norwegian-owned mobile firm Telenor Pakistan, according to local daily The News,

citing unnamed official sources. PTCL – which is majority state-owned but controlled by minority stakeholder e& (formerly Etisalat Group) of the UAE – was said to be preparing a bid of between USD800 million and USD1.2 billion for the cellco, with e& expected to provide guarantees to raise commercial loans for the purchase. According to the sources, Telenor's management have asked for payment to be made in US dollars. PTCL's mobile subsidiary Pakistan Telecommunications Mobile Limited (PTML) – which operates under the Ufone brand name – is the smallest of Pakistan's four national mobile providers in terms of subscription market share, with 23.5 million active subscriptions at the end of September 2022, or 12.1% of the total market. Telenor, meanwhile, claimed second place with 49.2 million subscriptions, or 25.3% of the market, at that date.



## The Council of Arab Ministers of Telecommunications and Information Technology Adopts the Arab Digital Agenda 2023-2033

The Council of Arab Ministers of Telecommunications and Information Technology adopted the Arab Digital Agenda 2023-2033 at its 26th meeting in Cairo. This document was prepared within the framework of a joint project between ESCWA and the League of Arab States (LAS) to produce, develop and implement the Arab information and communication (ICT) Strategy, in partnership with different stakeholders. The Arab Digital Agenda is a framework for the period 2023-2033, that ensures countries can benefit from digital technology and use it to achieve sustainable development.



## The 2Africa submarine cable landed in Yanbu

The 2Africa submarine cable has landed in Yanbu (Saudi Arabia), following a landing in Jeddah earlier this month. The system is now expected to complete its third landing

in the country, in Dubai, shortly. Upon completion, the 47,000km 2Africa submarine network is deemed to be the longest in the world, connecting 46 locations in Africa,

Europe and Asia. Portions of 2Africa are expected to enter commercial service by the end of 2023, delivering a design capacity of up to 180Tbps on key parts of the system.

## Satellite Pay TV Landscape in the Arab World: The Four MENA-based Providers Compete to Stay Relevant

A new report from Arab Advisors Group has been released to provide a business analysis of the four MENA-based pay TV providers targeting the Arab World. Arab Advisors Group analyzed a historical comparison of the airtime, packages and fees, content and channels, and interactive services of the satellite pay TV providers under study for the duration between 2014 and 2022. In addition, the report analyses satellite pay TVs' response to its



competitive forces in the region. Satellite pay TV providers need to reshape their business models in response to competitive forces and digitization of the broadcasting industry. According to Arab Advisors Group's report, MENA's satellite pay TV providers' response was fourfold. The MENA-based satellite pay TV providers which cater to the Arab World launched their own OTT streaming applications, launched multi-screen platforms, implemented price segmentation to their offerings, and entered into partnerships with telecom operators to provide telecom subscribers with their offerings, bundled with telecom services. Arab Advisors Group analyzed the four satellite pay TV providers (Al Majd, beIN, GOBX, and OSN) from 2014 to 2022, building on our previously published reports. This report includes a historical comparison of the airtime, packages and fees, content and channels, and interactive services of the four satellite pay TV providers. On the fees front, three of the four providers under study increased its monthly average package fees in 2022, in comparison to their average fees in 2016. As for their airtime, one satellite pay TV's airtime dropped in 2022 by around 39%, compared to its airtime in 2016; the remaining providers witnessed an increase in their airtime during 2022, compared to their airtime in 2016.

## SAP Pakistan Discusses Role of Cloud Migration in Digital Transformation

Saqib Ahmad, Country Managing Director of SAP Pakistan, highlighted the importance of cloud migration for businesses looking to undergo digital transformation. Ahmad emphasized the cost-effectiveness, efficiency, and security that cloud migration can provide for companies looking to manage their applications and data. SAP leads business in enterprise software, has a strong presence in various business sectors in Pakistan. Ahmad noted that the usage of technology has changed dramatically in the post-COVID-19 world, making cloud computing a necessity for companies of all sizes. He also mentioned that SAP is working with government institutions to improve time-efficient processes and provide evaluative options for decision-making. When asked about the flexibility of SAP solutions, Ahmad stated that the company offers tailored solutions to meet the specific needs of its clients. He also emphasized the importance of data security, assuring that SAP installations come with security paradigms in place to combat cyber theft and fraudulent activities. In addition to the benefits of cost-effectiveness and data security, Ahmad emphasized the infinite space available on the cloud and the ability for companies to work on the same project with fewer glitches. He also touched on the issue of change management and the reluctance of employees towards digital transformation, announcing free-of-cost training for students of several educational institutes as a means to digitally strengthen the economy of Pakistan. Overall, Ahmad emphasized that cloud migration is essential for companies looking to undergo



digital transformation and that SAP is well-positioned to provide effective and secure solutions for businesses in Pakistan.

## Afghanistan and Kazakhstan to Cooperate in the Telecommunication Sector

The country's Acting Telecommunications and Information Technology Minister, in a meeting with Kazakhstan ambassador in Kabul, discussed the cooperation between the two countries in the sector of telecommunications and capacity building. Mawlawi Najibullah Haqqani, Acting Telecommunications and Information Technology Minister, emphasized on expanding telecommunication services in Afghanistan, increasing the capacity of Afghan engineers and addressing internet problems in the country in a meeting with Kazakhstan ambassador Bakhtyar Sar Sanbhi. Kazakh ambassador said, he will inspire the reliable telecommunications companies of his country to cooperate with the telecommunications sector in Afghanistan and transfer their experiences to this country. He termed Afghanistan a safe and suitable country for investment. For his part, Haqqani said, that the current situation of Afghanistan and the strategic

position of this country are important for the countries of the region, mainly Central Asia and South Asia, in terms of internet transit. A senior official of the

Ministry, Ali Ahmad Samand asked the Ambassador of Kazakhstan to provide Afghan engineers trainings in the sector of telecommunications.



## PTA Wants to Increase Manufacturing of Laptops, Tablets, Phones, and Other Products

The Pakistan Telecommunication Authority (PTA) has urged the Government to make changes in the mobile phone manufacturing policy and include newer sectors. PTA suggests that making these changes will allow the production of many other devices such as laptops and tablets thus increasing job opportunities, increasing foreign exchange and reducing Pakistan's import bill. The current mobile manufacturing policy only favors the production of mobile phones and provides incentives limited

to the mobile manufacturers. PTA says that the current policy does not favor the production of many other tech products such as laptops, tablets, signal boosters, vehicle trackers, biometric machines, point-of-sales machines, dongles, RFID etc. Pakistan currently imports a lot of these above-mentioned devices, once local production is kicked off the country will take its first step towards self-fulfillment, increase exports, and even boost the local IT industry by lowering equipment

costs. PTA says that "the existing mobile manufacturing policy does not offer any competitive incentive for the export of locally manufactured mobile devices. This also needs to be reviewed, whereby export incentives should be enhanced which can help export of locally manufactured mobile devices to the Middle East, Central Asia and African region." According to the PTA, it's high time for the Government of Pakistan to move towards localization and make the necessary changes in Pakistan's mobile phone manufacturing policy. Alongside the government, the Engineering Development Board should also take the necessary steps for ensuring localization. Local technology manufacturing requires a firm R&D, therefore PTA has requested the local academia to focus on this sector. A strong R&D will allow the tech manufacturers to implement newer technologies and increase exports. Apart from all of this, PTA also urged the government to resolve LC's for mobile manufacturers since they are unable to import raw materials for production.



## Saudi Arabia Bets \$9 Billion On Future Tech and Startups at LEAP23

The four-day LEAP23 event in Riyadh kicked off with the announcement of over \$9 billion in investments focused on supporting future technologies, digital entrepreneurship, and tech startups. Revealed by the Minister of Communications and Information Technology, Eng. Abdullah bin Amer Alswaha, during his keynote address on the event's opening day, the investments are aimed at cementing Saudi Arabia's position as the largest digital market in the Middle East and North Africa region. The investments include Microsoft's \$2.1 billion in a global cloud in the Kingdom, Oracle's \$1.5 billion investment to expand its business in the region, Huawei's \$400 million investment in cloud infrastructure, and a Zoom cloud area partnership with Aramco. The MCIT Minister also stated that an additional \$4.5 billion has been invested in various assets globally and locally at LEAP23. Alswaha highlighted that the significant investments have the full support of HRH Crown Prince Mohammed bin Salman. These investments are a part of the Crown Prince's efforts to boost the technology sector, which is a rapidly growing and promising industry in Saudi Arabia with a thriving digital economy, advancements in IoT, healthtech, quantum science, space and satellite technology, fintech, and open-source initiatives. LEAP23 aims to accelerate the country's digital transformation and the Crown Prince remains dedicated to meeting the goals of Vision 2030 through the use of cutting-

edge technologies in promising sectors. This year, the event is expected to attract over 250,000 visitors. The event supports the kingdom's efforts in positioning itself as a leading nation in the digital market in the Middle East and North Africa region, with active investments worth over \$42 billion. In Saudi Arabia, more than 340,000 people are employed in the digital, telecommunications, and IT sectors, with a 32.5 percent female participation rate, which surpasses those in both the EU and Silicon Valley. Alswaha also announced plans to enhance the outcomes of LEAP23, which include diversifying the economy, localizing technology, and advancing industries. He emphasized the significance of LEAP23 as one of the world's leading annual global technology platforms and its ability to bring together innovators, entrepreneurs, thought leaders, and attract investments to new and innovative areas. Other notable announcements on the first day of LEAP23

included Meta opening the first Metaverse Academy in the MENA region, the launch of Hektar, a multi-content social media app by WEO Technology and Camel Lab, and the introduction of Beem, a new instant messaging app with high-quality voice and video calls, and business features by MENA Communication and STC. At the sidelines of LEAP23, the inaugural DeepFest, in partnership with the Saudi Data & AI Authority, will bring together global leaders in AI to showcase life-changing innovations in a conference with sector-specific tracks, live demos, and an exhibition. Themed "AI Beyond Imagination", the conference will feature government AI initiatives and innovations from thought-leaders, big tech, data scientists, innovators, enterprises, academia, startups and more. The conference program includes tracks for clean tech, the Metaverse, and women in technology. The exhibition will feature top tech companies and breakthrough stars.



## Oracle to Invest \$1.5 Billion in Saudi Arabia to Meet Cloud Computing Demands

Located in Riyadh, the new cloud region will be part of a planned \$1.5 billion investment from Oracle to expand cloud infrastructure capabilities in the Kingdom. To meet the rapidly growing demand for its cloud services, Oracle announced plans to open a third public cloud region in Saudi Arabia. Located in Riyadh, the new cloud region will be part of a planned \$1.5 billion investment from Oracle to expand cloud infrastructure capabilities in the Kingdom. The Oracle Cloud Riyadh Region will join the existing Oracle Cloud Jeddah Region and the planned Oracle Cloud Region to be located in the

futuristic city of NEOM. This investment is included in an MoU that Oracle has signed with the Ministry of Communications and Information Technology (MCIT) to help Saudi Arabian businesses take advantage of the latest innovations in the cloud. The MoU was signed during Oracle CEO, Safra Catz's recent visit to Riyadh in the presence of His Excellency Eng. Haitham AlOhal, Vice Minister, Ministry of Communications and Information Technology (MCIT). To quickly meet the requirements of its growing cloud business in Saudi Arabia, Oracle will also expand the capacity of

the Oracle Cloud Jeddah Region. "In the last century, Saudi Arabia transformed its economy by developing the infrastructure needed to produce, refine, process and transport hydrocarbons. This century we are committed to creating the digital infrastructure that will underpin future economies," said His Excellency Khalid Al-Falih, Minister of Investment. "Oracle's decision to expand its cloud computing capacity in the Kingdom will play a key role in unlocking the opportunities that rapid technological advancements are creating. MISA will continue in its quest to enable the

building of a robust digital infrastructure, by creating an attractive environment for these investments – for example, by establishing special economic zones that are tailored to particular industries such as cloud computing and digital transformation.” As part of the MoU, Oracle will also work with MCIT and the Communications and Information Technology Commission (CITC) to establish a commercial and operational model for an additional cloud region in Saudi Arabia that is aligned with Saudi government requirements and local data residency regulations. Oracle will also work with MCIT to help foster the development of Saudi Arabia’s cloud industry. Unique among hyperscale providers, Oracle Cloud Infrastructure (OCI) offers customer choice to deploy OCI based on regulations, data residency, or latency requirements.



## Oracle reaffirms commitment to Saudi Arabia with US \$1.5 Billion investment

OCI distributed cloud includes its public regions, Dedicated Region, Oracle Exadata Cloud@Customer, multicloud offerings, and recently-announced Oracle Alloy. “Oracle’s investment will rapidly accelerate the cloud transformation across Saudi Arabia’s business and public sector,” said

Richard Smith, Executive Vice President, Technology – EMEA, Oracle. “Oracle Cloud delivers pioneering innovation in technologies like AI, Machine Learning, and IoT, and it will help fuel the economic growth and digital transformation that is an integral part of the Saudi Vision 2030.”

## Oman Tops GCC in Telecommunication Services

The results of a study comparing the prices of retail telecom services with the GCC and Arab countries for the year 2021 revealed that the Sultanate of Oman ranked first in the Arab world in the cheapest retail prices for fixed telecommunication services for the year 2021. Oman recorded a significant decrease in the prices of mobile telecom services packages compared to previous years, and the continued decline in the prices of mobile data packages “5-50 GB”, while it increased the monthly average of data usage volume per beneficiary is 17%. Oman ranked first in the Gulf as the cheapest price in mobile telecom services for individuals, in voice baskets with data of “5, 10 and 20” GB, which represent more than 80% of the total subscriptions, while the Sultanate of Oman came from the countries The most expensive in the Gulf in terms of high data usage packages, in the “20 and 50” GB data packages, which represent less than 20% of the total subscriptions. Oman ranked first in the Arab world in the cheapest retail prices for fixed telecommunications services for the year 2021 for individuals with fixed telecom services packages for a package of 1000 megabits / second, while it ranked seventh in the Arab world and second in the Gulf for a package of 100 megabits / second, and ranked 14th in the Arab world and third in the Gulf for a package 0.25 Mbps, and tenth

place for the 10 and 25 Mbps packages. In retail prices for fixed telecom services for the year 2021 for enterprises, the Sultanate of Oman came the cheapest in the Gulf for the packages of 100 and 0.25 Mbps, and ranked fifth for the 10 and 25 Mbps packages, while it came in the eighth and eleventh place in the Arab world for the 100 Mbps packages. second and 0.25 Mbps, respectively, and ranked sixth for the 10 Mbps package, and ninth for the 25 Mbps package. The results of the study showed that fixed broadband services witnessed a decrease in the prices of high-speed Internet packages “100 and 1000” Mbps during the year 2021, which contributed to an increase in the average monthly data usage volume by 20%, and subscriptions to high-speed packages and their market shares increased during the year 2021. The study recommended that to ensure an increase in revenues in the telecommunications sector and usage in light of low prices, companies should raise the quality of communication services to enable higher usage, and enable subscribers to move from third generation technologies and internet services via copper cables to high-speed broadband services, and expand the deployment of infrastructure networks for technologies which supports high speeds such as fiber optics and the fifth generation, and also recommended that companies invest

in employing applications of the fourth industrial revolution and services of emerging technologies, and innovation in providing communication services in a way that leads to stimulating the increase in subscriptions. To ensure an increase in government revenues from the sector with lower prices, the study recommended the issuance of a law regulating communications and information technology in order to enable attracting global investments and regional centers in data and applications of the fourth industrial revolution, and aligning urban planning and population strategy to meet the requirements of the sector in increasing investment in the deployment of communication networks. Promoting the digital industry within the digital economy initiatives, such as the digital transformation of government services, the manufacture of digital content, and the increase in the number of service platforms. It also recommended stimulating tourism, which leads to attracting more tourists from outside the Sultanate of Oman. The study was prepared by a specialized international house of expertise, and under the supervision of the Telecommunications Regulatory Authority, Kingdom of Bahrain, on behalf of the Arab Network for Regulatory Authorities for Communications and Information Technology.

## Bahrain Assumes Presidency of DCO

Bahrain has assumed the presidency of the Digital Cooperation Organization (DCO) for the current session (2023) at the General Assembly which was held in Riyadh. The meeting was attended by ministers of telecommunications representing member states. Bahrain is one of the first five participating countries in the organization, along with Saudi Arabia, Jordan, Kuwait and Pakistan, said a Bahrain News Agency report. Minister of Transportation and Telecommunications Mohammed bin Thamer AlKaabi expressed delighted at the unanimous decision which reflects the confidence of member states in Bahrain's capabilities. He affirmed Bahrain's support for the efforts of all member states and to work in coordination to advance digital economy and provide real opportunities based on the digital economy in the region. High level delegations from the 13 DCO member states, observer states, as well as representatives from guest countries and international organizations took part in the General Assembly, to discuss the state of the digital economy and the challenges facing all nations in achieving equitable global digital growth and development. Focused on empowering youth, women, and entrepreneurs, leveraging the accelerative power of the digital economy and leapfrogging with innovation, the DCO is a global multilateral organization, founded

in November 2020 and headquartered in Riyadh, that aims to enable digital prosperity for all by accelerating the inclusive growth of the digital economy. Thirteen member states have joined DCO to date – Bahrain, Cyprus, Djibouti, The Gambia, Ghana, Jordan, Kuwait, Pakistan, Oman, Nigeria, Rwanda, Morocco, and Saudi Arabia – along with the private sector, academia, and NGO Observer Members. Deemah AlYahya, Secretary-General of the DCO said: "Digital technologies have immense potential to transform economies and empower groups including women and entrepreneurs with

new opportunities, especially that 70% of the new value created in the global economy over the next decade will be based on digitally enabled platforms so it is of critical importance that all nations have the same ability to leverage the power of digitalization to achieve their goals. The DCO was formed to accelerate digital transformation through collaboration and knowledge sharing among all stakeholders to empower nations to develop strategies and programs to drive their own digital development and equally participate in the global digital economy." 🌐



# Telecommunication Innovations

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# METAVVERSE



## A Middle East Perspective

Metaverse has all the potential to transform the key sectors in the region, such as telecom, travel and tourism, financial services, and real estate.

Dubai Metaverse strategy estimated

**\$4 billion**

to the economy in the next 5 years

Saudi Arabia Plans to invest

**\$500 billion**

in worlds 1<sup>st</sup> cognitive city fueling Metaverse adoption

Metaverse is estimated to contribute about

**\$15 billion**

to GCC economies by 2030

## TELCOS PLAY IN METAVVERSE

Technology evolution follows consumer needs & wants

**2G** Fueled Phone Commerce

**3G** Fueled Web Commerce

**4G** Fueled Mobile Apps & Cloud Commerce

**5G** Fuels Metaverse & Meta-Commerce

Metaverse is set to bring-in additional revenues along with innovative use cases to telcos.

## ENHANCING TELCOS REVENUES WITH BUNDLED VALUE-ADDED APPLICATIONS WITH NETWORK BANDWIDTH



Auto Dealerships for Automobiles



Asset Development for Realty Sector



Next Generation Meeting Platforms



Retail Enablement Stores

## FUTURISTIC USE CASES DRIVING INNOVATION FOR TELCOS



Drive Testing of Telecom Devices



Digital Twin for Network Beam Formation



Edge Computing with 5G

## ARTICLE

# Metaverse and Applicability in the Telecom Industry



**Rajesh Dhuddu**  
SVP & Global Head  
Metaverse & Blockchain  
Tech Mahindra

**Tech  
Mahindra**

## Into the Middle East – Viewpoint on Emerging technologies

The technology landscape in the Middle East is constantly changing, and as a region that adopts technology the fastest, it is poised to become a prominent player in the Metaverse. Metaverse has the potential to transform the key sectors in the region, such as telecom, travel and tourism, financial services, and real estate.

The Dubai Metaverse Strategy, which was launched in July 2022 with the goal of making Dubai one of the top Metaverse economies, has also helped speed up adoption in the region. It is designed to add \$4 billion to the economy in the next five years. Saudi Arabia's \$500 billion investment in developing NEOM as the world's first cognitive city will also provide a significant boost to the adoption of Metaverse and Digital Twins.

The GCC (Gulf Cooperation Council), the well-known alliance between six Middle East countries, has also shown great potential for Metaverse adoption, and Metaverse could contribute about \$15 billion to the GCC's economies by 2030 (as per the reports from the ChalHoub group).

*Metaverse has the potential to transform the key sectors in the region, such as telecom, travel and tourism, financial services, and real estate.*

Tech Mahindra plays a key role in leading the adoption of metaverse amongst global brands by generating business ROI and drive transformation.

## Rise of the "Metaverse": Evolving Consumer Preferences

Technology has to play a key role in driving this transformation. We have come a long way from using static websites to navigating a dynamic website, web portals, and apps built on Web 2.0 infrastructure. However, going forward the biggest shift in the era of telecom evolution will be brought by Metaverse and 5G. 5G will usher us into an era of meta-commerce. Meta-commerce is more immersive, resonates well with digital natives, and leverages Web3 technologies like blockchain and its various applications.

# WHY THE GCC HAS THE RIGHT FOUNDATIONS TO MAKE METaverse INITIATIVES SUCCESSFUL



Source: Chalhoub

Early industry statistics are promising, indicating that the metaverse and meta commerce have enormous potential. Cart abandonment rates are already increasing in current ecommerce channels. On the other hand, early reports suggest that 70% of customers who have shopped in the metaverse have bought something. The metaverse is here to stay and generate incremental business value for enterprises and individuals alike.

In the last couple of years, there have been significant adoption of augmented and virtual realities (AR/VR) due to increased demand by consumers for a more interactive and richer experiential interface compared to the traditional mails, chatbots and phone-based interactions.

### Opportunities in the Metaverse: A Service Provider's Perspective

There are opportunities galore when it comes to identifying and conceptualizing pan-industry use cases. However, we need to identify a framework that segregates the key use cases and has acceptability and

adoption across industries. One way is to look at it from the point of view of the 'consumer' (B2B2C and B2C) and 'enterprise' (B2B) and identify core and allied services that will enhance business value for the users.

### Types of Metaverse Ecosystem & Key Services

Clients are keen to consider and invest in both consumer and industry metaverses. From a consumer metaverse perspective, we are seeing increased adoption for building immersive experiences, near-real virtual trials of products and services, demand generation through AR, VR, and MR exploration of brands and services, gamification of learning, training, and brand engagement & loyalty through non-fungible tokens. From an industrial metaverse perspective, i.e., B2B industries, they are looking at digital twins, modeling virtual assets with data known as performance twins, digital visualization, and prototyping for process improvements and product enhancements.



### Telcos play in Metaverse

The introduction of 5G has fueled several significant technological advancements in the telecom sector, one of which is Metaverse. It necessitates unique user equipment as well as widespread, high-bandwidth, low-latency communications that have never been applied to mobile networks in a similar fashion before.

The Metaverse ecosystem is being scaled and made more flexible in large part of businesses, thanks to telcos. Also, metaverse not just addresses the infrastructure requirement for telcos; it also provides economic and strategic benefits for those telcos that actively participate in it.

Essentially, the telcos are vying to enable revenue enhancement and cost optimization to remain profitable. Let us understand how we can equip them to enhance their revenues.

In the 2G era, the telcos used to offer value-added services over the phone to their customers. The 3G and 4G era enabled the telcos to offer web and app-based services such as subscription plans, ads, and other related services. With the onset of the 5G era, operators will be able to offer much more than vanilla bandwidth, piped networks, and network slicing and dicing by offering several other value-added services and bundling cutting-edge applications with bandwidth for their end customers.

This will bring-in additional revenues to telcos. Some of these indicative cross-industry applications may include:

- 1. Automobiles:** In order to cater to the changing needs of consumers, automotive manufacturers are creating the photorealistic digital twin of their showrooms & dealerships for showcasing their vehicles in the environment. Customers can interact with a real automotive expert, ask questions, explore new features, take a virtual test drive, buy their vehicle, and return to the Meta environments at any time for post-sale support. There are other services as well that can be provided to the customers, like providing a car configurator for customizing the vehicle and ordering those in the metaverse itself.
- 2. Realty:** The metaverse is altering the real estate industry's dynamics. One of the emerging use cases in the industry is buying/selling properties in the metaverse. Now the property owners can create and showcase their properties in the Metaverse much before their launch to gather

responses from people and prospective buyers who may be living internationally and across the country. The metaverse will enable the visits of prospective buyers to get a lively experience where they will be accompanied by the AI concierge and customer agents who will help them with all the queries they have regarding the property.

**3. Next Gen Meeting:** The way we work has changed ever since the onset of COVID, and we can see a lot of the workforce working remotely on different projects, which has led to communication gaps between the people. Meta-rooms, as opposed to traditional team meetings, can solve communication and interaction issues by bridging the gap between physical and virtual meetings. This is where Next Gen meeting platforms come into play; we are seeing an increase in requests for such environments and are already working with many customers on their development.

**4. Retail Enablement Stores:** Telcos and retailers are investing heavily in customer service centers to achieve the highest level of customer satisfaction, resulting in a high capital infusion and lower profits. We can augment these physical centers with virtual product stores, which can help them optimize resource productivity in physical stores and enhance the returns on investment. The potential benefits of the solution include reduced capital infusion, increased resource utilization, better returns on investment, and an enhanced & immersive customer experience.

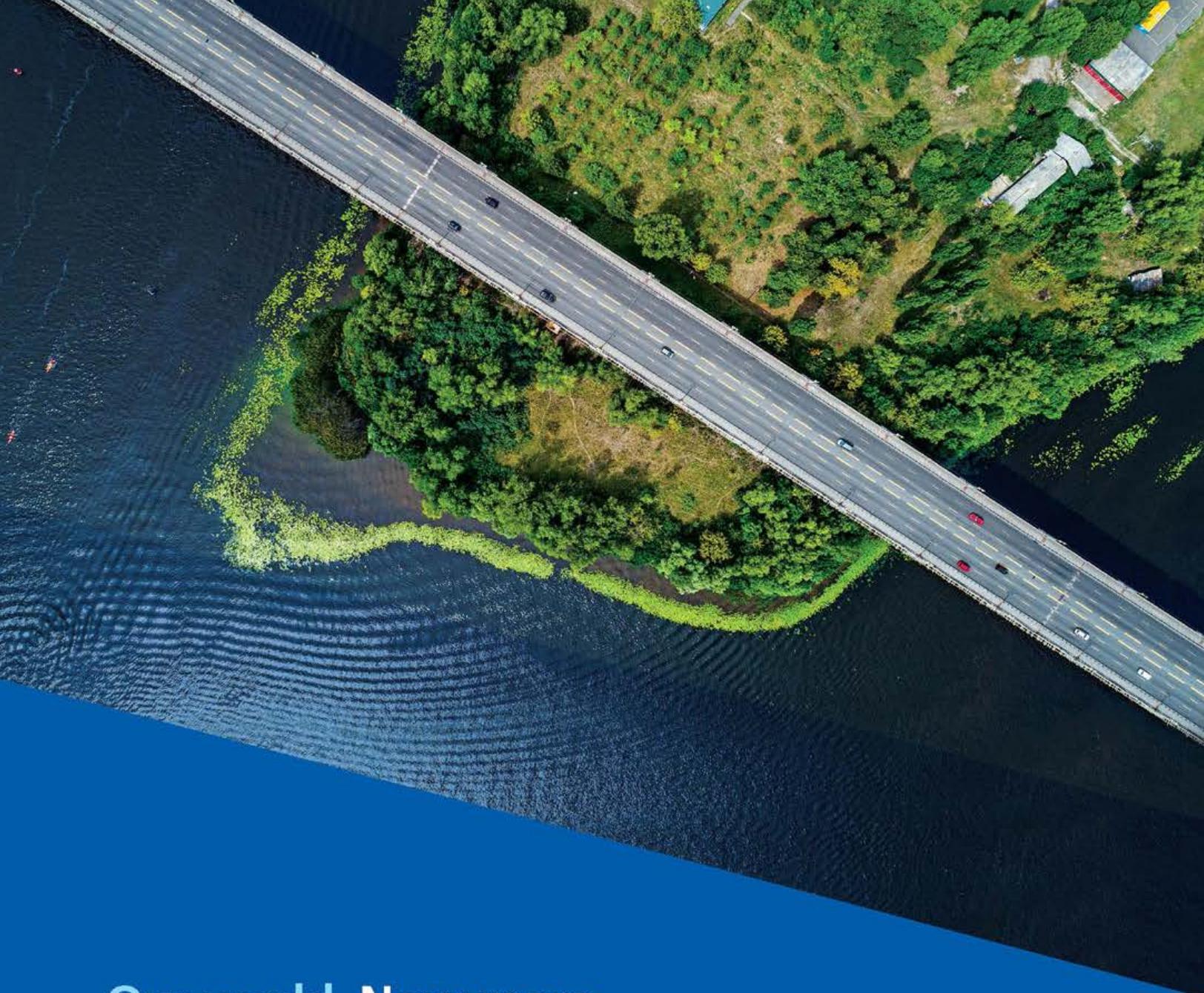
### Futuristic Use Cases Driving Innovation

The other aspect which is of prime concern for telcos is optimizing their spends. Some of the key use cases that can help drive this include:

- 1. Drive Testing of Telecom Devices:** Network operators need to test devices across multiple locations before launch. The impact of device-level parameters is variable and requires manual testing. This is where Metaverse comes into play, it helps in avoiding the need to do manual drive testing by creating a digital twin of the environment and using synthetic data to compare with the actual data in the Metaverse ecosystem. The major benefits delivered by the solution include reduced manual testing efforts leading to time and cost saving and precise analysis based on the availability of real-time data, thereby enhancing the operational efficiency of the process.
- 2. Digital Twin for Network Beam Formation**  
Most of the telecom operators, on their part,

are challenged by limited available information on the interaction between radio transmitters, the environment, and humans and devices that are on the move which in turn results in a high rate of customers churn / porting from one operator to another due to poor signal strength and network connectivity with incumbent telcos. A solution to run real-time simulations on city scale DT's using RF propagation & RTX ray tracing to accurately visualize and analyse real-time signal quality. This also incorporates non-geometric data via LIDAR sensors to create photorealistic accurate 3D model of the city. Potential benefits of the solution include a faster development cycle due to real-time testing of products, better network optimization by simulating various scenarios, swifter networks resulting in faster processing and insights and VR-enabled visualization of a city model at 1:1 scale.

**3. Edge Computing with 5G:** With decentralization as the core theme of metaverse applications, the need to move computing power towards the nodes and spokes away from the hub and into the hands of the user becomes paramount. For mission-critical, high-throughput, low-latency industrial applications on remote devices, real-time computing is a challenge. With fewer IoT devices, computation can still be managed by traditional data center infrastructures, but as we scale up and have multiple points of physical data being recorded, the focus has to shift to the logical edge of the infrastructure. Using the MEC server deployment (+nodes, routers, and gateways), telcos can reduce bandwidth and latency budgets by moving the computing from a remote cloud server to a node closer to the consumption source. As service providers at the forefront of this innovative technology, we need to synergize and adopt a collaborative solutioning approach that focuses on sharing best practices and solving a client's business problem rather than force-fitting the technology. The collaborative approach should lead to formulation of a design-thinking roadmap for the enterprise customer that is aligned with their digital strategy. The technology, its benefits, and applicable use cases need to be identified and their potential impact on the business parameters assessed. Our approach and solution help bring in several enhancements including performance monitoring and predictive analysis in the digital twins we create for our customers. 📍



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## SATELLITE NEWS

### Space Agency Prepares 5G, 6G Hub Expansion for Lift-Off

The European Space Agency (ESA) moved on a project to expand its UK hub dedicated to aiding development of 5G applications and 6G, with the international organization setting its sights on further collaborations with industry. In a statement, the ESA highlighted the signing of a contract

with specialist IT system provider CGI to deliver new facilities for its enlarged hub, while noting support from the UK Space Agency. The site opened in 2022 and provides facilities for third parties to experiment with connectivity services provided from satellites, including how

this technology can be integrated into mobile operator offerings. Industry players involved in the project include satellite communications companies Eutelsat and OneWeb, and Vodafone UK. The expansion is set to increase the physical footprint of the hub's dedicated networks and aid the development of enhanced satellite services; edge computing, multi-network and multi-orbit orchestration; and ease use of the connectivity systems. Moving forward the team behind the project also intend to conduct environmental impact analysis of architecture used. Head of ESA's 5G-6G program Antonio Franchi said collaboration "is key to telecommunications innovation and this project will consolidate the hub's position as a focal point for the establishment of new partnerships, both within Europe and globally". Vodafone UK business director Nick Gliddon added validating "the interoperability between 5G networks on Earth and satellite networks in space" will enable the operator to "open up exciting new possibilities for connectivity across the world".



### Starlink to Launch in Kenya in Q2

Starlink, the satellite internet service of SpaceX, has announced plans to launch in Kenya in the second quarter of this year, pending regulatory approval. Business Insider Africa reports that Kenyans can pre-order and deposit a refundable amount of KES12,260 (USD) to reserve the service. The company is initially targeting areas such as Nairobi, Kisumu, Mombasa and Nakuru, among other towns in the country. Starlink's Low Earth Orbit (LEO) satellites are designed to offer high speed, low latency broadband internet in remote and rural locations across the globe. Starlink reached the one million active subscriptions milestone last month.



## Inmarsat Launches I-6 F2 Satellite

Inmarsat has announced the successful launch of its latest I-6 F2 spacecraft from the Cape Canaveral Space Force Station aboard a flight-proven SpaceX Falcon 9 rocket. The launch saw I-6 F2 lift off from Cape Canaveral, Florida, reaching a top speed of almost 40,000km/h as it left Earth above central Africa. The satellite will now spend several months travelling to its geostationary orbit, 36,000km above

the Equator, using its onboard electric propulsion system. It will connect its first customers in 2024, following rigorous in-orbit technical testing. I-6 F2 follows its 'twin', I-6 F1, which launched from Japan in late 2021. These commercial communications satellites will provide a revolutionary upgrade in Inmarsat's global coverage services for at least the next 15 years. I-6 F1 is scheduled

to connect its first customers later this year. The new I-6 satellites add further capabilities to Inmarsat's ORCHESTRA communications network; a global multi-dimensional, dynamic mesh network that will redefine connectivity at scale with the highest capacity for mobility worldwide. ORCHESTRA enables Inmarsat's partners and customers to keep pace with their growing data demands and enables them to empower emerging technologies in the future, like autonomous vehicles or flying taxis. Rajeev Suri, CEO of Inmarsat, said: "I want to extend my profound thanks and appreciation to our dedicated employees and partners who have made this launch a reality. Our I-6 program has been six years in the making. Last night's launch marked another milestone as we revolutionize global communications at scale. "Of course, this is not the end. Along with the I-6s, we will add five more advanced spacecraft to our fleet by 2025 as part of our fully funded technology roadmap. That will allow us to continue to meet our customers' needs into the 2030s and beyond, while enabling new technologies for a smarter, more connected Earth."



## Starlink Deploys Satellite Internet in Rwanda

Rwanda's ICT Ministry has announced that a satellite service provided by SpaceX will be piloted in 500 schools in Rwanda after its launch on the 22nd of February. The project is part of a larger initiative to provide high-speed internet access to underserved areas in the country. The satellite-based internet soon to be provided by billionaire Elon Musk's high-speed satellite internet venture is expected to give students and teachers in Rwanda access to educational resources and digital tools. The program is expected to begin this February. This will play a big role in improving education, especially for a school like this that is not connected to reliable internet. One challenge we are still facing, however, is the lack of sufficient digital gadgets for our students, in this school, we have 1405 students, and the gadgets we have only 136. Isaac Ruganza, head teacher EP Kimihurura said. Starlink is a satellite

internet service that uses a network of low Earth orbit satellites to provide high-speed internet access to areas with limited or no connectivity. The service has the potential to bring reliable and high-speed internet to rural and remote areas, making it a valuable tool for improving education, healthcare, and economic opportunities in underserved communities. Where I live it's

hard to connect to the internet, it would be good to come to school and have access to the Internet. That would help me with my studies. Currently, there are 6,756 schools, consisting of primary, secondary and TVET schools in the country. Of these, about 3,000 schools. The Rwandan government is hoping to reduce these numbers after the launch of the Starlink Internet.



## Kacific and ST Engineering iDirect Partner to Extend Reach in Asia

Satellite operator Kacific and satcom technology and solutions provider ST Engineering iDirect say they have extended their technology partnership to expand satellite connectivity in Southeast Asia and other regions. The companies say they have reaffirmed their long-term technology partnership through



deep cooperation on the ground systems infrastructure for Kacific's fleet of satellites. ST Engineering iDirect will provide a comprehensive next-generation ground infrastructure, including systems integration, as part of this strategic partnership. Riding on the success of its Kacific1 satellite, Kacific is now working to expand its capabilities and coverage, adding capacity with services throughout the region. As a first step, the company's next-generation satellite aims to address the soaring demand for satellite connectivity in its existing Southeast Asian markets, and to extend its reach further into Southeast Asia, Central and Western Asia, and Eastern Africa. The upcoming Kacific next-generation satellites are planned to be reconfigurable, with flexible bandwidth allocation and high spectral efficiency. ST Engineering iDirect will match the space segment with a new generation of fully scalable, distributed ground systems that leverage standards-based, automated resource and service orchestration to enable dynamic allocation of satellite resources. It says its next-generation ground systems will enable extremely flexible services that align with new applications and changing customer demands, and facilitate the delivery of ultra-high-throughput services. New innovations such as virtualization, cloudification and a fully digitalized ground network, combined with ST Engineering iDirect's next-generation network management system, will allow Kacific to streamline the management and operations of a complex large-scale network, optimizing costs, performance and quality of service delivery.

## Argentina's ARSAT Orders Ka-Band Antennas from MDA

ARSAT, Argentina's national telecommunications company, has awarded MDA, a provider of technology and services to the global space industry, a contract to design, build and supply all of the Ka-band multibeam antennas for Argentina's ARSAT-SG1 satellite. ARSAT-SG1 will provide high-speed internet as well as digital video and voice services across the country and to Bolivia, Paraguay and Chile. This is the first contract signed between MDA and ARSAT. MDA provides antennas to the geosynchronous equatorial orbit (GEO), medium earth orbit (MEO), and low earth orbit (LEO) satellite markets. ARSAT-SG1 is a high throughput full electric geostationary communications satellite. The ARSAT antennas will be built in MDA's state-of-the-art high volume production facility in Montreal in Canada. MDA says its technology has been integrated into more than 350 satellite missions to date, with more than 2,000 antenna subsystems and 3,000 electronic subsystems on approximately 850 satellites currently in orbit. ARSAT selected INVAP, a leading company in technological projects actively supporting Argentine development, as satellite prime contractor using engineering and technology developed by GSATCOM, a joint venture company formed by INVAP and Turkish Aerospace. The ARSAT contract was added to MDA's backlog in Q4 2022. The Ka-band multibeam antennas will be delivered mid-2024.

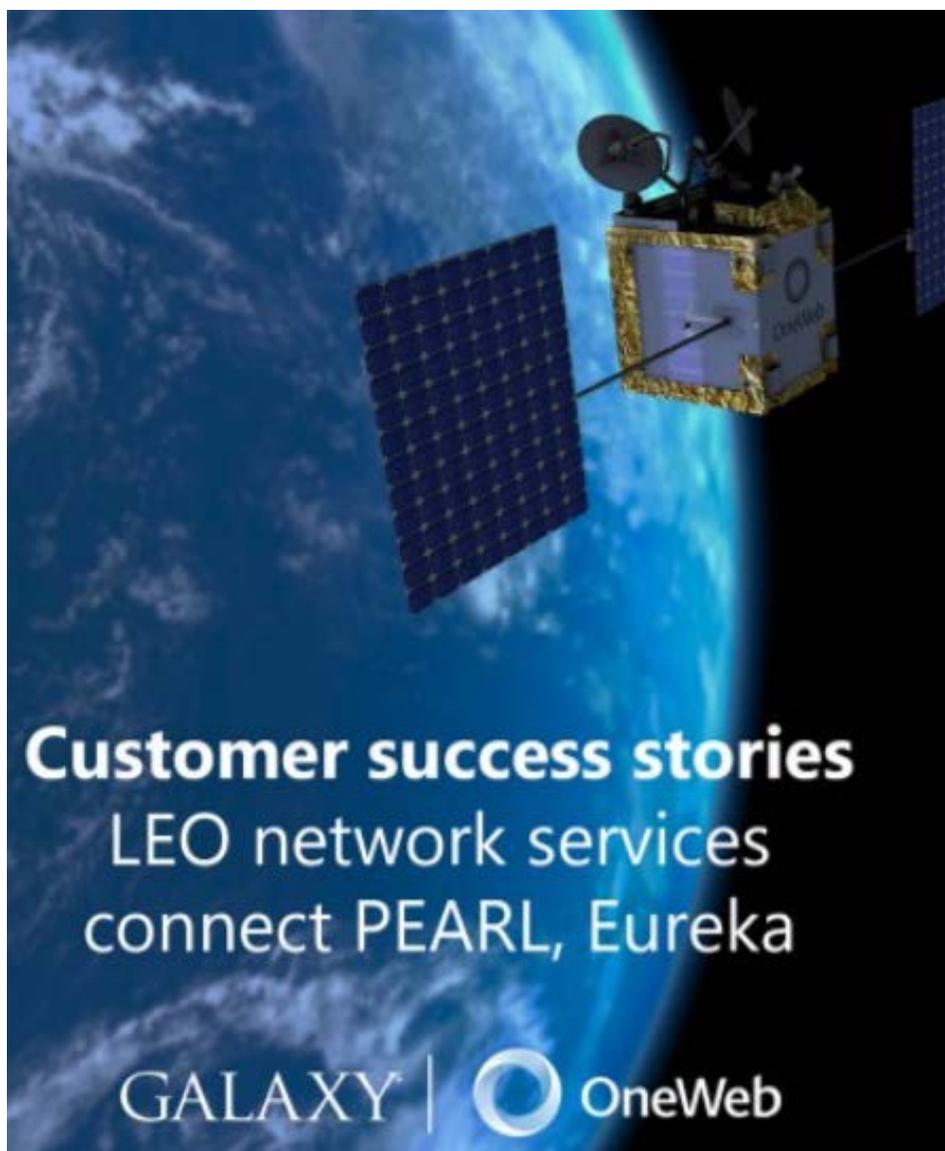


## OneWeb & Galaxy Provide LEO Satellite Comms to PEARL Research Station in Northern Canada

OneWeb's satellite connectivity services have been deployed at one of the northernmost research stations in the world. The satellite firm and local distribution partner Galaxy Broadband have deployed OneWeb terminals at the Polar Environment Atmospheric Research Laboratory (PEARL), a science station in remote northern Canada. Conducting atmospheric and climate research, PEARL is located at the Eureka research base on Ellesmere Island, Qikiqtaaluk Region, in the far northern Canadian territory of Nunavut. It is the third-northernmost permanent

research community in the world. For almost 20 years PEARL has solely relied on C-band geostationary satellites for its connectivity, which also serves other services nearby including the Eureka Weather Station. Despite limited uplink bandwidth, more than 25 instruments at PEARL produce multiple gigabytes of data per day, in addition to the station's communication and broadcast needs. "Today, we are able to access the high-speed, low-latency communications services provided by low Earth orbit satellite connectivity," said James Drummond, Professor at University

of Toronto. "Our provider Galaxy Broadband, with OneWeb, has enabled us to have a high-bandwidth experience, with less cost and with far lower latency." Pierre Fogal, PEARL site manager, added: "The addition of this link allows us to greatly expand our data transfer capacity, so we have a much better response when controlling instruments remotely and can allow our personnel to make use of streaming technologies for meetings and personal contacts. This connection will enhance the two-way communication we have between our on-site staff and the south." Established in 2005, PEARL includes the Ridge Lab building, originally built by the Meteorological Service of Canada in 1992 to hold the Arctic Stratospheric Ozone Observatory (AstrO); the Zero (0) Altitude PEARL Auxiliary Laboratory (OPAL); and the Surface Atmospheric Flux and IRradiation Extension (SAFIRE). Howard Stanley, OneWeb's VP for the Americas, said: "We are delighted that everyone stationed at PEARL now can access high-speed connectivity with low latency, not just for the long-term benefit of valuable scientific research, but also for themselves and their community." Galaxy became a OneWeb distribution partner in September 2021 and announced a \$50 million partnership this month. The firm has already deployed OneWeb services to more than 75 locations throughout Canada. Rival satellite firm Starlink has deployed its terminals in Antarctica to support the US National Science Foundation's operations there. Antarctica is the last remaining continent without a subsea fiber cable, with research stations across the region entirely reliant on satellite communications. The US McMurdo Antarctic station, located on Ross Island, has around 25Mbps to share between up to 1,000 people in the Austral summer. The South Pole is entirely reliant on communications from three aging satellites. However, a number of parties are exploring the possibility of building a cable to Antarctica to support research missions.



## Ontario Firm Signs \$67M Deal to Provide Satellite Internet to Nunavut Businesses

Galaxy Broadband Communications Inc. has struck a \$67-million deal to provide satellite internet service to businesses in the territory. The Ontario-based communications company announced the deal. It's a partnership with OneWeb, which provides the satellites. OneWeb uses low-orbit satellites to provide internet



to people in remote areas, similar to Starlink. But Galaxy Broadband will focus on internet for businesses, organizations and governments in Nunavut. That service is expected in Iqaluit by March, said Doug Harvey, vice-president of business development, sales and marketing for Galaxy Broadband, in an interview with Nunatsiaq News. "It just made sense for us to be able to lock up that bandwidth and deliver this service," he said. The company aims to have all 25 Nunavut communities in service by the end of the year. Galaxy Broadband already offers satellite internet to mining companies, such as Agnico Eagle, so expanding further North was the next step, said Harvey. He said low-orbit satellites provide connections less latency, which is the amount of time an internet connection lag. OneWeb satellites have a 140 millisecond latency, while before low-orbit satellite internet was available in Nunavut, latencies were closer to a 650-millisecond range. This will be better for work features, such as virtual meetings, according to Harvey. "That's going to make a big difference," he said. Galaxy Broadband has reached out to federal, territorial and municipal governments, Harvey said, however he declined comment on those discussions.

## Inmarsat-6 F2 Satellite Arrives in Florida Aboard an Airbus Beluga

The second Airbus-built Inmarsat-6 geostationary telecommunications satellite (I-6 F2) has arrived on board an Airbus Beluga at the Kennedy Space Center in Florida ready for its launch in February. The second satellite of the Inmarsat-6 generation is based on Airbus' ultra-reliable Eurostar E3000 spacecraft and will be the 58th Eurostar E3000 built by Airbus. It will be the ninth Eurostar in orbit that is equipped with electric propulsion for orbit raising, reinforcing Airbus' position as a 'world leader' in electric propulsion. François Gaullier, head of telecommunications and navigation systems at Airbus, said: "I-6 F2, with its sophisticated digitally processed payload, will join Inmarsat-6 F1 (I-6 F1) in orbit giving Inmarsat even more flexibility, capability and capacity. This is the 10th geo-telecommunications satellite we have built for our long-term customer Inmarsat, a leading provider of global mobile satellite communication services, and with I-6 F1 the satellites will enable a step change in the capabilities and capacity for their Elera services, and deliver significant additional capacity for their Global Xpress network." I-6 F1 and I-6 F2 each feature a large 9m aperture L-band antenna and six multi-beam Ka-band antennas, giving a high level of flexibility and connectivity. They also carry new generation modular digital processors to provide full routing flexibility with more than 8,000 channels and dynamic power allocation to over 200 spot beams in L-band, per spacecraft. The Ka-band spot beams are steerable over the full Earth disk, with flexible channel to beam allocation. The satellites will enable Inmarsat to further enhance its 'world-leading' Elera (L-band) and Global Xpress (Ka-band) networks respectively, for customers across land, sea and air. They are also the next step in the company's plans for the world's first multi-dimensional network, Inmarsat Orchestra. The 'network of networks' will build on Inmarsat's existing space-based capabilities to provide a transformational growth in capacity and new features

for customers into the 2030s and beyond. Investments made by Airbus in platform and payload technologies used on I-6 are supported by the European Space Agency and national agencies, in particular the UK Space Agency and CNES, France's National Centre for Space Studies. I-6 F2 has a launch mass of 5.5 tonnes, spacecraft power of 21kW and a design life of more than 15 years. The first Airbus-built Inmarsat-6 (I-6 F1) satellite was successfully launched in December 2021. It reached its geostationary testing location in summer 2022 and is scheduled to enter service in early 2023. I-6 F2 is set to follow after its successful launch and enter service in early 2024. Airbus' geostationary telecommunications satellites have clocked up more than 1,300 years of successful operation and are in service or being built for all of the world's leading geostationary satellite operators.



## UK Space Agency Announces £50 Million for Satellite Communications

The UK Space Agency has announced £50 million of funding for ambitious and innovative projects that will supercharge the UK's satellite communications industry. The funding, which is part of the European Space Agency (ESA) Advanced Research in Telecommunications Services (ARTES) program, is available for a wide range of projects, such as developing new satellite constellations, the ground systems needed to access them, or whole end-to-end systems delivering new services to customers. These could include integrating 5G systems to unlock connectivity for people and machines through upgrading infrastructure to enable new markets and services such as drones or driverless haulage, creating space-based networks to rival cable-based terrestrial ones, and helping UK space operators to use disruptive new technologies and business models to enable global operations. Science Minister George Freeman said: Developing UK space capabilities and maximizing commercial opportunities are key to the National Space Strategy, as part of our plans to become a leading power in space and build



on a sector already worth £16.5 billion to the UK economy. We are determined to invest in our world class satellite technology sector, which is why I committed £1.8 billion for UK participation in ESA programs over the next five years and recently committed £190 million specifically to participate in international telecommunications missions. This latest £50 million UK Space Agency funding will help more companies into our vibrant fast growth UK space telecoms sector, helping drive both growth and wider UK economic resilience. The UK already has a fast-growing satellite communications industry, with services contributing £10.4 billion to the economy and to the creation of more than 26,600 jobs. Successful companies will have the opportunity to help kick off the next generation of satellite communications hardware, paving the way for services that can provide better quality connectivity in remote and hard-to-reach places, higher bandwidth, lower latency, and increased security. UK Space Agency CEO Dr Paul Bate said: This is an exciting time to be involved in the satellite communications industry as the world increases its dependence on these services to manage business, travel, security, infrastructure, connectivity, and more. This funding will help UK companies that have the right expertise and ambition to become global players in this market and lead on ground-breaking technologies that will enhance the wider UK space sector, create jobs and generate further investment. I look forward to seeing the results of the competition and following the successful projects in their next steps. The UK is a leading investor in ARTES, having committed £190 million to the program at the ESA Council of Ministers in November. Previous UK projects funded by ARTES include Sunrise, supporting the delivery of OneWeb's first generation platform and user terminals for a UK-wide supply chain, and Pioneer, working with companies including Spire Global and AAC Clydespace to develop infrastructure that will enable new service providers with low cost and quick access to space.

## Viasat Awarded Satellite Communications Managed Services Contract by USMC

Viasat Inc. announced it was awarded a contract to provide end-to-end satellite communications (SATCOM) support through a fully managed service to the United States Marine Corps (USMC). The contract is an extension following a successful pilot and follow-on service program in the government's FY22 through which Viasat delivered a fully managed SATCOM as a Managed Service (SaaS) solution to the USMC I Marine Expeditionary Force (I MEF), the Marine Corps' largest warfighting organization. This is the first commercially developed SaaS implemented by a USMC command. Under this fully managed SATCOM service, Viasat has provided I MEF with a resilient beyond-line-of-sight communications capability that is both scalable and rapidly deployable to meet contract and operational requirements. This commercially developed SaaS capability has enabled I MEF to extend its command and control (C2) to the tactical edge, supporting Marine exercises, Marine Expeditionary Units and

Stand in Force rotational deployments with on-demand satellite connectivity and data transport. The SaaS is designed to provide greater flexibility to meet changing connectivity demands, support Multi-Domain Operations, and increase the safety of deployed forces through reliable and resilient communications. "Viasat is very excited to continue its partnership with the Marine Corps and provide a fully managed SATCOM service that offers a dynamic and scalable solution to meet the demands of expeditionary forces," said Craig Miller, President of Viasat Government Systems. "This is a modern SATCOM service that is designed to deliver the performance, flexibility and rapid deployment capability Marine expeditionary forces need – supporting operational readiness and enabling the USMC to easily leverage surge capacity for specific mission needs. This SaaS solution is a critical piece to achieving a decision advantage in a modern information and communications warfare environment."

## Angola to Invest More in Telecommunications Sector with New Satellites

Angola will continue to invest in the telecommunications sector with the construction of more satellites and other infrastructure, president João Lourenço has said. After inaugurating a new Satellite Control and Mission Centre, located in Funda, in Luanda province, Lourenço reaffirmed the “extreme importance” of telecommunications projects and guaranteed that “financial capacity will be found” to ensure they go ahead. “This center can host up to three satellites; the other two will have to be acquired over time, it is a question of programming,” he said. “If there is no capacity today, there will be tomorrow, what counts is the intention to complete the project, it is not complete and we have assumed the commitment to complete it no matter how long it takes.” Lourenço recalled that in terms of fiber optic technology, an investment had already been made that currently made it possible to link Angola to the neighboring Democratic Republic of Congo by cable. “With the recent launch of Angosat-2 and its entry into operation, Angola gains from every point of view,” he said. “We will improve our telecommunications, the media, voice and imaging will also be improved, and agriculture and science in general and education will benefit from this important project,” he said. Last October, Angola successfully launched Angosat-2, a satellite manufactured in Russia, from Kazakhstan. It was the second device built for Angola, after the first, Angosat-1, failed in December 2017. The Satellite Control and Mission Centre was built



over an area of 6,617 square meters and has 47 compartments equipped with technical and technological resources, with the capacity to ensure satellite tracking, monitoring and exploration, according to Angola’s national news agency Angop.

## Guerrilla RF Enters Satellite Communications Industry

According to Fortune Business Insights, the global SATCOM industry will grow from \$29.98 billion in 2022 to \$56.74 billion by 2029, a 9.54% compounded annual growth rate. Market growth will be driven by mobile applications and “Internet of Things” integration in a wide range of industries including agriculture, asset tracking, aviation, defense, energy, navigation, and weather monitoring. Growth in satellite communications has also brought complex engineering challenges. With the move to smaller satellites in low Earth orbits, satellite components need to be compact and capable of higher operating frequencies along with complex modulation schemes – all while still ensuring robust signal fidelity in extreme temperature, radiation, and interference conditions. Ryan Pratt, CEO and founder of Guerrilla RF commented, “We have always sought to meet the growing demand for connectivity by solving complex engineering challenges and producing high-performance semiconductors in the 5G, automotive, and cellular booster industries. Our approach to solving the unique application challenges of customers combined with a catalog of high-performance parts is what differentiates us from our competition and will allow us to take share in the rapidly growing SATCOM industry.” Guerrilla RF recently announced the initial closing of its



private placement, providing gross proceeds of approximately \$5.0 million, not including any additional proceeds that may be received upon further closings or the exercise of warrants. “The successful execution of this offering is a testament to the opportunity that our investors see in the company,” said Ryan Pratt. “Since 2020, we have grown the number of new products launched and also dramatically developed our GPS navigation and IoT Sales. The funds raised through this offering will be used to fund new headquarters and also support our continued growth”

## FAA Pitches Aircraft C-Band Retrofits by Early 2024

The US Federal Aviation Administration (FAA) proposed a directive which would mandate passenger and cargo aircraft have C-Band-tolerant altimeters or approved filters installed by early 2024 as a path forward for allowing 5G services to safely coexist with the aviation industry. The airworthiness directive (AD) is similar to one implemented in December 2021 which prohibited flight operations around C-Band wireless transmitters unless the FAA approved them. An FAA representative told Mobile World Live the AD would be open for public comment for 30 days. The new rules would go

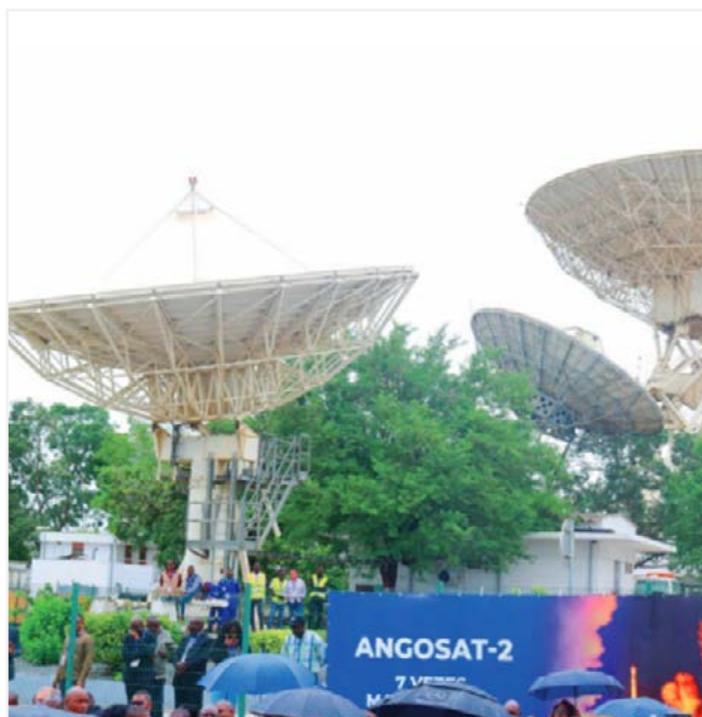


into effect 24 February 2024. In a statement, the FAA described the proposal as a collaboration between wireless companies, aviation stakeholders and other federal agencies including the Federal Communications Commission (FCC) to “enable the wireless companies to achieve full use of their networks while maintaining public safety”. The proposal also requires aviation operators to revise their flight manuals to prohibit low-visibility landings after 30 June unless the retrofits have been completed. Verizon and AT&T delayed the launch of 5G services on C-Band spectrum until January 2022 after the aviation industry expressed concern about interference with cockpit safety systems. The operators later agreed to further delay some of their C-Band usage near airports until July 2023 to give the aviation industry more time to retrofit aircraft. In October 2022, acting FAA administrator Billy Nolen called for the FCC to expand exclusion zones. AT&T and Verizon implemented around airports to 19 smaller mobile operators and other spectrum holders. Trade organization Airlines for America (A4A) stated while it supported moving forward on safety measures and mitigation efforts related to the use of C-Band, the compliance deadline for changing radio altimeters needed to be feasible. “A4A member carriers are working diligently to ensure fleets are equipped with compliant radio altimeters, but global supply chains continue to lag behind current demand,” it stated.

## Angola's Angosat-2 Satellite Put in Operation in Orbit

The Angosat-2 Angolan telecom satellite has passed tests in orbit and has commenced operation, the Moscow-based state space corporation Roscosmos has announced. “Following the test flight, the satellite passed to Angola’s control to be used as intended,” Roscosmos said. A Russian Proton-M launch vehicle coupled with Angosat-2 blasted off from the Baikonur Cosmodrome in Russia on 12 October. Shortly after the launch of the satellite, specialists from Angola and Moscow and Zheleznogorsk (Russia) embarked on 23 days of post-launch activities, including several maneuvers involving engineering principles related to orbital mechanics that facilitated the successful placement of Angosat-2 in its final orbital position 23E, in geostationary orbit at a distance of about 36,000 kilometers from Earth. Angosat-2 is a product of Roscosmos’ Reshetnev Satellite Information Systems based on the Express-1000N platform of the same company. The satellite has a mass of about 1.7 tones and a service life of 15 years. The conclusion of the second phase of Angosat-2 tests will allow telecommunication services, digital television and broadband Internet to be taken to the country’s most remote areas at competitive prices. In addition, the satellite services will cover the entire African continent, a significant part of Southern Europe and almost total coverage of the Southern Africa region. Angosat-2 is a replacement for the lost Angosat-1, which was launched into orbit on 26 December 2018 and stopped transmitting telemetric data after reaching the target orbit. Specialists from Angola and Russia tried to reanimate the

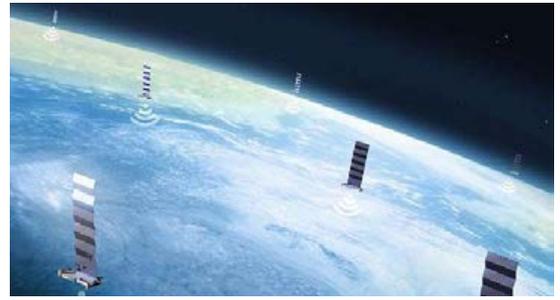
satellite in April 2019 when it entered the radio visibility zone, but finally declared it lost.



## SpaceX Launches Heaviest Starlink Payload Yet - 56 Satellites

SpaceX launched 56 Starlink satellites to low-Earth orbit on January 26th from Cape Canaveral Space Force Station, Florida. The launch was the heaviest payload yet carried by a

Falcon 9 – 17,400 kg. The mission was SpaceX's 205th overall launch. The Starlink service is currently available in 44 countries.



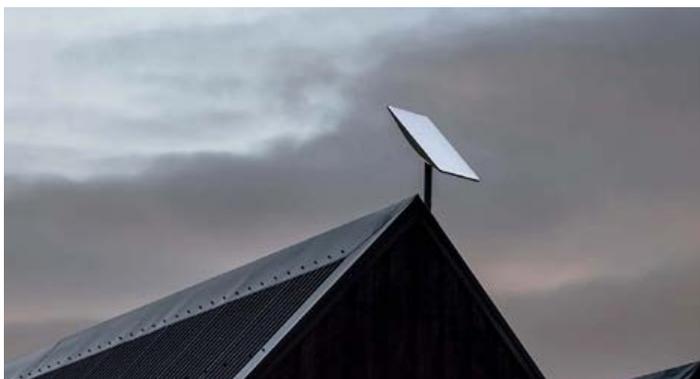
## Starlink's LEO Satellite Broadband Gets Energy Saving Sleep Mode

Customers of SpaceX's popular Starlink ultrafast broadband service, which harnesses a mega constellation of satellites in Low Earth Orbit (LEO) and is already home to 1 million subscribers, may



like to know that it's slowly adding a new 'Sleep Schedule' feature to help save electricity. As the name suggests, this feature simply allows customers to define a time period for when the system will go into a sleep (i.e. pausing its internet service and disabling other features, such as heating to melt snow). In effect, this is a kind of standby feature, although anybody expecting snowfall will need to make sure they clean off the accumulation first when re-enabling (i.e. using the heater to do this could take several hours). The new feature doesn't appear to be available for everybody yet, and initially it may only be intended for those on their Starlink for RVs (motorhomes) service, where energy saving is most important. But it's a useful feature for everybody to have – especially given UK electricity prices – since the Starlink service does tend to consume a fair bit of power (up to around 100 Watts). Customers in the UK typically pay from £75 per month, plus £460 for the regular home kit (standard dish, router etc.) and £40 for shipping on the Standard Starlink package, which gets you unlimited usage, fast latency times of 25-50ms, advertised downloads of c. 50-200Mbps and uploads of c.5-15Mbps (speeds may change as the network grows). The latest launch means that Starlink now has around 3,480 LEO satellites in orbit around the Earth (altitude of c. 500km+) and their initial plan is to deploy a total of roughly 4,400 by 2024, with approval already granted to add around 7,500 more to this by the end of 2027.

## Starlink Enters the African Market with First Launch in Nigeria



Nigeria has become the first country in Africa to see a commercial launch of satellite broadband services by Starlink, the satellite internet business of SpaceX. The firm's Low Earth Orbit (LEO) satellites are designed to offer high speed, low latency broadband internet in remote and rural locations across the globe. The service is currently priced at NGN19,260 (USD41.8) per month, while hardware costs NGN268,584. Starlink received licenses to operate in Nigeria and Mozambique in May last year, marking the start of the company's expansion to Africa. The Nigerian Communications Commission (NCC) confirmed that Starlink received two licenses – a ten-year international gateway license and a five-year ISP license – and would trade as Starlink Internet Services Nigeria.

## Argentina's ARSAT Takes Delivery of Satellite-Based IoT Solution



Satellite communications company ST Engineering iDirect has delivered its flagship Internet of Things (IoT) solution to ARSAT, the national telecommunications company of Argentina. ARSAT provides wholesale connectivity to bridge the digital divide between towns and cities across the country. The company has identified the requirement for satellite-based IoT services that enable businesses and organizations in remote areas to take advantage of sensor technology and Big Data management developments. The IoT solution incorporates an IoT-optimized waveform and a cloud-based network management system (NMS) powered by

technology from ST Engineering iDirect's strategic partner hiSky, which brings innovative technology to the field of voice and data satellite communications. This will enable ARSAT to tackle a range of in-country challenges across vertical markets. Applications include the implementation of fleet tracking solutions and more efficient farming practices. For example, the solution will permit the collection of critical data from sensors located on farms for the monitoring of everything from soil moisture to the health of livestock and the condition of farm vehicles. IoT services will also provide an invaluable tool for disaster recovery and mitigation, enabling users to

view important data on areas of concern such as rainfall and river levels or wildfire threats, deforestation, water scarcity, earthquakes and volcanoes. Sensor data can be collected and transmitted using satellite IoT connectivity solutions for analysis. The IoT solution also offers ARSAT the flexibility to move quickly into other markets such as oil and gas, energy, mining, fleet management and construction, as and when demand permits. ST Engineering iDirect's system integration partner Technology Bureau will help ARSAT to seamlessly integrate the IoT solution into its existing ST Engineering iDirect hub infrastructure. "This new technology adds value to our fleet of geostationary satellites, ARSAT-1 and ARSAT-2, which were launched in 2014 and 2015 respectively," says Guillermo Rus, Vice President, ARSAT. "We are currently carrying out tests of this innovative product with very good results and we hope to carry out the first implementations in the coming months. Among the use cases under evaluation are a hydrometeorological monitoring network, connectivity for research ships, marine buoys, and a monitoring system for the road network."

## SpaceX to Launch Amelia Earhart Satellite for Improved GPS Services

SpaceX will launch a Falcon 9 rocket carrying the GPS III-6 satellite for the United States Air Force. The satellite is also named Amelia Earhart, after the first female pilot to fly solo across the Atlantic Ocean and later disappeared somewhere over the Pacific Ocean. With the new satellite, GPS users around the world will benefit from improved positioning, navigation, and timing services. The launch is due at noon UTC from Cape Canaveral. The first launch we got last week was the Ceres-1 rocket carrying five satellites. It's a rocket developed by the private Chinese firm Galactic Energy. It launched from the Jiuquan Satellite Launch Center and delivered the satellites to low Earth orbit. Next, we got Virgin Orbit's Start Me Up mission which launched from the UK. The Cosmic Girl aircraft released the LauncherOne rocket mid-flight. The mission was ultimately a failure after the rocket came crashing to Earth. Next up, a Falcon 9 carried 40 OneWeb satellites to orbit from Cape Canaveral where they will be used to beam internet back to Earth. Later in the week, a Long March 2C took off from Xichang Satellite Launch Center carrying the APStar-6E satellite which will provide telecommunication services in Southeast Asia. Also blasting off from China was a Long March 2D carrying Yaogan-37 and Shiyang-22A/B



from the Jiuquan Satellite Launch Center. They are both remote sensing satellites that will perform various tasks including space environment monitoring, urban planning, smog detection and more. Finally, a Long March 2D took off from the Taiyuan Satellite Launch Center carrying 14 satellites into space.

## Sateliot Collaborates with Sensefinity for At-Sea Satellite 5G IoT

The past two years have seen many advances in satellite communications, connecting parts of the earth hitherto regarded as too remote for comms infrastructures, but there is no more remote a location than the high-seas, and looking to facilitate data transmission on cargo ships, saving vessel owners millions of dollars, satellite constellation 5G connectivity firm Sateliot has entered into a partnership with internet of things (IoT) provider Sensefinity for asset tracking to launch global 5G-IoT satellite connectivity for sea containers. Specifically, the two companies say they will be able to facilitate the first technology of data transmission from 1,000 smart containers that will save medium shipping companies up to \$1.4m per year on container maintenance and repairs. They add that current satellite coverage is not 100% global, as geostationary satellites only cover fixed areas of the planet and that their placement makes them less efficient than low earth orbit satellites, which come into play to fix this problem. The firms also believe that without NB-IoT coverage at high sea, trackers and sensors can only record the information, uploading it once the vessels are near shore, when it is already too late to do anything with damaged cargo. Furthermore, they argue legacy satellite transmission costs for every



container are a high addition to a vessel's already-expensive bills, particularly when considering tariffs and port and channel fees. In explaining their partnership, Sateliot and Sensefinity noted that shipping companies are heavily investing in smart containers to control cargo, citing research showing that by 2025, 25% of the box fleet will be able to gather data from inside the containers. However, transmitting gathered data in uncovered spots from the middle of the ocean is still an issue. Sateliot said the transmission costs of its full 5G NB-IoT satellite constellation start from less than \$1 per device per month, and this will allow Sensefinity to facilitate its growth, granting the shipping and

vessel companies the ability to transmit data from smart containers in the middle of the ocean with a very reduced cost. In addition, Sateliot assured that Sensefinity will be able to report location, temperature, humidity, vibration and container breach in real-time, unlocking a set of high-impact use cases such as notifications when a container falls into the ocean, alerting for fires inside containers, warning for cold-chain breaks for sensitive cargo such as food and medicines, and reporting impacts and damages in containers. Another advantage of the partnership is said to be the reduction of food waste and carbon emissions. 🌱

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## WHOLESALE NEWS

### Fern Trading to Amalgamate British Retail and Wholesale Fiber Businesses

UK-based Fern Trading has announced plans to consolidate its British retail and wholesale fiber businesses with a view to accelerating the deployment of full fiber services. In a press release issued simultaneously by Fern Trading's four fiber companies – AllPoints Fiber, Giganet, Jurassic Fiber and Swish Fiber – it was confirmed the businesses will combine their regional operations and create a national wholesale network 'during the course of 2023'. According to Fern Trading the unification of the four businesses will 'enable them to combine their resources, knowledge and expertise to hasten and grow full fiber network access across the UK'. Of note, two other companies which form part of Fern Trading's fiber broadband division – VitriFi and Vorboss – are not being consolidated. Jarlath Finnegan, currently CEO of Giganet, will lead the combined group moving forward, and the executive was cited as saying of the development: 'All four companies are excited to build upon the solid foundations they have built over the last few years as a combined force. Together, we will become even stronger through exceptional customer service, combined with a relentless focus on technology and product. We're looking forward to expanding our presence across the country and providing even more customers with access to full fiber

connectivity.' Meanwhile, ISPreview has reported that Fern Trading's initial aim for 2023 will be to ensure that the operational unification of the four companies involved is successful, with it understood that there

are currently no plans to create a new brand for the combined business. However, it has been suggested that Fern Trading may look at refocusing or changing some of the brands within the group in the future.



### BT boosts UK IoT Play with National Roaming

BT launched an IoT SIM service supporting national roaming on rival networks in its home market, citing benefits for companies requiring reliable connectivity in remote areas. The IoT National Roaming SIMs will primarily connect to its EE network, but will be able to use networks provided by rivals as a back-up, ensuring devices can stay online. BT highlighted this improved connectivity for enterprises will support

industries including transportation and logistics, providing drivers and couriers operating in hard-to-reach locations "with access to important information in real-time". The company noted reliable coverage is central to businesses across these sectors as it can help track essential operations including changes to delivery schedules, or managing fuel efficiency. In addition, the IoT service offers a security

system designed to protect important data and safeguard connected devices deployed in the field. BT stated the secure management portal will "ensure the safe and efficient use of devices, allowing companies to focus on their core operations without worrying about data breaches or device mismanagement".

## Airtel Congo and MTN Congo Ink National Roaming Deal



A national roaming agreement between Congolese mobile operators Airtel Congo and MTN Congo has been announced by the Regulatory Agency for Electronic Communications and Post (L'Agence de Regulation des Postes et des Communications Electroniques, ARPCE). In a press release regarding the matter, ARPCE noted that under the deal MTN Congo will open its network to its rivals subscribers at eight sites, with locations covered including Malele, Kissila, Kintamou, and Liouesso. Meanwhile, Airtel Congo will give access to its infrastructure to MTN Congo subscribers at ten localities – including Kayes, Tchicanou, Boulankio and Ketta.

## EC Adopts Proposal to Include Ukraine in EU Free Roaming Zone

The European Commission (EC) has adopted a proposal to incorporate mobile network roaming into the EU-Ukraine Association Agreement, bringing Ukraine one step closer to joining the EU's free roaming area. Currently, EU and Ukrainian telecom operators offer affordable or free calls between the EU and Ukraine, on a voluntary basis, benefitting more than four million people fleeing war. The voluntary measures were recently extended by six months and the new arrangement now also covers calls to fixed line numbers in Ukraine as well as new types of operators. The EC's latest proposal on 14 February will now be considered by the Council of the European Union. Following the Council's agreement, a Joint Decision will need to be taken by the EU-Ukraine Trade Committee to grant mutual internal market treatment for roaming. The EC highlights that bringing Ukraine into the EU free roaming area is one of the key actions of the revised Priority Action Plan – a roadmap for the full implementation of the EU-Ukraine Deep and Comprehensive Free Trade Area (DCFTA) and Ukraine's further integration into the EU Single Market.



## Somali Operators Enable Network Interconnection



The National Communications Authority (NCA) has announced that Somali mobile operators have implemented an interconnection agreement to allow end users to call each other seamlessly across different telecoms networks. The agreement, which was signed in December last year, was a result of a series of discussions and consultations between the relevant parties that worked out all the fundamental issues necessary for the signing of the deal, including mobile termination rates (MTRs). The interconnection agreement came into force on 10 January 2023, and the interconnection process was expected to be completed by February 2023. According to the NCA, 'the agreement has been implemented in part by Hormuud Telecom, Somtel, Amtel, SomLink, Golis Telecommunications and Telesom'.

## Orange Belgium, Telenet Sign Two Commercial Wholesale Fiber Deal

Orange Belgium and Telenet have signed two commercial fixed wholesale agreements, which entry into force is subject to the completion of the transaction related to the acquisition of 75% minus one share of VOO by Orange Belgium. The agreements will provide access to each other's fixed networks for a 15-year period and cover

both current Hybrid Fiber Coaxial and future Fiber to the Home technologies in both network areas. Orange Belgium believes these agreements will foster investment, benefit the customer and competition in the Belgian telecom market. With these agreements, Orange Belgium firstly secures an access to Telenet's Hybrid Fiber Coaxial

network and to its future Fiber to the Home network for 15 years, a key enabler to strengthen its nationwide convergent strategy. Combined with its state-of-the-art mobile network and with the modernization of the VOO network in the regions of Wallonia and Brussels-Capital, Orange Belgium will democratize the multi-gigabit fixed and mobile speed experience all over the country. It is a major step forward in the deployment of our leading nationwide multi-gigabit strategy. With the acquisition of VOO, we have an ambitious investment plan to upgrade the network and to provide multi-gigabit connectivity to our customers. The agreement on the Telenet network, will complement our ability to provide a Hybrid Fiber Coaxial and Fiber to the Home multi-gigabit connectivity value proposition to our customers wherever they live. We also welcome Telenet as a wholesale customer on our future VOO network. These agreements will foster competition and network investments nationwide.



## Brazil-Chile Roaming Pact Postponed Until July

The agreement to scrap cross-border roaming fees between Brazil and Chile has been postponed until July, at the request of the Chilean authorities. Brazil's National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) signed off on the arrangement earlier this

month, and it was expected to take effect on 25 January 2023, but Chile's Ministry of Foreign Affairs (Ministerio de Relaciones Exteriores, MRE) has proposed a six-month delay. The Decree No. 10,949 was published in Brazil's Official Diary of the Union (Diario Oficial da Uniao, DOU) on 26 January 2022,

concluding a process that got underway with the signing of a Free Trade Agreement between the two countries in Santiago on 21 November 2018. As per the terms of the document, roaming charges were to be cancelled within one year of the decree being signed.

## MACRA Reduces Termination Rates Over Next Three Years



The Malawi Communications Regulatory Authority (MACRA) has announced a new

set of maximum wholesale termination rates for voice and SMS services for the next three years. Under the glidepath, the maximum termination rate for voice services has been set at USD0.0024 per minute from 1 January 2023 and will fall to USD0.0019 twelve months later and again to USD0.0015 on 1 January 2025. For SMS, the rate was established at USD0.001 at the start of this year and is scheduled to fall to USD0.0005 on 1 January 2024 and USD0.0003 twelve months after that. MA-

CRA says the new rates are now amongst the lowest in the Southern African Development Community (SADC) region. In other news, The Times reports that MACRA has given fixed line operators Malawi Telecommunications (MTL) and Access Communications (ACL) until May this year to pay their outstanding licence fees. The pair allegedly face the revocation of their licenses if they fail to pay a combined figure of MWK3.3 billion (USD3.2 million) by that date.

## Telenet, Orange Sign 15-Year Wholesale Agreement for Fixed Network Access

Orange Belgium and Telenet have signed two 15-year commercial wholesale agreements providing access to their respective current hybrid fiber coaxial (HFC) and future fiber-to-the-home (FTTH) networks. The two companies believe the deals will foster investment, increase competition and expand freedom of choice for consumers. With these agreements, Orange Belgium secures access to Telenet's HFC network, which passed 3.4 million homes in the Flanders and Brussels regions at end-September 2022, and to its future FTTH network. Telenet, meanwhile, will gain access to VOO and sister company Brutele's HFC network in Wallonia and one-third of Brussels, covering around 1.8 million homes passed, as well as future FTTH deployments. The entry into force of the deals is subject to completion of Orange Belgium's acquisition of 75% minus one share of cable operator VOO, which is pending EC regulatory approval. Xavier Pichon, CEO of Orange Belgium, commented: 'It is a major step forward in the deployment of our leading nationwide



multi-gigabit strategy. With the acquisition of VOO, we have an ambitious investment plan to upgrade the network and to provide multi-gigabit connectivity to our customers. The agreement on the Telenet network will complement our ability to provide a HFC and FTTH multi-gigabit connectivity value proposition to our customers wherever they live.' John Porter, Telenet CEO, said:

'Through the agreements, we now have a clear path to wholesale access in the south of Belgium, complementing our existing fixed footprint in Flanders, parts of Brussels and the boot of Hainaut in Wallonia in addition to our nationwide mobile network coverage. This will enable us to grow into a nationwide FMC player and provide more choice for customers.'

## Niger Abolishes Tax on Incoming International Traffic

The government of Niger is once again scrapping the tax on incoming international traffic (Taxe sur la Terminaison du Trafic International Entrant, TATTIE), reports Agence Nigerienne de Presse. According to a government statement, the move is aimed at 'reviving the telecommunications sector and promoting digital development in Niger through a resumption of

investments, particularly in the field of infrastructure'. Instead, new minimum rates for the termination of international calls to Niger will be established. On 1 July 2016 the Supplementary Budget Act raised the tax on incoming international traffic from XOF67.5 (USD0.11) to XOF88 per minute. In November 2017, however, the government voted to abolish TATTIE, effective 1 January

2018. In return for scrapping the tax, the nation's telecoms operators committed to make significant investments in improving coverage and service quality. On 1 January 2019 the government reintroduced TATTIE, after accusing telecom companies of failing to honor commitments to improve services.

## Brazilian Cellcos Ordered to Scrap Chile Roaming Fees

Brazilian mobile operators have been ordered to adapt their international roaming offers to eliminate roaming charges between Brazil and Chile. The deadline was confirmed by the board of directors at the National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) earlier this week. All providers,

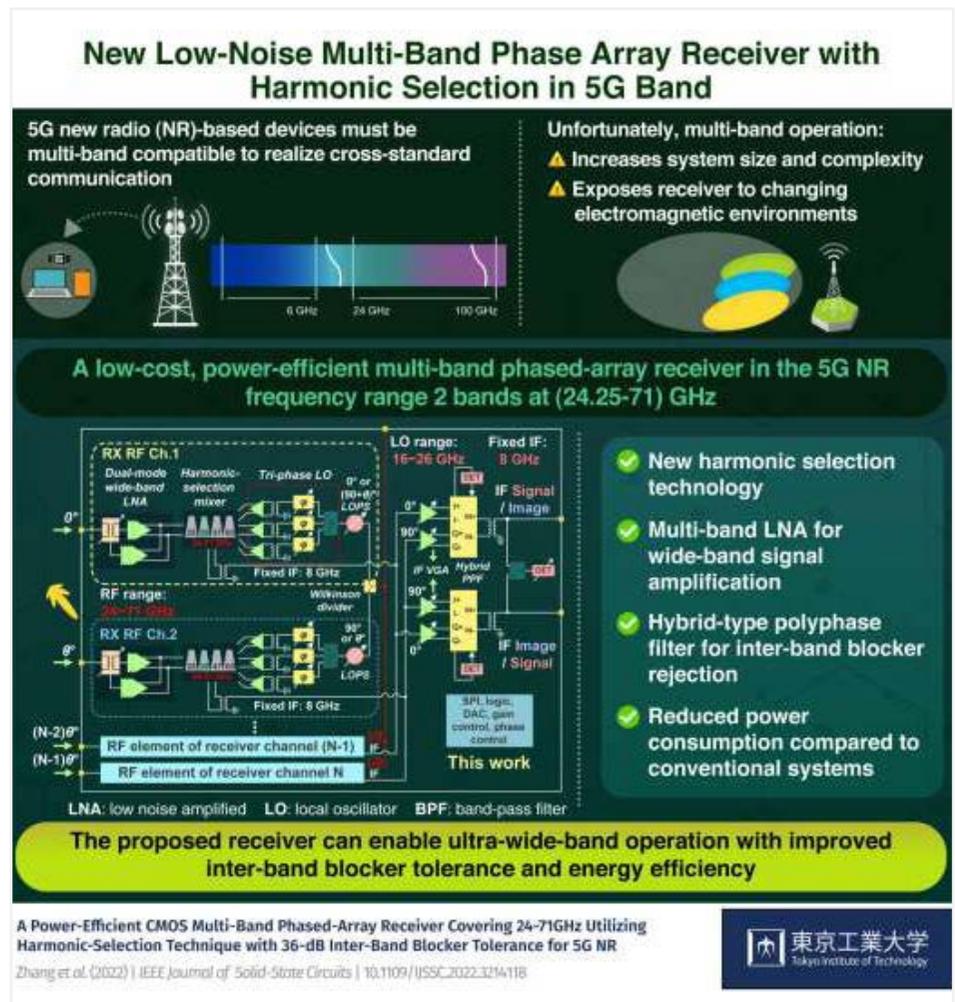
including MVNOs, must comply with the new arrangement. TeleGeography notes that Decree No. 10,949 was published in Brazil's Official Diary of the Union (Diario Oficial da Uniao, DOU) on 26 January 2022, concluding a process that got underway with the signing of a Free Trade Agreement between the two countries in Santiago on

21 November 2018. As per the document, roaming charges must be cancelled within one year of the decree being signed. TeleSintese notes that 'the matter has not yet been fully deliberated and regulated in Chile', meaning that the Brazilian side of the agreement may need to be tweaked further down the line. 

## TECHNOLOGY NEWS

## New and Improved Multi-Band Operational Receiver for 5G Radio Communication by Tokyo Institute of Technology

An ultra-wide-band receiver based on a harmonic selection technique to improve the operational bandwidth of 5G networks has been developed by Tokyo Tech researchers in a new study. Fifth generation (5G) mobile networks are now being used worldwide with frequencies of over 100 Hz. To keep up with the data traffic in these networks, appropriate receivers are necessary. In this regard, the proposed technology could revolutionize the world of next-generation communications. As next-generation communication networks are being developed, the technology used to deploy them must also evolve alongside. Fifth generation mobile network New Radio (5G NR) bands are continuously expanding to improve the channel capacity and data rate. To realize cross-standard communication and worldwide application using 5G NR, multi-band compatibility is, therefore, essential. Recently, millimeter-wave (mmW) communication has been considered a promising candidate for managing the ever-increasing data traffic between large devices in 5G NR networks. In the past few years, many studies have shown that a phased-array architecture improves the signal quality for 5G NR communication at mmW frequencies. Unfortunately, multiple chips are needed for multi-band operation, which increases the system size and complexity. Moreover, operating in multi-band modes exposes the receivers to changing electromagnetic environments, leading to cross-talk and cluttered signals with unwanted echoes. To address these issues, a team of researchers from Tokyo Institute of Technology (Tokyo Tech) in Japan has now developed a novel "harmonic-selection technique" for extending the operational bandwidth of 5G NR communication. The study, led by Professor Kenichi Okada, was published in the IEEE Journal of Solid-State Circuits. "Compared to conventional systems, our proposed network operates at low power consumption. Additionally, the frequency



coverage makes it compatible with all existing 5G bands, as well as the 60 GHz earmarked as the next potential licensed band. As such, our receiver could be the key to utilizing the ever-growing 5G bandwidth," says Prof. Okada. To fabricate the proposed dual-channel multi-band phased-array receiver, the team used a 65-nm CMOS process. The chip size was measured to be just 3.2 mm x 1.4 mm, which included the receiver with two channels. The team took a three-pronged approach to tackle the problems with 5G NR communication. The first was to use a harmonic-selection technique using a tri-phase local oscillator (LO) to drive the mixer. This technique

decreased the needed LO frequency coverage while allowing for multi-band down-conversion. The second was to use a dual-mode multi-band low-noise amplifier (LNA). The LNA structure not only improved the power efficiency and tolerance of the inter-band blocker (reducing interference from other bands) but also achieved a good balance between circuit performance and chip area. Finally, the third prong was the receiver, which utilized a Hartley receiver's architecture to improve image rejections. The team introduced a single-stage hybrid-type polyphase filter (PPF) for sideband selection and image rejection calibration. The team found that the proposed

technique outperformed other state-of-the-art multi-band receivers. The harmonic-selection technique enabled operation between (24.25–71) GHz while showing above 36-dB inter-band blocker rejection. Additionally, the power consumed by the receiver was low (36 mW, 32 mW, 51 mW,

and 75 mW at frequencies of 28 GHz, 39 GHz, 47.2 GHz, and 60.1 GHz, respectively). "By combining a dual-mode multi-band LNA with a polyphase filter, the device realizes rejections to inter-band blockers better than other state-of-the-art filters. This means that for currently used bands, the rejections

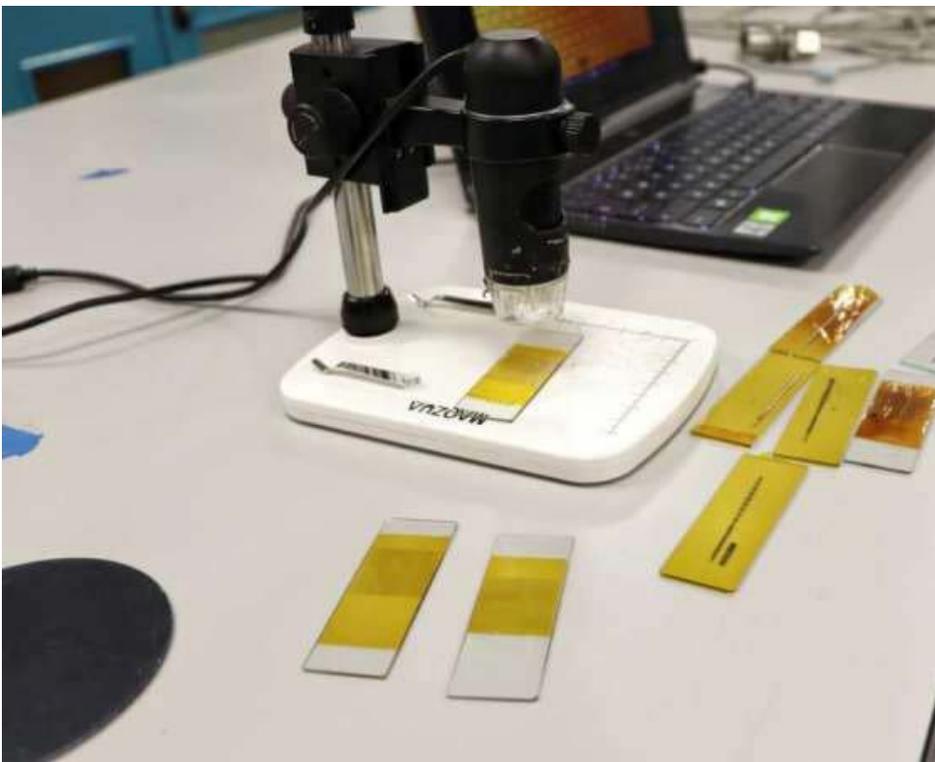
are better than 50dB and over 36dB for the entire supported (24–71) GHz operation region. With new 5G frequency bands on the horizon, such low-noise broadband receivers will prove to be useful," concludes Prof. Okada.

## 3D-Printed Antennas Could Bring 5G and 6G to Remote Communities by University of Sheffield

3D-printed radio antennas that could help bring stronger mobile phone signals and faster internet connections to people living in remote communities have been developed by researchers at the University of Sheffield. The millimeter wave (mmWave) aerials, which have been designed, made and tested by researchers from the University of Sheffield's Department of Electronic and Electrical Engineering, have radio frequency performance that matches those produced using conventional manufacturing techniques. The 3D-printed antennas could speed up the development of new 5G and 6G infrastructure as well as help to open

up access to the technologies for people living in remote areas, both in the U.K. and around the world. Antennas currently used to build telecommunication networks are typically slow and costly to manufacture. This is hindering innovation, delaying the development of prototypes and making it difficult to build new infrastructure. The researchers at Sheffield have developed a new design that enables radio antennas to be made much cheaper and faster using 3D printing without compromising on performance. The technique means antennas can be produced in as little as a few hours, for only a few pounds, but

with similar performance capabilities as antennas manufactured in the conventional way which usually cost hundreds of pounds to create. Below are some 3D surface plots created at the measurement lab—these plots show a comparison between a traditionally manufactured example, and the 3D printed antenna created by the team at the University of Sheffield. The antennas use silver nanoparticles, which have excellent electrical properties for radio frequency, and have been tested at various frequencies used by 5G and 6G networks, up to 48 GHz. Their gain and time domain response—affecting the direction and strength of signal they can receive and transmit—is almost indistinguishable from those manufactured traditionally. Eddie Ball, from the Communications Research Group at the University of Sheffield, said, "This 3D-printed design could be a game changer for the telecommunications industry. It enables us to prototype and produce antennas for 5G and 6G networks at a far lower cost and much quicker than the current manufacturing techniques. The design could also be used to produce antennas on a much larger scale and therefore have the capability to cover more areas and bring the fastest mobile networks to parts of the world that have not yet had access." Radio frequency testing of the antenna was performed using the University of Sheffield's industry-leading UKRI National mmWave Measurement Lab. The mmWave measurement facility can measure systems on chip and antennas to 110GHz, which is invaluable for communications research, such as that carried out on the 3D-printed antenna.



## Ceragon Launches AI-Based Intelligence and Management Software Suite for Multi-Vendor Wireless Transport Networks

Ceragon Networks Ltd. the global innovator and leading solutions provider of 5G wireless transport, today announced the launch of Ceragon Insight, an AI-based Intelligence and Management Software Suite capable of planning, managing, analyzing, and automating multi-vendor wireless transport networks. Ceragon Insight's centralized management suite includes advanced tools to help customers increase operational efficiency, improve network performance, and speed up troubleshooting. Ceragon will demonstrate these new software capabilities next week

at MWC 2023 in Barcelona, booth #5G61. At the event, Ceragon will additionally feature its OPEN transport solutions, new advanced long-haul capabilities, and flexible network services. Ceragon Insight is capable of autonomously implementing various real-time improvements, network utilization optimization tasks, and energy-saving adjustments. The software greatly reduces the time and expertise required for new link installation and commissioning with its easy-to-implement customizable configuration files. Ceragon Insight helps Network Operators build, manage, and

maintain open architecture networks overcoming legacy challenges presented by single-vendor proprietary ecosystems. The software suite's AI-powered predictive maintenance increases network uptime while helping to eliminate redundant reports, alerts, and alarms that can slow down NOC response capabilities. Doron Arazi, Ceragon CEO, commented, "Network Operators now have access to a single unified SDN-based management platform with a powerful easy-to-use interface. Ceragon Insight delivers real-time network awareness and the intelligence to predict and prevent issues before they occur. Beyond that, if a problem does arise, Ceragon Insight can be automated with predefined triggers and responses so that it can act autonomously, delivering substantial operational savings." Ceragon Insight is a cloud-based software suite that leverages the latest communication advancements and is now available for purchase with wide compatibility and flexible configurations designed to suit the needs of all customers, including cloud hosting and on-premise options.



## Unified Streaming Powers Workflows for CRA

České Radiokomunikace (CRA), a digital infrastructure, OTT, and telecommunications specialist in the Czech Republic and Eastern Europe, has selected the technology of Unified Streaming to power its growing on-demand video streaming workflows. As an OTT platform provider, CRA has seen a surge in demand over the last several years for data transfers, reaching 1 terabyte per second. The company decided it needed to replace its current streaming packaging infrastructure technology with a new one that could package and serve their content effectively, reliably, and scalably. Restructuring meant finding a future-proof solution. Meeting the Czech company's strict requirements are two core software products, Unified Origin and Unified Packager, from Unified Streaming, a creator of world-class streaming technologies and leader in defining industry-advancing standards and specifications. Unified Streaming's prod-

ucts allow CRA to stream from one single source to all devices including DRM (digital rights management) support. Unified tech also enhances CRA's workflows so that they can now serve more concurrent requests. CRA has recently experienced demand for its services outside its normal region. In addition to the outsize OTT role that CRA plays in Czech Republic and other countries (Slovakia and Romania), the company has also gone global. Newly contracted to provide intercontinental streaming platform services, CRA will now cover North and South America, Africa, East Asia, and Japan. Bigger customers makes it even more important that CRA's platform be able handle the stresses of worldwide streaming demands. Unified Streaming's technology will be able to manage all global streaming preconditions. Multilevel DRM (digital rights management), or the copy-protection of content across all tiers



of service, from free ad-supported to premium 4K streaming, comes standard in the technology of Unified Streaming. Unified Origin and Unified Packager feature all the functionality, flexibility, and reliability that České Radiokomunikace needs as it grows, to surpass global demands. "Content protection is an important topic for us as well as for our customers. We are continuously working on providing top quality services. Therefore, we welcome the opportunity to improve and innovate our model of content processing and distribution," said Petr

Možíš, CRA Commercial Director. "I am happy that we support CRA in its ambitions to grow their business and that our software will enable this. One of our strengths at Unified is broad device- and workflow-agnostic support and stability, and multilevel DRM is a

must-have for global streaming demands. Helping CRA vastly extend its reach fits perfectly with what we aim to do," said Simon Westbroek, VP Global Sales and Partnerships at Unified Streaming.

## Vodafone Deepens RCS Push with Google

Vodafone Group expanded an existing agreement with Google in Europe to make the internet giant's RCS-based messaging app the default offering on all applicable Android devices it sells. Messages by Google, powered by the Google Jibe Cloud platform, will become the default messaging app on Android devices sold across the operator's carrier sales channel. The companies stated RCS will bring "an interactive modern messaging experience", to Vodafone customers, apparently enhanced further through the cloud. They added RCS enables messages with high-quality photos and videos, read receipts, enhanced group messaging and encryption for one-to-one chats, protected by a "high level" of data privacy and security. The agreement will also extend to Vodafone Business customers, as messaging becomes "increasingly important" for companies of all sizes. Vodafone said its adoption of RCS will simplify business onboarding and operations, helping engagement with consumers for services and sales. RCS aside, Vodafone also



plans to expand availability of Google Pixel smartphones and wearables to additional markets in 2023, introducing the products to more retail outlets in Europe. The operator also plans to use Android TV as its preferred group-wide platform for its TV services going forward.

## Mobileum Announces New Release of its Active Intelligence Platform

Mobileum Inc. a leading global provider of telecom analytics solutions, is pleased to announce the latest release of its Active Intelligence Platform (AIP), a cloud-native big data solution designed to collect and analyze a growing volume, velocity, and diversity of complex data streams generated by Communication Service Provider (CSP) networks. The new release of AIP is built on an advanced data lakehouse architecture and lays the foundation for "One Platform," "One Technology," "One Data Policy," and "One User Experience." This foundation will allow customers to manage data as a product, providing different functional stakeholders and domain-specific team members the ability to collaborate with complete control and visibility over the data lifecycle. Users can rely on this data infrastructure to run quick, off-the-shelf BI analyses, while data scientists can develop and test new machine learning models faster and with higher confidence. This release supports a wide set of domain-specific applications for mobile roaming, network security, risk management, testing and service assurance, customer experience, and data monetization. "Service providers have access

to massive amounts of data but struggle to analyze and leverage it holistically across the organization. AIP's new data lakehouse architecture provides a common repository for both structured and unstructured data – enabling better AI/ML-powered insights with fewer resources," stated Avnish Chauhan, Chief Technology Officer at Mobileum. "This latest release steps up operators' low-code capabilities, allowing citizen data scientists to create their own analytical use cases and forecasts quickly and easily – bringing the power of machine learning and artificial intelligence to the entire organization." The Active Intelligence Platform simplifies data analysis by removing the need for operators to manage and support individual machine learning components, databases, and storage, allowing CSPs to focus on their business. It is built using industry standards and open APIs for easier integration. And its cloud-native architecture integrates with any existing cloud provider – or it can be installed on-premises - allowing operators to leverage best-of-breed technologies. Each Mobileum application built on top of AIP benefits from its analytical capabilities and insights. This new version expands possibilities in a number of fields, such as in network anomaly detection, root cause analysis, and trouble ticketing, enabling a fully automated, closed-loop process. Additionally, it enhances integrated risk management, enabling rich, real-time insights and tight integration between security and fraud applications. "This is the kind of agility and flexibility that every network operator needs in the era of 5G. The ability to cope with new data formats, new business and deployment models, and new technologies on the fly is now possible with AIP," stated Mr. Chauhan.



# NOAA Satellites Can Track Hurricanes and Hundreds of Missing People Sending SOS Signals

Imagine being in a boat mile from shore when the engine fails, or getting lost in a remote spot while hiking in the Rocky Mountains. Having a beacon or transmitter that sends a distress signal via satellite could mean the difference between life and death. The same satellites that send compelling images when massive hurricanes approach land or huge icebergs break off in Antarctica also play a crucial role in helping to find and rescue people from potentially life-threatening situations like these. Activating a device that sends an emergency signal can mean the difference between a search that takes a few hours or a search that could take days, if it's successful at all. Last year, satellite technology helped rescue 397 people throughout the nation and surrounding waterways, according to information provided by the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration. That's 67 more than last year, but below the record high of 421 U.S. rescues in 2019.

## How do satellites help rescue people?

When a lost hiker or a sinking boater turns on an emergency distress beacon, it sends a signal that can be detected by the global Search and Rescue Satellite Aided Tracking system. The program "truly takes the 'search' out of search and rescue," stated Steve Volz, assistant administrator for NOAA's Satellite and Information Service. Distress signals beamed from aircraft, boats and handheld personal locator beacons are detected by a network of U.S. and international spacecraft and used



to send rescuers. Since its beginnings in 1982, the network has supported more than 50,000 rescues worldwide. When a satellite picks up a distress signal, it's related to NOAA's Satellite Operations Facility in Suitland, Maryland, then dispatched to coordination centers staffed by the Air Force for land rescues or the Coast Guard for water rescues. Of the 397 rescues in the nation last year, 275 were water-related, while 42 were from downed aircraft. Personal locator beacons were used in 80 land rescues. The 106 rescues in Florida were the most of any state. Fifty-six were in Alaska and 20 in Utah. The rescues included:

- A group of 17 hikers who were lifted to safety after being stranded on a backcountry hike in Sandthrax Canyon, Utah, thanks to a personal beacon.
- Seven rescued in November near Bethel, Alaska, after the Alaska Rescue Coordination Center got the coordinates of a commercial plane forced to land on a frozen lake when its engine failed.
- A man who grabbed his life raft and activated a beacon in August when his boat capsized and sank off the coast of New Smyrna Beach, Florida. He was lifted to safety by a Coast Guard helicopter. 📍



## خدمات جو السحابية (IaaS) GO Cloud Services

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## REGULATORY NEWS

## TDRA Releases the Arabic Version of the United Nations e-Government Survey

The Telecommunications and Digital Government Regulatory Authority (TDRA) announced the release of the Arabic version of the United Nations E-Government Survey 2022, which monitors the level of progress in various indices related to digital transformation in 193 countries. The report release took place on the sidelines of the World Government Summit, with the participation of H.E. Eng. Majed Sultan Al Mesmar, TDRA Director General, and Mr. Vincenzo Aquaro, Chief of Digital Government Branch in the Division for Public Institutions and Digital Government - UN DESA, which is the body responsible for issuing the report and following up on the development of digital government globally. In the context of announcing the report release, H.E. Eng. Majed Sultan Al Mesmar said: "The dissemination of digital knowledge in Arabic has an impact on more than 420 million Arabs and Arabic speakers in this region. We are proud that the UAE, which provided the Arab world with an inspiring model in digital transformation, embodies its mission by transferring knowledge from its reliable sources to Arabic language, to serve the vast majority of Arab readers." He added: "We highly value our partnership with the UN and its various departments, foremost of which is the Department of Economic and Social Affairs (UN DESA), and we are pleased that this partnership serves our goals and the goals of the countries of the region in creating a sustainable digital future, in line with the UN global mission." The release of the report included holding a workshop with the participation of TDRA, local digital governments and the United Nations. The workshop included discussions on the mechanisms for preparing the report and ways to develop them to serve the needs of the region and the particularity of the digital transformation process. The Arabic language is one of the six official languages of the UN, in which the report is issued. The UAE, represented by TDRA, prepares the Arabic version of the report, and coordinates with the UN to publish it on a global and regional scale with the aim of disseminating digital knowledge and improving the digital transformation capabilities of the Arab countries based on the latest international standards, developments and experiences. The report monitors the world countries in related indices, foremost of which is the E-Government Development Index (EGDI), Online Services Index (OSI), E-Participation Index (EPI),



Telecommunications Infrastructure Index (TII), and Human Capital Index (HCI). The UAE is ranked first in the Arab region in all of these indices, which allows it to support other Arab countries in this regard. The report presents success stories and experiences from countries around the world in various digital applications that help create a real impact on societies based on ICT. The UAE had a large share of those experiences that can be beneficial for countries of the region. The UAE has handled the translation of the UN report to Arabic since 2018, under an MoU with the United Nations. The UAE publishes the report on the government official portal and arranges for its publication on the portal of the UN DESA to be available for all interested countries, institutions and individuals.

## IFT Classifies 6GHz as 'Free Spectrum'; Clears Band for Wi-Fi 6E Usage

The Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) has paved the way for the introduction of Wi-Fi 6E services in Mexico by classifying a 500MHz block of spectrum in the 5925MHz-6425MHz range as 'free spectrum', which can be used without the need for a concession or authorization.

The IFT notes: 'With the allocation of this segment, the amount of spectrum for the provision of Wi-Fi services in the country will practically double, adding to that of the 2.4GHz and 5GHz bands that are already used by these systems.'

## Dubai's VARA Issues Specialized Regulations for Virtual Assets

Dubai's Virtual Asset Regulatory Authority (VARA), has issued its Virtual Assets and Related Activities Regulations 2023 setting out a broad Virtual Asset (VA) Framework stressing economic sustainability and cross-border financial security. The UAE has remained committed to enabling these drivers safely, updating its oversight and regulatory approach, addressing global risks of money laundering (ML) and terrorist financing (TF), arising from the potential misuse of new technologies. The VA Framework is structurally designed to offer regulatory certainty – allowing the market to have greater clarity on the expected level of operator responsibility. It also mandates gold-standard risk assurance and Anti-Money Laundering (AML) standards to be applied by licensed entities within the Emirate. Helal Saeed Almarri, Director General Dubai's Department of Economy & Tourism, and Chairman of VARA's Executive Board said: "Dubai's D33 Economic Plan has outlined our mission to establish the Emirate as the capital of the Future Economy anchored by Metaverse, AI, Web3.0 and Blockchain. In Q1-2022, VARA was launched as the world's only independent and specialist regulator for Virtual Assets to serve as the accelerator for a truly borderless Digital Economy. "Ahead of its first anniversary since establishment, VARA launches the first-of-its-kind VA framework structured to accelerate our New Economy agenda, augmenting secure, and sustainable 'global' market growth. This custom-designed construct reflects UAE's commitment to building responsible safeguards, and Dubai's confidence in delivering a progressive VA ecosystem that nurtures next-gen innovation." As the Authority mandated to provide VA oversight across the Emirate of Dubai [except DIFC], VARA will facilitate VA-associated economic stability, investor protection, and jurisdictional resilience. The new regulations span a comprehensive breadth of seven licensed VA activities - Advisory services, Broker-Dealer services, Custodial services, Exchange services, Lending-Borrowing services, Payments and Remittances services, and VA Management and Investment services. Additionally,



**VIRTUAL ASSETS AND RELATED ACTIVITIES REGULATIONS 2023**

**Spectrum**  
AUDIT. VAT. ACCOUNTING.

Dubai Government has released a new law on Virtual Assets and Related Activities (VARA). As set out in the article 5 of the VARA law, VARA has the following objectives:

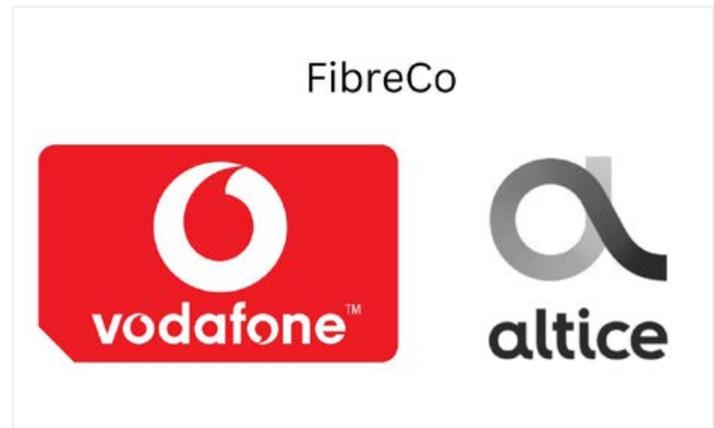
-  To promote the Emirate as a regional and international hub for Virtual Assets and related services; to boost the competitive edge of the Emirate at the local and international levels; and to develop the digital economy in the Emirate.
-  To increase awareness on investment in the Virtual Asset services and products sector, and encourage innovation in this sector.
-  To contribute to attracting investments and encourage companies operating in the field of Virtual Assets to base their business in the Emirate.
-  To develop the regulations required for the protection of investors and dealers in Virtual Assets, and to endeavour to curb illegal practices in coordination with the concerned entities.
-  To develop the regulations, rules and standards required for regulating, supervising, and overseeing Virtual Asset platforms, VASPs, and all other matters related to Virtual Assets.

issuance is a regulated activity under the VARA regime to allow consumers to make a more informed decision on new tokens being launched in Dubai, and the associated obligations of the issuer. Existing MVP Operational license applicants [and holders of either the Provisional or Preparatory MVP licenses], legacy UAE-based Virtual Asset Service-Providers (VASPs), and

new market entrants will be provided with a route towards full FMP licensing. All VASPs offering VA services to the Dubai market prior to the publication of the FMP Regulations will be required to register with VARA and become fully compliant with the final rules. Any breach of this condition will be subject to regulatory action.

## EC Clears FibreCo JV Between Vodafone and Altice

The European Commission (EC) has announced that it has approved the establishment of a new German fibre-optic joint venture (JV), dubbed 'FibreCo', by Vodafone Group and Altice. The JV, which was first announced in October last year, which will be tasked with the deployment of fiber-to-the-home (FTTH) networks to up to seven million German homes over a six-year period. After examination, the EC has concluded that the proposed concentration would not raise competition concerns and falls within the scope of the Merger Regulation. It has therefore decided not to oppose the creation of the JV and to declare it compatible with the internal market and with the EEA Agreement. FibreCo will be owned 50% by Vodafone Germany and 50% by Luxembourg-based Altice. FibreCo will construct and operate a FTTH broadband network available to up to seven million homes, 80% of which will be focused around large housing associations in Vodafone's existing HFC network footprint which are interested in FTTH upgrades. The remaining 20% will be outside of Vodafone's current footprint, focusing on



neighboring homes. FibreCo will also offer wholesale access to other service providers and has contracted Geodesia (a subsidiary of Altice) for the majority of rollout construction and maintenance.

## Vodafone Ghana Sale Completed

Vodafone Group has completed the transfer of its 70% stake in Vodafone Ghana to Telecel Group for an undisclosed sum, after obtaining all the necessary regulatory approvals including the agreement of the Ghanaian government, which remains the 30% minority shareholder. The operations of Vodafone Ghana and its three subsidiaries – National Communications Backbone Company (Vodafone Wholesale), Vodafone Mobile Financial Services (Vodafone Cash) and the Vodafone Ghana Foundation – will 'continue operations uninterrupted while embracing exciting new possibilities', the operator said in a press release. The deal had



received conditional approval from the National Communications Authority (NCA) in January. Confirming the sale, Vodafone Group CEO Margherita Della Valle, said: 'The sale of Vodafone Ghana to Telecel Group is a further step in simplifying Vodafone's African portfolio. Since entering the market in 2008, Vodafone has helped to develop Ghana's critical network infrastructure supporting customers, businesses and communities.' Malek Atrissi, Telecel Group COO, commented: 'This acquisition is a testament to our enthusiasm and positive outlook for the Ghanaian market, which we view as a vital market with unlimited potential for digitalization and innovation in Africa. Telecel Group is eager to develop and bring forward-thinking offerings to our subscribers, enterprises, and communities in Ghana. We look forward to a transformation journey of Vodafone Ghana with the contribution and growth of its human capital.' Vodafone entered Ghana in 2008 when it paid the government USD900 million for 70% of national PTO Ghana Telecommunications. Since then the company has struggled to compete with dominant market leader MTN, claiming 18.3% of the country's mobile subscriptions at 30 September 2022, compared with its rival's 65.4%.

## European Operators Sign New Ukraine Assistance Pact

Telecoms operators from across Europe have signed a new statement alongside their Ukrainian counterparts to prolong voluntary measures that have been allowing affordable or free calls between the EU and Ukraine, reports mobile operator association the GSMA. Under the updated Joint Statement, signatories have renewed and extended the framework to continue to voluntarily and bilaterally lower wholesale roaming and international call termination charges. According to a European Commission

estimate, the measures will allow over four million refugees to have affordable access to connectivity. The GSMA facilitated the involvement of its members in the initiative. Operators signing the pact included: Altice Portugal, Bouygues, Colt, Deutsche Telekom, Iliad, KPN, Liberty Global, Masmovil, Orange, Play, Polkomtel, Proximus, Telefonica, Telenor, 3 Group (CK Hutchison), TIM, United Group and Vodafone Group.

## CRTC Gets New Policy Direction to Prioritize Telecom Competition, Affordability

The Ministry of Innovation, Science and Economic Development outlined those priorities in a new policy direction to the CRTC. The document tells the CRTC what to consider when issuing decisions and making policy involving issues such as wireless and wireline internet services. The government told the CRTC to consider how its decisions encourage “all forms of competition and investment” and how they “foster affordability and lower prices,” as well as how they “enhance and protect the rights of consumers in their relationships with” telecom companies. Among other key objectives, the CRTC must look at ensuring the availability of “affordable access to high-quality, reliable and resilient telecommunications services” in all regions of Canada, and reducing barriers to market entry for new and smaller telecom companies. The policy direction from the Department of Innovation, Science and Economic Development is focused on telecom-related issues. The CRTC will receive a separate policy direction from Heritage on how to implement the Liberal government’s controversial online streaming legislation, Bill C-11, at a later date. The previous version of the policy direction told the CRTC to “rely on market forces to the maximum extent feasible.” That has been removed now that the new direction is in place, officials confirmed in a technical briefing. The final version of the direction released Monday is largely similar to a draft version released in the spring, which was supported by small telecoms who depend on wholesale access to the networks of the largest incumbent telecom companies. Five of Canada’s largest telecom companies earned 87 per cent of revenues in 2020. The CRTC has in recent years been under criticism from consumer advocates for its handling of the wholesale internet regime, who blame the CRTC for a wave of acquisitions in the sector that have seen independent ISPs bought by big telecoms. The regulator’s new chairperson, Vicky Eatrides, told National Post shortly after starting in the job

in January that the current wholesale wireline model isn’t working. The big telecoms criticized the draft policy direction when it was released in the spring. In written comments, Bell told the government the document “provides directions that are so specific and prescriptive that they lie beyond the powers” the government has under the Telecom Act. Officials told reporters in a background briefing the government “flat out” disagreed with those arguments from the big telecom companies. Consumer advocates took issue with the draft policy direction from the other side, arguing it was too permissive. The Public Interest Advocacy Centre called it a “largely toothless instrument,” and said it should be rewritten “to be directive, not suggestive.” Appearing at the House of Commons industry committee Monday afternoon, Innovation Minister François-Philippe Champagne said the policy direction is “the first one in many, many years, which puts competition and price at the center of that directive.” He said “we want to see better prices, more competition, and we want to see innovation in the sector.” Champagne was also questioned about the \$26-billion Rogers-Shaw deal, which would see two of Canada’s five biggest telecom companies merge while spinning off Freedom Mobile to Quebecor. Freedom Mobile has been credited with driving down prices as the fourth competitor in Ontario, Alberta and British Columbia. Champagne has final approval over the deal, but he said Monday he’s not in a hurry to make the decision about whether the merger will go ahead or not, even as the companies have extended a self-imposed extended deadline to Feb. 17. He said he’s not bound “by any artificial deadline. I’m the regulator. I will make my decision whenever I come to the conclusion that we have looked at every aspect... I want to be very clear with Canadians there is no deadline.”

## Bouygues Telecom Ordered to Pay EUR308m in Damages to Free

Bouygues Telecom has been ordered by the Paris Commercial Court to pay rival Free Mobile EUR308 million (USD328 million) in damages stemming from Bouygues’ business model. Back in 2014, Free Mobile opened legal proceedings against its main rivals Orange and Bouygues Telecom over the pair’s handset subsidy offerings, which it claimed bind customers into a long-term commitment with a single operator. It initially sought damages worth EUR1.5 billion from the two companies. The ruling states that there must be ‘immediate execution of the judgement’, which Bouygues Telecom believes is incorrect given the proceedings were initiated before 1 January 2020. Bouygues Telecom says that it ‘disputes this ruling in the strongest possible terms and considers that its bundled offers are legal’, adding that ‘the company acted in strict compliance with the law.’ The company will appeal the decision at the Paris Court of Appeal.



## ITU Academy Training Centers Selected to Enhance Digital Skills Development

The International Telecommunication Union (ITU) has selected organizations from around the world to join its new flagship ITU Academy Training Centers (ATC) program. The ATC program aims to deliver high-quality information and communication technology (ICT) training to develop both institutional and individual capacity in ITU's diverse membership and, in turn, across the global ICT and telecommunications industry. The ATCs will become operational in the second half of 2023. "Digital skills

and development are a cornerstone of stronger, more sustainable economies," said Doreen Bogdan-Martin, ITU Secretary-General. "The organizations participating in the ITU Academy Training Centers program have demonstrated their commitment to high-quality capacity development for all. Together, we are nurturing well-equipped digital professionals in developing countries and strengthening the ability of all countries to achieve the UN Sustainable Development Goals." The selected Centers

will support ITU's development priorities by strengthening capacity building and boosting technical ICT skills and proficiency, particularly in developing countries. Through the ATC program, training will be provided to intermediate- and senior-level personnel with courses tailored to the most pressing needs of ITU's membership, including on policy and regulation, network infrastructure, spectrum management, cybersecurity, digital inclusion, and digital services. The courses will be conducted online through ITU's e-learning platform, the ITU Academy. Hybrid and face-to-face courses will also be possible. Registration will be available online through the ITU Academy platform. "As we continue to support our Member States' digital transformation goals, the need to constantly upgrade digital skills and qualifications of all stakeholders must not be overlooked," said Cosmas Zavazava, Director of ITU's Telecommunication Development Bureau (BDT). "Building on BDT's vast experience in capacity development, the training delivered by the selected ATCs will help our members keep pace with emerging demands and new regional priorities."



## Telcos' Joint Advertising Venture Against Big Tech Gets EU Go-Ahead

The telecoms providers said the upcoming platform is designed to give customers control over their data which is currently collected by 'major, non-European players'. The European Commission has approved a joint venture to create a new digital advertising platform and challenge current Big Tech dominance. The new venture is being organized by Deutsche Telekom, Orange, Telefónica and Vodafone, which claim to be working on a "privacy-by-design" platform that requires opt-in consent by the consumer to activate brand advertising. The joint venture is set to launch in several EU countries following a successful trial in Germany, with further trials planned to develop the platform. The platform will first launch in Germany, Italy, Spain and the UK according to the commission. Orange said the four telecoms providers will have an equal stake in the new joint venture

company, which will be based in Belgium and run by independent management. The platform is based on a project first launched by Vodafone to create a digital advertising service for Europe. The platform creates a digital token for the user, which lets brands and publishers recognize users on websites in a near-anonymous state. The companies believe this will allow advertisers to group users and tailor content to them, while retaining privacy control for the user. The move appears to be aimed at the current control Big Tech companies have over the digital advertising market, based on a statement released by Orange. "The platform is specifically designed to offer consumers a step change in the control, transparency and protection of their data, which is currently collected, distributed and stored at scale by major, non-European players," the statement

said. The commission conducted an investigation and said the joint venture will raise "no competition concerns" in the EEA. The European Commission noted that there would still be alternative options available and that the joint venture will not restrict rival providers of digital identification services. The investigation also found that the joint venture would not increase the risk of coordination between the four companies. Certain Big Tech companies have been accused of anti-competitive practices in the adtech sector. For example, the US government recently accused Google of monopolizing key digital advertising technologies and engaging in various anti-competitive practices such as eliminating competition, forcing publishers and advertisers to use its products, and thwarting the ability to use competing products.

## UK Competition Regulator Opposes Microsoft-Activision Merger

The UK's Competition and Markets Authority (CMA) has found that Microsoft's proposed acquisition of gaming company Activision Blizzard could harm competition across multiple markets. The CMA's provisional conclusions, issued on 8 February, found that the deal would likely impact competition in cloud gaming services and the supply of consoles. The provisional findings come after five months of investigation into the \$69 billion deal, announced in January 2022 and cover antitrust concerns regarding the supply of both cloud gaming services and consoles. The merger has proved controversial, attracting regulatory scrutiny from several other authorities, including in Brussels and Washington. The CMA is now seeking input from the companies involved, as well as comments from interested parties ahead of its final report on the acquisition, due by 26 April. The UK competition authority will advance a probe into Microsoft's acquisition of gaming company Activision Blizzard, it announced. Following the launch of initial proceedings looking into the deal last July, the CMA in September announced that it would move ahead with a formal investigation into what would be Microsoft's largest acquisition to date. The purchase would make the tech giant one of the largest gaming companies by revenue, which prompted concerns from the UK watchdog that control by Microsoft over Activision's most popular games, such as Call of Duty, could harm rivals and lead to industry dominance. The CMA said that its investigation indicated that it would benefit Microsoft to make Activision's games exclusive to, or available at a much higher quality on, its own cloud gaming service. Given Microsoft's existing presence in this market, including its ownership of Xbox, Azure and Windows, the regulator concluded that buying an already powerful gaming



company would reduce competition, potentially harming UK gamers and impacting the future of the gaming environment. The UK regulator also found that a small number of high-profile games, including Call of Duty, are key in driving competition between different consoles and that it would likely be to Microsoft's commercial advantage to make Activision's games again either only available on its own consoles or available on others, but under materially worse conditions. The CMA noted that buying game studios and then making their content available only on Microsoft's own platforms has been a strategy used by the company before in previous purchases. Given the close competition between Xbox and Sony-owned PlayStation, Microsoft's ability to gatekeep access to games such as Call of Duty could, the CMA said, lead to higher prices and lower quality for UK gamers over time. In a statement of possible remedies, the CMA suggested that Microsoft could ensure that games such as Call of Duty are available to other platforms after the merger. "We are committed to offering effective and easily enforceable solutions that address the CMA's concerns," said Rima

Alaily, Microsoft's Corporate Vice President and Deputy General Counsel, in response to the CMA's findings. "Our commitment to grant long-term 100% equal access to Call of Duty to Sony, Nintendo, Steam and others preserves the deal's benefits to gamers and developers and increases competition in the market. 75% of respondents to the CMA's public consultation agree that this deal is good for competition in UK gaming." The UK is not the only jurisdiction in which concerns about the merger have been raised. In December, the US Federal Trade Commission issued a complaint requesting that the deal be blocked, referring to what it described as "Microsoft's record of acquiring and using valuable gaming content to suppress competition from rival consoles". The EU launched its own full-scale investigation into the deal in November after Microsoft chose not to put forward any proposed concessions to alleviate preliminary concerns outlined by the European Commission. According to media reports, Microsoft received a statement of objections from the EU antitrust authority last week, marking the start of the second phase of the investigation.

## EC to Rule on Orange-VOO Deal by 11 April

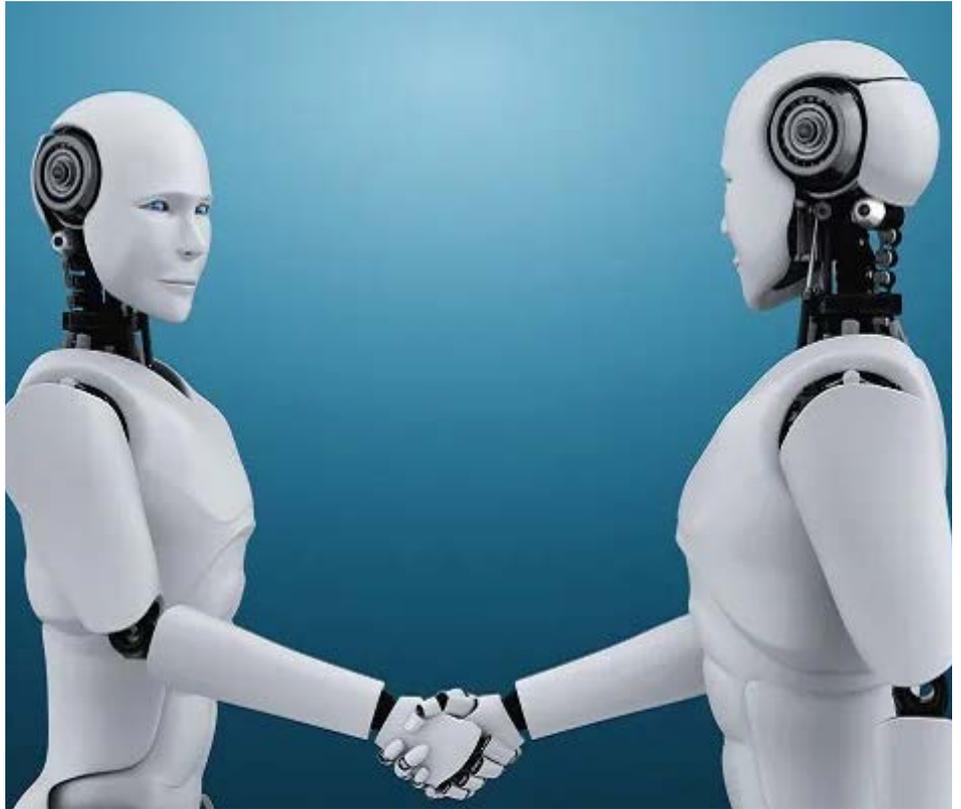
EU antitrust regulators will decide by 11 April whether to approve Orange Belgium's bid to acquire a majority stake in cable operator VOO. The decision to restart the phase II investigation comes after Orange announced a fixed network access deal with rival Telenet to address competition

concerns. Orange announced a final agreement to acquire a 75% minus one share of regional quad-play operator VOO in December 2021, based on an enterprise value of EUR1.8 billion (USD1.95 billion). Having warned the proposed transaction could significantly reduce competition, the

EC temporarily halted its investigation into the deal last October to give Orange time to reach a wholesale agreement with Telenet, enabling its rival to access VOO's network in Wallonia and provide fixed-mobile converged services throughout Belgium.

## US, EU Pledge Joint Pursuit Of Positive Impact AI

The European Union (EU) and US pledged to collaborate on research towards use of AI to address major global challenges including climate change and mitigating the impact of natural disasters. In the European Commission's statement on the move it explained the Administrative Arrangement on Artificial Intelligence for the Public Good was also designed to help tackle challenges related to healthcare, energy and agriculture. AI is expected by the partners to play a role in areas including predicting extreme weather and natural disasters, alongside aiding crop yields by modelling soil and atmospheric conditions, and bird and insect trends. The EC noted findings and resources would be shared with "international partners that share common values but lack relevant capabilities to help them manage such emergencies and challenges". "Based on common values and interests, EU and US researchers will join forces to develop societal applications of AI and will work with other international partners for a truly global impact," EC Commissioner for Internal Market Thierry Breton added. In his country's statement on the deal, US national security adviser Jake Sullivan noted the collaboration will "drive responsible advancements in AI to address major global



challenges with a joint development model and integrated research to deliver benefits to our societies". The partnership is the latest between the two regions focused on advanced technologies and trade. EU

member states were also part of a slew of countries to sign the Declaration for the Future of the Internet pledge with the US, outlining a global vision of the future of the internet and related technologies.

## Six Canadian Operators Win Spectrum in Residual 600MHz, 2500MHz, 3500MHz Auction

Canada's Minister of Innovation, Science and Industry Francois-Philippe Champagne announced the results of the Residual Spectrum license auction in the 600MHz, 2500MHz and 3500MHz frequency bands that concluded on 17 January. In total, 27 licenses were awarded to six companies, many covering rural and remote areas, including 13 licenses awarded to 'small and regional' providers. Mr. Champagne declared: 'Today's results will mean higher-quality services in more of our great country, especially in the rural parts of Canada.' Gudie Hutchings, Minister of Rural Economic Development, added: 'Putting

unused spectrum to work is an important part of our government's efforts to improve connectivity for Canadians living in rural and remote communities. The auction results announced today are yet another step in connecting Canadians from coast to coast to coast.' Auction revenue totaled CAD29.97 million (USD22.40 million), with licensing deployment requirements aiming to ensure that winners use the spectrum to offer services to end users 'in a timely manner'. 42 licenses had been made available in the auction, which had either gone unsold in previous auctions or had been returned to Innovation, Science and

Economic Development Canada (ISED), with 15 of these licenses now remaining unsold. Bell Canada was the biggest winner, spending CAD10.61 million on eight licenses covering a population of 1.6 million, while Videotron was close behind, buying seven licenses for CAD9.93 million (1.3 million population), followed by: Tbaytel (two licenses, CAD6.28 million, 780,000 pop.); Rogers Communications (six licenses, CAD2.67 million, 490,000 pop.); Sogetel (two licenses, CAD413,000, 16,000 pop.); and Ecotel (two licenses, CAD66,000, 36,000 pop.).

## FCC Proposes New Rules for CPNI Data Breach Reporting



The Federal Communications Commission ("FCC" or "Commission") has released its long-awaited Notice of Proposed Rulemaking ("NPRM") proposing to revise data breach reporting requirements for telecommunications carriers and providers of interconnected voice over internet protocol ("VoIP") service involving unauthorized access to, use or disclosure of

customer network proprietary information ("CPNI"). The FCC proposal would make substantial changes to the existing CPNI data breach notification requirements, including those to:

- Expand the definition of a covered "breach" to include inadvertent CPNI breaches;
- Require notification to the FCC, in addition to federal law enforcement;
- Require notification to the FCC and federal law enforcement "as soon as practicable," replacing the current requirement to notify within seven business days of discovery;
- Remove the existing seven-business-day waiting period for notifying customers or disclosing the breach following law enforcement notification; and
- Adopt minimum requirements for the contents of customer notifications.

The NPRM also seeks public input on several other key issues related to breach reporting, including: whether the proposed changes to the CPNI breach reporting rules also should be applied to the breach reporting rules for telecommunications relay services (TRSs) and video relay services (VRSS); whether the FCC has authority to promulgate breach reporting rules for other types of information held by telecommunications carriers and VoIP providers—including Social Security numbers and financial account information; and how the FCC might align its breach reporting rules to parallel state and federal reporting requirements, including the forthcoming cyber incident reporting requirements for critical infrastructure from the Cybersecurity and Infrastructure Security Agency (CISA).

## New Panama Licensing Process Underway; Newcomer Must Serve 500,000 Subs Elsewhere

Pre-qualification for the award of Panama's new mobile license is now underway, as the National Public Services Authority (Autoridad Nacional de los Servicios Públicos, ASEP) seeks to fill the void created by the exit of Digicel Panama. The first stage of the licensing process started on 12 January and will remain open until 16 March 2023. Public tender No. 01-2023-Telco will include 2x15MHz

in the 1900MHz band (1850MHz-1865MHz/1930MHz-1945MHz) and 2x10MHz in the 700MHz band (738MHz-748MHz/793MHz-803MHz). The licenses will be valid for 20 years. The regulator has emphasized that it is seeking a licensee with strong credentials, rather than an untried player and has stipulated that the successful applicant must have at least five years' experience as a mobile licensee

in another market and serve no fewer than 500,000 mobile subscriptions. With LatAm-focused groups Millicom International Cellular (MIC) and Liberty Latin America (LLA) already present in Panama, and Telefonica, America Movil (AM) and Digicel Group all exiting the sector in recent years there is no obvious candidate for the new concession.

## ER-Telecom Buys Out Rostec from AKADO Ownership

Russian fixed broadband operator ER-Telecom has increased its ownership stake in Moscow cableco AKADO Telecom by taking sole ownership of the 75%-minus-one-share it previously held jointly with state-owned conglomerate Rostec, reports CNews citing representatives of ER and Rostec and information from the Unified State Register of Legal Entities. No financial details were disclosed. In January 2022 ER and Rostec jointly bought the 75%-minus-one-share stake in AKADO while existing shareholder AVK Investments (led by Russian businessman Maxim Mayorets) retained the other 25%-plus-one-share.



## NZ Regulator Seeks Input on 2degrees Tower Deal

New Zealand's Commerce Commission raised preliminary concerns about a proposed acquisition of 2degrees' passive

infrastructure by Spark's independent tower unit Connexa and opened a public consultation on the transaction. Its

investigation will assess the potential effects of any deal, in particular whether a loss of competition would enable the merged entity to profitability raise prices, or reduce quality or innovation. The Commerce Commission stated the probe will also cover if the deal would allow or incentivize the new business or Spark to deprive rivals of access, along with if the move might result in "any horizontal unilateral, vertical or coordinated effects". Interested parties have until 13 February to submit comments as part of the consultation. The Commission is scheduled to decide on the sale by 7 March, but stated this may be extended as the investigation progresses. The regulator previously stated it will clear the proposed deal provided it judges it "unlikely to have the effect of substantially lessening competition". Connexa agreed the deal to acquire more than 1,100 towers from 2degrees for NZD1.1 billion (\$714.1 million) last month.



## Marcelo Claure Teams Up with Apollo for USD10Bn Millicom Takeover Bid

Apollo Global Management and former Sprint/SoftBank Group Corp. executive Marcelo Claure are in talks to acquire Millicom International Cellular (MIC), the Latin American-focused telecoms group has confirmed. The potential deal could value the Luxembourg-based company at almost USD10 billion, including debt, Bloomberg reports, citing a person familiar with the matter. The source added that Apollo and Claure are trying to structure an offer to avoid repaying or refinancing about USD6.9 billion in Millicom debt because of the rockiness of financial markets. Millicom issued a statement confirming: 'As a response to market speculation, the Board of Directors of Millicom International Cellular confirms that a potential acquisition of all outstanding shares in Millicom is being discussed with Apollo Global Management and Claure Group. There is no certainty that a transaction will materialize nor as to the terms, timing or form of any potential transaction.' Millicom's common shares are listed on

the NASDAQ stock exchange in the US and on NASDAQ Stockholm in the form of Swedish Depository Receipts (SDRs). The only stakeholders that currently own more than 5% of the group's shares are Atlas

Investissement (7.00%), Societe Generale (6.34%) and Dodge & Cox (5.15%). Atlas is a holding company owned by French billionaire Xavier Niel, which acquired its stake in November 2022.



## EC Aims to Cut Red Tape Around 5G Rollout

A European Commission (EC) proposal set to be released next month will outline a shake-up to existing regulation to help operators with the cost of rolling out 5G, Reuters reported, part of a wider plan for all citizens in the bloc to have access to gigabit connectivity by 2030. Reuters reported an official document outlines EC goals to cut red tape to help major operators including Deutsche Telekom, Orange and Telecom Italia push out 5G. The news agency stated the measures could slash annual administrative costs to the tune of about €40 million. The EC's latest push aims to help with a wider plan for all Europeans have access to gigabit connectivity and 5G, as well as ensure 75 per cent of companies operating in the continent use cloud infrastructure or AI by the end of the decade. It will release more details on the proposal, dubbed the Gigabit Infrastructure Act, on 10 February. In 2022, industry groups ETNO and the GSMA piled pressure on the EC to encourage big technology companies to share the cost of deploying the infrastructure required to meet the 2030 gigabit connectivity goal. Fleshing out the cost cutting measures, the EC

document reportedly states several of the proposed changes aims to clarify rules and streamline procedures, along with clearly laying out rights and obligations. The EC is also expected to propose operators have ready access to physical infrastructure owned or controlled by public sector bodies regardless of its location, with the European Union stepping in to resolve disputes.



## Court Rejects Competition Bureau's Appeal of Rogers-Shaw Takeover Approval

Canada's Federal Court of Appeal dismissed the appeal by the head of the Competition Bureau against the Competition Tribunal's approval of the proposed merger of Roger Communications and Shaw Communications and the associated proposed takeover of Shaw's subsidiary Freedom Mobile by Videotron. Commissioner of Competition Matthew Boswell had challenged the 31 December 2022 Tribunal decision which had concluded that selling Shaw's Freedom Mobile division to Quebec-based Videotron was unlikely



to result in higher prices for consumers in Shaw's western heartlands of Alberta and British Columbia. Minister of Innovation, Science and Industry Francois-Philippe Champagne must now approve spectrum license transfers from Shaw to Videotron before the combination of Rogers and Shaw can proceed. Rogers, Shaw and Videotron's parent Quebecor gave a joint statement welcoming the 'unequivocal and unanimous' Court of Appeal decision, noting that they 'continue to work' with Innovation, Science and Economic Development Canada (ISED) to secure the final approval needed to close the transactions 'and create a stronger fourth wireless carrier in Canada and a more formidable wireline competitor'. The 31 January 2023 merger deadline cannot be extended without permission from Quebecor. In addition to Competition Tribunal approval, the Rogers-Shaw merger has already been approved by the shareholders of Shaw and the Court of King's Bench of Alberta, and the transfer of Shaw's broadcasting licenses to Rogers has been approved by the Canadian Radio-television and Telecommunications Commission (CRTC).

## Viya Asks to Be Freed from PSC Regulatory Oversight

US Virgin Islands-based full-service telecoms operator Viya has requested that its fixed voice service be freed from oversight by the Public Services Commission (PSC), arguing that the market has changed dramatically over the last two decades. In its filing, the telco stated: 'Today, Viya provides landline voice service to only a small minority of the USVI's voice customers. It faces intense competition from many mobile and fixed voice and broadband

providers – a competition that is more than adequate to ensure that Viya prioritizes the best interests of its customers.' Local news site the St. Thomas Source quotes PSC chairman David Hughes as saying that Viya was entitled to 'a level playing field' but cautioned that the telco remains 'the carrier of last resort' for residents situated in rural locations. Interested parties are invited to submit comments to the regulatory body by 31 January.

## CNMC Fines MASMOVIL's Xfera Moviles EUR1.5m Over Its Execution of Ahi+ Acquisition

Spain's National Commission for Markets and Competition (Comision Nacional de los Mercados y la Competencia, CNMC) has fined MASMOVIL subsidiary Xfera Moviles EUR1.5 million (USD1.6 million) for carrying out the purchase of another telco before notifying it correctly. Under local law, companies must notify their M&A activities to the regulator prior to carrying them out, so that the latter can check if they meet certain legal requirements (known as gun jumping, such breaches constitute 'a serious infringement according to article 62.3.b of the Competition Law'). Xfera Moviles

failed to notify the CNMC of its purchase of regional operator Ahimas' (Ahi+) subsidiary Alma Telecom, it concluded. In a market update the watchdog confirmed: 'The CNMC ex officio required notification of the purchase on 29 March 2022 ... The CNMC considers that Xfera Moviles acted negligently, and points out that the company could have resorted to prior voluntary mechanisms if it had doubts about whether the operation should be notified. The CNMC initiated disciplinary action against Xfera Moviles in October 2022.'

## EC Kicks Off €200M European AI Push

The European Commission (EC) identified smart cities, agriculture, manufacturing and healthcare as focus areas for a series of AI and robotics projects earmarked for a total of €200 million in



funding. In a statement, the authority noted four schemes would receive between €40 million and €60 million each over five years, covering sectors deemed high impact. The funding comes from a central EC pot with individual European Union member states also contributing. It is intended to be used to create world class testing facilities for AI and robotics, and ultimately increase uptake of the technologies in Europe. Projects covering agriculture, health, industry, and cities and communities kicked off at the start of the year and will provide testing and experimentation facilities for companies using modern AI systems in real world environments. The EC noted the quartet were "an important part of building the AI ecosystem of excellence and trust to support Europe's strategic leadership in" the field. Findings will also contribute to related legislation. Testing facilities are the latest push by authorities to drive adoption in the region and secure the continent's position in the nascent sector, which is also being heavily funded by companies and authorities in other parts of the world.

## Globalive Bids for Xplore Mobile's Manitoba Spectrum, Continues Telus Talks

Canada's Globalive – the former owner of Wind Mobile (now Freedom Mobile, owned by Shaw Communications since 2016) – has announced plans to return to the mobile market via a bid to acquire spectrum in Manitoba province from defunct operator Xplore Mobile, which closed in August 2022. As reported by ITBusiness, Globalive's Manitoban bid is subject to Xplore Mobile's acceptance and customary conditions. Globalive indicates that it also remains in discussions with nationwide operator Telus to develop and expand an existing conditional spectrum and network sharing agreement which in its original form would only take effect if Globalive was successful in a bid to repurchase Freedom Mobile – an outcome which appears unlikely as the market awaits final regulatory clearance of Videotron's bid to acquire Freedom from

Shaw as a condition of the latter's pending merger with Rogers Communications. The proposed arrangement between Telus and Globalive, initially covering Ontario, British Columbia and Alberta subject to regulatory approval, seeks to provide improved coverage and choice to Canadians. Globalive founder and chairman Anthony Lacavera declared: 'We are building a national independent wireless carrier across Canada, and we are acquiring spectrum in all markets to realize our long-term vision of a globally competitive telecom market. It's clear by looking at truly competitive markets outside of Canada that these results are only possible by introducing a national pure-play wireless carrier with no legacy, fixed line business.'

# PTA Issues Regulatory Initiatives for Affordable Telecom Services and Digital Transformation

Critical frameworks have been developed by the Pakistan Telecommunication Authority (PTA) for the digital transformation of Pakistan as envisioned in the Telecom Policy 2015. These frameworks will reduce unnecessary inefficiency and prove minimum impact on the operators while they ensure accessibility and availability of affordable digital/telecom services across the country.

## Telecom Infrastructure Sharing Framework (Section 7.5)

PTA was to develop the necessary regulatory instrument to encourage, facilitate and standardize infrastructure sharing in consultation with Federal Government (Ministry of Information Technology and Telecommunication) and stakeholders. There is a great need for telecom infrastructure sharing in Pakistan due to increasing inflation, low Avg Revenue Per User (ARPU), increasing fuel prices, revenue challenges, the requirement of massive CapEx for new technologies like 5G, connecting the unconnected in remote/rural areas, cost-effective means to address capacity demand growth, social benefits, and nationwide coverage.

Some salient features are:

- The framework has been developed by PTA based on the principles of neutrality, non-discrimination, and equal access, considering regional & international best practices.
- The framework will provide a mechanism for licensees to share their telecom infrastructure facilities that would include passive (towers space, ducts, etc.) as well as active (Access Network – BTS, BSC/RNC, Microwave, etc.) components.

The draft Telecom Infrastructure Sharing Framework, after extensive and multiple industry consultation rounds, was approved by the Authority in November 2022 and submitted to Ministry of Information Technology and Telecommunication (MoITT) for policy-level approval by Federal Government.

## Radio Frequency (RF) Spectrum Management

RF Spectrum is a scarce and limited natural resource. It is the oil that powers the Wireless Broadband. The availability of RF spectrum for technological developments & to meet increasing capacity demands of broadband in the telecom industry is crucial. In order to meet the growing demands of the RF spectrum, the regulators have focused on the latest trends in spectrum management with

the objective to maximize the social, economic, and technological benefits of this natural resource. Spectrum Management is the process to regulate the use of radio frequencies in an efficient manner. RF Spectrum Re-Farming Framework (Section 8.5): PTA/PEMRA in consultation with FAB was mandated to propose a spectrum re-farming framework to be approved by the Federal Government (MoIT).

- Spectrum will be re-farmed where its current use is not in the best social and economic interests of Pakistan, it is underutilized, used inefficiently or its use is inconsistent with international allocations.
- The re-farming will ensure the reassignment of frequencies to uses with greater social and commercial benefits than are attainable from the prevailing assignment of those frequencies.

PTA in collaboration with PEMRA, FAB, industry stakeholders, and MoITT has developed a regulatory framework after an extensive consultation process with stakeholders that will be submitted after Authority approval in due course of time to MoITT for approval by the Federal Government.

## RF Spectrum Sharing Framework (Section 8.16):

PTA & PEMRA in consultation with FAB and stakeholders was to develop RF Spectrum Sharing Framework for approval by Federal Government. On the directions of GoP, PTA has prepared a draft framework after multiple rounds of consultation were carried out with the industry and all internal/external stakeholders. Cross-industry concerns and comments on the draft frameworks were analyzed. Considerable progress has been made for the formulation of spectrum sharing considering all international developments and market dynamics. Draft Framework is now undergoing a final review and will be shared with MoITT for approval.

## Satellite Telecommunication Framework

PTA has been working on the formulation of the Satellite Telecommunication Licensing Framework pursuant to a mandate given to it. To firm up an agreed framework on Regulatory and Financial aspects of the satellite services in Pakistan, an inter-Ministerial Committee (IMC) was constituted by the Prime Minister of Pakistan. In this regard, PTA has proposed a regulatory and licensing framework for satellite services proliferation in the country. The proposed framework covers the licensing of Fixed Satellite Services (FSS), Mobile Satellite Services (MSS) – Global Mobile Personal Communication Services (GMPCS), and Maritime & Aeronautical Satellite Services (On-Board Internet Connectivity (OIC), with special consideration to spectrum management, keeping in view the protection of existing services/users. The framework also outlines a registration process (Earth station, VSATs, etc.), taking into consideration the best international practices. This draft proposal has been submitted to MoITT for issuance of policy directives in order to introduce the satellite telecommunication licensing regime in Pakistan. PTA acknowledges the continued engagement & support of the telecom industry and specially MoITT, FAB & PEMRA in the development of these vital & high-impact frameworks that will drive the sector forward.



## JCRA to Recommend JT and Sure for 5G Spectrum Allocations

Having invited applications from operators interested in providing 5G connectivity back in September 2022, the Jersey Competition Regulatory Authority (JCRA) has now issued an 'Outcome Information Note' related to this matter. In this note the watchdog confirmed that it has accepted applications from JT Jersey and Sure Jersey for the 'Full Service' 5G spectrum packages which were being offered. It will now make recommendations to UK

communications regulator Ofcom – which has responsibility for managing the Bailiwick's radio spectrum – to award the aforementioned operators 5G-suitable frequencies this year. Meanwhile, the JCRA's information note also confirmed its intention to invite applications for a further 5G spectrum package during 2023.

## True, dtac Merger Nears Completion

A long-planned merger of True Corp and dtac was tipped to be completed by the end of March, with the companies agreeing to hold a shareholders' meeting on 23 February to finalize the corporate structure. In separate stock market filings, the two operators said they are working together to implement conditions prescribed by the National Broadcasting and Telecommunications Commission (NBTC). Their boards stated the merged business will be named True Corp, with the existing True Move and dtac brands to be maintained for at least the next three years. At the meeting next month, the board will vote on the CEO and deputy CEO, and elect new directors for the merged company. The companies nominated Current True Corp Co-President Manat Manavutiveth is nominated as CEO and dtac chief Sharad Mehrotra as deputy. The NBTC approved the deal in October 2022 nearly a year after it was

first considered. GSMA Intelligence estimates for Q4 2022 put the combined entity's share of mobile connections at 53.9 per cent, with current market leader AIS on 45.2 per cent.



## Citymesh Authorized to Transfer 2600MHz User Rights to Citymesh Mobile



Telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has granted B2B wireless connectivity provider Citymesh permission to transfer its user rights in the 2600MHz band to Citymesh Mobile, its joint venture with Romanian-backed Digi Communications. The decision follows a request submitted in August last year which indicated

the spectrum – 2520MHz-2535MHz/2640MHz-2655MHz, valid until 30 September 2035 – would be used to deploy nationwide 4G services. Citymesh is required to give the BIPT at least ten days' notice of the transfer of ownership. Citymesh Mobile exercised an option in March 2022 to secure the spectrum package reserved for a fourth mobile network operator in Belgium's 5G spectrum auction staged last summer, and went on to acquire frequencies in the 700MHz, 900MHz, 1800MHz, 2100MHz and 3600MHz bands, paying a total of EUR114.3 million (USD123.4 million). Citymesh – part of European IT services group Cegeka – holds a 51% stake in the new entrant and Digi Communications subsidiary RCS&RDS 49%.

## Anatel Concerned by V.tal Stake Sale Suggestions

Brazil's National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) has reportedly expressed concerns that Oi is planning to leverage its stake in fiber-to-the-home (FTTH) wholesale operator V.tal as it seeks to pay off its remaining debts. Oi's judicial recovery drew to a close on 14 December 2022, after around six-and-a-half years, but the cash-strapped telco still needs

to pay off a number of remaining creditors. TeleTime reports that the regulator is worried that Oi will jeopardize the continuity of its operations by diluting its V.tal shareholding any further. In November 2022 the Canada Pension Plan Investment Board (CPP Investments) agreed to pay BRL2.5 billion (USD462 million) for a 9.5% stake in V.tal and Oi's stake is now believed to be around 30%.

Oi signed an exclusivity agreement relating to the sale of its fibre-optic InfraCo unit in January 2021. The contract was signed with Globenet Cabos Submarinos, BTG Pactual Economia Real Fundo de Investimento em

Participações Multiestratégia and other investment funds managed or controlled by the BTG Group. InfraCo was renamed V.tal in November 2021 and the transaction belatedly closed in June 2022. In other

news, Oi has confirmed that its FTTH network is now available in a total of 277 towns and cities, and passes a total of 19 million homes.

## EC Outlines Digital Targets

The European Commission (EC) detailed plans and objectives to bolster its digital goals, stating its next steps will shine a spotlight on the related economy and public services, technological skills and network



infrastructure across Europe. In a statement, the EC explained the digital decade policy program will guide the European (EU) member states to achieve their ambitions by 2030. The EC highlighted four key areas: improving citizens' digital skills; deploying emerging technologies including cloud and AI for enterprise; advancing network and data infrastructure; and digitizing public services and administrative processes. "These targets embody the policy program's objectives", the EC claimed, citing a secure and competitive digital environment, fair online business practices

and access to technology as fundamental to the continent's ambitions. To make this possible, the EC will develop KPIs to monitor progress in the coming months. It stated EU member states are expected to hand in a "national strategic roadmap" detailing policies and actions to support the digital goals in October 2023. Additionally, the EC emphasized the importance of "multi-country projects" to advance investments in digital infrastructure spanning technologies including 5G and quantum computing. The EC is scheduled to publish its first digital decade report in June.

## FCC Passes Plan to Create Space Bureau

The US Federal Communications Commission (FCC) moved forward on a plan to carve out a separate organization to better support the growing satellite industry after unanimous approval by Commissioners. A proposal to establish the Space Bureau and a standalone Office of International Affairs was made by the FCC late in 2022 by eliminating the regulator's International Bureau. In a statement issued on 9 January, the FCC explained the Office of International Affairs will focus on global communications regulation and licensing. The Space Bureau "will better support the needs of the growing satellite industry, promote long-term technical capacity at

the FCC and help the agency navigate" the latest "global communications policy". It will address non-government satellite programs and improve coordination with other agencies on issues related to space. FCC chair Jessica Rosenworcel noted the regulatory frameworks for licensing the satellite industry have not kept up with fast growth. The regulator added the next step will be to seek government and other necessary approvals for the reorganization. It explained the move is the latest in a space-based agenda which also involved taking action to speed up regulatory review processes, increase the size of its satellite division, foster new opportunities

for competition in delivering satellite broadband services and modernizing spectrum policy. The FCC previously also proposed new rules for de-orbiting satellites to tackle debris.



## Canada Megadeal Threatened Again as Regulator Digs-In

Canada's Federal Court of Appeal granted a temporary suspension of a tribunal's decision to clear the acquisition of Shaw Communications by rival Rogers Communications, giving time for the country's competition authority to challenge the ruling. Having already failed in an

attempt to block the deal, the Competition Bureau Canada announced yesterday (2 January) it had secured an emergency interim suspension of an order made by the Competition Tribunal until its "request for a stay and injunction can be heard". The move is the latest threat to a tie-up

the operators have long-claimed would be beneficial to consumers and businesses in the country, a position strongly disputed by the country's competition regulator. In an attempt to appease concerns Shaw's Freedom Mobile is set to be sold to Videotron on completion of the main deal.

After failed attempts at mediation between Shaw, Rogers and the Commissioner of Competition, the case went to the Competition Tribunal to decide on whether to allow the agreement to proceed. On 29 December, the tribunal announced it had sided with the operators and dismissed the

regulator's appeal. If that decision survives the upcoming appeal, the only remaining approval needed would be for the transfer of Freedom Mobile's spectrum licenses to Videotron. This needs to be secured from the minister of innovation, science and industry. At the time of the Tribunal's

decision Rogers announced the deadline for the deal had been extended to the end of January 2023. When announced back in March 2021, it was originally slated to complete in the first half of 2022.

## Telenet Acquires Luxembourg's Eltrona

Belgian full-service provider Telenet has announced its acquisition of the remaining shares in Luxembourg-based Eltrona from the company's founding shareholders for an undisclosed sum. In a press release issued late last month, Telenet said the transaction – the first time the operator has taken full ownership of a company outside

Belgium – was being finalized and could be completed by early January. Following Telenet's acquisition of Coditel Luxembourg (SFR-Coditel) in 2017, SFR-Coditel's activities were merged with cable operator Eltrona in April 2020. This transaction resulted in Eltrona's founding shareholders obtaining 50% plus one of the shares and

Telenet 50% minus one of the shares of the merged entity. The merged entity has continued to develop its activities under the Eltrona brand over the past two years and claimed around 50,000 unique customer relationships at the end of September 2022, including approximately 46,000 cable and/or IPTV subscriptions, some 16,000 fixed broadband RGUs, approximately 8,000 fixed voice subscriptions and around 2,000 mobile accounts. Commenting on the deal, Telenet CEO John Porter said: 'This acquisition unlocks new opportunities for both Telenet and Eltrona. It offers Telenet the opportunity to evolve as a telecommunications operator in a broader market. At the same time, Eltrona will benefit from Telenet's success and reputation in Belgium. By becoming the sole owner of Eltrona, I believe Telenet will be even better able to deliver the growth perspectives it deserves for the future in the competitive and evolving Luxembourg market and to make it the number one brand in terms of customer experience.' 📺



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## A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION



### Bahrain

The Telecommunications Regulatory Authority of Bahrain (TRA) welcomed members of the Wi-Fi Industry at their headquarters in Seef District. Presentations and discussions were held on the capabilities of new Wi-Fi generations and their positions at the upcoming World Radiocommunication Conference (WRC-23), in addition to Bahrain's position regarding the upper 6GHz Band. In addition to supporting the Kingdom's digital economy, Wi-Fi 6 and Wi-Fi 6E will also foster digital transformation across all sectors and the development of cutting-edge fields such as artificial intelligence. In this way, the telecommunications and ICT sector can contribute to economic growth in all sectors of the Kingdom's economy and support growth across all sectors. Furthermore, it complies with the Government's requirement that consumers should benefit from improving average download speeds over time. This is to meet evolving consumer needs, and aspire to be among the leading countries regionally, when it comes to download and upload speeds. "New Wi-Fi generations 6 & 6E facilitates the objective of faster download speeds to consumers, as does the nationwide 5G coverage and the increasing fiber coverage. A maximum data rate of almost 10Gbps is provided by Wi-Fi 6 & Wi-Fi 6E, the latest version of unlicensed wireless networking. As a result, gaming, artificial and virtual reality, IoT, 4K/8K video, etc., can benefit from improved latency, improved connection quality, and faster data transfer." Says Eng. Hasan Mohamed Hasan, Director of Spectrum at TRA "This will allow improved quality of service, new areas for innovation, will encourage small businesses to introduce new products and services, and will enable remote monitoring and control of machinery throughout the Kingdom."

(January 30, 2023) [www.tra.org.bh](http://www.tra.org.bh)

TRA Bahrain has launched Qaren, a service comparator platform to enable users to compare the costs and features of a wide variety of telecom plans. This helps them chose the telecoms plans that best meet their specific needs. Qaren supports the continued development of a competitive market among telecom operators whilst ensuring it is consumer focused. It guides the user through a series of questions, allowing them to customize and tailor their search as they go. Additionally, the platform offers user friendly calculators that help users estimate their data and

speed needs. Philip Marnick, TRA's General Director, said: "The consumer is at the center of our work. Empowering and informing consumers ensures that Bahrain's telecoms market is competitive and consumer focused. The launch of Qaren marks a quantum leap in terms of the benefits provided to consumers, it empowers them to compare features and prices of all the available plans and select the most suitable service whether its mobile, broadband, or fixed. The TRA is committed to continuing innovate and introduce initiatives aimed at providing knowledge, developing expertise, and enabling consumers to make informed decisions through fair competition." Shaikh Abdulla bin Humood Al Khalifa, Director of Consumer Affairs and Communications at TRA, said: "Due to high competition, there is a wide variety of plans and packages for consumers to choose from, each with different features and benefits, making the decision-making process quite complicated and hefty for most consumers. Qaren helps consumers first understand their needs and accordingly choose the plan that best fits them. Qaren is an outcome of the Consumer Experience Policy, which is intended to ensure that all policies related to the telecoms sector focuses on enhancing the consumer experience and satisfaction."

(January 16, 2023) [www.tradearabia.com](http://www.tradearabia.com)

The Telecommunications Regulatory Authority (TRA) published the 2022 Consumer Experience Report, which measures consumers' satisfaction with Mobile Network Operators' services across both residential and corporate markets. The report contributes to the TRA's goal of understanding users' perceptions and satisfaction with mobile, broadband, and fixed-line services. The survey was conducted among approximately 2,330 consumers, with satisfaction measured across four main pillars: services, customer support, charging activity, and consumer knowledge. "The Consumer Experience Report is in line with the TRA's work to improve the telecoms services every one of us uses. It helps empower consumers to make informed decisions about telecoms services. It also helps operators by highlighting their performance in areas that matter to consumers," Philip Marnick, the General Director of TRA said.

(January 1, 2023) [www.bna.bh/en](http://www.bna.bh/en)



## Bangladesh

Bangladesh Telecom Minister Mustafa Jabbar said it is crucial to protect the intellectual property rights of digital innovations. Jabbar gave the statement at an event held in Dhaka in December 2022 celebrating the 25th anniversary of Robi Axiata Limited, a mobile network operator in Bangladesh. The telecom minister spoke about the importance of preserving IP in implementing Smart Bangladesh. Smart Bangladesh Innovation 2041 aims to bridge the digital divide in the country, culminating in a developed and prosperous Bangladesh by the year 2041. Unveiled by Prime Minister Sheikh Hasina during Digital Bangladesh Day on December 12, 2022, Smart Bangladesh is anchored on four pillars: Smart Citizens, Smart Government, Smart Economy and Smart Society. According to Jabbar, there will be no Smart Bangladesh without innovation. He added that there should be only one IP office releasing patent and copyright certificates. Mohammed Forrukh Rahman, head and barrister-in-law at Rahman's Chambers in Dhaka, mentioned Bangladesh Patent Act 2022 which repealed the Patents and Designs Act, 1911. Passed by the Parliament of Bangladesh in April 2022, the Act allows patent protection for 20

years in line with the TRIPS Agreement. According to Rahman, analyzing the Act should be the first step in terms of IP protection to help transform the country into Smart Bangladesh. "Besides, now compulsory licenses only are issued by the government. The Act must be analyzed if the same supplies protection to patents which are foreign-registered, enforcement mechanisms and effective protection available for violation and if the court or other authority so empowered is allowed to grant damages and so on," said Rahman. (January 18, 2023) [The Daily Star](#)

The Bangladesh Telecommunication Regulatory Commission (BTRC) has lifted a ban on GrameenPhone's SIM sales, which was imposed in June 2022 on the grounds of 'poor quality of service'. Company CEO Yasir Azman confirmed that the operator had received a letter from the regulator on the withdrawal of the ban. The executive disclosed: 'Since the imposition of the embargo, the company has had a constructive dialogue with the regulator and has repeatedly reiterated that such a move deprives customers of exercising their freedom of choice and raises investor concerns.'

(January 5, 2023) [www.commsupdate.com](#)



## Egypt

The National Center for ICT Service Quality Control and Monitoring of the National Telecom Regulatory Authority (NTRA) has issued its Quality of Service (QoS) Benchmark Report for the fourth quarter of 2022 (October to December). The report is part of NTRA efforts in improving the quality of telecommunication services. It showcases the indicators of the quality of voice and Internet services provided by Mobile Network Operators (MNOs) in Egypt. The quality of services provided by each MNO was measured in 81 areas (cities and districts). Specimens of calls and data transfers were tested to measure the quality of telecommunication services, using measuring equipment and vehicles. Field scans were conducted in 122,000 km in main and secondary roads in urban and rural areas during that period. According to the report, the service quality improved in various areas that experienced low quality of voice services, by 34%, and Internet services, by 41% in the fourth quarter of 2022, compared to the same period in 2021. It is worth noting that NTRA has taken several steps to improve the quality of telecommunication services. It adopted 2,930 new base stations during the mentioned period, imposed fines on MNOs who did not meet quality standards, enhanced network coverage on main roads, and implemented 199 seizures of signal boosters (repeaters) and unauthorized devices. (February 6, 2023) [www.mcit.gov.eg](#)

The Minister of Communications and Information Technology Amr Talaat opened, today, the Global Semiconductor Alliance (GSA) 2023 Egypt Summit, in Cairo. The Summit is the inaugural event of GSA Egypt, established in collaboration with the

Information Technology Industry Development Agency (ITIDA) and the Egyptian Information Telecommunications Electronics and Software Alliance (EITESAL). Officials and representatives of more than 60 local and global companies specializing in the semiconductor design and embedded systems industry, as well as several experts and academics attended the Summit. The event includes seminars and panel discussions aimed at highlighting the current state of the semiconductor global industry, as well as the advantages and competitiveness of the Egyptian market. Topics in advanced technologies, venture capital, the future of semiconductors and embedded systems in the automotive industry, in addition to the challenges facing the industry, most notably talent shortage, were discussed during the Summit. In his speech, the ICT Minister emphasized that the domestic electronics industry is growing, with Egypt developing and prioritizing it. He pointed out that the electronics industry development strategy is implemented to enhance Egypt's position on the global map of that significant industry. The strategy stands on five pillars: capacity building, partnerships, strengthening of foundations, policy development, and electronics manufacturing hubs. Talaat added that capacity building is the cornerstone of the electronics industry development. He explained that Egypt has a rich talent pool, where 250,000 graduates in science, technology, engineering, and mathematics, 50,000 of whom graduate from the Faculty of Engineering. Talaat emphasized the efforts made by the Ministry of Communications and Information Technology (MCIT) to invest in building youth's digital capabilities, resulting

in training about 600,000 young people over the past three years through a variety of programs and initiatives. These include short-term training programs, freelancing training, undergraduate ICT specialized education, and master's scholarships in technical disciplines. The training programs cover various ICT disciplines, with focusing on electronics design, Talaat said, adding that MCIT works to increase the number of specialists in this industry and enhance their competitiveness. The ICT Minister underlined that Egypt is developing policies to attract local and foreign investment to the electronics industry, including by establishing economic and industrial tech zones and specialized labs to stimulate the growth of electronics manufacturers. The ICT Minister revealed that MCIT

has also established the largest electronics industry hub in Egypt, at the Knowledge City in the New Administrative Capital. The hub houses 24 companies specialized in electronics design to serve as a center for research and development (R&D), testing and innovation, with its specialized labs. The Ministry also developed the ICT infrastructure at \$4 billion to boost Internet speed, the ICT Minister noted. As a result, Egypt now has the highest median fixed broadband speed in Africa. Furthermore, MCIT developed policies for strengthening the start-up ecosystem and fostering tech innovation and entrepreneurship.

(January 19, 2023) [www.mcit.gov.eg/en](http://www.mcit.gov.eg/en)



Libya will host the North African Internet Governance Forum on February 23, while the Prime Minister Abdul Hamid Dbeibah has announced that his government will pay the costs of the forum, according to the General Authority for Telecommunications and Information. The General Authority for Telecommunications and Information, Libya Telecom and Technology Company, and the Libyan Internet Commission, held a press conference in Tripoli on Monday to announce hosting the forum, which is organized by the General Authority for Telecommunications and Information, in the presence of the Minister of State for Cabinet Affairs Adel Jumua, and the Minister of State for Communication and Political Affairs Walid Ellafi. The Ministry of Telecommunications said in a statement that the event came within the general policy of the Telecommunications Commission and its plan for 2023, which

bears the slogan "Digital Libya 202", and within the objectives of developing policies, legislation, laws and regulations related to digital transformation and Internet governance. The Minister of Communication and Political Affairs Walid Ellafi confirmed that Libya was one of the African countries "that is located in an important geographical position, being a transit gateway in the field of telecommunications and the Internet in the future, which requires interventions at the policy level, so the government adopted the executive regulations of the Telecommunications Law and it worked on building and developing youth capacities to ensure high levels of service. Ellafi stressed the need for Africa to devise ways to keep pace with the growing demand for digital infrastructure, bridge communication gaps, and create decent job opportunities. (January 25, 2023) <https://libyaobserver.ly>

## Libya



Telecom regulator Nepal Telecommunication Authority (NTA) will provide internet service at various TU (Tribhuvan University) campuses around the country. The authority has signed agreements with many colleges including Sanskrit University. The internet service will be free of charge. The regulator has signed an agreement with respective universities for broadband service. NTA Chairman, Purushottam Khanal, Registrar Prof. Dr. Peshal Dahal from Tribhuvan University, and Registrar Madhav Adhikari on behalf of Nepal Sanskrit University signed the MoU. The free internet project for TU will use the rural telecommunication development fund (RTDF). The internet service will be established at TU and Sanskrit university. Telecom companies in Nepal pay a sum of their profit in RTDF to NTA which it mobilizes for various service expansion projects. The authority said that the broadband connectivity will be free for two years but the respective educational institutions will need to bear charges afterward. It's the

same broadband strategy it has adopted with its nationwide free broadband project at local levels. The project has also started free internet services at community schools, colleges, wards, health centers, etc. The high-speed fiber internet will make TU campuses and Sanskrit University works more efficient and accessible. Likewise, it will benefit the Digital Nepal initiatives by helping to connect more people with broadband internet and promote digital inclusion. Nepal though has a growing number of subscribers in numbers, the figure doesn't translate into reality. As many in rural areas are still without consistent internet service. Many are without fiber connectivity and are dependent on 2G for voice only. At colleges, many are still deprived of consistent internet access which could prove vital for learning. NTA's project if works to plan will further contribute to uplifting the lives of many at higher-level of education with the help of high-speed internet.

(February 6, 2023) [www.nepaltelecom.com](http://www.nepaltelecom.com)

## Nepal



## Oman

The Telecommunications Regulatory Authority (TRA) is continuing with its awareness campaign on the protection of the rights of users of various services TRA campaign #YourRight\_ToKnow aims to protect the rights of beneficiaries by educating them about their rights and obligations towards telecom service providers. In return, the telecom providers have participated in the campaign by publishing a number of messages through the hashtag #YourRight\_ToKnow, on various types of fraud issues and their risks, which targets all segments of society, and both citizens and residents. The campaign includes educational messages on several topics of interest such as international roaming, billing, advertising messages, grievances of beneficiaries, and children's rights, in addition to quality approval and the 'Choose your package' platform. TRA issued a regulation of the rights of beneficiaries last September, which included 11 chapters divided into 75 articles, concerned with regulating the relationship between beneficiaries and telecommunications companies or their licensees. These regulations will be implemented in mid-February of 2024 as part of the TRA's responsibility towards taking care of the interests of beneficiaries and promoting the use of telecommunications services. (February 16, 2023) [www.omanobserver.om](http://www.omanobserver.om)

The Telecommunications Regulatory Authority (TRA) has said that the Wilayat of Muttrah posted the highest 4G service coverage rate in 2022, while the Wilayat of Saham boasted the highest data download speed for mobile broadband services. The Telecom Services Quality Assessment for 2022 was the outcome of a field survey conducted by the TRA to measure the quality of telecommunication services in Oman's wilayats in 2022. The survey covered 11 wilayats, which were Daba, Saham, Barka, Muttrah,

Al Mudhaibi, Jaalan Bani Bu Ali, Bahla, Yanqul, Mahdha, Duqm and Taqah. TRA affirmed that such surveys are carried out using specialized measurement tools and approved methodologies that simulate a user's experience. They seek to raise beneficiaries' level of awareness and enhance competition in the sector, it said. Key indicators covered the level of coverage, the speed of downloading data and the percentage of successful calls, it added.

(February 13, 2023) [www.timesofoman.com](http://www.timesofoman.com)

The Telecommunications Regulatory Authority (TRA) has issued a permit for North Star Company to provide Internet of Things services. This type of permit is aimed at supporting innovation, promoting the digital economy and investment opportunities, and finding innovative solutions to raise the level of services. In 2022, TRA issued a permit for Artificial Excellence Technologies to provide its services in this field, the only other company authorized to provide IoT services. The organization of the Internet of Things (IoT) was announced in 2022 through the issuance of a regulation regulating the provision of Internet services issued by Resolution 93/2022 in May 2022. The regulation included four chapters, which are definitions and general provisions, the licenses chapter, the obligations and rights of authorized persons, and the penalties chapter. The IoT value chain covers devices, connectivity, big data, data analytics, and applications with multiple stakeholders. Companies keen to operate in the sector can submit requests for licenses to provide Internet of Things (IoT) services. The initial approval will be valid for 12 months to enable the applicant to establish the system for providing the service.

(January 25, 2023) [www.omanobserver.om](http://www.omanobserver.om)



## Pakistan

The Pakistan Telecommunication Authority (PTA) has published a consultation document on the proposed introduction of a SIM disowning charge. The proposed charge has been sought by mobile operators due to the high cost of customer acquisition and reported abuse of free SIMs by some consumers. Regarding the latter, the PTA claims that some consumers hand SIMs to 'illegal sources' for financial gain and exploit the free disowning SIM facility by returning the SIM once they are identified. These customers then acquire a new SIM from another operator for the same activity, which also enables them to abuse customer acquisition offers provided to new customers for the sale of SIMs. In addition, the regulator stated that there were instances where free SIM disowning was exploited by grey traffickers/fraudsters, as they were able to get new SIMs after disowning old SIMs that were used for grey traffic or fraud. On the financial impact of these practices, the PTA notes that 'significant resources and cost' are involved in the sale of SIMs to customers through the Biometric Verification System (BVS) and that the expenses have

increased due to the 'current economic situation and increase in operational expenditures'. Meanwhile, SIM connection prices were deregulated in 2020 but competition amongst cellcos prevents any from imposing sign-up fees. Consequently, mobile provider Telenor announced in August last year that it would implement a SIM disowning fee. The cellco was directed to halt the program, however, and the PTA initiated talks on the matter with industry players in September. No consensus was reached amongst the providers on a potential framework for SIM disowning charges or suitable price for such. Telenor proposed a minimum levy of PKR300 (USD1.3), whilst ceilings of PKR300 and PKR500 were suggested by Zong and Jazz, respectively and the PTA recommended a maximum charge of PKR200. No solution was proposed for addressing legitimate complaints from genuine customers, for example resulting from the illegal sale of SIMs on a user's Computerized National Identity Card (CNIC). As such, the PTA has invited comments from stakeholders and the general public on the matter. (January 26, 2023) [www.pta.gov.pk](http://www.pta.gov.pk)

The Pakistan Telecommunication Authority (PTA) has directed telecom operators and internet service providers (ISPs) to upgrade their internet protocols to IPv6 technology. "The instructions have been issued with a focus on innovation and digitalization, as IPv6 technology was the latest version of internet protocol (IP)," the PTA has said. However, the telecom sector regulator has not

set any deadline for shifting to Internet Protocol version 6 (IPv6), which is used to identify devices on a network and route traffic between them. IPv6 is an upgradation from the existing version of the Internet Protocol Version 4 (IPv4), but the new version has enhanced internet layer protocol and provides end-to-end datagram transmission across multiple IP networks. (January 23, 2023) [www.dawn.com](http://www.dawn.com)



## Qatar

Qatar participated in the 29th Meeting of the Cooperation Council for the Arab States of the Gulf (GCC) Committee for Under-Secretaries of Post and Telecommunications, conducted via videoconferencing technology. Qatar's delegation was headed by Hassan Jassim Al Sayed, Advisor to the Minister of Communications and Information Technology for Technical Affairs, along with several officials from the Communications Regulatory Authority (CRA) and Qatar Postal Services (Qatar Post). The Committee discussed the topics on the agenda of the meeting, the most important of which is the unified draft law regulating the activities of private companies and institutions working in the field of express post and parcels. It also approved the guiding framework for the protection of personal information of the citizens of the GCC States, and the recommendations of the working group to study the reduction of the prices of international connectivity between the GCC States. The Committee for Under-Secretaries of Post and Telecommunications also agreed to form a working group headed by Qatar to consider the measures that must be taken with regard to the establishment of unlicensed wireless networks that are used for mining cryptocurrencies. The Committee was briefed on the joint action plan between the GCC and the People's Republic of China. Finally, the Committee considered the outputs of the meeting of the temporary team formed to analyze and document the lessons learned from the Covid-19 pandemic, with the aim of coming up with the required recommendations and identifying the important role played by the ICT sector in limiting the spread of the virus and recovering from it.

(February 5, 2023) [www.gulf-times.com](http://www.gulf-times.com)

The Communications Regulatory Authority (CRA) has conducted a benchmarking study on the prices for retail telecom services in the State of Qatar compared to the averages in the Cooperation Council for the Arab States of the Gulf (GCC) and the Organization for Economic Co-operation and Development (OECD) to monitor the state of the telecom market in Qatar. The study is based on the Arab Regulators Network of Telecommunications (AREGNET) study and the 5 OECD price baskets: fixed voice, fixed broadband, mobile voice and data, mobile broadband, and leased lines. The study's main findings are that prices for telecom services in Qatar are typically below or on par with the GCC average, while typically

above the OECD average. Also, it shows that since 2017, prices for fixed broadband and mobile voice and data services in Qatar have decreased, while prices for fixed voice, mobile broadband, and leased lines services have largely remained static. To develop the necessary regulatory instruments, CRA ensures conducting studies and monitoring the state of the telecom market in Qatar in comparison with similar markets at the regional and international levels. This supports CRA to effectively regulate the telecom sector towards its development for the benefit of both the service providers and telecom consumers. (January 17, 2023) [www.gulf-times.com](http://www.gulf-times.com)

The Communications Regulatory Authority (CRA) issued the document for the Standard on Inbuilding Wiring, in accordance with its powers stipulated in the Telecommunications Law. The aim is to urge property developers, consultants, and building owners to work with licensed telecom Service Providers, and follow the specifications stipulated in the document's framework at an early stage, each according to its responsibilities. The Standard includes a set of technical guidelines, specifications, requirements, and procedures for internal wiring of various building types such as multi-dwelling units, a compound of villas, schools, warehouses, and labor accommodation. CRA has developed the Standard to achieve a set of objectives, including setting a common and neutral standard as well as requirements for inbuilding wiring that are similar to best practice standards implemented globally and facilitating the rollout of Fiber to the x (FTTx) networks and inbuilding mobile networks. Ali Al Suwaidi, Technical Affairs Department Director at CRA said: "The Information and Communications Technology (ICT) sector is developing rapidly; therefore, CRA was keen to develop the Standard on Inbuilding Wiring to balance current and future requirements and support the deployment of fiber networks for the benefit of all stakeholders in the field and to contribute to the development of the ICT sector." He added, "the Standard will be reviewed regularly, taking into consideration new developments and experiences, to keep it current and guarantee the optimal technical and commercial approach in the future. We look forward to the cooperation of all stakeholders in complying with the Standard and contributing to its improvement."

(January 10, 2023) [www.thepeninsulaqatar.com](http://www.thepeninsulaqatar.com)



## Saudi Arabia

The Communications, Space and Technology (CST) and the Middle East Cloud and Digital Transformation Company Limited "CNTXT" have signed a memorandum of understanding during LEAP23, which aims to promote cloud services that contribute to the Kingdom's digital economy, develop the national cadres, and enable various sectors by providing leading technologies and solutions that accelerate innovation and support digital transformation. At the ceremony, CST was represented by Mr. Raed Alfayez, the Deputy Governor for IT and Emerging Technologies, while CNTXT was represented by Engineer Abdullah Jarwan, the CEO of CNTXT. According to CST, the MoU aims to develop the cloud computing sector by attracting value-added tech companies known as independent software vendors (ISVs) that are hosted in public cloud environment to serve the various benefited sectors, as well as to develop national cadres in a way that supports the Kingdom's 2030 vision development and economic goals. Over the course of three years, the MoU will contribute in identifying and reaching out to more than 100 ISVs, attracting approximately 25 companies to the Saudi market, developing more than 500 national specialists, and providing more than 120 training opportunities in collaboration with these specialized companies. CST regulates and develops the cloud computing sector, as well as provides regulatory and motivational initiatives to support the development of this promising sector. CNTXT is a joint venture between Saudi Aramco and the Norwegian company COGNITE, it is also the exclusive Google Cloud partner in the Kingdom.

(February 9, 2023) [www.cst.gov.sa](http://www.cst.gov.sa)

H.E. Eng. Abdulrahman AlFadley, Minister of Environment, Water, and Agriculture, and H.E. Eng. Abdullah Alswaha, Minister of Communications and Information Technology, witnessed the signing of a memorandum of understanding between the Communications, Space, and Technology Commission (CST) and the Water Regulator in the Water Regulator's headquarter in Riyadh, which relies on innovative solutions that increase the benefit of infrastructure, with the goal of utilizing the current infrastructure of the National Water Company (NWC) to extend fiber optics, to enable and accelerate the deployment of the fibers in the Kingdom, which will contribute to the time, cost, and quality of the provided services while ensuring continuity of service for users and integration between parties to serve the public interest.



## South Sudan

The Council of Ministers has approved the allocation of USD4.48 million to appeal a court case brought against the government by former mobile operator Vivacell, reports Eye Radio. Vivacell's operating license was suspended by the government in March 2018, after the cellco failed to pay the required taxes and license

fees. During the signing ceremony, the National Water Company was represented by H.E. Eng. Mansour Al Mushaiti, Vice Minister of Environment, Water and Agriculture and Chairman of the Steering Committee of the Water Regulator, while the Communications, Space, and Technology Commission was represented by H.E. Dr. Mohammad Altamimi, CST Governor. The MOU will assist the parties' efforts in maximizing the benefit of water sector infrastructure to expand fiber optics coverage in the Kingdom, exchanging information and support based on each party's area of expertise in order to find an effective fiber optics extending mechanism. It is expected to improve telecom infrastructure and provide fiber optics to homes by sustaining infrastructure, lowering network delivery costs, increasing user access, innovating solutions to improve service quality, and reducing drilling and extending impacts. CST is the Kingdom's regulator for communications, space and technology and is in charge of monitoring and utilizing the sector's technologies and services, whereas the water regulator is responsible for organizing water service activities in the water system. (January 30, 2023) [www.cst.gov.sa](http://www.cst.gov.sa)

The Communications, Space & Technology Commission (CST) announces the formation of Space Entrepreneurship Alliance achieve growth and sustainability in the sector and develop a strong foundation to support entrepreneurs in the Kingdom's space sector. The alliance announced during the Commission's participation in the seventh edition of the "Garage Disrupt" event, where Mr. Frank Salzgeber, Acting Deputy Governor of the Space sector at CST, has explained that the alliance aims to create an entrepreneurial ecosystem in the Space Sector and will be a platform to gather stakeholders to support Saudi entrepreneurs in innovation, the Garage is the first to join this alliance. In addition, Mr. Frank pointed out that the Alliance aims to create a strong foundation for innovation and entrepreneurs in Saudi space sector, by providing access to resources and services like shared workspaces and technical labs, as well as support initiatives like accelerator programs, workshops, and Hackathons. The Alliance also seeks to connect entrepreneurs with investors and experts in the field. The Garage Disrupt is a monthly event to gather tech startups and investors with the presence of representatives from the public and private sectors to promote growth and sustainability for startups. (January 25, 2023) [www.cst.gov.sa](http://www.cst.gov.sa)

license waived all taxes and took the government of South Sudan to the International Court of Arbitration, demanding USD3 billion in restitution. According to reports, it was awarded USD1 billion

by the court, although the government is seeking to appeal this judgement and is looking to hire national and international law firms. (January 24, 2023) [www.commsupdate.com](http://www.commsupdate.com)



The Ministry of Communication Technologies has announced plans to launch the second phase of its white spots (areas that are currently uncovered) coverage project. This project aims to expand access to broadband internet in Tunisia. It will do this by highlighting priority deployment areas in an effort to close the digital divide between different areas of the country. Phase one of the project involved coverage of so-called white spots in 94 areas, providing internet access for more than 164 schools, 59 basic health centres and 180,000 inhabitants. The first phase of the project also enabled the installation of 71 mobile phone base stations. According to the Zawya news service, the Ministry made a statement earlier this week in which it said that, following the completion of the first phase of this project in 2022, the second

phase aims to extend coverage to 112 areas. The Ministry also said the number of mobile base stations owned by the three main operators will increase from 5,679 in 2021 to 5,903 by the end of 2022. The three operators – Ooredoo Tunisia, Tunisie Telecom and Orange Tunisie – also share 1,289 radio sites to improve access while reducing operating costs. In its statement the ministry added that the number of 4G antennas in the country increased from 5,614 in 2021 to 6,560 antennas in 2022, with a penetration rate of around 65% by the end of 2022. This growth seems to underline the concerns of the June 2022 announcement in which the state-owned incumbent Tunisie Telecom said it wanted to get rid of 3G to focus on 4G, a move driven, in part, by the rapid migration of many users from 3G to 4G. (February 1, 2023) [www.developingtelecoms.com](http://www.developingtelecoms.com)

## Tunisia



The Telecommunications and Digital Government Regulatory Authority (TDRA) held the workshop “Management and Allocation of Aeronautical Radio Frequency Spectrum in the GCC Countries”, in Abu Dhabi, in collaboration with the International Civil Aviation Organization (ICAO) and in coordination with the GCC Technical Office for Telecommunications. The workshop was attended by a group of specialists from the GCC countries, in addition to UAE authorities such as the Ministry of Defense, the General Civil Aviation Authority (GCAA), and representatives of airports and airlines in the UAE. The workshop shed light on the mechanism used by ICAO to allocate air navigation and aviation frequencies and the technical analysis mechanism of these frequencies. It also reviewed the main features of the system used in the process of technical analysis and customization. It focused on the latest methods and systems through which frequencies are allocated, to ensure their use without any interference that may affect air traffic and air safety. Eng. Saleh Al Masabi, Director of Spectrum Services at TDRA, said: “The aviation sector is one of the vital sectors that are impacted by TDRA’s scope of work in terms of reliance on aeronautical radio frequencies. We, at TDRA, attach high importance to this sector based on its positive impact on the UAE’s global competitiveness. Hence the importance of this workshop, which benefits workers in the aviation sector, whether in the UAE

or in the Gulf countries.” The workshop included training sessions facilitated by a group of lecturers accredited by ICAO, such as a session on planning and explaining aeronautical frequencies and standards, a session on the current frequency allocation plan in the Middle East, two training sessions on ICAO frequency identification process in the Middle East, a training on the use of the approved electronic system for technical analysis and allocation through pre-prepared scenarios. The workshop, which was presented by ICAO-accredited experts, included a presentation on the followed procedures for aeronautical radio frequency allocation and the requests’ analysis mechanism. The participants received training on the use of the ICAO electronic system for allocating aeronautical frequencies, ‘Frequency Finder Tools’. TDRA hosted this workshop as part of its endeavors to develop the capabilities of all stakeholders, provide them with the necessary skills and qualifications, and invest in building capacities and national human cadres in line with the directions of the UAE Government and its future vision. The workshop is also part of the efforts to develop the services provided to the aviation sector in the UAE, facilitate air traffic operations, and support strategic partners in the aviation sector to carry out their tasks and maintain the UAE’s leading position in this field. (January 17, 2023) <https://tdra.gov.ae>

## United Arab Emirates

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## REGULATORY ACTIVITIES BEYOND THE SAMENA REGION



### Angola

China will provide Angola with USD249 million financing this year to support the implementation of a project titled National Broadband Network (Rede Nacional de Banda Larga – RNBL). The funding comes in the form of a concessional loan from Export-Import Bank of China, with arrangements confirmed on 11 January. Chinese diplomat Gong Tao said after signing the contract for the project's implementation that China will continue to support Angola in various development projects, with emphasis on the areas of telecommunications

and digital transformation. Angolan Minister of Finance Vera Daves noted that further steps are now required regarding the adoption of specific agreements for the disbursement of the USD249 million for project implementation. Daves added that the disbursement of the financing is part of the government's quota for the development of telecommunications infrastructures alongside expected significant participation from the Angolan private sector.

(January 13, 2023) Jornal de Angola



### Argentina

Argentina's multi-band 5G spectrum auction is now expected to be held in March or April this year, rather than February. The new timeline was reported this week. The spectrum sale is expected to include the following frequency bands: 1427MHz-1518MHz (1500MHz band); 1770MHz-1780MHz/2170MHz-2180MHz (AWS-3 band); 2300MHz-2400MHz (2.3GHz band); 3.3GHz-3.6GHz (3.5GHz); 24.25GHz-25.75GHz (26GHz band); and 37GHz-43.5GHz (38GHz band). As per government projections, the auction could raise as much as USD1.4 billion. (January 19, 2023) Tiempo Argentino

The National Communications Agency (Ente Nacional de Comunicaciones, ENACOM) has confirmed that it has added spectrum in the 3.3GHz-3.6GHz band to the

Servicio Movil Terrestre (Land Mobile Service) register, in line with the Plan de Gestion Integral del Espectro Radioelectrico (Comprehensive Management Plan for the Radioelectric Spectrum). The decision was rubber-stamped in the watchdog's last meeting of the 2022 and announced on 27 December. Argentina is aiming to stage a multi-band 5G spectrum auction in February 2023. Alongside spectrum in the 3.3GHz-3.6GHz band, ENACOM expects to distribute the following frequency bands: 1427MHz-1518MHz (1500MHz band); 1770MHz-1780MHz/2170MHz-2200MHz (AWS-3 band); 2300MHz-2400MHz (2.3GHz band); 24.25GHz-25.75GHz (26GHz band); and 37GHz-43.5GHz (38GHz band).

(January 3, 2023) www.commsupdate.com



### Australia

Australia's government has called for feedback on the future of standards regulating fixed voice services. A discussion paper has been published by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) on the 20-year old Customer Service Guarantee (CSG), which provides performance standards for the connection and repair of fixed voice services and provides for compensation to be paid to consumers where standards are not met; and complements the Universal Service Obligation (USO), which provides reasonable access to fixed telephone services. Four instruments that support the CSG – made by the Minister for Communications and the Australian Communications and Media Authority (ACMA) – are set to cease on 1 October 2023. Given its regulatory role, it was noted that the ACMA will be involved in the review process. In launching the consultation the DITRDCA said that since the CSG was first introduced, the telecommunications industry had changed dramatically as a result of the rise of mobile technology, changing consumer preferences, the cre-

ation of the National Broadband Network (NBN), and new market structures and industry players. As such, it said its discussion paper was seeking stakeholder views on the CSG as a whole, and the various regulatory instruments that give effect to it, noting these changes to the sector. Minister for Communications, Michelle Rowland, noted: 'This discussion paper is an important first step towards considering the future role and form of the CSG, and the views of stakeholders will help inform its development ... With instruments that are part of the existing CSG ceasing in coming months, we will work collaboratively with the community and industry to ensure performance standards appropriately reflect changes in the market and consumer interests.'

(February 17, 2023) www.commsupdate.com

A court-enforceable undertaking from Telstra related to the telco's failure to comply with its 'priority assistance' obligations has been accepted by the Australian Communications and Media Authority (ACMA). As a condition of its license, Telstra is required to provide

priority assistance to customers who have a life-threatening medical condition, and once identified, must have systems in place to provide those customers with additional levels of service. However, an ACMA investigation found the operator had failed to: send priority assistance application forms and/or required additional information on more than 260 occasions to customers who had made contact to enquire about priority assistance; initiate 'emergency medical request' procedures on five occasions; and follow processes for 'enhanced service reliability' on one occasion. In addition to the ACMA's investigation findings, Telstra also reported that there were 740 other instances where it had been unable to locate records of whether priority assistance paperwork was sent. Now, under the court-enforceable undertaking Telstra will implement new systems to address the deficiencies in its existing procedures to ensure customers requiring priority assistance are provided with the required information and can easily register for the service. Further, the telco has reportedly increased the monitoring of staff who handle priority assistance communications to ensure the correct steps are followed. Should Telstra fail to comply with the conditions of the enforceable undertaking, meanwhile, the ACMA may consider commencing Federal Court proceedings.

(February 8, 2023) [www.commsupdate.com](http://www.commsupdate.com)

Telstra and TPG have both lodged applications with the Australian Competition Tribunal (ACT) calling for

a review of the Australian Competition and Consumer Commission's (ACCC's) decision not to authorize proposed regional mobile network arrangements between the two operators. Last month it was announced that the ACCC had opted not to permit a regional network deal between Telstra and TPG on the grounds that the proposed arrangements could impact competition in the mobile sector. Now, as part of both telcos' applications, the pair have each called on the Tribunal to set aside the ACCC's determination and grant 'unconditional merger authorization'. In their respective – and identical – applications, both companies cited grievances with the ACCC's ruling, arguing that the regulator had 'incorrectly concluded that authorization should not be granted on the basis that the Commission could not be satisfied that the deemed acquisition would not have the effect, or would not be likely to have the effect, of substantially lessening competition in relevant markets'. Further, the cellcos have also claimed that the ACCC incorrectly concluded that it could not be satisfied that the network deal would result in a benefit to the public that would outweigh the detriment to the public. It is understood that the ACT must now rule on the matter within 90 days, though this period for a ruling can be extended to 120 days should the Tribunal call for additional information.

(January 16, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Azerbaijan

President of the Republic of Azerbaijan Ilham Aliyev has signed a Law amending the Telecommunications Law, Trend reports. Following the amendments, the mobile device registration should be carried out in the manner prescribed by the relevant executive authority. In order to prevent avoiding mobile device registration, it's prohibited to change or copy the device's IMEI number (International Mobile Equipment Identity), as well as provide telecommunications services to the devices, IMEI numbers of which are blacklisted. In addition, President Ilham Aliyev has signed a Law amending the Administrative Offenses Code. According to the law,

individuals will be fined from 300 (\$176.4) to 400 manat (\$235.2), officials – from 1,000 (\$588) to 1,500 manat (\$882), legal entities – from 3,000 (\$1,764) to 4,000 manat (\$2,352) if the above requirement is violated. If a person who has been given an administrative penalty commits the repeated offense within one year from the date of the relevant decision's entering into force, individuals will be fined from 600 (\$352.8) to 800 manat (\$470.4), officials – from 2,000 (\$1,176) to 2,500 manat (\$1,470), and legal entities – from 9,000 (\$5,292) to 12,000 manat (\$7,056). The law will enter into force on April 1, 2023. (January 29, 2023) [www.en.trend.az](http://www.en.trend.az)



## Barbados

A number of unnamed international operators have applied for operating licenses in Barbados, a government official has confirmed. Clifford Bostic, Director of the Digital Infrastructure Unit at the Ministry of Industry, Innovation, Science and Technology (MIST), told: 'There are several requests for both mobile services and fixed services, as well as VSAT.' Mr. Bostic added that would-be market entrant KW Telecommunications – which received a license in early 2022 – is still planning to launch commercial services. While little is known about KW Telecommunications – or its backers – the

newcomer appears set to fill the void left when debt-racked Ozone Wireless shut down in August 2019, barely two years after its launch. (February 8, 2023) [Loop News](http://Loop News)

Mobile number portability (MNP) and fixed number portability (FNP) have gone live in Barbados, government officials have confirmed. The 1 February launch event was presided over by David Ishmael, the country's Minister of Industry, Innovation, Science and Technology (MIST), while the audience comprised senior officials from Digicel Barbados

and Flow Barbados, as well as other MIST personnel, members of the Fair-Trading Commission (FTC) and representatives from consultancy firm Northpoint. Mr. Ishmael commented: 'I am elated to announce that Barbados' telecommunications sector has come of age. This government, your government, has delivered on its promise to introduce Local Number Portability

to Barbados. The ability for customers to be able to make an unfettered choice of one service provider over another – a fundamental consumer right – is now possible.' Mobile numbers will be ported within 24 hours, while a fixed voice number will take five days to be transferred. (February 3, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Belgium

Telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has opened a consultation regarding the extension of temporary user rights in the 70GHz/80GHz frequency bands assigned to Telenet, Proximus and Orange Belgium for the use of radio relay links. Having previously granted each of the three mobile network operators (MNOs) temporary

licenses for 1GHz of spectrum in March 2021, it is now proposing to extend these until 30 June 2023. The regulator will also consider options which would potentially enable similar frequency assignments in the bands for new entrant Citymesh Mobile and other potential users. (January 13, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Brazil

The National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) has announced that it has set up a Working Group to monitor the operational and financial situation of troubled telco Oi Group in relation to its Judicial Recovery Plan. The Working Group will evaluate and propose measures to deal with the possible discontinuity of Oi's operations. In the event of a bankruptcy scenario, Anatel is determined to maintain the provision of fixed voice services, in accordance with the telco's Servico de Telefonia Fixa Comutado (STFC) license. In addition, Oi is obliged to notify the Working Group in advance of any changes to its equity interest in neutral network fiber firm V.tal, following recent suggestions that Oi could cash in on the asset to ease its debt situation. Last week, Oi requested 'urgent precautionary relief' from the 7th Corporate Court of the Court of Justice of Rio de Janeiro in relation to 'a potential renegotiation of certain debts. The telco's judicial recovery drew to a close on 14 December 2022, after around six-and-a-half years. Fernando Viana, the judge of the 7th Corporate Court of the Court of Justice of Rio de Janeiro, declared that all obligations assumed by the company have been

fulfilled. In total, Oi faced claims from some 65,000 creditors, although not all cases had been settled as of the December decision. (February 6, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The Board of Directors at the National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) has approved the renewal of Algar Telecom's spectrum usage rights in the 800MHz, 900MHz and 1800MHz bands. The 800MHz permit has been extended until 29 November 2028, while the other two concessions will run until 22 December 2032. The 15-year licenses were previously renewed in 2008 and were due to expire on 21 January. Locations covered by the regional licenses include Sao Paulo, Minas Gerais, Mato Grosso do Sul and Goias. Going forward, Anatel is understood to be keen to reappraise the issue of 2G/3G spectrum licenses, rather than renewing them automatically when they expire. The watchdog hopes to revise its rules governing spectrum allocations and use (Regulamento de Uso de Espectro, RUE) to create larger, contiguous spectrum blocks in the 850MHz, 900MHz and 1800MHz bands, which can be used to boost capacity in the 5G-era. (January 20, 2023) TeleTime



## Cameroon

ThreemobileoperatorshavecommittedtoinvestXAF156 billion (USD255 million) in their operations across Cameroon this year, Justine Diffo Tchunkam, Chair of the Telecommunications Regulatory Board (ART), said. MTN Cameroon, Orange Cameroon and Viettel (Nexttel) will spend the funds on extending network coverage

and improving the quality of services throughout the national territory. 'I think what our consumers should be expecting should be an improvement in the future as we look to find lasting solutions to the challenges that are impacting the quality of services today,' MTN Cameroon CEO Mitwa Ng'ambi said. (January 10, 2023) ITWeb



## Canada

The Minister of Innovation, Science and Industry, Francois-Philippe Champagne, has finalized a policy direction to the Canadian Radio-television and Telecommunications Commission (CRTC), aimed at 'placing affordability and consumer rights at the forefront of the regulator's future decisions'. Having proposed the new federal policy in May 2022, the final directives published yesterday by the telecoms Ministry, Innovation, Science and Economic Development Canada, put the following objectives at the top of the CRTC's decision process:

- enhance wholesale internet access and competition
- increase mobile competition
- improve the reliability and resilience of services
- improve consumer rights
- speed up new infrastructure for universal access
- proactively improve the accessibility of telecom services for Canadians with disabilities
- build better regulations to better support consumers.

Mr. Champagne declared: 'Canadians still pay too much and see too little competition ... These objectives will ensure that affordable access to high-quality, reliable and resilient telecommunications services is available in all regions of Canada, including rural and remote areas and Indigenous communities. The direction also

calls on the CRTC to continue to implement and adjust its Broadband Fund to meet connectivity needs across the country in coordination with other programmes ... Additionally, it directs the CRTC to increase the transparency and clarity of service plan pricing, making it easier and affordable for Canadians to change or cancel services.' (February 14, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The federal government's decision on whether to approve the Rogers-Shaw merger will be made 'in due course', Canada's Minister of Innovation, Science and Industry Francois-Philippe Champagne told reporters as the House of Commons Standing Committee on Industry and Technology examined the proposed deal, GlobalNews.ca reported. Speaking at a Liberal cabinet three-day retreat in Hamilton, Ontario, Champagne said he seeks to understand why the Federal Court of Appeal dismissed the Competition Bureau's appeal against the CAD26 billion (USD19.4 billion) Rogers-Shaw deal and the associated CAD2.85 billion sale of Shaw's subsidiary Freedom Mobile to Videotron, while his decision will focus on 'making sure the deal will provide more competition and affordability for Canadians.'

(January 26, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Chile

The Antitrust Tribunal (Tribunal de Defensa de la Libre Competencia, TDLC) has reversed its position on the use of existing fixed wireless 3.5GHz spectrum allocations for mobile services, TeleSemana reports. Previous requests from sector watchdog the Department of Telecommunications (Subsecretaria de Telecomunicaciones, Subtel) to alter the assignment were rejected by the TDLC on the basis that such changes could only be implemented through a public

tender. The matter primarily concerns Claro Chile which hold rights to spectrum in the 3.5GHz band but is not permitted to use the airwaves for 5G services. Subtel argued that as the concession is valid until 2032 the resource is being underutilized, to the detriment of customers and the market. TDLC's revised decision now clears the way for Subtel to alter Claro's authorization so that the spectrum can be used for 5G mobile services.

(January 10, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Colombia

The Ministry of Information Technologies and Communications (Ministerio de Tecnologias de la Informacion y las Comunicaciones, MinTIC) has revealed that a total of nine companies expressed an interest in securing 5G spectrum licenses ahead of its 29 December 2022 deadline. The list includes established mobile players such as Comunicacion Celular (Claro), Colombia Movil (Tigo), Colombia Telecomunicaciones (Movistar), Em-

presa De Telecomunicaciones De Bogota (ETB), Partners Telecom Colombia (WOM), alongside unknown quantities such as Colombia WB Hots, Global Play, EGC Colombia and OSC Top Solutions Group. The government is poised to distribute spectrum in the 700MHz, 1900MHz, 2.5GHz, 3.5GHz and 26GHz bands, although not all of the would-be applicants are interested in bidding on all bands. (January 4, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Costa Rica

The Superintendency of Telecommunications (Superintendencia de Telecomunicaciones, Sutel) has launched a 5G consultation as it seeks to establish which spectrum bands to include in its planned 5G spectrum auction. As per the document, the watchdog is considering distributing 90MHz of 700MHz spectrum, 100MHz in the 2300MHz band and 100MHz blocks at

3300MHz-3400MHz and 3400MHz-3500MHz. A block of 3600MHz-3625MHz spectrum and millimeter wave (mmWave) frequencies in the 26GHz and 28GHz bands could also come into play. Sutel notes that state-backed telco/utility firm Grupo ICE, which operates via the Kolbi brand, currently holds the largest spectrum allowance in Costa Rica, with 309.4MHz across multiple bands, while

its sister company Radiografica Costarricense (RACSA) holds a 100MHz block of 3.5GHz spectrum. Claro Costa Rica holds a total of 100MHz of spectrum, while

Liberty Costa Rica has the rights to 100.6MHz worth of frequencies. (February 2, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Croatia

Croatia has begun its multi-band spectrum auction which is offering frequencies in the 800MHz, 900MHz, 1800MHz, 2100MHz, 2.6GHz and 3.5GHz bands. The sale will take place in two stages, the first including national licenses in all bands except 3.5GHz, with this followed by a separate auction of regional 3.5GHz concessions. The country's three incumbent cellcos – Hrvatski Telekom (HT), A1 and Telemach – are all pre-qualified to bid in the first stage, while local ISPs Digicom and Markoja have come forward to participate in the 3.5GHz sale. The national licenses on offer and the starting price per 2x5MHz block are:

- 791MHz-821MHz/832MHz-862MHz (EUR7 million

[USD7.6 million])

- 880MHz-915MHz/925MHz-960MHz (EUR7 million)
- 1710MHz-1785MHz/1805MHz-1880MHz (EUR2 million)
- 920MHz-1980MHz/2110MHz-2170MHz (EUR2 million)
- 2500MHz-2570MHz/2620MHz-2690MHz (EUR700,000)
- The total starting price of all bidding blocks for national coverage is EUR154.8 million. Licenses will be valid for 15 years, with an optional five-year extension. (January 17, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## El Salvador

The Electricity and Telecommunications Superintendency (Superintendencia General de Electricidad y Telecom, SIGET) has said that it will hold the previously announced public tender for mobile spectrum in the 1755MHz-1770MHz/2155MHz-2170MHz (Extended AWS) frequency range on 7 February, after the December launch was postponed. A total of 30MHz will now be auctioned off next month, divided up into three

blocks of 2x5MHz: 1755MHz-1760MHz/2155MHz-2160MHz, 1760MHz-1765MHz/2160MHz-2165MHz, and 1765MHz-1770MHz/2165MHz-2170MHz. SIGET has set a minimum bid price of USD21.66 million for the frequencies. The move to hold the spectrum auction follows a request from mobile network operator (MNO) Telefonica Moviles El Salvador (Movistar).

(January 19, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Ethiopia

Ethiopia's government is looking to move forward with the partial privatization of incumbent telecoms operator Ethio Telecom, and to that end has published a Request for Proposal (RfP) inviting 'proposals from interested parties who can add value to the Company by bringing in best practices in terms of operations, infrastructure management and next generation technological capabilities'. It is understood that the government is now offering a 45% stake in Ethio Telecom, with the Ministry of Finance (MoF) having confirmed that companies interested in obtaining the RfP will be required to pay a non-refundable fee of USD200,000. The MoF has set a deadline of 23 February 2023 for requests, while also confirming that the tender is open to any interested party, notably specifying that it is 'not limited to those companies who indicated their interest by submitting an expression of interest'. In November 2022 the MoF restarted the stalled process of offering a stake in Ethio Telecom, though at that time it said it was looking to engage with prospective bidders for a 40% stake in the telco. Prior to that, in March 2022 the MoF had revealed the partial privatization process had been postponed 'given the recent developments and fast-moving macroeconomic changes both globally and from a country perspective'.

(February 13, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The Ethiopian Communications Authority (ECA) is preparing to invite Expressions of Interest (EoI) from would-be telecoms licensees early next month, Capital Ethiopia reports, citing comments by Balcha Reba, the watchdog's Director General. The article quotes Mr. Reba as saying: 'ECA has now resumed the licensing process for a third license – or the second new full-service nationwide telecommunications license ... We have invited different international consultation companies to evaluate the document.' The licensing process was suspended more than twelve months ago, with the regulator pausing its efforts to attract a third operator on 22 December 2021. In May 2021 Ethiopia's Ministry of Finance (MoF) and the ECA named Global Partnership for Ethiopia (GPE), a private consortium comprising Safaricom, Vodafone Group, Vodacom Group, CDC Group and Sumitomo Corporation, as the winning bidder for one of two nationwide concessions that it had put up for grabs. The newcomer went on to stage a full commercial launch in October 2022, under the Safaricom Ethiopia name. In November 2022, meanwhile, the MoF issued an EoI for the partial privatization of incumbent telecoms provider Ethio Telecom. (January 5, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## France

The French government has launched a new support scheme for research and development (R&D) projects on advanced 5G, 6G and future network generations. The government has given all interested parties until 29 February 2024 to submit applications for solutions linked to virtualization, open interfaces on access networks, edge computing, security, and the integration of

AI and machine learning. The scheme is part of President Macron's France 2030 strategy, a EUR30 billion (USD32.4 billion) plan unveiled in 2021 aimed at modernizing the economy; the government has earmarked EUR750 million of the budget for the 5G/6G R&D support scheme by 2025.

(January 13, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Germany

The Federal Network Agency (FNA, known locally as the Bundesnetzagentur or BNetzA) is reviewing reports submitted by mobile network operators (MNOs) to determine whether they met the coverage requirements of the 2019 multi-band spectrum auction. These include an obligation to provide mobile data speeds of at least 100Mbps to 98% of households in each federal state by the end of 2022, as well as supplying all federal motorways, the most important federal roads and the major rail routes with those speeds. In addition, 1,000 5G base stations were required to be set up by end-2022, plus 500 base stations in underserved 'white spots' areas. According to their own information, Telekom Deutschland, Telefonica Deutschland and Vodafone Germany all claim they fulfilled the household coverage

requirements, while traffic routes are almost completely supplied with 100Mbps. Where these targets could not be fulfilled, operators have blamed delays on a lack of building permits, a need for third parties involvement, a lack of public acceptance for new cell phone sites, and nature conservation requirements. The trio largely achieved the obligation to activate 1,000 5G base stations, although newcomer 1&1 did not meet this target on time. The FNA is currently reviewing the information provided by the operators and will conduct its own measurements by the end of March. The regulator will then decide on whether each company has fulfilled the coverage requirements of their mobile spectrum licenses.

(January 16, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Ghana

The National Communications Authority (NCA) has granted a conditional approval for the transfer of the 70 per cent majority shares in Vodafone Ghana to Telecel Group. This is subject to concessions made by Vodafone and representations made by Telecel to the NCA. It is still pursuant to the evaluation of the revised proposal from the Telecel Group. A notice posted on the regulator's website today (January 16), said "it would be recalled that in January 2022, the NCA received an application from Vodafone Ghana for the transfer of 70 per cent of its majority shares held by the Seller to the Buyer. It said in accordance with due process, the NCA evaluated the application on various criteria and engaged both Vodafone Ghana and Telecel. "The NCA concluded that the request did not meet the regulatory threshold for approval to be granted. "Following the NCA's decision, the Buyer resubmitted a revised financial and technical proposal in December 2022 which demonstrated the needed capital investment to extend the deployment of 4G and launch innovative

Fintech solutions," the notice said. It said the NCA found that the revised proposal provided more clarity and certainty in terms of the funding required for the acquisition and the commitments from both the Seller and Buyer. In addition, the Buyer had strengthened the overall governance and management team and made firm commitments towards meeting the regulatory requirements of the NCA. "Based on the above, the NCA confirms that the revised proposal from the Buyer now meets the regulatory threshold and hence has granted a conditional approval for the transfer of shares to the Buyer including submission of strategies for employee retention. "The NCA would like to assure the general public and all stakeholders that it would continue to work with Vodafone Ghana and the Buyer to complete all outstanding regulatory requirements to ensure a smooth transition as well as continuity of service delivery and improved choice for consumers and competition within the industry," it added.

(January 16, 2023) [www.graphic.com.gh](http://www.graphic.com.gh)



## India

India's Department of Telecommunications (DoT) has reportedly expressed concerns regarding applications for submarine cable landing station authorizations from several telcos, the Hindu writes. According to the paper, the DoT noted that some of the applicants – Reliance Jio Infocomm (Jio), Bharti Airtel, and Sify Technologies – are not stakeholders in the cable systems that they land. Jio has applied for authorizations to land the India

Asia Xpress and India Europe Xpress cables (Jio holds a significant stake in both systems); Airtel has sought permission to land the 2Africa and SeaMeWe-6 cables (Bharti Airtel is understood to have no stake in 2Africa, but is part of the SeaMeWe-6 consortium); and Sify has submitted an application to land the Raman cable, but is understood to not have a stake in the system. Under the current regulations, companies deploying international

submarine cables must ensure that they – or a member of the consortium – hold a valid international long distance (ILD) license from the DoT. A further direction from the DoT notes: 'ILD licensees ... while applying for security clearances on behalf of any entity for laying/maintaining the submarine cables, shall make sure that they have significant stake in such entities on behalf of whom they are applying for security clearances.' The matter has been referred to sector watchdog the Telecom Regulatory Authority of India (TRAI). The licensing framework for landing submarine cables in India is currently under consultation: the TRAI published a consultation paper in December 2022 and earlier this month it extended the deadline for comments and counter-comments to 10 February and 24 February, respectively. (January 30, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The Telecom Regulatory Authority of India (TRAI) has recommended that 5MHz of spectrum in the 700MHz band be allocated to the National Capital Region Transport Corporation (NCRTC) for the operation of mission-critical safety applications related to signaling and train control operations. The airwaves would be used to cover the company's under-construction regional rapid trans system (RRTS) corridors, a series of semi-high speed, high capacity rail routes connecting regional nodes. TRAI's recommendation would see NCRTC – a

joint venture of the government of India and the states of Haryana, Rajasthan, Uttar Pradesh and Delhi – issued a ten-year license for the airwaves via the administrative route, at a price based on 50% of the auction-determined price based on the August 2022 tender. The watchdog also suggested that the price could be further modified to reflect the area of the corridor relative to the total area of the licensing areas covered by the RRTS project. The TRAI also recommended that a separate permit category be established for captive non-public networks for railways (CNP-N) and that 700MHz frequencies be assigned to other geographically separated rail networks that are not likely to cause interference. Finally, the TRAI recommended that the Department of Telecommunications (DoT) oversee a field trial to assess the feasibility of assigning 700MHz airwaves to telcos on a non-interference basis. In a related development, meanwhile, the DoT has reportedly cast doubt on the potential allocation of mid-band (3300MHz-3700MHz) spectrum for CNPNs, on the basis that doing so would result in a potential loss to state coffers. An unnamed official was quoted as saying: 'We are still in the process to finalize spectrum for private networks but reserving mid-band airwaves is not likely to happen. We will explore some more bands, apart from what has been proposed by the regulator.'

(January 4, 2023) [The Economic Times](http://The Economic Times)



## Ireland

The Commission for Communications Regulation (ComReg) has launched a consultation related to its analysis of the Physical Infrastructure Access (PIA) market and its proposals to regulate it on the basis that it is 'characterized by the presence of market failure in the form of significant market power (SMP), and associated competition problems arising from [eir's] ability and incentive to behave anti-competitively'. In summary, ComReg has proposed defining a national market consisting of telecoms-specific Physical Infrastructure ('PI') – ducts, poles and associated facilities such as chambers – while it has provisionally found that eir, due to its 'ubiquitous telecom-specific PI

network which is capable of being used to access the vast majority of premises in the country, and the lack of an effective existing or potential rival PI', holds SMP in the PIA market. As part of its consultation, ComReg has proposed access remedies, non-discrimination remedies and transparency remedies, as well as price control, cost accounting and accounting separation remedies. With the watchdog seeking feedback on its plans by a deadline of 3 March 2023, it said that once it has analyzed and considered any comments received, will review its proposals and, having considered whether to make any amendments, will then seek to adopt a final decision. (January 10, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Italy

An Italian government Minister has expressed concern at delays with Open Fiber's state-subsidized rollouts in underserved rural areas. A series of rollout contracts were awarded to Open Fiber between 2017 and 2019 covering so-called 'white' areas, where fiber network rollout was not expected to take place without government financial support. Open Fiber initially suggested it would complete the work by April 2022, but subsequently pushed back the completion date several times. Under its latest schedule, it expects EU-funded projects to be finished by the middle of this year, while the remaining rollouts will run on until September 2024. Minister of Economic Development

Adolfo Urso has attributed the delays to 'an initial underestimation of the issue of permits, erroneous industrial policies and political responsibilities. He is quoted by StartMag as saying: 'To ensure compliance with the timetable, a reinforced monitoring of the activities has been activated to detect progress and manage anomalies and implementation delays ... and define the corrective actions to be undertaken.' Open Fiber, which is 60%-owned by state investment fund Cassa Depositi e Prestiti (CDP), claims to have deployed fiber infrastructure which passes more than 14.5 million premises across Italy.

(January 12, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Japan

The Ministry of Internal Affairs and Communications (MIC) is looking to introduce spectrum auctions by early 2026, replacing the current system where operators are awarded frequencies for free. A report says that rather than use a simple auction format where the highest bidder wins, the regulator will base its decision on

factors including bid price, technological development and investment plans. A working group will be set up to discuss the plans, involving regulatory authorities, operators, equipment manufacturers and industry experts.

(January 31, 2023) Nikkei News



## Jersey

The Jersey Competition Regulatory Authority (JCRA) has launched a consultation on proposals to review the allocation of radio spectrum as part of its program to enable the introduction of next generation mobile technology to the Bailiwick. In it, the JCRA is seeking views from interested parties on the option of moving the existing radio spectrum allocations of some telecoms operators or potentially recommending the cancellation of their radio spectrum licenses. With the regulator noting that it is specifically examining plans related to the 3.4GHz-3.8GHz band, it noted that frequencies in this range have previously been licensed for the provision of 'earlier wireless services', adding that these existing historic allocations 'prevent the creation of large blocks for new 5G services without changes in allocations. According to the JCRA, after examining the local situation and considering the approach taken in other comparable locations, it is now consulting on provisional plans to defragment the 3.4GHz-3.8 GHz spectrum band. In summarizing its proposals, the authority has recommended to UK regulator Ofcom – which is responsible for managing the Bailiwick's radio spectrum – that: the licenses for spectrum presently held by Clear Mobitel, Newtel and Sure in the 3.4GHz-3.8GHz band are revoked subject

to a three-year notice period; subject to accepting that revocation, existing historic licensees will receive new 'Limited Service' spectrum packages, as defined in the JCRA's '5G Spectrum Award'; and new 5G licensees will be permitted to access any unused 3.4GHz-3.8 GHz spectrum during this notice period, following agreement with existing historic licensees over sharing arrangements necessary to avoid interference between services. With a closing date of 31 March 2023 having been set for comments on the consultation, the JCRA's chief executive Tim Ringsdore said: 'One of our important duties as Jersey's telecoms regulator is ensuring Islanders can access and rely on high-quality next generation mobile services in the future. Providing new 5G services that meet this expectation will require additional radio spectrum, some of which has been historically allocated to existing licensed telecoms operators. After carefully examining the situation, we believe it right to consider requesting these operators move to an alternative part of the spectrum band, or to give up their allocation. Our consultation explains the reasoning behind our provisional proposals – we're looking forward to engaging through this process and determining the right approach.'

(February 16, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Kyrgyzstan

The Ministry of Digital Development, Innovation & Aerospace announced the results of the country's 5G spectrum license auction, with both frequency blocks on offer won by a consortium of mobile operators Kcell and Mobile Telecom Service (Tele2-Altel) – both part of the Kazakhtelecom group. The two 1×100MHz blocks are in the ranges 3600MHz-3700MHz (Lot No. 1) and 3700MHz-3800MHz (Lot No. 2). The initial price for

each lot was set at KZT1.76 billion (USD3.8 million), but local news site Profit.kz reports that as a result of competition, the price of Lot No. 1 increased to KZT62.7 billion, and the bid for Lot No. 2 rose to KZT93.4 billion. Representing the winning consortium, Sergey Konkov, General Director of Mobile Telecom Service, noted: 'By the end of 2025 Kcell and Tele2-Altel plan to build over 7,000 5G base stations.' (January 3, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Kosovo

Two of Kosovo's mobile operators have been granted 5G licenses. Regulatory Authority for Post and Electronic Communications (Autoriteti Rregullator i Komunikimeve Elektronike dhe Postare, ARKEP) has awarded IPKO and Telecom Kosovo the licenses. The regulator published the decision on February 15, reported Comms Update, with the announcement a boost for Kosovo, where 5G is yet to launch. Telecom Kosovo has been awarded a 2×10MHz block in the 800MHz band (811MHz-

821MHz/852MHz-862MHz) alongside a 1×100MHz block in the 3.6GHz band (3,510MHz-3,610MHz). IPKO has picked up spectrum in the 2×10MHz in the 800MHz band, (791MHz-801MHz/832MHz-842MHz) plus a 1×100MHz block of the spectrum at 3,410MHz-3,510MHz. Both licenses are valid for 20 years and are technology-neutral. According to the regulator, an additional 90MHz block of 5G spectrum in the 3,710MHz-3,800MHz range has been awarded

to the NGN Institute, with the goal of supporting the deployment of local private 5G networks. IPKO revealed it completed 5G testing in July of last year, where it was able to achieve speeds of more than 1.2Gbps. However, the operator didn't disclose the vendor it worked with.

Telekom Kosovo signed a deal with Ericsson Nikola Tesla, a Croatian subsidiary of Ericsson, to modernize the operator's mobile network, including 5G broadband, noted Broadband TV News in December of last year.

(February 20, 2022) [www.datacenterdynamics.com](http://www.datacenterdynamics.com)



## Liechtenstein

The telecoms watchdog the Office for Communication (Amt für Kommunikation, AK) has published details of the frequency assignment to the nation's trio of mobile providers: Swisscom, Salt and Telecom Liechtenstein (FL1). In February 2020 AK had invited the cellcos to propose a solution for the allocation of additional spectrum in the 700MHz, 1400MHz and 3500MHz ranges and to adapt the existing terms of use for airwaves. In May 2020 the government passed a resolution to distribute the entirety of the spectrum

that had been reserved for mobile services to the trio and in July that year the three cellcos submitted a joint proposal for the award of airwaves in the three new bands, as well as alterations to existing allocations. A final application was submitted to the regulator in October 2022 and the new allocations were awarded in December, although it was not until the following month that the details were published in full on AK's website.

(January 12, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Madagascar

The Agency for Regulation of Technology and Communication (Autorite de Regulation des Technologies de Communications, ARTEC) has revealed that some technical issues still need to be resolved before 5G services can be launched in Madagascar, but it expects they will become operational 'soon'. In a press release, the watchdog explained that 'anomalies' were still being detected during 5G tests conducted by an unnamed national operator at 20 sites (17 in Antananarivo and three in Taomasina), resulting in interference with neighboring frequency bands. As part of its efforts to ensure that 5G spectrum can be allocated 'under optimal conditions', ARTEC said it plans

to publish a roadmap detailing measures to reorganize frequency band usage. In July 2020 ARTEC ordered Telecom Malagasy (Telma) to deactivate a 5G network launched in Antananarivo and Taomasina the previous month using spectrum in the 3.6GHz-3.7GHz band. Noting the operator's temporary permit did not authorize the marketing of commercial services, ARTEC also highlighted that it was a condition of the authorization that all tests were to be conducted within an enclosed building, 'whereas the operator had performed trials on more than ten outdoor sites without prior notification'.

(January 19, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Mexico

The Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) has informed Telcel and AT&T of the renewal fees for their existing 850MHz concessions. Each company will pay MXN1.231 billion (USD65.1 million) for a 2x10MHz concession. AT&T's licenses expired last year, while Telcel's licenses are due to expire in 2025. (Note: the AT&T frequencies previously belonged to Nextel de Mexico, which AT&T acquired for USD1.875 billion back in 2015.) As per the report, AT&T has renewed spectrum in the 814MHz-824MHz/859MHz-869MHz band, while Telcel's license includes 835MHz-845MHz/880MHz-890MHz spectrum. The spectrum covers Nuevo Leon, Michoacan, Coahuila, Tamaulipas, Hidalgo, Edomex, Veracruz, Queretaro, Mexico City, Jalisco, Nayarit, Colima and some highway routes that connect the capital with the Mexican Gulf and the Pacific coast. Both license renewals are valid for 20 years, the report notes. (January 13, 2023) [El Economista](http://ElEconomista)

The Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) has launched a consultation regarding its planned multi-band 5G spectrum auction. The main 5G spectrum bands scheduled for inclusion are 70MHz in the 614MHz-698MHz (600MHz) band, a 50MHz block at 3300MHz-3350MHz and 90MHz in the L-band (1427MHz-1518MHz). In addition, the regulator is keen to gauge feedback regarding the potential inclusion of unused spectrum in a number of other bands. This includes spectrum in the 800MHz, 850MHz, 1900MHz, AWS and 2.5GHz bands, some of which was relinquished by Movistar in 2020. The IFT explains: 'The design of this new tender will seek to assign the greatest amount of spectrum possible [so] that new players in the mobile market can access this resource, especially for the provision of services in neglected or underserved areas.'

(January 11, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Montenegro

The Montenegrin government plans to conduct a cost benefit analysis to determine the viability of establishing a state telecoms operator, reports local news agency Mina. Prime Minister Dritan Abazovic told a meeting that the Montenegrin power grid operator Crnogorski Elektrodistributivni Sistem (CEDIS) has a 530km network throughout the country that could form the basis for a new telecoms company. He suggested a working group should be established to evaluate the infrastructure, the costs involved, its likely coverage and potential benefits. The Prime Minister was quoted as saying the government must decide whether 'we create our own state operator and probably earn five times more, or lease [the infrastructure] to existing ones for much less'. 'If we see that it makes sense, we can go one step further, and if not – no harm's done', he stated, adding that he believes the venture would be very profitable and have a positive effect by enhancing competition in the market. Finance Minister Aleksandar Damjanovic also expressed support for the proposal. 'This is a good idea and we are going to ensure that in the key EU countries and beyond, these services are, among other things, under the state's control,' he reportedly told the meeting.

(February 14, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The telecoms watchdog the Agency for Electronic Communications and Postal Services (EKIP) has announced that Crnogorski Telekom (CT), MTEL and One Montenegro all secured frequencies in the 700MHz and 3.6GHz (3400MHz-3800MHz) bands in the 5G auction staged late last month, with the three mobile operators agreeing to pay a total of EUR8.836 million (USD9.435 million). CT emerged as the most successful bidder, paying EUR3.108 million for 2x10MHz in the 700MHz band and a 140MHz block of 3.6GHz frequencies, while both One and MTEL secured 2x10MHz of 700MHz spectrum and 120MHz in the 3.6GHz band, bidding EUR2.978 million and EUR2.750 million respectively. EKIP notes the available blocks of unpaired 700MHz band and 26GHz spectrum remained unallocated due to a lack of interest from the operators. In terms of coverage obligations, the three operators will be required to activate 5G networks in every municipality of the country by the end of 2024, provide coverage to at least 50% of the country's population by end-2026, and extend their 5G footprint to all populated places, highways and main roads by end-2030.

(January 3, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Namibia

The Communications Regulatory Authority of Namibia (CRAN) has launched the auction process to allocate frequencies in the 700MHz (684MHz-790MHz) and 800MHz (790MHz-862MHz) bands for the provision of 4G and 5G services. Under the terms of the 'Request to Bid', applicants must hold a Class Comprehensive telecommunications service license (ECS & ECNS) or Individual telecommunications service license (ECS & ECNS), and will be required to submit a detailed business case, including their rollout plans for the next three years aimed at expanding broadband connectivity in those regions with 4G population coverage below the national target of 80%. The spectrum is reserved for use by 4G and/or 5G mobile services providing mobile broadband speeds of not less than 20Mbps and may not be utilized for 2G and 3G. The Authority will assign the frequency user rights on a competitive basis by means of a spectrum auction under a beauty contest model, with three lots available as follows: (Lot A) 703MHz-723MHz paired with 758MHz-778MHz; (Lot B) 723MHz-733MHz paired with 778MHz-788MHz and 791MHz-801MHz paired with 832MHz-842MHz; and (Lot C) 801MHz-821MHz paired with 842MHz-862MHz. To ensure fair and equitable access to spectrum, no participant will be allowed to bid for multiple lots. The spectrum licenses will be valid for a period of ten years from the date of

publication of the award in the Government Gazette and be renewable for a further period of ten years. According to the auction process timeline published by the regulator, potential bidders have until 17 April to submit their applications. The eligible participants will be confirmed on 21 April and the auction held between 24 and 28 April, with the results set to be announced on 30 June and spectrum licenses granted on 21 August.

(February 22, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The Communications Regulatory Authority of Namibia (CRAN) has confirmed it plans to allocate spectrum in the 700MHz and 800MHz bands in 2023, as part of efforts to improve network coverage and quality of service throughout the country. According to the regulator, the additional frequencies should enable operators to increase the current population coverage from 85% to 88% without deploying any new cell towers. 'These two spectrum bands will also allow operators to roll out 5G services in addition to 4G services, ensuring the optimal use of the spectrum to foster digital inclusivity throughout Namibia,' CRAN spokesperson Katrina Siken told reporters. The watchdog revealed last month it was preparing to issue 5G spectrum before March. (January 20, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## The Netherlands

The National Inspectorate for Digital Infrastructure (Rijksinspectie Digitale Infrastructuur, RDI) – which was recently renamed from the Telecommunications Agency (Agentschap Telecom) – reported that network operators KPN and VodafoneZiggo have received temporary waivers of coverage obligations for cellular 700MHz band mobile services in a limited number of localities. KPN, VodafoneZiggo and T-Mobile Netherlands each won 2x10MHz spectrum licenses in the 5G 700MHz band in July 2020. The national

5G licensees were subject to geographical coverage requirements stipulating mobile coverage of ‘98% of the surface area of every Dutch municipality’ with standards set for minimum data speed ‘on the outer edges of a mobile network’: with effect from July 2022 minimum requirements for these ‘worst points’ are 8Mbps, rising to 10Mbps in 2026, and in August 2022 RDI began checking network coverage and speeds.

(January 5, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Nigeria

Airtel Africa has announced that its Nigerian subsidiary has purchased 100MHz of spectrum in the 3.5GHz band and 2x5MHz in the 2600MHz band from the Nigerian Communications Commission (NCC) for a gross consideration of USD316.7 million, payable in local currency. The additional spectrum will support Airtel Nigeria’s investments in network expansion for both mobile data and fixed wireless home broadband capability, including 5G rollout, providing significant capacity to accommodate its continued strong data growth and enhancing customer experience. The acquisition of 3.5GHz spectrum will enable Airtel to launch 5G connectivity with higher speeds, lower latency, significant network capacity and an improved user experience. It will also accelerate the availability and efficiency of fixed wireless access products, contributing towards Airtel Nigeria’s progress in meeting

the National Broadband Plan targets. The acquisition of 2600MHz spectrum will complement Airtel’s strong spectrum position in the market to enhance network capacity and future-proof its growth opportunity. ‘Nigeria is a market with enormous potential for future growth in mobile services. Investment in new technologies and local infrastructure to enable this growth is a strategic priority for the Group and will ensure we are able to provide reliable and affordable services to local communities across the country,’ stated Segun Ogunsanya, CEO of Airtel Africa, adding: ‘5G is critical to these ambitions, and we look forward to launching new services to drive further digitalization across the country, facilitate economic progress and transform lives across Nigeria.’

(January 9, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Norway

The Ministry of Local Government and District (Kommunal- og distriktsdepartement, KDD) and the National Communications Authority (Nasjonal kommunikasjonsmyndighet, Nkom) have confirmed the allocation of subsidies designed to expand the reach of faster fixed broadband speeds. A total of NOK362.7 million (USD36.5 million) is being distributed for projects in 2023, up NOK60 million on the sum handed out in 2022, with these funds being made available as part of government efforts aimed at ensuring all Norwegians have access to downlink speeds of 100Mbps by the end of 2025. Of note, while state aid in previous years had only been available to counties that lacked fixed broadband access at downlink speeds of 30Mbps, this year support is also being offered to areas that have connectivity at speeds of between 30Mbps and 100Mbps. In terms of the areas that will benefit from funding in 2023, the counties of Viken and Innlandet will be the biggest recipients, with grants of NOK69.9 million and NOK69.6 million, respectively.

(January 20, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The National Communications Authority (Nasjonal kommunikasjonsmyndighet, Nkom) has confirmed that the 3.8GHz-4.2GHz band has been made available for the deployment of local 5G networks. In a press release regarding the development the regulator noted that, having conducted pilots during 2022, companies can now apply for licenses offering up to 80MHz in the aforementioned band for the construction of non-public 5G infrastructure in a geographically limited area. Concessions are valid for up to ten years, with annual fees ranging from NOK200 (USD20.3) for a 20MHz block of ‘low-power’ spectrum, rising to NOK3,800 for an 80MHz ‘medium-power’ block. According to Nkom, the newly established regulation governing local 5G networks in the 3.8GHz-4.2GHz bands ‘lowers the barriers to get the Norwegian industry into exploring what 5G can offer in solving their wireless communication needs’.

(January 19, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Panama

The National Public Services Authority (Autoridad Nacional de los Servicios Públicos, ASEP) has announced that pre-qualification for its public tender for a new mobile licensee will commence on 12 January, with the first stage of the licensing process expected to culminate on 16 March. Public tender No. 01-2023-Telco will seek to fill the void created by the exit of Digicel Panama, by offering a new concession to operate and exploit the vacated PCS license (No.106) as well as allowing for the purchase of certain Digicel assets. The regulator notes: 'We reiterate to all Digicel customers, as well as to its collaborators and suppliers, that the company continues to operate hand-in-hand with the auditor, providing its services without interruptions. Digicel will maintain its operations until the entry of the new operator and, in addition, it will accompany the new company in the transition process.' In April 2022 Digicel Panama announced that it intended to apply for voluntary liquidation and withdraw

from the Panamanian telecoms market as a result of the merger between Cable & Wireless Panama (CWP, +Movil) and Claro, which it said represented an 'illegal economic concentration'. Digicel's concession was duly transferred to the ASEP on 27 April 2022. On 2 August ASEP's 'intervention period' was extended by a further 180 days; this is due to expire at the end of January 2023. The new licensee will become the third mobile operator, alongside the newly enlarged CWP/Claro, and Tigo Panama, which comprises the former Movistar assets acquired by Millicom International Cellular (MIC) in August 2019. (Note: the Claro brand is allowed to be phased out from 17 January 2023, after the expiration of a ten-month grace period.) With LatAm-focused groups Millicom and Liberty Latin America (LLA) already present in Panama, and Telefonica, America Movil (AM) and Digicel all exiting the sector in recent years there is no obvious candidate for the new concession.

(January 10, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Peru

The Ministry of Transport and Communications (Ministerio de Transportes y Comunicaciones, MTC) has announced plans for a pilot scheme to test the sharing of active mobile access network infrastructure by multiple providers. The Multi Operator Core Networks (MOCN) scheme will run for six months at three base stations in Lima and one in Lambayeque, using sites owned by Telefonica del Peru (Movistar) and Entel Peru. The MTC expects that greater sharing of infrastructure will help improve coverage and service quality, by ensuring that operators can reach more users with the same number of sites. At the same time the practice would reduce investment, operating and maintenance costs. The MTC has also unveiled plans to establish 2,417 free Wi-Fi zones in public spaces in rural towns across the country with the intention of reducing the digital divide. The project is being handled by the National Telecommunications Program (Programa Nacional de Telecomunicaciones, Pronatel) under the government's Digital Access

Public Spaces (Espacios Públicos de Acceso Digital, EPAD) initiative. According to the ministry the initiative provided close to three million internet connections in 2022 through 223 EPAD sites installed across the Ayacucho, Apurimac, Cusco and Huancavelica regions.

(January 20, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The Peruvian government has modified and relaunched its auction of spectrum in the 1700MHz band, which had been suspended in February 2022 following several postponements. The new tender comprises the allocation of two 2x15MHz lots of 1700MHz frequencies, plus 1x30MHz in the 2300MHz band. The winning applicant will be selected on the basis of technical proposals for the expansion of 4G mobile services. The auction process also includes a round of consultation on the potential modification of the terms of the license. (January 10, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Philippines

The National Telecommunications Commission (NTC) in the Philippines has approved a request from SpaceX's local operating unit, Starlink Internet Services Philippines, asking that its equipment be exempted from radio station licensing. With SpaceX looking to hasten the commercial deployment of its technology in the country, the NTC confirmed via a statement that it 'deemed approved the request of Starlink Internet Services Philippines Inc.

that its Starlink User Terminals be classified as customer premise equipment [CPE] and not to subject the same to radio station licensing as it nears its commercial rollout.' Nonetheless, Starlink Internet Services Philippines will still be required to file an application for the modification of its Type acceptance certificates with the NTC's Equipment Standards Division.

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

The National Telecommunications

Commission (NTC) has provided an update on the country's ongoing Subscriber Identity Module (SIM) card registration process, noting that the total passed 17 million on 10 January, a little over two weeks since mandatory registration began. However, with the total standing at 17,115,910 at that date, it represented just 10.13% of the 168,977,773 total number of subscriptions in the Philippines. The NTC's data confirmed that PLDT's Smart Communications

has completed 8,037,862 registrations (11.82% of its total base), followed by Globe Telecom with 7,556,037 (8.60%) and DITO Telecommunity with 1,522,011 (11.61%). A spokesperson for the Department of Information and Communications Technology (DICT),

Anna Mae Lamentillo, blamed the low level of take-up on problems that occurred during the first few days of the implementation.

(January 12, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Poland

The Office of Competition and Consumer Protection (Urząd Ochrony Konkurencji i Konsumentów, UOKiK) has fined cableco Vectra more than PLN22 million (USD5.1 million) for illegal price hikes. Following unlawful modifications to customer contracts in 2019 and 2020, Vectra went on to implement PLN5 increases in monthly fixed broadband and pay-TV tariffs, adding PLN120 a year to a customer's bill if they took both services. In a statement, the regulator said: 'The President of UOKiK has repeatedly indicated that a change in the

essential terms of an ongoing contract concluded for an indefinite period may only take place if the contract expressly provides for it.' It added: 'Contracts with Vectra for an indefinite period did not contain a clause specifying the criteria and scope of possible changes. This is essential for consumers to anticipate situations in which unilateral changes may be made, for example when they may increase service prices.'

(January 25, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Portugal

The National Communications Authority (Autoridade Nacional de Comunicações, ANACOM) has approved the launch of a public consultation on the availability of spectrum in the 700MHz frequency band. This consultation intends to gather the position of the various players in the market regarding current interest

in the sub-bands that remain available: 733MHz-758MHz designated as duplex gap, and 694MHz-703MHz and 788MHz-791MHz designated as guard bands, respective conditions of access and use, as well as the applicable timetable for its distribution.

(January 4, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Romania

The National Authority for Management and Regulation in Communications (ANCOM) has revealed that almost 1.337 million telephone numbers were ported in 2021 – the highest annual figure since the service's introduction in 2008. Records were also set in terms of the average monthly volume of ported numbers, which rose to 111,415, with the highest figures of more than 140,000 recorded in November and December. Mobile number porting rose around 20% year-on-year to 1.256 million, while fixed voice number transfers increased by over 30% to 81,020. RCS&RDS (DIGI) accepted the most mobile porting requests in 2022 (754,833), followed by Vodafone Romania (191,822), Orange Romania

(149,361), Telekom Romania Mobile Communications (129,732) and Orange Romania Communications (30,190). Post-paid subscriptions accounted for 56% of mobile numbers ported. Fixed voice numbers were ported between the main providers as follows: RCS&RDS 26,259, GTS Telecom 15,345, Vodafone 12,516, Orange 10,744, BT Global Europe 4,542 and others 11,614. More than 9.7 million numbers have now been transferred between networks since the portability service was introduced in October 2008, comprising 8.7 million mobile numbers (89%) and one million fixed voice numbers.

(January 18, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Serbia

The Serbian government has adopted a new Bill on Electronic Communications, which it says is harmonized with the EU's Electronic Communications Code and will establish a modern business environment in line with European standards. The new law aims to provide conditions for the development of electronic communications networks throughout the territory of Serbia and to encourage the use of new technologies.

Amongst the new elements introduced by the updated law are measures to allow operators to more easily and more fairly share existing infrastructure, and requirements for providers to issue bills to customers in an electronic form. The bill also includes an obligation to register prepaid mobile users.

(February 14, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Somalia

The National Communications Authority (NCA) has announced that Somali mobile operators have implemented an interconnection agreement to allow end users to call each other seamlessly across different telecoms networks. The agreement, which was signed in December last year, was a result of a series of discussions and consultations between the relevant parties that worked out all the fundamental issues necessary for the signing of the deal, including

mobile termination rates (MTRs). The interconnection agreement came into force on 10 January 2023, and the interconnection process was expected to be completed by February 2023. According to the NCA, 'the agreement has been implemented in part by Hormuud Telecom, Somtel, Amtel, SomLink, Golis Telecommunications and Telesom'.

(February 14, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## South Korea

The Ministry of Science and ICT (MSIT) is planning to offer spectrum in the 28GHz band to a new operator, with a view to promoting competition in the sector and enabling the introduction of differentiated 5G services. The MSIT announced its plans for the frequencies after last year confirming it had cancelled the 28GHz licenses previously issued to KT Corp and LG Uplus. As per the Ministry's plans, initially only one new 28GHz spectrum award will be made, while the other block of reclaimed spectrum will be allocated three years after the award of the first new concession, so as to give the new entrant time to secure its position in the market. Meanwhile, the report notes that financial benefits, including tax cuts

and fresh loans, will also be provided to the company that secures the first of these new 28GHz licenses. Speaking on its decision to have a three-year period before offering the second 28GHz concession, the MSIT was cited as saying: 'The government is giving businesses an opportunity to enter the market, one in which they can take their time, considering that it might be hard for them to make new investments in the 28GHz band due to rising economic uncertainties at home and abroad.' In terms of timings for the allocation of the new concession, the MSIT has said it will get the process underway in Q2 2023.

(February 1, 2023) The Yonhap News Agency



## Spain

Spain's auction of 5G-suitable spectrum in the 26GHz band concluded on 21 December, generating a total of EUR36.2 million (USD38.7 million) for government coffers. The Ministry of Economic Affairs and Digital Transformation (Ministerio de Asuntos Economicos y Transformacion Digital) announced that Movistar, Vodafone and Orange collectively bid for 1,800MHz of the available 2,400MHz spectrum that was tendered at a nationwide level, while regional player Globe Operator

acquired a 200MHz regional concession covering Castilla and Leon. Movistar was the leading bidder, securing five 1x200MHz blocks of 26GHz spectrum for a total outlay of EUR20 million. By contrast, Vodafone and Orange each paid EUR8 million for a pair of 1x200MHz concessions. All licenses have a duration of 20 years, extendable for an additional 20-year period.

(January 3, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Sweden

Sweden's Post and Telecom Agency (Post & Telestyrelsen, PTS) has opened a consultation into its planned spectrum auction which is due to be held in September this year. The sale will offer licenses in the 900MHz, 2100MHz and 2600MHz bands, with existing concessions in these bands due to expire at end-2025. The 900MHz concessions will run for 23 years, while licenses in the other two bands will be valid for 25 years. 2x10MHz will be allocated in the 900MHz band, primarily to improve mobile signals alongside main road and rail routes, while new coverage obligations will accompany 2100MHz and 2.6GHz frequencies.

(February 1, 2023) [www.commsupdate.com](http://www.commsupdate.com)

The Post and Telecom Agency (Post & Telestyrelsen, PTS) has opened a consultation on proposals to remove Telia's obligations on the provision of access to its copper networks. The regulator has issued its draft decision as the operator continues to decommission its legacy copper-based local access infrastructure and customers migrate to faster technologies. Telia's obligations to provide access to its fiber networks will remain unchanged. According to the latest PTS figures, as of October 2021 96% of Swedish households had direct access to, or were in the vicinity of, a fiber connection. Telia aims to switch off its copper networks by end-2026.

(January 10, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Tanzania

The Tanzania Communications Regulatory Authority (TCRA) has extended the deadline for mobile users to verify active SIM cards using their personal National Identification Number (NIN). The original deadline of 31 January has now been postponed to 13 February. The

regulator said that unverified active SIM cards would be barred from receiving or providing services after that date, in order to prevent fraud and ensure user safety.

(January 26, 2023) [The Citizen](#)



## Taiwan

The communications regulator approved two separate mergers of the country's major telecom operators. Following the decisions, Taiwan Mobile will merge with Taiwan Star Telecom, while Far EasTone will be able to merge with Asia Pacific Telecom. But the two new enterprises arising from the mergers will each exceed legally mandated bandwidth limits. That's why regulators

have given the companies until the end of June 2024 to correct the problem through returning, exchanging, or trading the extra bandwidth. The approval process has taken almost a year, with applications being submitted in February and March last year. The decisions still have to obtain approval from Taiwan's Fair-Trade Commission.

(January 18, 2023) [en.rti.org.tw](#)



## Ukraine

The telecoms sector incurred around USD1.8 billion worth of damages in six months after Russia's invasion in February 2022, according to a report from UN agency the International Telecommunication Union (ITU), cited by Capacity Media. The ITU said that in the first six months of the war damage was done to communications infrastructure in more than ten out of 24 Ukrainian regions. As of July 2022, 12.2% of homes lost access to mobile communications services (3.1% partially) and 11% of base stations of mobile operators were out of service, while 20% of the country's telecommunication infrastructure was damaged or destroyed. 'Direct damage' of telecommunications facilities, networks, systems and equipment was estimated at USD710 million. The report added: 'Since the beginning of military attacks, with the purpose of using the facilities in its interests and for its own needs, the aggressor either destroyed completely or seized the regular operation of public and private terrestrial

telecommunication and critical infrastructure in the temporarily occupied and war-affected territories of Ukraine.' The economic losses of the telecoms market were estimated at over USD100 million in six months, with companies providing 22% fewer services than before the start of the war, while 'three out of seven operators providing mobile communication services and 961 out of 4,482 fixed internet service providers of Ukraine are under occupation' according to the report. The ITU Council adopted Resolution 1408 on 'Assistance and support to Ukraine for rebuilding their telecommunication sector' to monitor and provide regular reports on the country's needs in telecoms and to prepare proposals for effective technical assistance. It also aims to carry out assessments of the impact of the war and to ensure 'adequate financial and human resources mobilization', including the internal budget for the implementation of proposed actions.

(January 10, 2023) [www.commsupdate.com](#)



## United Kingdom

Ofcom has launched a review to examine whether inflation-linked, mid-contract price rises give phone and broadband customers sufficient certainty and clarity about what they can expect to pay. We are concerned about the degree of uncertainty consumers face about future price rises specified in contracts on the basis of inflation. The unpredictability of inflation rates means it can be difficult to know – months in advance – what an inflation-linked price rise will equate to in pounds and pence when consumers enter a contract. Our preliminary research (XLSX, 20.5 KB) has found that around a third of mobile and broadband customers do not know whether their provider can increase their price. Among those who do know their provider can increase their price, around half do not know how this would be calculated. And nearly half of all customers do not know what CPI and RPI measure.

(February 9, 2023) [www.ofcom.org.uk](#)

British telecoms regulator Ofcom has set out four 'key expectations' for the nation's mobile network operators (MNOs) with regards to what happens when they switch off their 2G and 3G networks. With network closures expected to happen over the course of the next decade, the watchdog has said it aims to ensure consumers are treated fairly and can continue to access the services they need, even though Ofcom does not have a formal role in the switch-off process. In short, it expects the MNOs to: minimize impact by ensuring an equivalent level of coverage post switch-off; explain in contract information when service will no longer work due to a planned network shutdown; provide a minimum of three to six months' notice of steps customers need to take should they need to replace or update their handset; and identify services that will be impacted by network switch-offs, such as telecare alarms and payment terminals, and raise awareness so that relevant

suppliers have time to update devices. Separately, meanwhile, Ofcom has also launched a consultation on a pricing offer for full fiber broadband that BT Group's network arm Openreach intends to introduce from 1 April 2023. Under UK regulation, Openreach is required to notify Ofcom of certain offers 90 days before they come into effect, so that the watchdog can consider whether they might be anticompetitive. With Openreach having notified Ofcom of its new wholesale pricing plans, known as the 'Equinox 2' offer, Ofcom has said that its provisional view is that there is no need for it to intervene to prevent the network operator from introducing the revised pricing arrangements. According to Ofcom: 'In our provisional view, the proposed offer is consistent with our primary strategic goal of promoting investment in high-speed networks to deliver fast, affordable broadband to people and business across the UK.' It has, however invited comments on the matter by a deadline of 4 March 2023 before deciding how to proceed, while it says it expects to issue a final decision before the end of March. (February 3, 2023) [www.commsupdate.com](http://www.commsupdate.com)

Telcos are no longer required to provide fax support to customer lines The fax machine is going the way of

the camcorder and video player. Telecoms providers BT and KCOM will no longer have to provide fax services on their networks. Ofcom has changed the obligations requiring the telcos to provide fax services because the fax machine "has been overtaken by email and document sharing software that offers the same or better functionality". There are two designated telecom providers responsible for universal service in the UK – BT and KCOM (in the Hull area only). This change does not mean that fax services will stop working immediately, but there will no longer be an obligation on BT and KCOM to provide fax support. "The current USO (Universal Service Obligation) was set out in 2003 when fax machines were more prevalent and email and instant messaging were less ubiquitous. "So, at that time it was important the USO required BT and KCOM to provide fax services. Alternatives to fax machines are now more widely available and migration of networks to IP technology means fax services can no longer be guaranteed to work in the same way. This change doesn't mean fax services will stop working immediately, but current fax users should look for alternatives". (January 15, 2023) [www.mobilenewscwp.co.uk](http://www.mobilenewscwp.co.uk)



## United States

The Wireline Competition Bureau of the Federal Communications Commission (FCC) has updated the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Energy and Commerce regarding the progress of the 'Secure and Trusted Communications Networks Reimbursement Program'. The scheme – which is better known as the 'rip-and-replace' program – seeks to bankroll the removal of Chinese-built telecoms equipment from the networks of regional mobile and fixed broadband operators but has faced significant problems to date. The report, which was published on 10 January 2023, notes that only 2% of recipients have completed the permanent removal, replacement, and disposal of all the covered communications equipment and services in their networks. 83% of respondents have made some progress, but not completed the work,

while the other 15% have not yet begun the work. The regulator highlights the four main challenges as follows: lack of funding; supply chain delays; labor shortages; and weather-related challenges. The next update is due to be submitted on 10 July 2023. The FCC faces a USD3 billion shortfall as it seeks to reimburse small-scale US operators who need to remove Huawei/ZTE equipment from their networks on national security grounds. The FCC is taking steps to reimburse communications providers with ten million or fewer subscriptions to remove, replace and dispose of Chinese-built equipment. The reimbursement program is being funded by a USD1.9 billion congressional appropriation, but 'Priority 1 applicants' (operators serving fewer than two million subscriptions) have submitted approximately USD4.640 billion in cost estimates that are reasonable and supported. (January 12, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Uruguay

The Regulatory Unit of Communications Services (Unidad Reguladora de Servicios de Comunicaciones, URSEC) has published its first draft of the bidding terms and conditions for the planned auction of spectrum in the 3.5GHz band. Interested parties have been given until 13 February to submit comments on the document, which was formulated following the passing of Decree 425/2022 of 27 December 2022 authorizing the allocation by competitive procedure of radio frequencies in the 3.5GHz band for international mobile telecommunications services. The draft document proposes that three 100MHz lots of spectrum will be

allocated, ranging from 3300MHz-3400MHz, 3600MHz-3700MHz (reserved for state-owned incumbent Antel) and 3700MHz-3800MHz. Each 100MHz spectrum package has a minimum initial price of USD28 million, according to the proposal. Rollout obligations include a requirement to deploy 70 base stations within one year, with at least two base stations in a minimum of ten or more departments (excluding Montevideo) required within two years, and at least two base stations in each of the country's 19 departments by the end of the third year. (February 9, 2023) [www.commsupdate.com](http://www.commsupdate.com)



## Zambia

Paratus Zambia, a part of the pan-African telecommunications company Paratus Group, has been awarded a data gateway license in Zambia; this is, apparently, the country's last available such license. The award, from regulator the Zambia Information and Communications Technology Authority (ZICTA), is important because, according to a number of news reports, only data license holders can deploy international gateways and cross-border communications services, and import internet data traffic into the country. In fact, this service had previously been limited to mobile network and carrier providers. Now Paratus Zambia has joined the five other data gateway licensees in Zambia in holding exclusive rights to import and export internet data capacity. Quoted on the MyBroadband ICT website, Marius van Vuuren, the Managing Director of Paratus Zambia, said: "With this license, we can leverage our

terrestrial and cross-border fiber network and satellite communications to provide high-quality internet services and import/export internet data capacity to other ISPs in Zambia." Chama Chinyanta, the General Manager of Infrastructure at Paratus Zambia, added, "We started the process in April 2022. We were awarded the ZICTA tender because Paratus meets the necessary infrastructure requirements. For example, our network is connected and spans the southern African region. This means we can deliver what is needed: international data connections to neighboring countries. We are now one of six providers with this type of license and can import/export data into and out of Zambia." The award comes at a time when Paratus Zambia is nearing completion of its metro fiber rollout project which was carried out in partnership with Meta.

(February 8, 2023) [www.developingtelecoms.com](http://www.developingtelecoms.com) 

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