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5G, CLOUDIFICATION AND NETWORK TRANSFORMATION

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SAMENA Telecommunications Council at MWC22 highlights importance of key recommendations and outcomes of the UN Broadband Commission's WG on 21st Century Financing Models to close the connectivity gap

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5G, Cloudification and Network Transformation

As we speak, 5G exists in more than 175 countries, serving over 500 million users. 5G is not only providing a new mobile experience for end-users, we see multi-industry empowerment taking place before our eyes. In some cases, the pace of adoption and impact of 5G has been faster than expected, and, in part, this may have also to do with early discussions on 5G enablement, as done by SAMENA Council and likeminded industry bodies on their respective platforms. Among other requirements, such platforms, including the SAMENA Council Leaders' Summit (which will be held on 9th May this year in Dubai as a fully physical industry meeting), have successfully highlighted the need for an enabling regulatory environment. Furthermore, stakeholders and decisionmakers have been called on to timely capitalize on new opportunities relating to Industry 4.0, smart-city projects, and proliferating 5G applications across education, healthcare, oil and gas, port operations, and other verticals of most relevance to the economic diversification efforts of the countries of the SA-ME-NA region.

Granted 5G development is an investment-intensive undertaking, making best use of 5G is in major part driven by the freedom to innovate, achieve efficiency in capex, reduce opex, and scalability of networks to offer new digital services and customer experiences by leveraging the new cloud technologies as well other technologies that dramatically transform and optimize

the network. Already we see that 5G is bringing major changes to cloud computing and cloud communications. With 1 billion 5G end-users expected earlier than the next two years, such 5G plus cloudification capabilities will prove to be a true game-changer, allowing for new applications across industries to come into existence, making use of Internet-of-things and Artificial Intelligence, and triggering an altogether new wave of investments in the cloud business.

The process of making 5G a mainstream technology is well on its way to catching further speed and, in so doing, several network, infrastructure, and terminal standardization milestones have to be achieved first. Nonetheless, 5G strategy encompassing cloudification and cloud enablement at its heart must be adopted by Telecom Operators, enterprises, and any existing and emerging businesses that will depend on cloudification for scalability, efficiency, and innovation. From healthcare to financial services; from IoT, remote working, to latency-free applications of 5G at the network edge, the future of mobile cloud applications will materialize quickly with widespread expansion of 5G networks, particularly standalone 5G networks.

In the larger interest of the region's Telecom Operators, enterprises, and socio-economic empowerment goals of individual countries as well as the region, we need to align our business and regulatory priorities and programs to advance in synch. The way we



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

bring access to advanced connectivity, make use of cloud technologies, and other allied technologies that are transforming the network, should be driven with full cognizance of the new market and societal realities, and sustainability of the evolving digital ecosystem, with cloud taking center stage. Moreover, investment in new infrastructure, including cloud infrastructure, may no longer follow traditional approaches. A technology such as 5G, which improves integration, innovation, cloud-dependence, and inclusion of multiple industries particularly requires new approaches across all layers. 🌱

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SAMENA COUNCIL ACTIVITY

SAMENA Telecommunications Council at MWC22 Highlights Importance of Key Recommendations and Outcomes of the UN Broadband Commission's WG on 21st Century Financing Models to Close the Connectivity Gap

SAMENA Telecommunications Council's CEO Bocar BA, as chair of the UN Broadband Commission for Sustainable Development's Working Group on 21st Financing, Funding and Investment Models moderated a session on "Financing the Digital Transformation" during GSMA's MWC22 Ministerial Programme. The session focused on three themes: (1) additional sources of financing, collaboration and shared investment, (2) pro-investment policies for connectivity expansion and (3) synergies and collaboration between telco operators and other beneficiaries of the digital ecosystem. It included speakers from the OECD, Mr. Ulrik Vestergaard Knudsen, Deputy Secretary General of the OECD, Her Excellency Ms. Vianna Maino, Minister of Telecommunications and Information Society of Ecuador, Mr. Sunil Mittal, Founder and Chairman, Bharti Enterprises, as well as key leading industry representatives Mr. Denis O'Brien, Chairman Digicel, Mr. Lacina Koné, CEO of Smart Africa, and Dr. Alicia Abella, Managing Director of Telecom, Media and Industry Solutions, Google.

In his introductory remarks, BA praised the efforts made by the BBCom WG members and fellow Commissioners to put together a groundbreaking report that embraces the changed market realities of the 21st century and which has created a foundation for catalyzing investment, collaboration, and paved a way forward for innovative partnerships, essential for future broadband development and usage based on four strategic

recommendations: (1) broadening the base of contributors, (2) earmarking proceeds from ICT sector participants, (3) reforming universal service and access funds and, (4) the creation of an international fund. BA stressed "that the work of the BBCom's WG on 21st Century Financing Models and recommendations act as a foundation for driving connectivity and focus on a growing narrative around connectivity – one that emphasizes the shared benefits we all enjoy, our collective responsibility, the commitment required, the reforms we must carry out, and the opportunity to enable global connectivity for all."

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The Working Group for 21st Century Financing and Funding Models for Sustainable Broadband Development was established as a cross-sector group of thought-leaders with representation from national regulatory authorities, telecommunications operators, financial institutions, trade associations, academics and not-for-profit development organizations operating under the auspices of the Broadband Commission for Sustainable Development.

OECD outlined the key aspects of its 2021 Council Recommendation on Broadband Connectivity, highlighting that a sound regulatory framework is key. The Minister

of Telecommunications and Information Society of Ecuador gave an overview of its more recent far-reaching reforms of its telecommunications regulatory environment, and Sunil Mittal of Bharti Enterprises urged the broadening of the base of contributions and contributors to ensure that digital infrastructure can be expanded. The panel discussion delved into the recommendations of the report, with Digicel urging a reduction in sector-specific taxes and the creation of a level playing field calling into responsibility Internet platforms, which was mirrored by Smart Africa emphasizing on the need for concerted and structured ways of contributions by all beneficiaries of digital infrastructure and Google highlighting its various ways that it already contributes to expanding infrastructure.

BA also pressed on the need to reflect and acknowledge that now is the right time to adopt the right strategies and funding and financing approaches that support the spirit of collaboration, multi-literalism, mutual responsibility sharing and creativity. There is an urgent need to work together very closely and leverage the large pool of insights, recommendations, and ideas

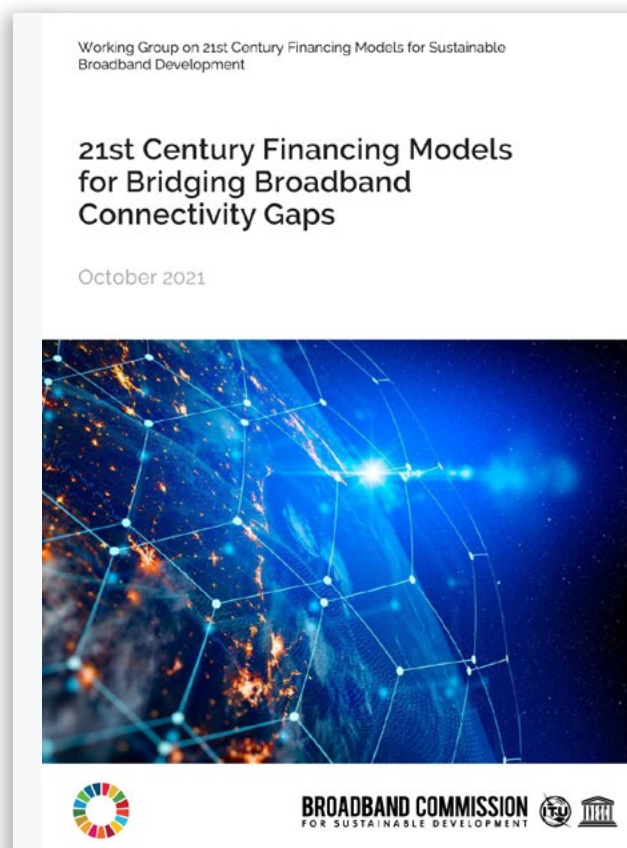
to address the challenges of speeding up the world's digital transformation in a sustainable, more predictable, equitable and structured manner to achieve the 2030 UN Agenda and the SDGs.

The Working Group for 21st Century Financing and Funding Models for Sustainable Broadband Development was established as a cross-sector group of thought-leaders with representation from national regulatory authorities, telecommunications operators, financial institutions, trade associations, academics and not-for-profit development organizations operating under the auspices of the Broadband Commission for Sustainable Development. Its objective was to explore and identify new and innovative funding, financing, and investment strategies to address the challenge of extending broadband connectivity and services to the 3.7 billion people who remain unconnected today, particularly in Africa, Asia, South America and the Pacific Islands. The Working Group was co-chaired by Scott Gegenheimer, former CEO – Operations of Zain Group, and Bocar A. BB, CEO of SAMENA Telecommunications Council. 

The Executive Summary of the aforementioned report can be downloaded from the UN BCom's website here:

<https://www.broadbandcommission.org/publication/21st-century-financing-models/>

https://www.samenacouncil.org/initiatives/industryissues/BBCOM-Broadband_Report-Executive_Summary_1709-1.pdf



Etisalat Group Transforms to e&



To Fulfill Growth Ambitions, Venture & Partnership Creation, and Maximize Value-Creation across Operations within the MEA Region

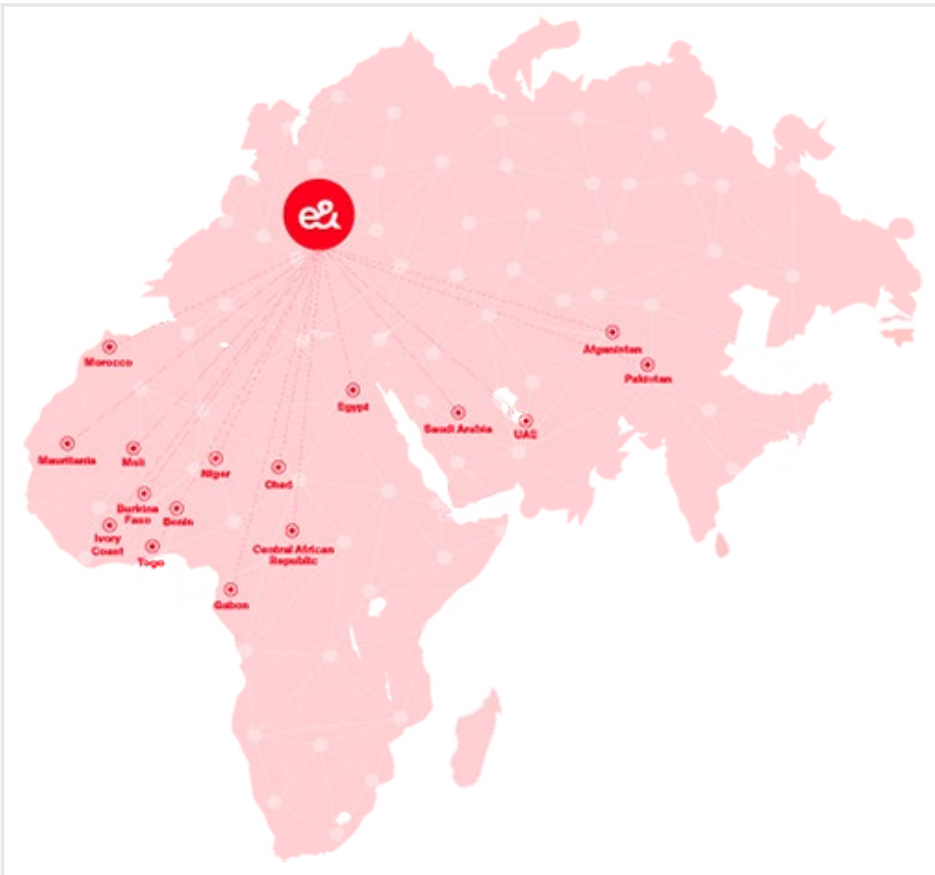
Since 1976, Etisalat Group has pioneered new technologies and brought these to new people and new places. First as the Emirates' telephone company, today as the technology and investment group, e&.

Now, in 2022, after 46 years of experience, having more than 159 million customers across 16 countries in the SA-ME-NA region, the Group is continuing in its evolution to identify new growth opportunities, take full advantage of strong partnerships and maintain its edge as the global technology investment conglomerate fully committed to making a difference in the lives of people.

As part of its transformation strategy, e& will enhance customers' experiences across all segments by ideating, designing, and delivering a range of innovative and breakthrough technologies, driven by its track record of success. This strategy is aimed at accelerating growth through the creation of a resilient business model that is representing the Group's main business pillars.

The transformation of e& from a telecom company founded more than four decades ago in the UAE into a global influence in digitalisation highlights its role in upholding the UAE's sustainable economic development and diversification plans. We commend e& for being the national champion that steers its global digitalisation leadership through pioneering advanced technologies, advancing ICT infrastructures, and fuelling geographic expansions while unlocking value."

- HH Sheikh Mansour Bin Zayed Al Nahyan
Deputy Prime Minister of the United Arab Emirates
and Minister of Presidential Affairs



With new ambitions to expand into markets of Africa, Europe, and Asia in areas outside of telecommunications/ICT, including in fintech, the newly transformed structure of the Group refocuses growth areas into several new divisions. The telecom division, new business verticals including "e& life" and "e& enterprise" will split its consumer and enterprise divisions, while a new vertical known as "e& capital" will serve as an investment arm to focus on joint ventures, acquisitions and startup investment opportunities.

As part of its strategy, e& will enhance customer experiences across all segments

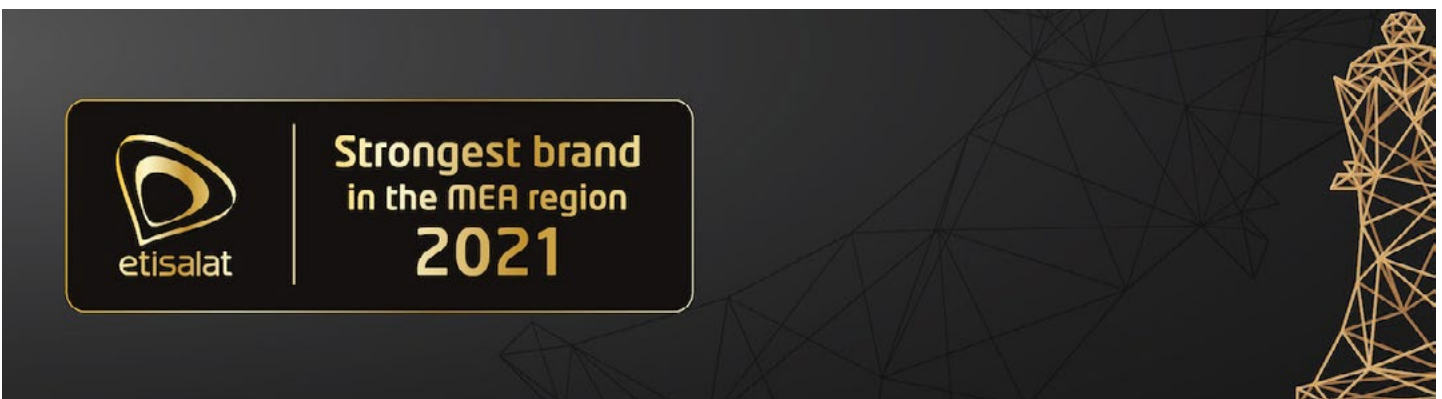
by ideating, designing, and delivering a range of innovative and breakthrough technologies. This strategy is aimed at accelerating growth through the creation of a resilient business model that is representing the group's main business pillars. Telecom will retain the previous branding identity in the UAE and internationally, while its e& life division will be focused on delivering next-generation technologies and digital experiences to customers through smart connectivity platforms in entertainment, retail and financial services. Similarly, e& enterprise will be the driving force behind the digital transformation of governments,

corporates and enterprises. It will deploy its solutions in cybersecurity, cloud, internet of things and artificial intelligence across major projects. e& capital will serve as a growth driver for the group, as it drives new acquisitions and mergers.

The evolution of e& is a testament to Etisalat Group's strong financial performance as well as several milestones that contributed to the transformation. More recently, e& ranked first in the Forbes MENA Top 10 most valuable listed companies in the UAE. Earlier in 2022, the Group was also named the strongest telecoms brand in the world. Prior to that, as a result of the operator's standout network performance during 2020, Etisalat was awarded in 2021 the Speedtest Award for World's Fastest Mobile Network.

In 2021, Etisalat also made history by emerging as the strongest brand across all categories in Middle East and Africa (MEA) region. This feat placed Etisalat among the top 25 brands globally in the strongest brands index by Brand Finance, the world's leading independent brand valuation and strategy consultancy. This global accomplishment was made possible due to Etisalat's brand strength and performance with continuous efforts and investments in accelerating its value by engaging with consumers across markets with launching many successful innovative global branding initiatives.

With this ranking from Brand Finance, Etisalat also ranked among the world's strongest brands including Ferrari, Coca Cola, Apple, among others making it to the global top 25 strongest brands in the world. Continuing its growth streak, Etisalat is turning its sights on transforming into



Commenting on the launch of the new brand and its transformation strategy, Hatem Dowidar, Group CEO of e& said:

"The evolution as e& embodies our commitment to double down on enhancing the quality of our solutions while surpassing customer expectations and maximising value creation for our shareholders. Our robust transformation plans will focus on running our business operations more efficiently, diversifying our revenue streams as well. The digitalisation acceleration during the pandemic offered a new realm of opportunities for us to serve our customers better as they seek more seamless and enhanced digital experiences. Our strong business continuity principles and adept crisis management, combined with our growth mindset, have dramatically impacted our business growth across our operations. We seized the moment to become future makers who are confident to lead a transformation of such grand scale, whether it is being master innovators or enablers of digitalisation in markets where we operate. We are keen to contribute to a knowledge-based economy that will digitally empower societies as we move forward with our mission to pioneer next-generation technologies, build breakthrough partnerships and create a new world powered by all of us."



a truly global player and climbed 17 spots in the global 500 brand value ranking in 2021. Etisalat has also retained its title as the most valuable telecom portfolio of brands for the fifth year in a row with an impressive portfolio of brands touching more than AED 40 bn including Etisalat Misr, Mobily, Ufone, Maroc Telecom, PTCL and is also the only telecom brand to retain AAA brand rating.

These achievements by the Group are further enhanced with the recent ranking by Brand Finance for CEO of E&, Hatem Dowidar, who has been featured among the worlds' Top 3 Telecom CEOs and is among the world's Top 100 CEOs, overall.

Dowidar's contribution to Etisalat's strategy and vision of driving the digital future to empower societies is evident. Under his leadership the brand was named the fastest network in the world – in itself a significant achievement – Dowidar will now be setting his sights on long-term transformation, turning the brand into a truly global player. His experience across a variety of global markets – including in Asia, Europe, and Africa - will help to expand the brand's footprint from its current standing of 16 nations and 159 million subscribers.

Accumulating success year on year has taken place in light of the considerable investments the Group has made in maintaining its 5G network prowess, investing in breakthrough technologies, aggressive market penetrations, deploying megaprojects, driving smarter connectivity, and pursuing strong partnerships and industry firsts.

The Group's new identity will help enhance customers' experiences across all segments by delivering a range of innovative and breakthrough technologies. As part of the strategy, it targets to maximize shareholder value while boosting global presence through new acquisitions and mergers.

Recent Major Highlights by e& Include:

Financial Highlights for Q4 2021

- Consolidated revenues for the fourth quarter amounted to AED 13.6 billion, representing an increase of 4.2% year over year
- Consolidated EBITDA for the fourth quarter amounted to AED 6.6 billion, representing an increase of 4.3% year over year and resulting in EBITDA margin of 48%
- Consolidated net profit after Federal Royalty amounted to AED 2.1 billion, increasing year over year by 4.3%, and resulting in a net profit margin of 16%
- Consolidated capital spending remained flat at AED 2.9 billion, representing 22% of the consolidated revenues
- Operating free cash flow amounted to AED 3.6 billion, representing a 8% increase year over year

Key Developments in Q4 2021

- Etisalat Group (now known as e&) and G42 signed an agreement to create the largest data centre provider in the UAE by combining their data centres
- e& signed an agreement to acquire 100% of the online groceries marketplace ElGrocer
- e& enterprise and Accenture joined forces to offer Oracle enterprise cloud services
- e& launched the Business App Store, the first software-as-a-service platform of its kind in the region that integrates all business applications for small and medium-sized companies
- Etisalat UAE launched the Business Edge Healthcare platform, a plethora of services dedicated to enhance and empower hospitals, ambulatory practices and medical staff
- Etisalat UAE partnered with Sharjah Roads and Transport Authority (SRTA) to provide smart services and products to enhance sustainable transport in the emirate
- Etisalat UAE partnered with Microsoft's Digital Crimes Unit to secure the UAE's digital borders
- PTCL launched cyber security services for corporate customers
- PTCL and Ufone have been recognized as the Best Place to Work at Pakistan's leading HR awards
- e& was awarded the "Best Wholesale and Service Provider in the Middle East" during the Global Carrier Awards 2021
- e& recognised for its unwavering commitment to Abu Dhabi's digital transformation journey at the Abu Dhabi Digital Authority ICT Leaders Meeting and received three awards: 'Government Services' award, the 'Information Security' and the 'Shared Government Solutions' award.



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MEMBERS NEWS



stc's Revenue for the Year 2021 Compared to Year 2020 Increased by 7.57%, and It Distributes SR 1 Per Share Dividends for the 4th Quarter

In accordance with the approved dividend policy for three years starting from the 4th quarter 2021, which was announced on 27 September 2021, and has been ratified during the Ordinary General Assembly Meeting on November 30th 2021, stc will distribute a total of SR 1,997.1 million in cash dividend for Q4 2021, representing SR 1 per share. The eligibility of dividends shall be for the shareholders at the close of trading on Sunday 27/02/2022 corresponding to 26/07/1443 H and as per the registered shareholders in the register of The Securities Depository Center Company at the end of the 2nd trading day following the eligibility date. Dividend distribution date will be on 17/03/2022 corresponding to 14/08/1443H. Commenting on these results, Eng. Olayan Mohammed Alwetaid, stc Group CEO, stated that the positive results achieved by the company for the year 2021 came in line with our expectations, as the company was able to grow its top line by 7.6% compared to the previous year. This was driven by the strong performance witnessed in the Enterprise business unit, which was able to grow its revenues by 20.9%, benefiting from the company's ability to accommodate the strong demand from the public and private sectors for Enterprise Business Unit's services and products. The Wholesale Business Unit continued its positive contribution to the company's financial results, as it achieved a growth of 2.9%, thru leveraging stc's infrastructure investments to grow the company's hubbing services. The Residential Segment also achieved a growth in its revenues, with an increase of 10.5%, which supported the Consumer Business Unit's financial performance, this is primarily due to an increase in FTTH and fixed wireless access subscribers by 10.3% and 21.7%, respectively. Moreover, the revenue growth witnessed in stc's subsidiaries also contributed positively to the company's financial results. In line with Saudi Vision 2030, the company will continue its national role and contributions towards achieving the vision by investing in the digitization of the economy, strengthening its assets, diversifying its services, developing commercial and operational capabilities, and maintaining its ICT leadership in the region. In achieving its "DARE" strategy, the company will continue to invest in new business trends and execute its ambitious plans to expand in telecommunications and infrastructure, in addition to developing new platforms such as IoT, cloud, cybersecurity, data analytics, digital services and applications, data center hosting services, in addition to regional and international connectivity. Alwetaid went on to say that the year 2021 was full of challenges and successes for stc group. The company, through its digital payments company (stc pay), was able to obtain the approval of the Council of Ministers for stc pay to become one of the first digital banks in the Kingdom of Saudi Arabia. Also, we have established and launched the Advanced Technology and Cybersecurity Company (sirar by stc); a new company dedicated to providing advanced cybersecurity services and solutions to the business sector. Furthermore, the



company launched (stcplay) platform to lead the transformation in the gaming and E-sports sector and to act as a digital enabler for the gaming sector in the KSA and the Middle East by providing distinctive experiences and high-quality services to players and service providers. During the year, we have also witnessed the successful listing of (solutions by stc) in the Saudi Stock Exchange, Tadawul, which represents a qualitative and important leap in supporting companies working in the field of communications and information technology. Recently, The Public Investment Fund and stc group, announced the successful completion of the secondary public offering. 120 million shares representing 6.0% of stc's share capital were sold to local and international institutional investors and retail investors by way of a secondary public offering, the first of its kind in the Saudi capital market. The total offering size reached SAR 12 billion, which makes it the largest secondary public offering in EMEA in the last three years.

Saudi Tawal Buys Pakistani Awal

Saudi Telecom Company (stc) tower unit Tawal made its first foray outside its domestic market with the 100 per cent acquisition of Pakistan-based independent tower company Awal Telecom, and indicated further acquisitions could lie ahead. Few other details of the transaction were released, such as how much Tawal paid for Awal Telecom, who the acquired



businesses' shareholders are or how many towers it operates. Telecom tower industry tracker TowerXchange states Awal Telecom is owned by Progressive Technologies Investments (PTI), a privately-owned telecommunications systems company, and had built at least 45 towers. The Pakistani towerco primarily operates in the Federally Administered Tribal Areas (FATA) of the country, including North and South Waziristan, Orakzai Agency, KPK, Islamabad and Rawalpindi, and provides services to operators Jazz, Telenor Pakistan, Ufone and Zong. Tawal stated it will rebrand Awal Telecom as Tawal Pakistan once regulatory approval of the deal has been received. The Saudi towerco also noted the acquisition marks the first step in its "international expansion roadmap". TowerXchange remarked that 36,187 towers in Pakistan currently serve the four MNOs, which have a combined mobile subscriber base of 189 million. "It has been estimated that 30,000 to 40,000 additional towers will be required over the next five years, so it is little wonder that Tawal has sought out its first foothold outside Saudi Arabia here," the research company observed. Tawal is a 100 per cent-owned subsidiary of STC, and owns and manages more than 15,500 mobile towers in Saudi Arabia. It launched in April 2019 after STC decided to carve out its towers business and establish a separate unit.



Etisalat Recognizes Outstanding SMBs and Start-Ups in the UAE

Etisalat announced the winners of the second 'SMB Awards 2021' in a grand gala event to recognize and celebrate the outstanding achievements of Small and Medium businesses (SMBs) in the UAE. The prestigious awards ceremony was attended by H.E. Faisal Al Hammadi, Assistant Undersecretary for Entrepreneurship and SMEs from the Ministry of Economy, along with senior management from Etisalat joined by more than 200 partners and business representatives from the SMB community. In his keynote at the awards ceremony, H.E. Al Hammadi applauded the success of the SMB community and lauded the strong collaborative support of the UAE government in creating a conducive and sustainable ecosystem that is well-placed to produce successful unicorn companies in the country. The awards recognized ten pioneering entrepreneurs and thriving businesses across ten categories. These mainly included ARJ Holding (Emirati Business), Ascentria Examinations & Tests Preparation Centre



(Women in Business), Aster Hospitals UAE (Digital Transformation), Prognica Labs (Artificial Intelligence), Tecton Engineering & Construction (Top Sustainability), Route Mobile (Business Mobility), Universal Medical Transfer Services (Top Healthcare), Corporate Business Services (CSR), Edenred UAE (Technology for Good), and Al Adil Trading (SMB of the Year). Esam Mahmoud, Senior Vice President, SMB, Etisalat, offered a congratulatory message

to all winners, highlighting their potential, resilience and agility to to differentiate their business. He said: "The SMB awards celebrate the wealth of excellence and innovation in our industry. We live and work in different times where progress is determined by how quickly and efficiently, we innovate and transform for the benefit of societies, regardless of the competitive business landscape. Driven by our service mantra for SMBs 'Your Business Grows

with Us,' we are proud to serve the business community in UAE as they co-create and ideate with us to drive a better and brighter digital future." The SMB Awards, launched in November 2021, received

over 500 registrations from businesses across UAE. The external jury members were industry veterans and professionals hailing from varying sectors such as Dubai Chamber, American University of Sharjah,

DIFC compliance and risk management advisory firm, ADGM, Burson Cohn & Wolfe, Frost & Sullivan and Nissan Motors.

Deputy Prime Minister of UAE Announces Etisalat Group's New Identity

His Highness Sheikh Mansour Bin Zayed Al Nahyan, Deputy Prime Minister of the United Arab Emirates and Minister of Presidential Affairs, today launched e&, marking the transformation ambitions of Etisalat Group into a global technology and investment conglomerate. Commenting on the launch, HH Sheikh Mansour emphasized the importance of capitalizing on opportunities that the fast-evolving business landscape continues to present in the age of technological disruption. He commended the efforts of e& in devising a more progressive business model that sustains its hyperscaling ambitions, promotes new ventures and partnerships, and maximizes value across its operations. His Highness said, "The transformation of e& from a telecom company founded more than four decades ago in the UAE into a global influence in digitalization highlights its role in upholding the UAE's sustainable economic development and diversification plans. We commend e& for being the national champion that steers its global digitalization leadership through pioneering advanced technologies, advancing ICT infrastructures, and fueling geographic expansions while unlocking value." The launch of the new brand identity for Etisalat Group was attended by His Excellency Mohammad bin Abdullah Al Gergawi, Minister of Cabinet Affairs, H.E. Mohamed Bin Hadi Al Hussaini, Minister of State for Financial Affairs and H.E. Jassem Mohamed Bu Ataba Alzaabi, Chairman of e&.

The ambitious strategy

As part of its strategy, e& will enhance customers experiences across all segments by ideating, designing, and delivering a range of innovative and breakthrough technologies, driven by its track record of success. This strategy is aimed at accelerating growth through the creation of a resilient business model that is representing the Group's main business pillars. Telecom will retain the previous



branding identity while upholding the Group's rich telecoms heritage, bolstering the Group's strong telecoms infrastructure and maximizing value for its customer segments, in the UAE and internationally. In addition, it will expand into new geographic markets while continuing to drive operational performance in the 16 markets where it operates. e& life is focused on enhancing customer delight by becoming an integral part of the lives of its customers. The business pillar has already made robust plans to deliver next-generation technologies and digital experiences that will bring the world to the customers' fingertips through smart connectivity platforms in entertainment, retail and financial services. e& enterprise will be the driving force behind the digital transformation of governments, corporates and enterprises. Through its breakthrough technology solutions in cybersecurity, cloud, Internet of Things (IoT) and Artificial Intelligence (AI), as well as deploying mega projects, e& enterprise will create real business value as it continues to leverage on its expertise as a digital managed company having the strength and reach of a global trusted partner. Maximizing shareholder value while strengthening global presence is key to the e& strategy to empower societies. e& capital will act as a pillar for growth for the Group as it drives

new acquisitions and mergers in line with its vision for investing in ideas that make the future. The evolution e& comes at the heels of the Group's strong financial performance as well as several milestones that contributed to the transformation. More recently, e& ranked first in the Forbes MENA Top 10 most valuable listed companies in the UAE. The Group was also named the strongest telecoms brand in the world. Accumulating success year on year has taken place in light of the considerable investments the Group has made in maintaining its 5G network prowess, investing in breakthrough technologies, aggressive market penetrations, deploying megaprojects, driving smarter connectivity, and pursuing strong partnerships.

A new era built on solid foundations

H.E. Jassem Mohamed Bu Ataba Alzaabi, Chairman of e&, said, "This is a milestone in the history of the Group, and a new era where we reaffirm our commitment to deliver outstanding customer experiences and maximise value for our shareholders. To ensure that the next chapter of our journey is a success, we made the decision to realign our business model so that we can stay agile and fit for the future. "This successful journey has been made possible through the continuous support of the UAE leadership as we become key enablers in the digital transformation

taking place globally across all industries." He added, "Our evolution is built on the solid foundations of several historical achievements, multiple milestones and robust financial performance, highlighting our global technological leadership and our confidence in leading change for growth. During this time, we have also worked tirelessly to ensure that our solutions positively impact people's lives at every touchpoint. We are now ready to be the future-focused nexus that will drive more positive change for our customers and shareholders through our robust expertise."

Transformation driven by thought leadership

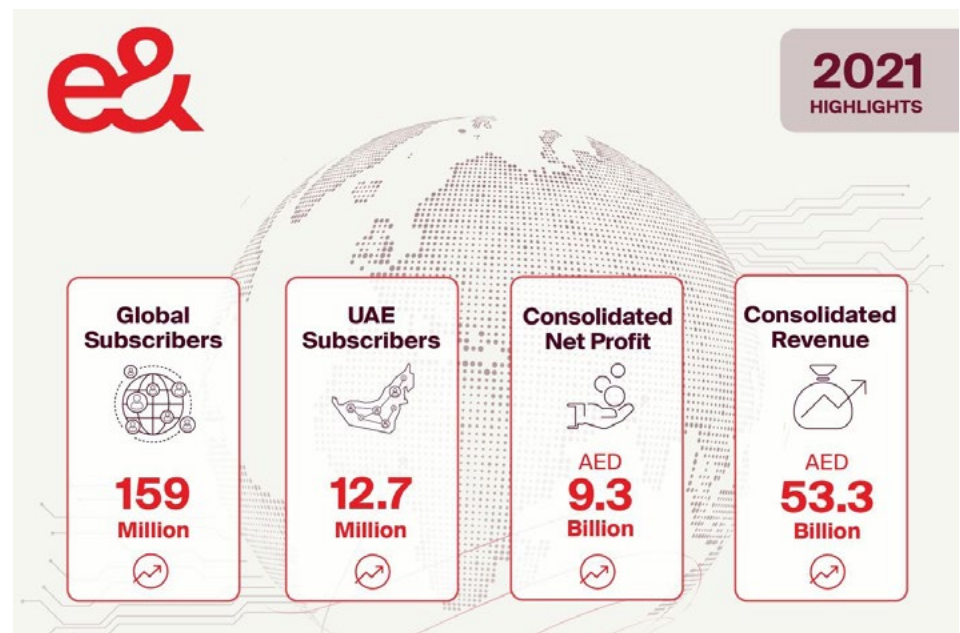
e& has already demonstrated its robust industry leadership when it comes to digital transformation when it announced the establishment of its consumer digital and enterprise digital business units,

in addition to attracting partners from around the world to contribute to the digitalization growth journey. Commenting on the launch of the new brand and its transformation strategy, Hatem Dowidar, Group CEO of e& said, "The evolution as e& embodies our commitment to double down on enhancing the quality of our solutions while surpassing customer expectations and maximizing value creation for our shareholders. Our robust transformation plans will focus on running our business operations more efficiently, diversifying our revenue streams as well as helping our enterprise customers achieve their digital transformation goals adeptly. "We will continue to identify new growth opportunities, take full advantage of strong partnerships and maintain our edge as the global technology investment conglomerate that makes a difference in people's lives." Hatem Dowidar added,

"The digitalization acceleration during the pandemic offered a new realm of opportunities for us to serve our customers better as they seek more seamless and enhanced digital experiences. Our strong business continuity principles and adept crisis management, combined with our growth mindset, have dramatically impacted our business growth across our operations. We seized the moment to become future makers who are confident to lead a transformation of such grand scale, whether it is being master innovators or enablers of digitalization in markets where we operate. "We are keen to contribute to a knowledge-based economy that will digitally empower societies as we move forward with our mission to pioneer next-generation technologies, build breakthrough partnerships and create a new world powered by all of us."

2021 Sales and Profits Up 3% for Etisalat

International telco group Etisalat has reported a preliminary 3.2% year-on-year rise in net profit for the twelve months ended 31 December 2021, to AED9.3 billion (USD2.5 billion). Sales for the year were up by the same margin at AED53.3 billion, with the rise attributed to increased demand for data connectivity and digital services, plus growth at its international operations and a steady improvement in domestic operations. Etisalat is the largest operator in the United Arab Emirates (UAE) and has operations in 15 other markets across the Middle East, Africa and Asia. The group's full 2021 results announcement is due on 24 February.



Etisalat UAE Successfully Tests Fiber-to-the-Room (FTTR) Solution

Etisalat UAE part of e& announced the successful testing of Fiber-to-the-Room (FTTR) solution. The FTTR solution is a revolutionary technology for intelligent home networks providing a solid bedrock for enhanced digital capabilities for millions of consumers in the UAE. The FTTR solution also effectively eliminates challenges restricting speed limits within the home. In collaboration with

Huawei, Etisalat successfully tested the FTTR solution demonstrating a superior customer experience of the solution capabilities in a six-bedroom multi-story villa. The successful testing of the FTTR solution has set yet another benchmark in the networking segment, demonstrating next-level end-user experience. This revolutionary solution will enable smart city development, enabling home broadband

networks to be ready for disruptive innovation and transformation. This is essential, especially during the pandemic when the broadband network has become a digital lifeline for families confined to their homes. With children attending online learning, more people working from home and accessing day-to-day services related to shopping and health online, a reliable and high-speed internet connection has

become necessary. "The completion of the successful trials of the FTTR solution is a testament of Etisalat's long-term commitment to provide a resilient fiber network so that our subscribers can enjoy ubiquitous high-speed connectivity and low latency networks, thereby continuing to create new experiences and value," said Abdulrahman Al Humaidan, Senior Director, Fixed Access Network, Etisalat UAE. In FTTR solutions, fiber is used to replace traditional network cables or Wi-Fi networking, to achieve premium experience of full gigabit coverage, seamless Wi-Fi roaming, and intelligent management. Gigabit Wi-Fi can reach every room in the house, ensuring smooth connectivity and no interruptions. With intelligent management systems in place, faults can be remotely located and rectified in one-click mode, improving fault locating and rectification efficiency. Traditional Wi-Fi solutions over ethernet cables are susceptible to interference affecting performance significantly across the house as signals pass through walls. The solution includes deploying optical fiber to substitute Ethernet copper cables which



can be extended to rooms easily by either reutilizing the existing concealed utility conduits or deploying an exposed transparent fiber without affecting the aesthetic appeal. It will ultimately benefit consumers with large living spaces and the online gaming community requiring reliable high-speed connectivity.

Etisalat Digital Partners with NICE to Bring the CXone Cloud Platform to the UAE

Etisalat Digital announced a partnership with NICE to drive the availability of the CXone platform in the UAE. The collaboration provides Etisalat customers with a clear, seamless path to the cloud with CXone while enabling frictionless digital self-service and agent-assisted customer experiences. With CXone, Etisalat Digital is uniquely positioned to advise and empower organizations to transform their business via effective, engaging customer communications now and into the future. NICE CEO, Barak Eilam, and Etisalat Enterprise Digital CEO, Salvador Anglada, were present at the signing ceremony held at the Etisalat Digital Hospitality Lounge at Expo 2020, Dubai. Etisalat Digital chose to collaborate with NICE following a comprehensive review of Contact Centre as a Service (CCaaS) providers that revealed CXone as the leading CX platform with a proven ability to drive digital transformation well into the future. Capabilities such as easy migration to the cloud, the ability to rapidly innovate and offer cutting-edge features, flexibility to scale as needed, easy management of remote agents working from any location as well as multiple contact centers drove the decision for the collaboration. As part of this alliance, Etisalat Digital will drive strategic investments in building managed services practice around NICE CXone - a first of its kind in the region. Among the



NICE solutions to be offered by Etisalat is the CXi, (Customer Experience interactions) platform, a new framework delivered through a unified suite of applications organizations to intelligently meet their customers wherever their journey begins, enables resolution through AI and data driven self-service, and prepares agents to resolve customer needs successfully. It enables a frictionless end-to-end service experience, combining digital entry points, journey orchestration, smart self-service, prepared agents and complete performance improvement, all embedded with purpose-built CX AI and based on a native open cloud foundation. Salvador Anglada, CEO of Etisalat Enterprise Digital, said: "Etisalat Digital is committed to deliver the most advanced and efficient customer

engagement solutions as a cornerstone in the digital transformation journey of businesses and governments. NICE and CXone are an ideal partner for our contact center practice that will deliver the most innovative solutions for an exceptional customer service experience." Barak Eilam, CEO, NICE, said: "Our partnership with Etisalat Digital demonstrates NICE CXone's accelerated international expansion, and we're excited to work together to bring the benefits of the cloud to agents and customers in the UAE. CXone provides the essential technology businesses need to exceed today's customers' expectations in a unified cloud native platform, fast-tracking digital transformations and digital fluency for companies of all sizes across the globe."

Etisalat Makes Key Leadership Appointments to Drive Growth Across Its Operations

Etisalat Group announced the appointment of Mikhail Gerchuk as CEO - International and Khalifa Hassan Al Forah Al Shamsi as CEO - Etisalat Consumer Digital. Reporting to Hatem Dowidar - Etisalat Group CEO, Gerchuk and Al Shamsi will help secure the organization's growth mandate. Gerchuk will be responsible for providing comprehensive direction to develop and implement the international telco strategy and the accompanying long-term plans needed for practical, maintaining growth across international operations. Al Shamsi's appointment is part of Etisalat Group's ongoing digital transformation strategy to significantly expand Etisalat's digital portfolio by growing the existing business, as well as capturing new opportunities in the consumer market, through its new dedicated vertical – Etisalat Consumer Digital. The announcement follows the appointment of Salvador Anglada as the CEO of Etisalat Enterprise Digital in November 2021, to drive digital transformation by enabling enterprises and governments to become smarter through the use of the latest technologies such as Cloud, Cyber Security, Internet of Things (IoT) and AI. Etisalat Enterprise Digital brings together the best

industry digital experts, assets and platforms with a unique service and operating model, providing end-to-end digital vertical propositions to enable smarter developments, education, healthcare, transportation and a smarter economy. It has a successful track record in delivering large digital projects and solutions by providing comprehensive services in consultancy, business modeling, solutions design, program management, execution, delivery and post-implementation support and operation services. These appointments are a testament to Etisalat's commitment to accelerate digital transformation and provide outstanding customer experiences while investing in and empowering its UAE national capabilities to excel in their career path of choice. Where Etisalat Enterprise Digital is focused on the strategic growth of its digital offerings to cater to the needs of its enterprise customers, Etisalat Consumer Digital will expand its digital portfolio in the consumer market. Al Shamsi began his career with Etisalat spanning nearly three decades and has a proven track record in telecom and digital services backed by a solid commercial and technical background. He has had a solid hand

in Etisalat's first move into growing digital adjacencies, leading the deployment of mobile services, fibre-based broadband and advanced data services. He has held several leadership positions within Etisalat Group, including Head of Mobile Networks, Chief Marketing Offices and Chief Digital Officer. His role in building the business unit 'Etisalat Digital Services' was paramount to generating new revenue streams and accelerating business growth. In his previous role as the Group Chief Corporate Strategy & Governance Officer, he was a key contributor to the vision and future strategic priorities of Etisalat Group. With over 20 years of experience in the telecoms industry, Gerchuk has held several notable leadership roles with Vodafone, MTS, and VEON, covering marketing, product and services development, and launching new business segments. In his most recent role, he was the Senior Advisor – Telecom, Media and Technology Practice – at McKinsey & Company, London. Before that, he was the VEON CEO for the Eurasia region, where he was instrumental in successfully turning around the decline in business revenue and achieving strong growth, thus increasing profitability dramatically.



CITC Grants 'Best User Experience Award 2021' to Mobily

The Communications and Information Technology Commission (CITC), the Kingdom's 'fifth generation' digital regulator, has announced that Mobily has won the Best User Experience Award for 2021. The award is granted on an annual basis to one of the Kingdom's telecoms operators as a means of encouraging competition and raising levels of customer service. Speaking at the global technology conference LEAP22, which is taking place in Riyadh from 1 to 3 February, H.E. Dr. Muhammad bin Saud Al-Tamimi, Governor of the CITC, underlined the importance of the award: "Through this award CITC aims to improve the quality of users' experience



and encourage service providers to innovate in their pursuit of market share. Publishing the results of our best-practice assessment also raises transparency in the market, enabling investors and other interested parties to make more accurate assessments of industry participants."

The award is granted according to a wide range of criteria, including a user satisfaction index, the willingness of users to recommend service providers to relatives and friends and an assessment of the processes involved with obtaining services. CITC's mission to raise service

levels in the telecoms industry is part of the broader mandate to promote high-quality, equitable communications, resulting in the regulators accreditation as a 'fifth generation' (G5) regulator by the International Telecommunications Union (ITU) in June 2021.

Mobily Launches New SD-WAN Service for Business Customers

Leading Saudi telecom service operator Mobily has announced the launch of its SD-WAN service for Mobily Business customers in the kingdom. Developed in partnership with VMware, the SD-WAN service will help drive digital transformation in the Kingdom and consolidate the country's position as a leader in Information and Communications Technology (ICT). Mobily Business's SD-WAN network will enable public and private sector organizations in the Kingdom to scale up rapidly and efficiently without the need for costly physical infrastructure, while allowing them to monitor network performance and adjust network settings remotely. SD-WAN enables reliable, secure, and simplified branch deployments, which reduce operational cost and increase productivity. It also allows for seamless innovation at the Edge. The network will help Saudi Arabia achieve its vision of increasing the share of local IT content while equipping public and private sector organizations with the ICT capabilities they need to contribute to developing mega projects. Mobily Chief Business Officer Engineer Majed bin Abdulaziz Al Otaibi said: "Mobily Business is proud to be a



pioneer of SD-WAN in Saudi Arabia, giving organizations the solution, they need to drive digital transformation and boost local ICT content." "Mobily Business will prove to be a key pillar supporting growth and development of the Kingdom's economy and society in line with Saudi Vision," he added. The launch of the SD-WAN network builds on Mobily Business's technology leadership position. The telecom operator invested early in developing its infrastructure and global partnerships to

meet demand for integrated solutions. Sanjay Uppal, senior vice president and general manager, service provider and Edge business, VMware, said: "By launching SD-WAN services with VMware, Mobily will help organizations of all types and size across the Kingdom gain agility and visibility of their networks." "This will help accelerate innovation at the network Edge, and empower customers to support nationwide digital transformation," he added.

Ethad Etisalat Company (Mobily)'s Net Income for 2021 Grows 36.8% to SAR 1,072Mln and Proposed Cash Dividends Raised by 70% YoY

Ethad Etisalat Company "Mobily", a leading Saudi Arabian telecommunications services provider, announces its financial results for FY 2021. Net income showed significant increase by 36.8% YoY on the back of healthy growth in revenue coupled with margin stability owing to tight control of costs. Based on the solid performance, on November 24, 2021, the Board of Directors recommended to the Annual General Assembly the distribution of cash dividends amounting to SAR 654.5 million,

equivalent to SAR 0.85/share, for 2021, representing a 70% increase over the cash dividends distributed in 2020. Financial Performance Highlights – FY 2021

- Revenue increased by 5.6% YoY to reach SAR 14,834 million, driven by strong growth in the Business and Consumer segments, with the latter showing promising growth in Fibre-To-The-Home (FTTH). Mobily's subscriber base continued to exhibit healthy growth.
- EBITDA1 recorded SAR 5,594 million,

representing a 4.6% YoY growth, mainly on the back of the increase in the top-line. The EBITDA margin reached 37.7% compared to 38.1% last year.

- Net Income increased by 36.8% YoY to reach SAR 1,072 million, predominantly owing to the solid growth in the top-line in addition to a 10% YoY decrease in finance charges which reached SAR 505 million, thanks to Mobily's deleveraging strategy, coupled with an easing in SAIBOR.

- CAPEX decreased by 25.1% YoY to reach SAR 2,092 million in 2021 due to the completion and achievement of strategic objectives. As a result, CAPEX/revenue stood at 14.1% in 2021 compared to 19.9% in 2020. Mobily mostly focused its 2021 CAPEX toward the ongoing roll-out of 5G.
- Operational Cash Flow² increased by 36.9% to reach SAR 3,502 million due to the increase in EBITDA and decrease in CAPEX.

Eng. Salman Bin Abdulaziz Al Badran, Chief Executive Officer at Mobily commented: "All sectors in Mobily showed significant performance in 2021, and as a result, Mobily was able to achieve significant operational successes and meet ambitious targets in line with our strategy of growing core sectors while optimizing efficient delivery of services and products. Highlights for the year included the digital enhancements, as well as a substantial increase in our FTTH customer segment. Our Business Unit achieved excellent results in servicing a growing range of company accounts, and we were delighted to facilitate a Kingdom-wide health information system. Our notable growth in net income demonstrates the strength and resilience of our business model, and we look forward to further expand our business in the coming years."

Khalid Abanami, Chief Finance Officer at Mobily commented: "Sales in all of the company segments went from strength to

strength as the year progressed, enabling the Company to increase its year-on-year revenues in 2021 after successfully managing pandemic-related headwinds in the early part of the year. Thanks to our continued focus on effective cost management and streamlining efficiencies in areas including customer care, the launch of several enterprise projects, and expansion of 5G services, we were able to improve our performance and solidify our position as a leading telecommunications provider in the Kingdom. Furthermore, we are delighted that our robust financial position supported the recommendation of a higher dividend payout for our shareholders."

Performance Highlights

Mobily managed to successfully grow the Consumer segment's revenues over the course of 2021, despite a slow return to pre-pandemic travel that not only affected sales and revenues in Q1 but further drove a dip in roaming returns due to the restriction in inward Hajj and Umrah travel from abroad. The Company's stores resumed normal operations and contributed significantly to monthly sales. In addition, digital channels, supported the introduction of new services and products, including carefully planned digital promotions and innovative new Family and eSIM50 packages. As the Company continued to introduce 5G across a wider range of geographies, data uptake and average revenue per user saw a rapid increase across a number of GSM

and data packages in 2021. In parallel, Mobily expanded fixed wireless access in 5G coverage areas, which supported growth in the home segment revenue and customer base. Similarly, FTTH saw steady growth in 2021, driven by consumers' high demand for premium home services. Mobily ended 2021 with the highest-ever revenue and gross margins as well as best cash collection performance in the Business segment. By focusing on new customer acquisitions and improving the value proposition for existing clients, the Company was able to mitigate threats to its business that were caused by the slow economic recovery in 2021. Mobily continued to focus on prominent Small and Medium-sized Businesses (SMBs) and Government sector through its highly experienced sales and presales teams. The Company further invested in enhancing its customer service and experience, resulting in a significant growth in its customer base across the Kingdom. Similar to the Consumer segment, Mobily continued to innovate and drive digitization in the Business segment, in line with the objectives outlined in its GAIN strategy. The Company made several strategic investments in digital solutions, and expects to succeed in capturing the growth potential in the market. Examples of other digital achievements included the introduction of a disaster recovery and back-up service solution.

	FY 2021	FY 2020	% Δ YoY
Revenue	14,834	14,046	5.6%
EBITDA ¹	5,594	5,350	4.6%
EBITDA margin	37.7%	38.1%	(0.4) pts
Net Income	1,072	783	36.8%
CAPEX	2,092	2,792	(25.1%)
CAPEX/revenue	14.1%	19.9%	(5.8) pts
Operational Cash Flow ²	3,502	2,558	36.9%
Net debt ³	12,128	13,109	(7.5%)
Net debt/EBITDA (x)	2.17x	2.45x	-
Dividend declared (SAR/share)	0.85	0.50	70.0%



Omantel ICT Offers "Teamway" ERP & POS Solution

As more and more businesses adopt for digital solutions for their operations, Omantel has stepped in to fill the need for secure, tested and reliable solutions by leveraging its capabilities and strong ecosystem of partners and sister companies. Omantel's new product "Teamway" supports Government initiatives to boost Micro & Small Businesses across the Sultanate by offering cloud-based ERP & POS solutions to provide ease of doing business without any initial investment in setting up the system. Teamway is a flexible product that can be scaled up as per the needs of individual businesses. Omantel believes that businesses need to continuously adopt cloud based solutions to operate their business efficiently, hence Omantel ICT introduced Teamway cloud solutions to Oman's market in corporation with Intelligent Projects and Qaid Al-Ard LLC – an Omani SME company, starting with most demanded ERP & POS products. "Teamway" ERP consists of different standard modules like Inventory, Accounting, Project & Task, HR Management and Supply Chain readily available to start using on the go and also open for any customized requirement based on customer's business nature. Business owners opting for standard Teamway ERP solution can subscribe online and for any customized Teamway ERP requirement can connect with Omantel's ICT Expert. Customers can access Teamway from anywhere via the Internet and can choose from two offerings – ERP & POS – based upon their requirement. Eng. Baha Al Lawati, Enterprise Business Unit VP at Omantel said: "Omantel continues to be an enabler of digital transformation in Oman. This transformation is not just about shifting to digital options but offering society safe & secure solutions that allow for cost optimization and operational excellence. "Teamway" ERP & POS are the latest business solution for our SME customers. They can rely on Omantel's technological efficiencies, infrastructure, agility, and expertise to derive more from their businesses" In her turn, Ruba Ahmed Elhadi, Intelligent Projects Founder said: "We are glad that Omantel showed interest in Teamway. Teamway is purely an Omani product completely developed with our in-house resources after proper analysis of exact need to Omani business

process flows. Though Teamway's ERP & POS fits the needs of the majority of business types, it could be customized to fit more sophisticated needs of our customers and provide the best smart technical solutions to the SME sector all over the Sultanate". On his part, Bader Sulaiman Al Yarobi, the founder and CEO of Qayd Al-Ard Company, said: "There is no doubt that the cooperation with Omantel and Intelligent Projects Company will contribute in offering a high quality service to our business customers in the SME sector. "Teamway" service was launched after an extensive study to meet & exceed the market requirements from the technical and financial point of view, which makes us confident of providing the ERP and POS services in a new way that suits the needs of the local market and provides an advanced experience to elevate customer's operations." 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 optimum customer satisfaction, Omantel plays a key social role to provide the required support and subsidy to all sectors of the Omani society.



Investment in Empowerment and Development of Human Resources

Human resources are the most valuable asset and the key element that determines the success of an organization; it plays a prominent role in the economic development of any country. Therefore, the development of human resources is a prerequisite for the progress of any nation due to its role in bringing up a generation that can shoulder such a responsibility. The Sultanate of Oman has always placed significant importance for the development of its national human resources so as to address any challenges it might face in its pursuit for progress and prosperity. Omantel is one of such leading organizations in Oman that attributes great priority to the development of human resources. Since its inception, Omantel has always sought to provide its employees with a conducive environment for development and growth. It has

also been among the leading organizations in Oman to establish an in-house training center back in 1978. The center has provided the entire telecom sector with talented Omanis who are currently holding leadership positions in different organizations in the Sultanate. Omantel's investment in the development of human resources has been in accordance with its clear strategy aimed at establishing a work culture that promotes innovation, attracts and retains the best talent as well as provides a world-class HR services for employees. The company's new human resources strategy started in 2008 during the integration of operations of Omantel and Oman Mobile and the transfer of both entities employees to the company's previous headquarters in Mawaleh in 2010. This strategy, which is a reflection of the main objectives



of the company's general strategy, covered many aspects related to human resources, the most important of which was creating a unified business culture that is aligned with the company's new operating model. This strategy aimed also at developing competencies, building a clear database of all employees, improving and automating HR Unit services. Omantel has also developed an operational model and a clear authority matrix to empower its employees and to in the Company's operating model. This strategy contributed not only to overcome the challenges faced by the company in the market but also to create a positive work environment capable of attracting and retaining the best talent. This strategy included many initiatives and projects, such as Kafaat (competencies) Academies, which provided employees with the capabilities, skills, knowledge and experience needed to achieve continued success. The skills that employees acquired were unique and exclusive as they focused not only on technical and functional skills but also on ways to enable them to keep pace with rapid technology developments in the world. Competencies Academies were established in partnership with reputable universities and institutes to provide the latest distance learning courses that focus on future disciplines. The courses have been provided through advanced digital platforms. At the end of these courses, certificates with worldwide recognition are given to eligible participants who pass the required tests. One of the most important universities that Omantel has partnered with was the prestigious Stanford University in the United States, which is ranked second in the world in the fields of

computer science, information technology and support services. Omantel has also financed several researches related to innovation, information technology and communication. The company has also signed an agreement with the Massachusetts Institute of Technology, which is considered one of the most prestigious educational institutions in US and the world in the fields of technology, computer science, information systems and operations research. This program also included leadership development. An agreement was also signed with the prestigious Georgetown University in the US to implement a number of special programs targeting the company's leaders. Omantel has also partnered with Harvard Business University to provide several courses and grant specialized certificates. All these initiatives were aimed to develop the company's employees and enable them to keep abreast of the latest developments at the administrative and technical level. During 2021 only, 1,601 employees benefited from this Program through 10,453 training opportunities in various fields, despite the challenges of the Covid-19 pandemic. The program aimed at continuously enhancing the capabilities and skills of Omantel's employees. During this period, Omantel had harnessed digital technologies and distance learning solutions as an alternative to the traditional learning and training process. In order to maximize the benefit and rationalize the costs of training, Omantel has implemented a successful initiative that focuses on transferring expertise and knowledge among employees. Omantel plays a major role in recruiting students from various universities and colleges and training them

in various sectors and specializations of the company under the supervision of experienced specialists. The company also holds virtual lectures and workshops to provide students with hands-on experiences, besides other technical skills. The virtual training focuses on technical areas related to artificial intelligence, the Internet of Things and smart cities in order to enhance the competencies and skills of undergraduates by providing them with the necessary skills and knowledge they need to enter the labor market and empowering them to meet the current and future needs of the labor market. It is worth mentioning that Omantel has trained a large number students last year. The training program, which covered the various technical and administrative departments within the company, enabled the students to acquire the required practical and professional knowledge. Omantel also supports many programs and initiatives launched by various entities. In this regard, Omantel has joined hands with the Ministry of Education to develop a curriculum for information technology and programming chains in the first cycle (grades 1-4) for the basic education stage. The agreement aims to develop an educational curriculum to provide students with future skills and the Fourth Industrial Revolution skills. The initiative is in line with Oman Vision 2040, which aims to build a knowledge-based economy among many other goals. The curriculum will be applied to students from grades 1-4 in government schools, private monolingual schools, Diwan schools, the Royal Omani Orchestra, and Royal Oman Police schools, for a period of three academic years - starting from 2021/2022. As part of its youth capacity-building programs, Omantel has also launched several social responsibility initiatives. Among the most important of these programs is the Upgrade program, in cooperation with the Ministry of Higher Education, Scientific Research and Innovation, the Public Authority for Small and Medium Enterprises Development and a number of other partners. It also introduced the Entrepreneurship Award in cooperation with the Public Authority for Small and Medium Enterprises Development, Mehnaty (my profession) and other programs and initiatives.



Zain Business Introduces Z-HUB: All-New Integrated Hub to Serve SMEs Business Needs

Zain, the leading digital service provider in Kuwait, introduces Z-HUB, an all-new, fully integrated hub to serve all business needs of startups and Small & Medium Enterprises (SMEs) in the Kuwaiti market. The hub offers a wide range of services and solutions in over 6 essential business areas to help SME owners expand their businesses, take them towards the road of success, and rise above the competition. Z-HUB gathers the best tools that serve the needs of SMEs in one place, focusing on six essential business areas including services for e-commerce, marketing, HR, location and online presence, insurance, tendering, Zain Business solutions, and more. Zain presents these services and more for the most competitive prices in the market. The new hub comes in collaboration with a number of SMEs specializing in the above-mentioned areas. Zain will design special and exclusive offers for its SME customers in partnership with its partners to tailor each offer to each customer's unique business needs. The offerings are designed to maximize efficiency, increase productivity, elevate customer satisfaction rates, and reduce the time needed to process transactions all while cutting costs. Commenting on the announcement, Zain Kuwait's Chief Enterprise Business Officer Hamad Al Marzouq said: "We are proud today to launch Z-HUB, our all-new integrated hub to serve the Kuwaiti startups market. Through this service, we gather all of our most advanced, world-class solutions and put them in the hands of SME owners, supporting them to build a digital infrastructure for their business and helping them serve their customers with utmost efficiency". Al Marzouq added: "The Kuwaiti market is full of promising talents, and we at Zain are well aware of the important role played by SMEs in achieving economic and social development in the nation. We believe SMEs represent a big part of the country's production channels, and they play an essential role in the growth of national economy. That is why we are always committed to offering them the best and most advanced solutions, especially that Zain is a leading

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digital service provider in Kuwait and the region. We hope this step opens up entire new horizons in front of Kuwaiti entrepreneurs". Al Marzouq continued: "Since its inception, Zain has always enjoyed a solid ecosystem of strategic partnerships with the world's top tech leaders, making it the first destination to serve the technical needs of companies of all sizes. Today, we expand this ecosystem by partnering with a number of SMEs, each specializing in their respective industries, so that Z-HUB's services are offered by entrepreneurs for entrepreneurs. We believe this will help enrich the spirit of joint collaboration and contribute to developing the local SMEs market". Al Marzouq concluded: "This launch reflects our continuous efforts to grow our services portfolio for Kuwait's SME community, who have grown to become a great part of our corporate customer base. This is why we will always be commitment to offering such refreshed offerings in line with our digital transformation strategy that aims at empowering a more efficient business sector in the Kuwaiti market". Z-HUB is an integrated hub where customers can find a variety of services tailored to meet the needs of SMEs in one user-friendly place

to ensure the swift expansion of their business. Zain offers special and exclusive offers to its customers, tailored to every customer's company, customer base, and business partners, ensuring efficiency and flexibility in their everyday operations. The new hub features tools and solutions in over six essential business areas, including e-commerce services and integrated platforms where customers can manage their products with ease, marketing services like analysis, strategies and branding customizable for every customer, HR services that aid business owners to manage their employees, location services to help customers get recognized on Google Maps and create an online presence, insurance services to provide consultation and risk assessment, tendering services to facilitate the tendering process across all sectors, as well as a wide range of tech services and tools from Zain Business.

The Z-HUB partners ecosystem features a number of SMEs specializing in their own respective industries, including:

UPayments:

Online e-commerce tool to meet every business need that includes UStore, Upay, and Uinterface.

Zyda:

Fully customizable restaurant delivery platform.

ExpandCart:

Offering complete e-commerce tools, solutions, and plans that include ExpandCart Professional, ExpandCart Ultimate, and ExpandCart Enterprise.

Tendering Center:

Tendering Center offers a one-year tendering plan and notifications designed to facilitate tenderers and bidders.

Chrysalis Digital:

Chrysalis General Trading Company helps customers get Google Business

verification in addition to 360 virtual walkthrough tours, and more.

MenaITech:

Providing consultancy services such as MenaLite Core, MenaLite HR and MenaTracks, as well as MenaCRM that helps to develop innovation.

Al Othman Pearls:

Helps create comprehensive insurance packages for customers' businesses at a below-market price.

Totals:

Totals offers multiple packages for marketing, advertising, and content creation based on every customer's

needs, such as Total's Starter, Growth and Enterprise Packages.

Zain strongly believes in the crucial role played by private sector organizations in supporting social and economic sustainability projects, as well as further pushing the entrepreneurial community's growth in the country. Springing from its growing commitment towards practicing its social responsibility, the company is committed to printing a positive print through all its activities. This has led Zain to embrace the most influential issues in the community, including the support of entrepreneurship and innovation.

Zain Group Reports a 2% Increase in Net Profit in 2021

Kuwait-based telecoms group Zain has published its consolidated financial results for the twelve months ended 31 December 2021, reporting a 5% decrease in revenues year-on-year to KWD1.5 billion (USD5.0 billion), while EBITDA decreased 5% annually to KWD628 million. The company booked a net profit of KWD186 million in the twelve months under review, up 2% y-o-y. Further, foreign currency translation impact – mainly due to currency devaluations in Sudan and Iraq – cost the group USD962 million in revenue and USD479 million in EBITDA. Zain Group invested USD1.1 billion in CAPEX (21% of revenues), predominantly in 5G rollouts in Kuwait, Saudi Arabia and Bahrain; 4G upgrades across Iraq, Jordan, South Sudan and Sudan; expansion of fiber-to-the-home (FTTH) infrastructure; and spectrum license fees. In operational terms, Zain Group reported a consolidated subscription base of 48.9 million at 31 December 2021. In Kuwait subscriptions decreased 3.8% y-o-y to 2.5 million, while the Saudi Arabian unit reported eight million subscriptions (up 5.3% y-o-y). Zain Sudan's subscription base stood at 16.6 million at 31 December 2021, down 1.8% y-o-y. Zain Iraq, meanwhile, saw its subscription base increase 1.2% y-o-y to serve 16.4 million at end-2021, while the subscription base in Jordan reached 3.6 million (3.5 million in 2020). Bader Nasser Al-Kharafi, Zain Vice-Chairman and Group CEO, commented: 'The Group's solid performance for 2021



reflects the success of the many operational and monetization initiatives implemented by the management across all markets. The board's recommendation of KWD0.023 per share dividend for H2 in addition to the semi-annual KWD0.010 dividend, totaling KWD0.033 for the year, reflects a 77% payout ratio, one of the highest in the region. This provides a clear indication of the strength of our financial solvency, and the company's ability to execute on its strategic profitable growth plans, despite the continuing challenges of the pandemic and impact of unavoidable currency devaluations on the business.'



AT&T Claims 500,000 FWA Subs

AT&T has revealed that it has signed up more than 500,000 fixed wireless access (FWA) subscriptions to date. In an interview with Fierce Wireless, Chris Sambar, AT&T's EVP of Technology Operations, commented: 'We're no stranger to fixed wireless ... Fixed wireless has some warts on it. It's got issues where you can't have

too many fixed users on a single sector. That becomes complicated. As the years go on, that spectrum becomes congested. What do you do with your FWA customers at that point? We want to be very careful and thoughtful.' TeleGeography notes that US FWA uptake has surged in recent quarters, as the country's main

players have sought to target unserved communities. Rival operator T-Mobile US recently disclosed that it ended December 2021 with 646,000 FWA subscriptions, while Verizon is currently lagging behind, serving just 223,000 FWA users at end-2021.

AT&T Demonstrates 5G Capabilities for Department of Defense

AT&T successfully completed its first milestone toward proving the capabilities of its 5G network solution to enable “smart warehouse” applications for the Department of Defense’s Naval Base Coronado in San Diego. AT&T’s 5G network solution demonstrated data throughput speeds greater than 4 gigabits per second with less than 10 milliseconds of latency using AT&T 5G spectrum and a private 5G Core and Radio Access Network (RAN). This performance was demonstrated with commercially available commodity mobile devices at a testbed facility in Richardson, Texas. In October 2020, the Department of Defense (DOD) announced \$600 million in awards for 5G experimentation and testing at five U.S. military test sites, representing the largest full-scale 5G tests for dual-use applications in the world. DOD seeks to remain at the forefront of cutting-edge 5G testing and experimentation to strengthen our Nation’s warfighting capabilities as well as U.S. economic competitiveness in this critical field. AT&T’s successful demonstration of its 5G networking capabilities allows the program to advance

to its next stage: delivering AT&T 5G across the 120,000 square foot Naval Base Coronado warehouse. There, we expect to efficiently and securely connect smart warehouse application infrastructure to provide high-speed, low-latency 5G connectivity for autonomous mobile robots, video cameras, Internet of Things (IoT), and AR/VR systems that will enable inventory tracking, transshipment and other elements of DOD’s objectives for the test. Following successful completion of that stage of the test, AT&T 5G is expected to integrate with official Navy systems to enable Smart Warehouse capabilities. DOD selected AT&T as the primary 5G networking services provider for 2 of the 4 U.S. military test sites where it is testing 5G capabilities as part of DOD’s Tranche 1 experiments:

1. Naval Base Coronado, San Diego, CA – 5G Smart Warehousing

The objective of this project is to develop a 5G-enabled Smart Warehouse focused on transshipment between shore facilities and naval units, to increase the efficiency and fidelity of naval logistic operations,

including identification, recording, organization, storage, retrieval, and transportation of materiel and supplies. Additionally, the project will create a proving ground for testing, refining, and validating emerging 5G-enabled technologies.

2. Fort Hood, Killeen, TX – Augmented Reality/Virtual Reality Training

This DOD 5G project was originally designated for Joint Base Lewis-McChord in Tacoma, WA. It has been relocated by DOD to U.S. Army base Fort Hood near Killeen, Texas. The objective of this project is to enable modular, deployable and secure 5G connectivity on currently available training devices, specifically the Instrument able Multiple Integrated Laser Engagement System (I-MILES) and the U.S. Army’s Integrated Visual Augmentation System (IVAS). DOD is testing 5G support for tactical edge use cases that integrate I-MILES and IVAS with Augmented Reality and Virtual Reality (AR/VR) capabilities to conduct mission planning, distributed training, and operations.

AT&T: Using Streetlights to Boost 5G Deployments in Cities

Ever notice new poles popping up with strange boxes and wires strung about along some streets? It’s most likely a 5G small cell site. These access points help deliver mobile data to a localized area, powering the connections you rely on for everything from a video conference on the go to streaming your favorite team in the playoffs. With ever-growing capabilities and sizeable shift in connectivity trends at home and on the go, it’s no surprise that data consumption and demand for high-speed connections has surged over the last few years. Keeping pace means continued expansion and enhancement of the network, including more 5G small cell sites in areas where you live, work and play. One of the most significant challenges network operators face in deploying new mobile network infrastructure is the time it takes to work through the process of acquiring sites, engineering designs, and securing permits – and that’s all before construction even begins. Across the industry adding



new 5G locations can take anywhere from 12 to 18 months on average, which also means it’s ripe for innovative solutions. Continuous process improvement is in our blood as engineers. Pushing the traditional

options for how 5G is deployed is exactly what inspired the question and idea nearly three years ago that I posed to smart solution provider Ubicquia: Why not plug 5G radios into streetlights? We quickly

connected with global equipment provider Ericsson and the concept for the Ericsson Street Radio 4402 was born.

Nearly Invisible 5G Sites

The ultra-compact, fully integrated Ericsson Street Radio small cell can be deployed globally by plugging into existing streetlights that utilize a National Electrical Manufacturers Association (NEMA) standardized connector. And it is virtually unseen from street level. The device sits just above the streetlight shield next to the light itself allowing it to blend into the existing infrastructure. No long wires and big, bulky boxes – a true aesthetic improvement. And in many cases the installation can be completed within just 15 minutes, transforming a streetlight into a low- or mid-band 5G site. Streetlights are also

the perfect deployment point for meeting network infrastructure densification needs because they are typically 8 to 10 meters high, spaced 50 meters apart, have an existing power supply and are within close proximity to fiber. By using existing infrastructure, this solution reduces costs, streamlines site approval and permitting, and speeds installation. These radios also have smart sensors that allow us to detect failed or downed streetlights in the event of a storm, blackout, or other disruptive event. This helps us in quickly assessing damage and dispatching crews for repairs or alerting the power provider of an issue. On the Horizon Just how promising is this new solution? Street Radio prototypes were trialed last year, and we are now in the process of field testing and deploying

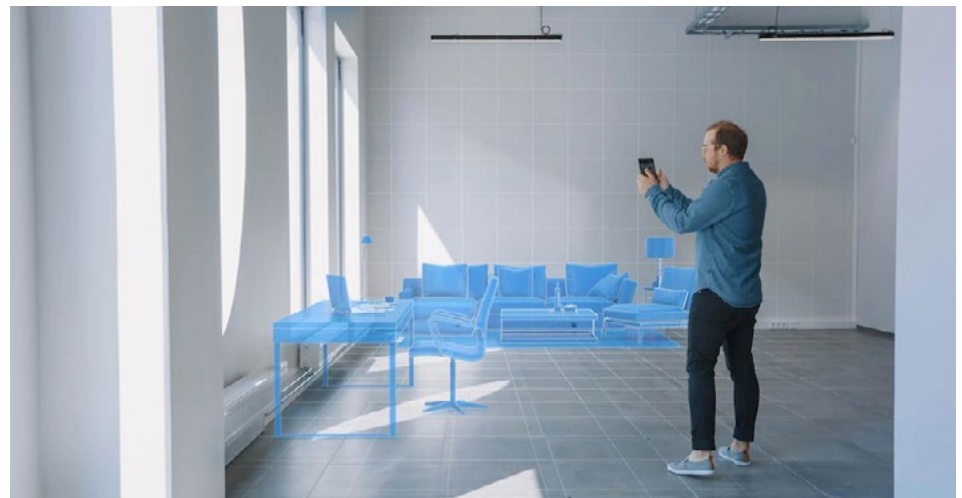
commercially available units in multiple cities – meaning this unique solution is poised to help accelerate 5G deployments across the country on the most reliable 5G network in America, AT&T 5G.1 One of the most fulfilling parts of my job is creating access in areas lacking coverage. Because this unique, compact solution uses existing infrastructure, it could play a role in helping bring 5G to some underserved areas and further meet our company commitment to closing the digital divide. Although jointly pioneered for our network, other operators will be able to utilize the technology in the future, further benefiting the entire industry. This project was nominated by the Global Mobile (GLOMO) Awards in Barcelona for “Best Mobile Network Infrastructure.”

AT&T Teams with Ericsson to Boost Consumer 5G

AT&T became the first US operator to join an Ericsson initiative to aid service providers with launching and generating revenue from next-generation mobile technology, adding to a list which already includes Telstra, Etisalat and Rogers Communications. Ericsson explained its Startup 5G program helps operators identify innovative use cases spanning multiple consumer segments and touching on areas including entertainment, media, gaming, sports, learning and more. The program is run by Ericsson's ConsumerLab division, serving as a go-between for CSPs and consumer companies, supporting the development of a strategy designed to address an estimated \$3.7 trillion business opportunity within the market by 2030. Operators are further aided by ConsumerLab research and analytical data, gaining access to a worldwide network of more than 40 start-ups specializing in 5G.

Jay Cary, VP 5G product and innovation at AT&T said while its customers were enjoying the benefits of faster data rates and low latency, its network was ready to take on “more social and immersive experiences”. “Tapping into Ericsson's

ConsumerLab and its deep catalogue of companies and innovative ideas could help us bring new experiences to life using technology like AR and VR across a variety of interests including travel and sports,” he said.



Cisco Reveals New Innovations to Help Businesses Make Hybrid Work, Work

Cisco announced new innovations designed to power hybrid work with people working from home, in the office, or anywhere. Businesses of all sizes are

adjusting to the major digital transitions that have reshaped IT plans and operations over the past two years, spanning hybrid cloud to connect private and public

clouds, AI (Artificial Intelligence) and ML (Machine Learning) for the adoption of IoT, and hybrid work to connect everyone and everything securely. Hybrid work success

is not simply the ability to support a remote workforce. It is the ability to adapt to change as it happens. It is all powered by reliable, mission-critical connectivity. The Network. Powering Hybrid Work.

The network is the essential driver of productivity in a hybrid world, helping businesses, schools, and governments work better. As more people require the flexibility to work on their terms, organizations must rapidly scale their digital operations to enable the connections needed for the work-from-anywhere approach. For hybrid work to work, a fundamental change is required in how organizations use and rely on technology. Connecting more people and more devices across more places requires ubiquitous wireless connections, increased network strength and resiliency, and reliable zero trust security to deliver the best experience every time, with no interruptions. At a virtual press event today, the company will explain how its latest wave of tech innovation is critical for customers to deliver improved user experiences, enable smart and sustainable workplaces, and secure IoT deployments at scale across their enterprise campus. "Hybrid work doesn't work without the network," said Todd Nightingale, Executive Vice President and General Manager, Enterprise Networking and Cloud, Cisco. "The capabilities of the network empower the capabilities of the workforce. These launches, powered by Silicon One, make hybrid work possible with unprecedented power, reliability, and most importantly, the agility needed to continue to adapt and change with our teams." New wireless networking and access innovations



announced today include:

- **Wi-Fi 6E (Catalyst 9136 and Meraki MR57):** Wi-Fi 6E technology expands capacity to exceed gigabit performance. The new Cisco Wi-Fi 6E products from Catalyst and Meraki are the industry's first high-end 6E access points that address the most demanding hybrid business environments.
- **Cisco Private 5G:** Cisco's Private 5G managed service delivered with global service provider and technology partners, offers a wireless experience that is simple to start, intuitive to operate, and trusted for digital transitions to hybrid work and IoT.
- **Catalyst 9000X Switches:** New Catalyst 9000X models extend the switching family and deliver the backbone that provides the speed, bandwidth capacity, and scale needed to support 100G/400G network access for transitions to hybrid work in the campus and extending the branch with zero trust security and power efficiency.
- **Introduction of Cisco Silicon One to the Catalyst Switching Portfolio:** Cisco Silicon One, originally deployed in web scale and service provider networks, continues to prove its capabilities and programming flexibility to support networking innovation across enterprise networks. The new Catalyst 9500X and 9600X Series switches are powered by the Cisco Silicon One Q200.

Industry response

"Organizations in recent years have accelerated their plans for supporting hybrid work models. A fundamental component of these plans is a secure and powerful network that's able to connect any user at any time," said Brandon Butler, Research Manager, Enterprise Networks, IDC. "IDC believes that the network of the future will need to address the increasing demands of network performance and reliability to ultimately deliver greater business agility and productivity."



Etihad Atheeb "GO" Collaborates with Fortinet to Provide SD-WAN Solutions to GO's Customers

Etihad Atheeb Telecom Company "GO", a Saudi licensed telecommunication service provider, has announced collaboration with Fortinet, a global leader in cybersecurity solutions, to expand GO's managed security services offering by adding the Fortinet Secure SD-WAN solutions to its portfolio. This will allow Etihad Atheeb

Telecom Company "GO" to better meet the evolving business needs in the Saudi market and enhance the performance of business applications and overall user experience.

The CEO of Etihad Atheeb Telecom Company "GO", Mr. Yahya Saleh Al Mansour, commented: "expanding our

portfolio with Fortinet's reliable and secured SD-WAN is a key development in the relationship of the two companies. This will allow our customers to benefit from providing a secure standardized network and represents a value-added to our clients". The service will enable enterprise customers to provide better

protection against cyber threats such as viruses, botnets and advanced persistent security threats. It will also help customers to reduce their CAPEX by eliminating the cost of deploying and running hardware on their premises as well as reducing their OPEX of hiring additional operational resources. "GO" will provide the needed protection with a much lower cost. This contributes to the transformation journey of "GO" to better serve its business clients



with quality of world-class standards.



Huawei Ranked Among Top 10 Most Valuable Brands of 2022

Brand Finance has named Huawei among the top 10 most valuable brands for 2022 in its recently published Brand Finance Global 500 2022 report, jumping up 6 places from 2021 despite facing many unforeseen challenges. The Chinese tech giant has ranked the world's 9th most valuable brand for 2022. Its brand value improvement defies the odds amidst the heavy scrutiny it faces from the US. The report from the London-headquartered brand valuation and strategy consultancy showed a staggering year-on-year growth of 29% in Huawei's brand value to \$71.2 billion. Every year, Brand Finance puts 5,000 of the biggest brands to the test, and publish nearly 100 reports, ranking brands across all sectors and countries. The world's top 500 most valuable and strongest brands are included in the



annual Brand Finance Global 500 ranking – now in its 16th year. As a whole, the tech sector is once again revealed to be the

most valuable industry, with a cumulative brand value of close to US\$1.3 trillion in the Brand Finance Global 500 rankings.

Huawei Explores How Countries in The Middle East Region Can Take the Lead in Digitization at The Inaugural LEAP Summit in Riyadh

During this week's LEAP conference held in Riyadh, Huawei showcased how a new generation of cutting-edge technologies and applications will help nations to achieve their digital transformation agendas successfully, sustainably, and securely. In addition to being a strategic partner to the inaugural LEAP conference, a number of international Huawei executives participated in forums throughout the three-day event. LEAP was held against the backdrop of rapid

digital transformation in Saudi society, in line with Vision 2030 goals. The country aims to become one of the world's top 20 tech economies using digital to create a more diverse economy. Huawei's rotating chairman Guo Ping delivered a keynote speech on the opening day of LEAP on how companies and countries in the region can take a lead in global digital innovation. The synergy of modern technologies was also explored by Frank Dai, president of cloud business at Huawei Middle East,

while Edwin Diender, CIO of the global energy business unit at Huawei, looked specifically at how the digitization journey can support a global energy transition and carbon-neutrality goals. Steven Yi, president of Huawei Middle East, said: "As the host of LEAP, Saudi Arabia's digitization roadmap exemplifies the transformative role of technology across all sectors of the society. The Kingdom has put digitization on the fast track and is now amongst the global pioneers in deploying

new generations of ICT solutions. LEAP has served as an important international forum to build consensus and deepen collaboration in areas that will create new economic and social value for all." Under the theme of "Dive into Digital", Huawei's exhibition at LEAP demonstrated the full end-to-end capabilities of its ICT expertise, with representation from its enterprise, carrier, and consumer business groups, as well as its cloud and digital power business units. Huawei's enterprise business group explored scenario-based solutions across five major industries including government, energy, transportation,

finance, and education. The company's carrier business group meanwhile focused on strategies for creating future-oriented networks, cooperating with telecom carriers to enable Saudi Arabia's digitalization transformation and achieve Vision 2030. Visitors to LEAP further explored eight experience zones from Huawei consumer business group looking at the future of smart devices and mobile services ecosystems. Cloud computing was another important domain at this year's LEAP, with Huawei displaying the latest cloud-native, AI capabilities for supporting governments and enterprises

to intelligently upgrade through HUAWEI CLOUD. The role of technology in supporting carbon neutrality was also in the spotlight at LEAP. The Huawei Digital Power business focused on the intersection between digital and power electronics technologies to help create zero-carbon ICT infrastructure in the Middle East, and to support zero-carbon electricity generation in line with recent national sustainability commitments. Huawei showcased the latest green energy-saving products, some of which have shown to save 30% on power consumption compared to traditional products.

Saudi Digital Academy and Huawei to Cooperate in Nurturing Future Digital Talent Through Huawei ICT Academy Program



The Saudi Digital Academy (SDA) has signed a memorandum of understanding with Huawei to cooperate in developing local talent within the technology domain, supporting the Kingdom's digitization goals outlined in Vision 2030. The memorandum was signed between SDA CEO Mohammed Alsuheim and Deputy CEO of Huawei in Saudi Arabia Steven Liu in the presence of HE Eng. Haytham AlOuali, Vice Minister of Communications and Information Technology, Eng. Faris AlSaqabi, Deputy Minister for Future Jobs and Capabilities, Shunli Wang, Vice President of Huawei Middle East, and Eric Yang, CEO of Huawei in Saudi Arabia, at the global technology conference LEAP. The two organizations will work together on the

launch of new projects within the Huawei ICT Academy Program that involves building a talent supply chain covering the entire process of learning, certification, and talent promotion. Through such projects, SDA and Huawei aim to support 8,000 Saudi trainees through the Huawei ICT Certification Program. The two parties will also collaborate in upcoming editions of Huawei's annual Middle East ICT Competition, which in 2021 was run in partnership with the Saudi Ministry of Communications and Information Technology (MCIT). SDA and Huawei further plan to collaborate in supporting the 'Attaa Digital' initiative, empowered by MCIT, including the delivery of trainings for Huawei HMS developers in the Kingdom.

Expanding its own capabilities, SDA will engage Huawei in a variety of knowledge-sharing activities. The latest memorandum outlines plans for Huawei to train and certify 100 Saudi trainers from SDA through its Huawei Train the Trainer (TTT) program, focusing on areas such as AI, cloud, security, data center and 5G. Huawei will also conduct a digital leadership camp for SDA and MCIT leaders.

In the area of job creation, SDA and Huawei have also confirmed an ambition to host a joint ICT job fair by the end of 2022 that expands opportunities for local talent in the Kingdom.

Mohamad Alsuheim, CEO of Saudi Digital Academy, said: "SDA has a legacy of working with prestigious academic institutions and private sector leaders in the development of its programs. This memorandum with Huawei will open up new opportunities for Saudi digital talent to both develop cutting-edge skills and to be leaders of the future digital economy." Eric Yang, CEO of Huawei Tech Investment Saudi Arabia, said: "Local talent is constantly required to drive digital transformation on a national level. Through partnerships like this with the Saudi Digital Academy, we are able to create an even stronger digital ecosystem that serves both recent graduates and ICT professionals, contributing towards the progress of Saudi Arabia's Vision 2030 which places a strong emphasis on the potential of the ICT sector."

Huawei's Ryan Ding: GUIDE to a Better Digital Economy



At the Huawei Day 0 Forum held the day before Mobile World Congress 2022, Ryan Ding, Huawei's Executive Director and President of the Carrier Business Group, said that operators can work on connection density, computing diversity, and carbon reduction intensity, and called on operators to join Huawei in its GUIDE business blueprint to create a better digital economy together. The global digital economy is developing rapidly, and over 50% of global GDP will be digitalized in 2022. Many countries and regions, like China, South Korea, and the EU, have already announced huge investment plans for the digital economy. As ICT infrastructure providers, operators will play an increasingly important role in leading the development of the future digital economy. During his keynote, Ding explained that the vitality of digital economy can be evaluated by three factors: connection density, computing diversity, and carbon reduction intensity, and that these factors give operators the levers they need to shape the future of the digital economy. By increasing connection density, operators can grow their 5G user base and expand their business scope. By diversifying their computing resources, operators can create synergies between connectivity and IT to boost enterprise digitalization for new growth. In carbon reduction, new green ICT solutions, like those Huawei provides, will increase network capacity and cut the energy consumption per bit for greener development.

5G has come a long way

Commercial 5G deployment started two years ago, and since then, the numbers of 5G networks, users, and devices have grown rapidly. By the end of 2021, more than 200 operators have deployed commercial 5G networks, servicing more than 700 million 5G users. There are currently over 1,200 commercial 5G devices in use. This growing user base is bringing commercial returns to operators while driving continuous network rollouts. During the event, Ding shared 5G success stories from various operators and showed how new 5G applications like AR, VR, and new video are offering users new experiences. Flexible 5G pricing models are also benefiting both users and operators and driving rapid growth in the 5G user base.

Connectivity + IT for new growth

According to Ding, as more industries are going digital, IT infrastructure will need to be rebuilt to drive more efficient operations. By creating synergies between IT and CT, cloud and edge, and cloud and networks, Huawei hopes to help operators go digital and intelligent and achieve new revenue growth. In Asia Pacific, for example, Huawei's OneStorage solution has helped one operator cut TCO by 30%.

Green ICT: More Bits, Less Watts

Green ICT is key to sustainable growth in the digital economy. The ICT industry is providing new technologies to help other industries reduce their carbon footprints. In fact, these savings are predicted to amount to ten times larger than the ICT industry's own footprint. At the forum, Ding also shared Huawei's green strategy: More Bits, Less Watts. With its full range of green solutions, including green site, green network, and green operation, Huawei aims to help operators increase network capacity and cut the energy consumption per bit. Huawei also proposed the Network Carbon Intensity index to quantify the carbon emissions of the ICT industry and help operators make their green strategy a reality. At the end of his speech, Ding proposed Huawei's GUIDE business blueprint, which aims to help operators develop the five key capabilities required for business success: expanding services, innovating efficiently, leveraging resources, competing on value, and contributing to society. Huawei's President of Carrier Marketing & Solution Sales, Peng Song, discussed this path for network evolution in his keynote speech and called on operators to collaborate more with industry partners along the GUIDE business blueprint, saying, "We should more actively embrace the digital world. GUIDE is now. Let's act now to draw a business blueprint with partners in more industries to lead future development, as once the train of digitalization starts to roll forward, nothing can stop it." Separately at the Huawei Day 0 Forum, Huawei released a series of new IT products and solutions as part of a new "intelligent IT foundation" for operators. David Wang, Executive Director of the Board and Chairman of the ICT Infrastructure Managing Board at Huawei, explained that this reliable and efficient IT foundation will help operators go intelligent, increase revenue, reduce costs, boost efficiency, and ultimately achieve new growth. Breaking down misconceptions to accelerate green development, Huawei Carrier's Chief Marketing Officer Dr. Philip Song noted, "Green development is a buzzword. Just like from Newton's classical mechanics to Einstein's theory of relativity, its development is going to be marked by a spiraling path between misconceptions and truths. We need to move past these five misconceptions as soon as possible to accelerate the green development of the ICT industry." MWC22 Barcelona runs from February 28 to March 3 in Barcelona, Spain. Huawei is showcasing 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 industry trends, GUIDE to the Future, and green development to envision the future of digital networks.



Microsoft, Singtel Make Asia MEC Move

Singtel upped its enterprise play, teaming with Microsoft to deliver what the operator claimed is the first multi-access edge compute (MEC) product for businesses in Asia. The operator plans to deploy Microsoft Azure Edge Zones on its 5G network, a combination Singtel stated would enable rapid deployment of services spanning real-time simulations and live video analytics in a multi-tenant setting. Singtel cited public sector services as one potential beneficiary of the Microsoft tie-up, adding MEC would deliver a bump in security and performance, "enabling new intelligent edge scenarios". It also noted potential in public safety, urban planning, healthcare, banking, transport and logistics. Bill Chang, CEO of Group Enterprise at Singtel, branded the collaboration a "milestone for edge computing in Asia", predicting benefits for companies' digital transformation efforts. The service will be publicly available in H2 for Azure customers in Singapore using their current subscriptions. The operator highlighted a "cloud consumption model", noting enterprises would only be billed for the "amount of compute and storage" used along with the duration. The operator launched standalone 5G in 2021 and is required to cover half of the city state by the end of this year.



Nokia Launches New UBT-T XP Dual Band Radio at Mobile World Congress 2022 #MWC22

Nokia is showcasing the UBT-T XP Dual Band radio, the latest addition to its award-winning Wavence product family, at Mobile World Congress 2022. Designed to support mobile operators and enterprises, the extreme high-power outdoor unit delivers high-capacity and dual-carrier functionality with the best system gain available in an outdoor package. The UBT-T XP supports the low-frequency spectrum bands 6GHz to 11 GHz and is ideal for full outdoor or split-mount configurations. Its exclusive 6/11 dual-band feature provides maximum flexibility for interference mitigation and spectrum efficiency and delivers the highest path performance and capacity in its class. The UBT-T XP is available from Q3 2022.

Nokia's UBT-T XP unique dual-band solution provides a channel at 6Ghz and a channel at 11Ghz in a single outdoor unit. The UBT-T XP supports multi-frequency carrier aggregation with mixed channel sizes and high modulation schemes that can carry 2.5 Gbps over the air. As part of the UBT-T XP solution, Nokia offers 4+0, 6+0, and 8+0 configurations using the Outdoor Combining Module with Nokia's high-performance adjacent channels filters, providing the maximum flexibility for frequency selection and spectrum efficiency. The UBT-T XP is also integrated into the Nokia Network Services Platform for common management for full end-to-end management of the network. Nokia's comprehensive Wavence portfolio provides

a complete microwave solution for all uses cases covering short-haul, long-haul, E-Band, and SDN-based management both for Service Providers and Enterprises. Its zero-footprint implementation for full-outdoor architectures can be integrated directly with RAN and IP devices with common management. Giuseppe Targia, Vice President, Microwave Radio Links at Nokia said: "This new dual-carrier solution enhances our industry-leading Wavence portfolio offering our customers an alternative 5G backhaul solution with scalable coverage and capacity. Microwave technology ensures we can deliver high-capacity services over long distances which is critical when fiber can't be deployed."

Nokia Launches Intelligent RAN Operations to Manage the Power of 5G with Machine Learning

Nokia has announced the launch of its new Intelligent RAN Operations solution designed to manage the increasing complexity of 5G networks through machine learning (ML). The framework and its underlying products enable mobile operators to boost 5G network quality, efficiency, and the subscriber experience while reducing operational costs, energy consumption, and CO2 emissions. The solution supports Nokia's ambitious commitment to sustainability and combatting climate change. Nokia Intelligent RAN Operations implements several machine learning functionalities that help operators manage network density and complexity. It enables the automation of routine network management tasks, with a greater ability to detect, categorize and solve network issues in real-time. This saves time and eliminates human error. 5G networks have ushered in a host of new use cases as well as products and services reliant on ultra-low latency and resiliency. They also support a vast range

of applications with widely varying service requirements. In this complex environment, operating cost-effective radio networks using manual intensive tools or even just automation is no longer possible. Operators trialing the solution on a live network have seen an operational efficiency gain of up to 80 percent with zero-touch optimization, and 70 percent fewer issues to resolve, reducing team workloads and helping ensure consistent network quality. The solution also includes intelligent energy-saving features that reduce base station power consumption by up to 15 percent, enabling more sustainable operating practices. Nokia has set sustainability goals to reduce its environmental impact and help its customers to do the same. Nokia's technology is designed to be energy efficient, contributing towards the climate and environmental targets of mobile operators. The demonstration shows how machine learning helps automate radio network energy-saving configuration and management while reducing energy consumption and CO2 emissions. James Crawshaw, Principal Analyst at Omdia, said: "As mobile networks have evolved from 2G through 5G they have become much more performant and sophisticated. Management and configuration tools largely kept pace with this evolution - until now. To optimize operational, capital, and energy efficiency in the 5G era requires a paradigm shift. Manual configuration of the thousands of parameters available in network nodes, a ten-fold increase on 4G, is no longer feasible. Operators need automated solutions that leverage artificial intelligence to augment and relieve human intelligence which can then be brought to bear on the manifold RAN operational challenges that computers are not yet able to solve." Mark Atkinson, SVP, Radio Access Networks PLM at Nokia, said: "Nokia's Intelligent RAN Operations helps operators deliver 5G services to their customers in the most efficient and effective way possible. Through intelligent machine learning, it boosts network performance, quality, and the subscriber experience whilst reducing power consumption and operational costs. Nokia continually supports its global customer base with innovative products and solutions that help them to be more sustainable and deliver better services."



Nokia Turnaround Picks Up Pace

Nokia CEO Pekka Lundmark provided details of a promised revision to its long-term outlook, as he again hailed the benefits of a strategy shake-up which continues to drive its turnaround. The Finland-based equipment manufacturer replaced its former 2023 outlook with targets covering the next three- to five-years. Broadly, the targets are for net sales to grow faster than the market and comparable operating margins of at least 14 per cent, replacing its earlier 2023 target of between 11 per cent and 13 per cent. In 2022, net sales are predicted to increase to between €22.6 billion and €23.8 billion, up from €22.2 billion in 2021, with a comparable operating margin in the range of 11 per cent to 13.5 per cent. Nokia reported a comparable operating margin of 12.5 per cent for 2021 as a whole. Thanks to its improved cash generation,

a more confident Nokia also plans to reinstate payments to shareholders, with a proposed 2021 dividend of €0.08 per share and a €600 million share buy-back program over two years. The vendor last made a dividend payment in 2019. Lundmark stated Nokia's strong performance in 2021 "and a faster than expected reset of our business", have created the foundations to "move into the next phase of our strategy to deliver growth and expand profitability". "We have now largely caught up competition in 5G," Lundmark told Reuters. "We have created a foundation for growth acceleration, the year of reset is behind us, now we are accelerating." He highlighted opportunities in operator rollouts of 5G networks and the "growing" enterprise market, although he warned the global supply chain situation remains tight.

Nokia Deploys IP Peering Solution to Upgrade TRES Regional Internet Exchanges in Finland

Nokia announced it will supply IP routing platforms to enable Finnish internet exchange provider TRES Regional Exchanges Oy (TRES) to scale its regional interconnection and peering infrastructure. The solution will enable TRES to deliver higher capacity services to customers while increasing operations efficiency through network automation. TRES will deploy the Nokia 7220 Interconnect Router platforms running on the Nokia SR Linux network operating system (NOS) to upgrade its network. The platforms, supplied by Nokia partner NetNordic, deliver high-density, high-speed IP routing in a small footprint that will allow

TRES to increase its interconnection and peering services capacity. Aleksi Suhonen, Chairman of TRES, said: "We chose the Nokia 7220 IXR platform running SR Linux because it meets our current and future requirements for a scalable, cost-effective interconnection platform with advanced network operations capabilities. The new platform will allow us to meet increasing customer traffic needs while ensuring operations efficiency through network automation." Manuel Ortiz Fernandez, Senior Vice President of EMEA Webscale business at Nokia, said: "TRES is expanding its regional interconnection capabilities to meet the needs of its customers as

they embrace new digital and cloud technologies. We are pleased that TRES has chosen Nokia IP routing technology to enhance its interconnection capabilities to support the needs of its consumers in the region." The Nokia SR Linux provides TRES with an open and extensible NOS that allows the collection of operations data – such as fine-grained system state, configuration settings and real-time network analytics – using push-based streaming telemetry. TRES can enhance its automation capabilities for current and future network services by leveraging the extensive automation framework provided with the Nokia SR Linux.

Nokia Chosen by 450connect to Supply Network Technology for LTE450 Critical Infrastructure Network in Germany

Nokia announced that it has signed a contract with 450connect, a joint venture backed by German companies from the energy and water sectors, to build its nationwide LTE450 radio network. The deal will cover the supply of radio system technology for the 450 MHz network, including the central technology, radio stations, microwave radio links for the backhaul network, and power back-up systems. Nokia will manage the supply and performance of all LTE components, including maintenance services, until 2040. In March 2021, 450connect GmbH was awarded the 450 MHz frequencies until 2040 by the Federal Network Agency. With 450connect's new nationwide, highly-available and secure LTE450 radio network, operators of critical infrastructures will receive the platform they need to digitalize their infrastructure, implement the energy transition to decarbonization, and further secure the energy supply. The Nokia LTE450 technology is ideally suited to achieve wide-area coverage and operate services such as voice and machine-to-machine communications (M2M) or Internet-of-Things applications for critical infrastructure. This industrial-grade private LTE / LTE-M solution is optimized for M2M applications and critical voice communications. Carsten Ullrich, CEO of 450connect, says: "In view of the major challenges involved in setting up the 450 MHz platform, we are pleased to have Nokia as a strong and capable partner at our side for the long-term, with whom we can meet the high technical requirements of our customers as operators of critical infrastructures." Dirk Lewandowski, Vice President Central and East



Europe, Nokia Enterprise, says: "The task of digitalization of Germany's critical infrastructure is of enormous strategic importance. Nokia can make an important contribution to securing this country's energy supply with our industrial-grade 450 MHz private LTE network, especially considering the challenges posed by the energy transition to decarbonization and decentralization. We look forward to a trusting and close cooperation with 450connect on this long-term and important project for the Federal Republic of Germany." Due to the high demand for highly available and resilient communications, both parties have agreed to a

rapid implementation of the radio network. Initial end-to-end tests will take place in the field by mid-2022 to ensure performance for the upcoming rollout. Radio services will be offered in the first regions of Germany in 2023. The nationwide rollout will take place by 2025. The Nokia solution includes georedundant LTE cores, RAN network, Nokia Wavence microwave radio backhaul, management solution and installation, commissioning, integration, training and support services. In addition, 20 years of lifecycle network management of this critical network will be provided by Nokia.

Senior Nokia Executive Brands Open RAN Unstoppable

Nokia Europe SVP Jan van Tetering backed the industry to overcome additional network complexities associated with open RAN and make its adoption a reality, though conceded it was too early to tell if the approach would become mainstream. In an interview with Mobile World Live, van Tetering said use of the architecture was unstoppable, though the jury was still out on when or how much it would be deployed by operators despite wide support. However, in the Nokia executive's bullish assessment of the prospects for open RAN, he pointed to backing from various governments, operators and the vendor itself, noting it would "definitely become a tool they [operators] can use in the radio across their footprint". Nokia

has made various moves to solidify its position in the new ecosystem, with membership of various open RAN industry groups and participation in operator trials, which have been vital in assessing the qualities and potential issues with open RAN. "There is extra complexity in open RAN architecture compared to the current classical architecture," van Tetering noted. "We spent a lot of time getting that complexity understood and managed. This is why we see a lot of trials going on, trying to understand what the added value will be and trying to get the ecosystems up and running." While authorities in some markets have been pushing open RAN as a way to diversify the number of vendors used by operators, especially where

Huawei equipment is being removed, van Tetering emphasized his view Nokia saw development of the architecture as a positive. "I would sound arrogant if I said there would be no change" to Nokia's business. "Open RAN is an evolution in technology and as a technology company we have to embrace it. The future will tell if we have embraced it in the right way to address customer needs." "As a tech company we are not afraid of evolution or technology disruptions, in fact we are also disrupting as we are moving forward." "I believe that our customers, in the end, will buy into the most performant and secure vendor, which they trust and I think Nokia ticks a lot of these boxes going forward."

Nokia Announces 5G Network Slicing Addition to Its Nokia Bell Labs 5G Certification Program



Nokia announced the introduction of a new professional level 5G certification. Network Slicing is the final addition to Nokia's popular program to train and certify industry professionals on 5G technology, from network access to application management. The Nokia Bell Labs 5G Certification Program is a first-of-its-kind program that offers two levels of certification for professionals across the information and communications technology (ICT) industry, Associate and Professional. The program, which has so far received 40,000 registrations, delivers essential knowledge

covering everything from the basics of 5G networks to professional level planning and design. The launch of the 5G Network Slicing curriculum includes the role of network slicing in 5G deployments, its business benefits to both operators and enterprises, and how slicing works across the core, radio and transport domains. In addition, the course examines how end-to-end orchestration and automation work seamlessly across these domains to provide slicing services. Network Slicing technology promises the delivery of a new generation of high-speed services, and Nokia Bell Labs brings clarity to network as a service. The new course offers a deeper understanding of how Network Slicing accentuates 5G System efficiencies enabling stringent and highly customized performance SLAs to be addressed affordably, bringing new value to operators, enterprises, and end-users alike. A hallmark of the Nokia Bell Labs 5G Certification Program is its creative use of case studies to emphasize and demonstrate key learning points. 5G Network Slicing follows this formula using real-life examples of Network Slicing knowledge and application. As an emerging technology with many advantages, this course illustrates how orchestration provides end-to-end services and how automation helps to rapidly scale network

slicing deployments. The Nokia Bell Labs 5G Network Slicing course, as well as the complete program, is available for individual learners, industry players and service providers who need to develop the capabilities to make strong business and technology planning decisions that are enabled by 5G. The program is also appropriate for anyone interested in going beyond foundational 5G knowledge and skills to make the most of 5G's capabilities today and in the future. Peter Vetter, President Bell Labs Core Research, said: "5G network slicing opens up countless opportunities for our customers by enabling them to configure their networks to support requirements for their specific use cases and services. The 5G Network Slicing course showcases how operators and enterprises alike can benefit from 5G capabilities in an innovative and cost-efficient manner." Sergio Fasce, VP of People Services, said: "We are happy to launch this 5G Network Slicing Certification as the final component of our Nokia Bell Labs 5G Certification Program. Our complete offering provides a holistic view of 5G and reality-based use cases for a wide range of industries. From basic to expert, our full certification program has something for everyone with an interest in this game-changing technology."

PCCW Global

Viu Strengthens Its Position as One Of the Top OTT Streaming Platforms in Greater Southeast Asia After a Strong Performance

Viu, PCCW's leading pan-regional OTT video streaming service, announced that the platform saw significant growth in monetization in 2021, adding strong financial performance to its position as one of the top OTT streaming platforms in Greater Southeast Asia (GSEA), the Middle East and South Africa. According to parent company PCCW's annual financial results announcement, Viu was reported to have an overall increase in revenue of 37% year-on-year (yoy) in 2021 and have consistently delivered high growth revenue at 36% CAGR since 2018. GSEA as a region has been consistently outpacing the overall GSEA OTT market growth rate for the past two years, at 43% yoy growth in revenue* against industry market growth of 35%** for 2021. With a strong content lineup and strengthened commercial partnerships including distribution, Viu saw a growth of approximately 30% in Monthly Active Users (MAU) as compared to 2020, reaching 58.6 million. Viu also enjoyed a total of 8.4 million paid subscribers as at the end of 2021, an

increase of 58% from a year ago when paid subscribers stood at 5.3 million. Large markets such as Thailand and Indonesia saw strong growth, with the Philippines and South Africa having high growth. Ms. Janice Lee, Chief Executive Officer, Viu & Managing Director, PCCW Media Group, said, "The strong performance in 2021 is a validation of Viu's freemium model, despite an increasingly competitive landscape. We continue to pave the way in marrying the subscription video on demand (SVOD) model with the advertising video on

demand (AVOD) model, allowing us to tap into the rapid growth in both sectors. We identified a content strategy and consumer proposition that is appealing to a wide and growing audience of pan-regional Asian entertainment which includes Korean, Japanese and Chinese content to complement an increased investment into Viu Original productions. 2022 will see over 30 titles produced in Thailand, Indonesia, Malaysia, the Philippines, and the Middle East, with pan-regional distribution in all our markets."



Now TV Extends Exclusive Premier League Broadcast Rights to 2024/25 Seasons

Now TV, the media entertainment arm of HKT, has secured the exclusive broadcast rights for Premier League on pay TV for the seasons 2022/23 to 2024/25 in Hong Kong, making it the city's Premier League broadcaster for 12 consecutive years. Now TV will continue to deliver live coverage of all 380 matches for every season, with selected matches in 4K quality to bring viewers exciting live action and the best viewing experience. The recently introduced new features such as Premier League Multi-Angle* and Watch Party are set to further enhance viewers' enjoyment. Now TV customers can also enjoy matches on the go via the Now Player app or relive their favorite matches using Now TV's Video-on-Demand service. Now E

subscribers will be able to catch Premier League matches live and on demand for the next three seasons. Now TV understands that customers prefer a variety of sports action. Starting from March 1, Now TV customers can also watch MotoGP World Championship, Wimbledon and The US Open Tennis Championships, The Open Championships, BWF World Tour, World Table Tennis, Korean Baseball League, PSA Squash, etc. via the newly launched SPOTV channels (Ch.670 & Ch.671). SPOTV is a leading international sports pay TV network in Asia featuring premium live sports action. Together with the recently secured sports content such as Formula One, Ultimate Fighting Championship, Australian Open and Roland-Garros, UEFA

Champions League and UEFA Europa League, Now TV offers the strongest sports content lineup for Hong Kong. Mr. Derek Choi, Head of Pay TV, HKT, said, "We are excited to extend our long-standing partnership with Premier League for the coming three seasons exclusively in Hong Kong. Being Hong Kong's Home of Sports, the continued broadcast of the Premier League and the addition of SPOTV reaffirm our commitment to bring the best global sports content to the city." Mr. Choi added, "Now TV is Hong Kong's first broadcaster to offer Premier League matches in 4K. Add to that our comprehensive coverage and innovative features, we are confident that we can provide the best-ever Premier League experience to Hong Kong viewers."



SpeedChecker Releases Report on Africa's Mobile Network Champions

SpeedChecker, the mobile crowdsourcing company released a new report on the performance of mobile networks in the African continent during 2021. The Africa's Mobile Network Champions report is part of an ongoing commitment from SpeedChecker to benchmark true user experience. The SpeedChecker report has been compiled using data from over 3 million speed test samples and over 700 million coverage samples from over 50 countries between January 2021 and January 2022. The report identifies the best-performing operators in each country in terms of both speed and coverage. Each country is represented by their best (champion) operator in each of the two categories and the results are presented in league tables. The results of this report make for some interesting reading. For instance, there are only 4 countries that have champions in both coverage and speed (Mauritius, Morocco, South Africa and Tunisia). Read the report to identify which operators are the champions for these countries. It may not come as a surprise to find South Africa second for speed but can you guess who beat them to first place with average speeds of 23.57 Mb/s and where they stand in the coverage table?

FASTEST MOBILE CHAMPIONS

Rank	Country	Average Country Download speed (Mb/s)	Mobile Network Champion	# Samples
1	Morocco	23.57	Maroc Telecom	147,819
2	South Africa	19.20	MTN	62,294
3	Tunisia	18.19	Tunisie Telecom	59,133
4	Mali	15.76	Orange	55,509
5	Malawi	13.71	TNM	36,443
6	Botswana	13.56	Orange	19,537
7	Namibia	13.35	MTC	49,990
8	Madagascar	13.24	Telma	18,300
9	Liberia	13.08	Orange	46,891
10	Mauritius	12.80	Mauritius Telecom	66,452
11	Cape Verde	11.89	CV Móvel	27,374
12	Sierra Leone	11.87	Orange	78,339
13	Chad	11.86	Moov	38,730
14	Gabon	11.70	Moov Gabon Telecom	30,420
15	Congo	11.67	MTN	30,426
16	Nigeria	11.55	Airtel	69,393
17	Kenya	10.66	Safaricom	137,495
18	Mozambique	9.67	Vodacom	63,979
19	Senegal	9.56	Orange	57,011
20	Angola	9.52	Unitel	119,175



Syniverse Enables Vodafone Oman's 5G Mobile Roaming Services

Syniverse announced it is working with Vodafone Oman to enable 5G roaming services in the Sultanate of Oman. Vodafone is one of the world's largest telecommunications companies and has partner operations with mobile networks in 41 countries. Syniverse is a premier global technology provider of mission-critical mobile platforms for carriers and enterprises. Vodafone Oman will benefit from Syniverse's Clearing and Settlement solution to drive efficiencies by using a robust set of cloud applications designed to automate and optimize all workflows needed by Vodafone Oman to address its 5G roaming business. Vodafone Oman will also benefit from Syniverse's Roaming Fraud Protection and Syniverse's Universal

Commerce for BCE solutions to monetize wholesale roaming traffic using the GSMA's Billing and Charging Evolution (BCE) industry standard. Universal Commerce for BCE is an industry-leading blockchain based solution which enables new 5G enabled monetization models such as network slicing, and monetization of new 5G enabled use cases such as the internet of Things (IoT). Universal Commerce for BCE also permits reports between Vodafone Oman and mobile operators to be exchanged upon previously agreed bilateral agreements for use in support of wholesale invoicing and settlement. By implementing these new methods for monetizing wholesale roaming, Syniverse allows for more accurate and efficient

reconciliation of network usage between Vodafone Oman and its roaming partners. In August 2021, Syniverse announced its plan to go public through a merger agreement with M3-Brigade Acquisition II Corp. (NYSE: MBAC). On January 10, 2022, Syniverse and MBAC announced that MBAC's special meeting of shareholders to approve the merger is scheduled to be held on February 9, 2022. On January 7, 2022, MBAC commenced mailing of its definitive proxy statement to its shareholders of record as of January 6, 2022. Upon closing of the transaction, the renamed Syniverse Technologies Corporation will be listed on the New York Stock Exchange under the ticker "SYNV."



Tech Mahindra Collaborates with ASKA to Create the Best Drive-and-Fly Experience

Tech Mahindra, a leading provider of digital transformation, consulting and business re-engineering services, announced that it has collaborated with ASKA, a drive and fly company that offers consumers a new generation commuter vehicle by combining the convenience of an automobile, with the safety, ease and efficiency of VTOL (Vertical Take-off And Landing) and STOL (Short Take Off and Landing) flight, to create the best drive-and-fly experience. The collaboration aims to solve the worldwide problem of traffic congestion and improve people's quality of life with the world's first viable drive & fly eVTOL (Electric drive & fly Vertical Take-off and Landing). This collaboration will leverage Tech Mahindra's extensive expertise in the engineering space that comes with decades of experience of working with top aerospace and automotive customers. Further, through this engagement, Tech Mahindra will support ASKA in the areas of design, analysis, development of

composites and advanced materials, crash dynamics (automotive and aerospace), battery and structural testing. Guy Kaplinsky, Co-founder and CEO of ASKA, said, "We are confident that our engagement with Tech Mahindra will boost ASKA's development, testing and certification process to meet ASKA™'s commercialization target for 2026. Tech Mahindra's aim to deliver tomorrow's experiences today, solidly supports our mission to solve the worldwide problem of traffic congestion and improve people's quality of life." ASKATM is a 4-seater electric flying vehicle that can drive like a car and take off vertically to fly efficiently like an aircraft with a maximum flight range of 250 miles on a single charge. It is also equipped with a range extender engine that charges the batteries during flight. The collaboration will accelerate the eVTOL's development, testing and certification and thereby escalate its commercialization by 2026, making it

scalable to solve the problem of traffic congestion. Lakshmanan Chidambaram, President – Enterprise Americas, Tech Mahindra, said, "The development of drive-and-fly vehicles is an emerging area of innovation globally, which can play a great role in creating best travel experience with minimal infrastructure investment and low environmental impacts. We look forward to creating synergies with ASKATM by working on the engineering design and analysis of fly and drive eVTOL, and thereby delivering tomorrow's experience today, which forms the core objective of our NXT.NOWTM strategy." As part of the NXT.NOWTM framework, Tech Mahindra aims to enhance human centric experiences for businesses. This means focusing on investing in emerging technologies and solutions that enable digital transformation to better meet the evolving needs of its customers through our DigitALL framework

Tech Mahindra Emerges as the Only Indian Company in the Forbes' Blockchain 50 List

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services & solutions, today announced that it has been included in the Forbes Blockchain 50 list, a highly-respected global listing of pioneering companies, startups, and influencers in the distributed ledgers space, for the second consecutive year. Tech Mahindra is the only Indian company out of the 50 companies that has been included in the list. Tech Mahindra has been recognized for developing more than 60 blockchain-based products spanning telecom, media and entertainment, manufacturing, retail, and energy. Its work around blockchain-based unit-level traceability solution for global vaccine supply, 'VaccineLedger' was specifically highlighted. The solution helps in predicting and preventing failures in supply chains, including problems related to wastage through expired vaccines, stock-outs, and counterfeiting. Rajesh



Dhuddu, VP & Practice Leader, Blockchain & Cybersecurity, Tech Mahindra, said, "The COVID-19 pandemic accelerated the adoption of emerging technologies and Blockchain has emerged as one of the key technologies that is best equipped to significantly improve the efficiency of any

supply chain operations, facilitate real-time view of all transactions, and eliminate the 'trust gap' amongst all the emerging technologies. At Tech Mahindra, we are at the forefront of leveraging Blockchain-based solutions and are pioneers in leveraging NFTs and Digital Identities to

solve tough business problems and create a nuanced experience for end-users. This recognition by Forbes is a testimony to our continued focus on developing blockchain-based solutions to meet evolving customer needs." Blockchain continues to grow as a major pillar in Tech Mahindra's digital transformation portfolio and is increasingly

becoming a part of the company's wide range of business verticals. As part of NXT.NOWTM 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 provides a holistic framework called 'Block Ecosystem' comprised of various levers: Block Studio, Block Engage, Block Talk, Block Geeks, Block Accelerate, Block Access & Block Value, which can be used to create industry-leading applications that unlock significant value for clients.

Tech Mahindra Partners with Yellow.ai to Transform Enterprise Customer Experiences with Conversational AI

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services & solutions, announced a collaboration with Yellow.ai, the world's leading next-gen total experience (TX) automation platform to transform enterprise customer experiences with conversational Artificial Intelligence (AI). The partnership is aimed at redefining the way enterprises connect with customers, employees, and vendors. As part of the partnership, Tech Mahindra and Yellow.ai will work towards developing next-gen conversational-AI solutions to elevate omnichannel capabilities such as Enterprise Resource Planning (ERP), Human Resources Management System

(HRMS), Supply Chain Management (SCM), and Customer Relationship Management (CRM). These implementations will help reduce costs, optimize resources, improve response time, and provide intelligent insights to enterprises across the globe, serving key industry verticals such as telecommunications, media & entertainment, energy & utilities, automotive, healthcare, retail, and manufacturing. Birendra Sen, Head, Business Process Services, Tech Mahindra, said, "As organizations across the globe are shifting from transactional to conversational business model, we believe that conversational CX and EX solutions will revolutionize the way they do business.

Our partnership with Yellow.ai is aimed at driving digital transformations in the CX and EX space. Together, we aim to redefine the way enterprises connect with their customers and employees by personalizing their interactions." This partnership will enable enterprises to provide personalized experiences to customers and employees. The joint offering will support a diverse set of solutions across a variety of platforms including, conversational chatbots and voicebots for live chat, email support, and ticket management. These features will support conversational campaigns & surveys, provide analytical insights, and enable customer experience automation & full-stack experience automation for IT, HR, and P2P. Raghu Ravinutala, CEO and Co-Founder, Yellow.ai, said, "We are breaking new ground with Tech Mahindra to give enterprise customers a competitive advantage with greater efficiencies across business processes. With our joint offerings, we aim to redefine how enterprises connect with their customers, employees and vendors. Combining a conversational layer built on our rich NLP engine with Tech Mahindra's deep expertise in optimizing day-to-day business activities, our objective is to transform the future of work across a broad set of industries." Tech Mahindra believes in DigitALL philosophy for comprehensive Business Transformation. Digital technologies catalyze the transformations – they humanize businesses by helping them think, sense, connect, communicate, secure, and act better than before. As part of NXT.NOWTM 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.

yellow.ai **Tech Mahindra**

 PRESS RELEASE

Tech Mahindra partners with Yellow.ai to transform **Enterprise Customer Experiences with Conversational AI**



Telecom Egypt and GRID Telecom Sign a Strategic MoU to Connect Egypt and Greece

Telecom Egypt, Egypt's first integrated telecom operator and one of the largest subsea cables operators in the region, and GRID Telecom, subsidiary of the Independent Power Transmission Operator (IPTO) in Greece, signed a strategic Memorandum of Understanding (MoU) to connect Greece and Egypt using submarine cable infrastructure. The MoU was signed at IPTO's headquarters in Athens by the Managing Director and CEO of Telecom Egypt, Mr. Adel Hamed and the Chairman and CEO of IPTO, Mr. Manos Manousakis. Present during the signing ceremony were Egypt's Minister of Telecommunications and Information Technology, Dr. Amr Talaat, Greece's Minister of Digital Governance, Mr. Kyriakos Pierrakakis, and the Chargé d' Affaires of the Embassy of Egypt in Athens, Mr. Mohamed Elghazawy. The strategic agreement sets the ground for the exploration of different connectivity options between Greece and Egypt, as well as the optimal utilization of Telecom Egypt's and Grid Telecom's state-of-the-art networks and international reach, through their existing and future optical interconnectivity to neighboring countries. Bilateral talks between the Ministers and high-ranking government officials of the two countries also took place during the signing ceremony, covering a number of topics, namely Artificial Intelligence, Innovation, and Entrepreneurship. With a domestic fiber optic network currently exceeding 4,000 km, Grid Telecom, IPTO's vehicle in the telecommunications market, is already offering diverse fiber connectivity between the island of Crete and the Greek mainland, in addition to its network infrastructure in Italy, the Balkans, and Central Europe, leveraging its position as a major, carrier-neutral hub in Europe. Telecom Egypt's international network extends to over 140 landing points in more than 60 countries across the globe. The company has invested extensively in its submarine cable infrastructure, which is the shortest and most reliable crossing path between Africa, Asia and Europe, making Telecom Egypt the partner-of-choice for many international telecom



players over the years. Additionally, Telecom Egypt is working on multiple layers of its infrastructure diversity, such as establishing new submarine landing stations and crossing routes as well as investing in new systems and solutions that will cater for the rising global demand for international capacities. The Minister of Communications and Information Technology of Egypt, Dr. Amr Talaat, stated: "Egypt and Greece have deep rooted economic, political, and cultural ties, which have united the two countries for over thousands of years given that they are among the oldest civilizations known to humanity. The MoU signed between the two companies will contribute to strengthening bilateral cooperation in the field of communications and information technology by maximizing data traffic that crosses the Mediterranean Sea, through Egypt and Greece. This will lead to future discussions about accelerating the construction of submarine cables between the two countries, which will facilitate the massive flow of data worldwide, which continues to increase exponentially. Egypt's distinct geographic location makes it a regional data hub, as it transfers traffic to Asia, Africa, and Europe through more than 13 submarine cables, which are scheduled to increase to 18 cables within three years. There are also plans in place to complete HARP, the submarine system that will be circling the African continent by 2023." The Minister of Digital Governance of Greece, Mr. Kyriakos Pierrakakis,

stated: "Today, we welcome the signing of the Memorandum of Understanding pertaining to interconnecting Greece and Egypt via submarine cable infrastructure. Exploring the possibility to deep dive into underwater connectivity, we trust this infrastructure that provides high quality, high volume of content and fast services. This is an important agreement between Grid Telecom and Telecom Egypt as the cables' route enables connecting points of presence in our countries and across continents, and secures the exponential growth of our respective digital markets." The Chairman and CEO of IPTO, Mr. Manos Manousakis, stated: "IPTO, building upon its ongoing collaboration with Egypt in the Energy sector, enters into a constructive partnership with Telecom Egypt that lays strong foundations for new international connectivity projects in the growing field of telecommunications between the two countries. IPTO's agreement to work with one of the world's leading subsea cables operators further advances our international growth strategy and can actively contribute to Greece's emergence as a key telecommunication hub in the broader Mediterranean region." The Managing Director and CEO of Telecom Egypt, Mr. Adel Hamed, commented: "We are pleased to work with Grid Telecom, as this collaboration reinforces our strategy to further expand our international infrastructure and increase the geo-diversity of our assets. With Grid Telecom as an important strategic partner, we will

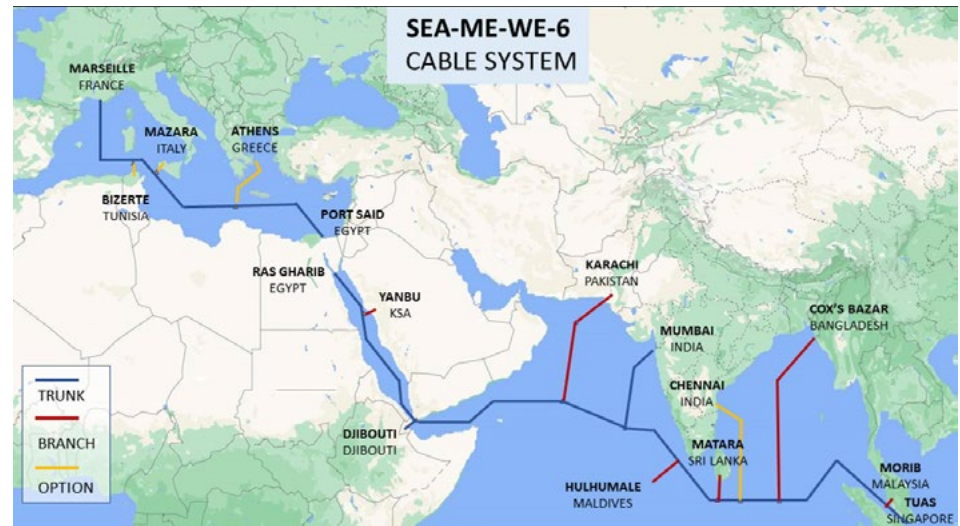
be able to expand our reach to Europe via Grid Telecom's extensive network in and beyond Greece." The Director of Grid Telecom, Mr. Georgios Psyrris, said: "Grid Telecom, in its only three years of

presence, has achieved major domestic and international business partnerships and is already recognized as a key provider in the wholesale telecommunications market. With this MoU, Telecom Egypt

becomes an important partner and strong ally for our regional expansion and highlights the strong market confidence to our Company's further growth prospects".

Telecom Egypt Extends Its Network Reach Through SEA-ME-WE 6 Cable and Provides It a Unique Crossing Route Over Its Distinctive Infrastructure

Telecom Egypt, Egypt's first integrated telecom operator and one of the largest subsea cables operators in the region, announced that it is extending its reach through the Southeast Asia-Middle East-Western Europe 6 (SEA-ME-WE 6) subsea cable, as part of the cable's consortium. The new cable will cross Egypt over the company's distinctive infrastructure through trans-Egypt's new geo diversified crossings and landing points from the other cables in the SEA-ME-WE family. With the rising demand for connectivity coupled with the dynamic digital transformations that are triggering higher levels of data transfers from Asia to Europe, SEA-ME-WE 6 provides an additional layer of diversity and resilience for the high traffic density route between Asia and Europe, strengthening the overall network of each consortium partner. The added flexibility means service providers in the consortium



can rapidly scale capacity, protect traffic from faults, and lower total cost of network ownership. The system is expected to be completed by the first quarter of 2025. The construction has commenced on a

19,200 km-long submarine cable system connecting multiple countries between Singapore and France. The SEA-ME-WE



YahClick, the satellite broadband service of UAE-based global satellite operator Yahsat, is teaming up with an off-grid power company Clear Blue Technologies to expand its services of offering high-speed connectivity in Africa. "As a global Tier 1 satellite service provider, YahClick continues to strengthen its presence as a market leader in bringing connectivity across Africa. Initial installations under this partnership will begin in early 2022 for sites in Nigeria and Zambia, with an estimated target of close to 1,000 sites to be installed over the next 12 to 24 months,"

YahClick to Expand Its Africa Network with Clear Blue

said a press release from the satellite telecom operator. Our partnership with Clear Blue delivers clean off-grid power to enable our proven, high speed, reliable, and affordable broadband connectivity for Africa's leading network providers of choice," said Farhad Khan, CEO of YahClick. Miriam Tuerk, Co-founder & CEO of Clear Blue, noted, "YahClick is a leader in broadband and satellite services across Africa. We are thrilled to be their partner as they roll out their customer networks across Africa. And this is only the beginning of Clear Blue's role in

bringing wireless power management solutions to unserved and underserved populations." With well over a billion people unconnected in Africa, the economic need to provide telecommunication services to underserved populations remains a key driver across the continent. Mordor Intelligence indicates that to meet the growing telecom demand for services globally, over US\$4.47 billion in spending on powering telecom tower rollouts will occur in 2022, growing to US\$5.25 billion in 2025, a 3.25% CAGR.

Satellite Operator Yahsat Wins US\$248 Million UAE Contract

Abu Dhabi's Yahsat Government Solutions has secured a 909.5 million dirhams (\$247.5 million) mandate to provide enhanced services to the UAE Government for its satellite communications capabilities. Yahsat Government Solutions is satellite operator Al Yah Satellite Communications Company's (Yahsat) dedicated government arm. The mandate also adds to Yahsat Group's contracted future revenues which now stand at approximately 8.4 billion dirhams (2.3 billion). "The agreement augments the previous operations and maintenance services provided, to include technology management support, from January 2022 until the end of 2026," Yahsat said on Monday in a bourse filing to Abu Dhabi Securities Exchange (ADX), where its shares trade. Earlier this month, Yahsat Government Solutions secured a 24 million dirhams contract from Abu Dhabi Ship Building to provide advanced and secure satellite communication services. Yahsat is partly owned by Abu Dhabi state investor Mubadala and has plans to launch a new satellite in 2023 to provide advanced data services to its clients by 2024.



Zain Bahrain Enhances 5G Network in East Hidd

Zain Bahrain has announced the permanent deployment of 5G network enhancements in the newly developed areas of East Hidd. The operator noted residents can now 'enjoy reliable, fast, and uninterrupted internet access and mobile services' as a result of the upgrade, which is part of a wider plan to deploy enhancements at new sites across the

Kingdom and ensure reliable 5G and 4G services for all customers. Commenting on the network expansion, Zain Bahrain's Director of Technology, Ali Isa Alyaham, said: 'Zain Bahrain is constantly investing in its 5G and 4G infrastructure to ensure it has the most advanced network with the widest and most reliable coverage ... With the new enhancement, East Hidd

residents now have access to the latest and most advanced wireless technology the world has to offer. This is in line with our commitment to provide the best experience and support in the Kingdom, to help it achieve its digital transformation goals and better serve citizens and residents.'

Zain Saudi Launches 5G Standalone Network

Zain Saudi Arabia has announced the rollout of what it claims is the Kingdom's first 5G Standalone (SA) network, providing its users with technologies like network slicing over the infrastructure. Zain's 5G network currently covers 51 cities across the Kingdom via more than 5,000 towers. Zain KSA's CEO Sultan bin Abdulaziz Al-Degaither stated: 'Deploying

the 5G Standalone technology comes within our role of employing innovation to serve the digital future aspirations and equip our subscribers, whether individuals or in the business sector, with the latest technologies and digital innovations that would enhance their experience and support them to develop their businesses in faster, more efficient and reliable ways.

By applying this technology across our network throughout the Kingdom, we will take the digital experience to a whole new level. We will deliver a fully integrated digital ecosystem which will drive us along our journey to becoming the leading provider of digital services and achieving added value to our national economy and the quality of life in the Kingdom.'

Zain Saudi Arabia Nears Deal For \$800M Tower Sale

Zain Saudi Arabia came closer to completing a sale of its 8,069 mobile towers to local investors in a deal worth SAR3 billion (\$800 million), ending a somewhat protracted process to cash in passive assets to help fund network and technology upgrades. The operator accepted offers in 2021 from Saudi Arabia's sovereign wealth fund and two other investors to sell stakes totaling 80 per cent of its towers. Zain stated its board had now approved the final offers from the trio, although it noted they are still subject to regulatory approval. As previously announced, the Public Investment Fund (PIF) is acquiring a 60 per cent stake in

the Saudi towers unit, while Prince Saud Bin Fahad and Sultan Holding Company are each taking 10 per cent stakes. Zain will retain a 20 per cent stake for now, but explained PIF's final offer includes a call option on the remaining stake. The operator is 37 per cent-owned by Kuwait-based Zain Group and has reportedly been exploring the sale of its towers since January 2015. Zain's Saudi unit had agreed a sale-and-leaseback deal for the towers with IHS Holding in 2018, but cancelled after the company failed to satisfy all regulatory requirements. In 2017, Zain was reportedly close to reaching an agreement to sell around 7,500 towers to Lebanon-

based TASC Towers for \$500 million, but the deal never materialized. Bader Al Kharafi, Zain Group CEO and vice chairman of Zain KSA (pictured), stated previously the company wanted to unlock value from its fixed infrastructure, "which can be more efficiently deployed in new technologies and higher yielding investments". The group has also agreed deals involving 2,607 towers in Jordan to UAE-based infrastructure company TASC Towers in an \$88 million deal, and in late 2021 began due diligence on a \$1.3 billion offer for its mobile and ICT managed services businesses in Sudan from a subsidiary of local conglomerate Dal Group.

Nokia Partners with Zain KSA to Expand and Enhance Its Digital Infrastructure

Nokia announced that it has signed an agreement with Zain KSA to expand the operator's digital infrastructure and enhance its network capabilities covering all regions of the Kingdom. The agreement was signed during the LEAP global technology event in Riyadh and organized by the Saudi Ministry of Communications and Information Technology (MCIT). The agreement will contribute to enhancing Zain KSA's network coverage while empowering its customers by providing advanced digital services with high-bandwidth and low-latency technologies for the best broadband and communications experience. This agreement is in line with Zain KSA's initiatives to position the Saudi telecom sector on a global scale and transform it into a major enabler to achieve the objectives of the Saudi Vision 2030 such as comprehensive digital transformation, transfer and localization of knowledge and technology and improving the quality of life. The agreement covers a range of Nokia solutions, including AirScale Radio, Wavence Microwave, NetAct and EdenNet Self-Organizing Networks (SON), to improve coverage and network performance. Nokia is applying carrier aggregation and massive Multiple Input Multiple Output (mMIMO) technology approaches to help Zain KSA enhance network capacity while continuing to support better end user



experience. Eng. Abdulrahman bin Hamad Al-Mufadda, Chief Technology Officer at Zain KSA, said: "Innovation, empowerment and localization are the driving force behind our introduction of next generation technologies. We recognize the importance of strategic partnerships with major global companies such as Nokia. Through this partnership announced at LEAP, we will collaborate with Nokia to further develop technologies, use cases and multiple applications that will further contribute to the enhancement of the services our network provides. This will open up new horizons for the future of technology which will be based on cloud computing services, AI services, Internet of Things (IoT) technologies, smart cities, fintech

and others." Eng. Mohammed Al-Keridy, Head of Zain KSA Customer Team at Nokia, said: "We are proud of our long-term relationship with Zain KSA and pleased to be part of its journey to support the Kingdom's transition to a comprehensive digital transformation for socio-economic development by empowering individuals, businesses and government agencies with Nokia's latest, most reliable innovative technologies and products. We are confident that our solutions will help Zain KSA provide differentiated services and the best possible experience for its customers, strengthening the company's presence in the country."

Zain KSA Signs Agreement with Huawei to Develop and Expand Its Digital Services Infrastructure

Zain KSA, a leading telecommunications provider in Saudi Arabia, signed an agreement with its global partner Huawei to expand and develop its cloud and digital services infrastructure. The announcement was made on the sidelines of the global future technologies event LEAP 2022. Zain KSA participated in line with its strategy to support the efforts and initiatives of the Ministry of Communications and Information Technology (MCIT), overseeing and organizing the landmark event. Being a key player in the Saudi telecom market, the cooperation with Huawei comes as part of Zain KSA's efforts to strengthen its leadership as one of the largest 5G providers in the Kingdom and invest in industry digitization. In this regard, Zain KSA's CTO Eng. Abdulrahman bin Hamad AlMufadda, stated: "Our journey in driving forward digital transformation in the Kingdom has been enabled by pairing investments in innovative technology with pioneering digital products and services. Today, Zain KSA plays a pivotal role in empowering a digital society and in pursuing the transition towards a digital economy, supporting the strategy of MCIT towards accelerating nationwide digital transformation. We will continue to focus on digital infrastructure investments, backed by our partnerships with global tech leaders, including Huawei, to achieve our objectives in promoting economic

growth and sustainable development, in line with Saudi Vision 2030." Zain KSA continues to enhance its wireless network, the foundation of its 5G target network infrastructure and the first phase of its 5G non-standalone network. Following will be the transition to the 5G standalone phase, which will boost the ultra-reliable low latency communications (URLLC) application development and support the massive requirements of Machine Type Communications (mMTC), to enable a new range of vertical services for industry digitalization. Zain KSA already offers a full suite of 5G-based solutions including Zain Drones and Zain Cloud, as well as a range of other services catering to individual and

business users. Zain KSA was recognized as having the best 5G in Riyadh and the fastest in downloading and uploading files by umlaut. Zain KSA also ranks first in 5G coverage and speed in Riyadh according to the Communications and Information Technology Commission (CITC) report. Also, Zain KSA earned the "Ookla Speedtest" 'Fastest Fixed Network' Award three consecutive times. Recently, Zain KSA won the "Best 5G User Growth" award at the Telecom Review Leaders' 2021 summit, cementing its position in building 5G networks, deepening innovative experiences, and developing 5G use cases and deploying them across the Kingdom.



Together we evolve

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ARTICLE

Global Connectivity Essential During and After the Pandemic



The COVID-19 pandemic has accelerated digital transformation for companies and organizations in the Middle East and Africa (MEA). China Mobile International (CMI) is expanding its network infrastructure to connect MEA and the world, promoting global connectivity and helping shape a better digital future.

Reliable global connectivity positions companies and organizations to transform and better support their business functions within the MEA region and across their other global locations. At the same time, the COVID-19 crisis has changed the way companies do business and touched every aspect of daily life. Global connectivity has become more essential than ever, enabling remote working, distance learning and telehealth, and facilitating personal communication and entertainment services.

In MEA, demand for digital services is accelerating across all sectors of the economy. Pandemic-related changes and MEA companies' ambition to attract foreign investment are combining to put further focus on digital transformation, driving high demand for cloud solutions and collaboration applications.

Gartner is predicting that over 95% of new digital workloads will be deployed on cloud-native platforms by 2025, up from 30% in 2021, and that remote employees will make up a sizeable portion of the global workforce. More than 30% of workers worldwide are expected to be working remotely at least part of the time this year.

With MEA markets experiencing similar trends, the global ICT community is supporting increased connectivity by boosting the region's digital infrastructure.

Connecting MEA to Asia and beyond

At the forefront of this push in MEA is CMI, the China Mobile subsidiary responsible for international business. CMI continues to invest and innovate to bring high-quality communications services and solutions to MEA to create a more connected world.

"We are committed to a digital future where telecommunications is a bridge that increases economic competitiveness and promotes better quality of life for people in urban and rural communities across the globe. That's why we are here," Colin Wang, Managing Director of CMI MEA Region said.

2Africa is a key part of this future vision. The longest subsea cable in the world, 2Africa will be over 45,000 kilometers in length once completed in 2023/2024, connecting 33 countries across three continents: Africa, Europe and Asia. As a partner in the 2Africa consortium, CMI is helping bring seamless international connectivity and new opportunities directly to 3 billion people, representing 36% of the global population.

With MEA increasingly looking beyond the pandemic, 2Africa creates unique connectivity to enrich the region's links with the world. The cable system has 46 landing locations, directly linking the African continent to the Persian Gulf, India and Pakistan, and four key countries in Europe, and onward to Asia. This coverage is important, since businesses and organizations will now have fair and easy access to ample capacity in each landing location, encouraging and supporting

the development of a healthy internet ecosystem to enrich the region.

"As the only operator from Asia investing in 2Africa, our subsea cable resources are vital to connecting Africa to Asia and beyond," Colin said.

"We are committed to a digital future where telecommunications is a bridge that increases economic competitiveness and promotes better quality of life for people in urban and rural communities across the globe. That's why we are here,"

Colin Wang
Managing Director of CMI
MEA Region

CMI has built global ICT infrastructure that spans cables, points of presence (PoPs) and data centers, with a total international transmission bandwidth of more than 105T at the end of 2021, up 18% over 2020. 2Africa will help CMI further connect its 31 PoPs around the Arabian Sea with its local ring in Europe and self-owned data centers in London and Frankfurt. It will also extend connectivity to Asia via its existing subsea cable resources: SEA-ME-WE 5 and AAE-1.

In this way, CMI is creating a transnational ICT superhighway that will help it deliver enhanced capacity and improved service quality to drive intelligent digital transformation around the world.



Helping carriers prepare for a digitalized future

Mobile carriers worldwide are now preparing their post-pandemic recovery path to help corporate customers meet evolving business needs.

Empowering carriers for growth, CMI is a trusted one-stop-shop partner with a comprehensive solution. It delivers reliable, cost-effective and secure global connectivity, with offerings that extend from traditional data services, such as connectivity, Internet Data Center (IDC) and Dedicated Internet Access (DIA), to value-added services such as China-wide content delivery encompassing provisioning, installation, maintenance, billing and customer support.

Bringing smart and efficient 5G connectivity

Demand for 5G roaming is set to soar in MEA as economic recovery gains ground. The commercial roll-out of 5G in Africa commenced earlier this year, and large-scale deployment will be the next step, though challenges remain. Most crucially, the rollout of 5G networks will more than double the energy consumption of base station equipment.

"Many base stations don't have sufficient power supply or battery capacity to

support 5G deployment. Carriers also face increased deployment and operational costs," Colin said.

Overcoming these challenges, CMI's innovative iConnect 5G Power Cabinet is an integrated base station power system with multiple energy input and output capabilities and modular design to support on-demand deployment. It needs less installation space and modification, ensuring fast deployment, and incorporates an energy management and control platform to increase efficiency and reduce maintenance costs.

Enhancing access to cloud technologies

Since its launch in May 2019, CMI's mCloud cloud-network integration platform has helped more than 19,000 enterprises, including MEA-based businesses and multinationals serving MEA, to efficiently deploy and manage innovative cloud and network products worldwide.

Riding on its extensive global network infrastructure, CMI's partnerships with renowned cloud service providers, such as Amazon Web Services, Microsoft Azure, Google Cloud, Alibaba Cloud, Huawei Cloud and Tencent Cloud, help it deliver fast and easy one-stop worldwide cloud-network coverage for mCloud customers. Its multi-cloud platform supports self-service

ordering, rapid automated deployment and visualized Operations and Maintenance. CMI also offers flexible contract periods and supports a variety of payment options and currencies.

Enabling smart homes and more

The smart home market is expected to take off in MEA in the next few years. Helping carriers, service providers, device makers and retail brands prepare for this upswing, CMI has launched RINGA, a smart home development platform. It will support the rapid growth of the smart home market by allowing ecosystem partners to build integrated home automation solutions that connect various Internet of Things (IoT) devices to a single application.

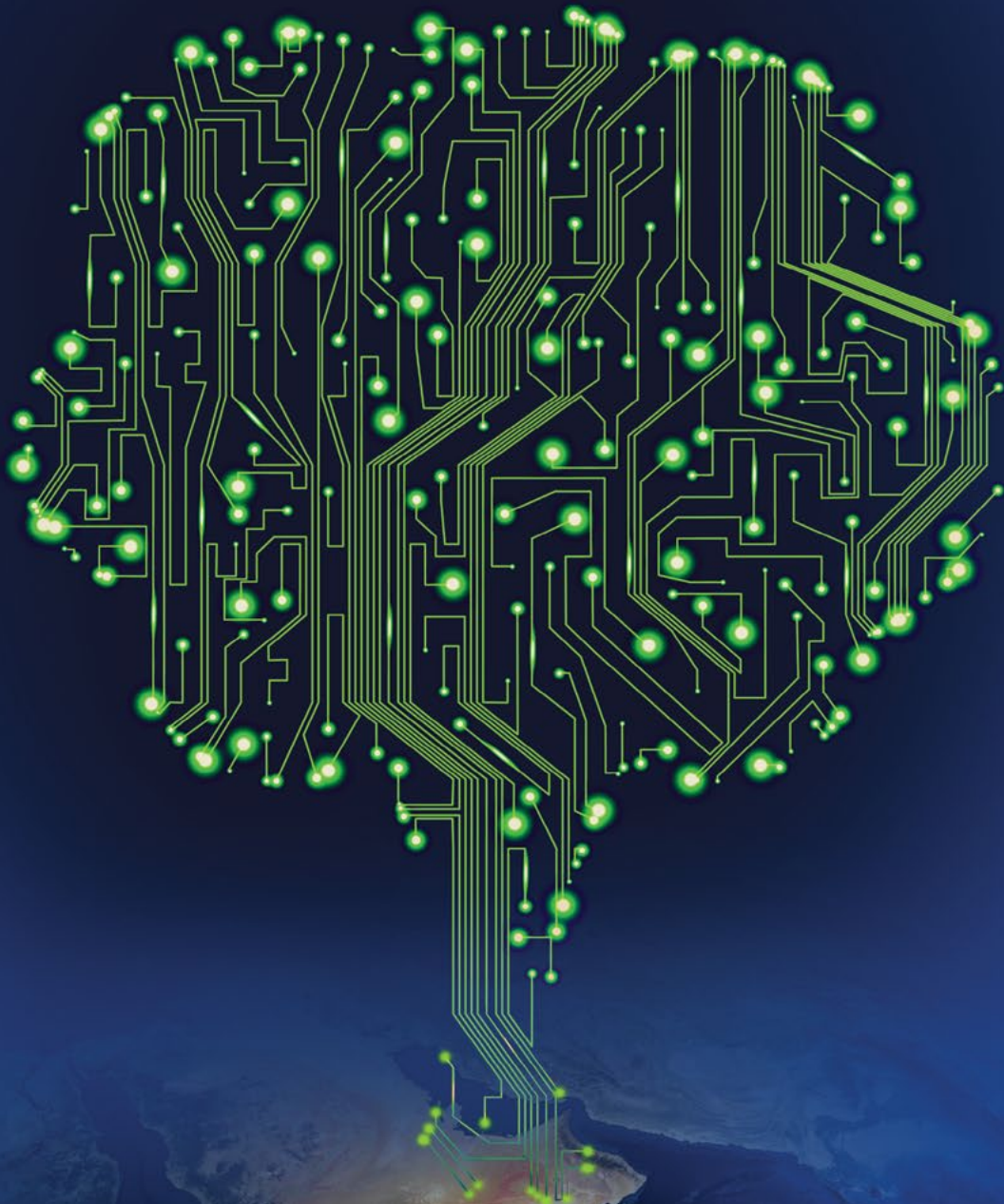
More broadly, carriers and enterprises in MEA will be able to leverage CMI's expanding digital infrastructure and solutions like mCloud and RINGA for seamless, smart and efficient digital connectivity with the world.

Building the right infrastructure, solutions and services to help carriers and enterprises in MEA embrace opportunities in the advancing digital era is vital to CMI's mission to shape a better digital future through innovation, synergy and vitality, connecting MEA and the world. 🌍

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REGIONAL NEWS

UAE Leads the Arab World in Digital Transition

More than 300 senior government officials, Chief Information Officers, IT experts, ICT companies, public policy-makers and suppliers have converged in Dubai to unlock a \$3 trillion open-data opportunity. This happens at a time the UAE is leading the Arab World in digital transformation, having ranked first in the Arab world and 8th globally in the United Nations' Online Service Index (OSI) 2020, according to the UN EDGI Report covering 193 countries. The E-Government Development Index (EGDI) presents the state of E-Government Development of the United Nations Member States. While the country moves towards a data-driven and paperless government, the delegates gathered to take stock on the progress made by the governments of the Middle East in their digital transformation movement at the 2nd Data-Driven Government Conference, taking place from February 15 to 16, 2022, at Movenpick Grand Al Bustan Hotel in Dubai, UAE. "The global market for Big Data is estimated at \$70.5 billion in 2020. It is projected to exceed \$243.4 billion by 2027, Abdul Mobeen Khan, Chairman of the 2nd Data-Driven Government Conference who is also a Strategy Execution, Program Management, ITSM, Cybersecurity and Governance Practitioner and Trainer, UAE. He said governments should now focus on the untapped potential of the data economy. "The opening of the Geographic Information System (GIS), has fueled the growth of the Global Positioning System (GPS) industry that is now represents a market worth over \$128 billion. We are no longer working in silos. If we do not use data analytics properly, things can fall between the cracks," he said. "Government and businesses should ensure strategic alignment based on data. Your strategy should be agile and flexible based on data." Meanwhile, Saudi Arabia is cruising ahead towards a digital government. In 2019, the kingdom launched its ICT Sector Strategy 2023 followed by National Cybersecurity Strategy 2020 and National Strategy for Data and Artificial Intelligence



in 2020. In 2021, Saudi Arabia launched E-Government Regulatory Framework and the development of the Digital Government Authority (DGA). Nabil Aloufi, Vice-Governor of Risks and Business Continuity, Digital Government Authority at Saudi Arabia's Ministry of Communications and Information Technology (MCIT), said: "Saudi Arabia currently offers 6,000 e-Government services, records 3 billion transactions per year, and this is increasing. We have a proper roadmap for the digital government. Saudi Arabia ranked 43 in UN EDGI Report in 2021. "We aim to improve our ranking to 38 this year and become one of the top ten countries in the world by 2030. Our roadmap includes three key communication channels – Government to Citizens, Government to Business and Government to Government agencies – to ensure the data-driven government offers the best experiences for all," Aloufi said. Data-Driven Government makes public administration more effective, transparent, strengthens safety and security, saves public money and weeds out corruption. It helps governments in undertaking the right decision, based on data analytics. The two-day conference takes place when governments of more than 200 countries are shifting their focus on data-driven governance which will determine which government excels in leading their country in future. Data-Driven Government

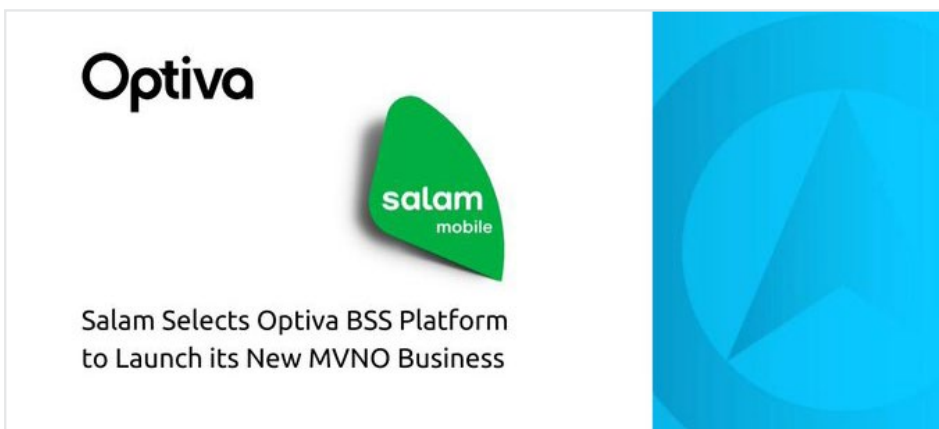
changes the way the government functions. Decisions are backed up by the real-time data analytics that help assess the situation more appropriately. Governments can play a key role as data providers – both in the form of raw data and official statistics – helping to unlock a \$3 trillion open-data opportunity for the private sector and civil society, says McKinsey & Company. A latest report by Gartne, says, worldwide public sector spending on IT and soft infrastructure is set to increase 6.5% from \$523.2 billion in 2021 to \$557 billion next year, as governments worldwide are allocating massive resources to strengthen data-driven government that will help the public sector to ensure smooth service delivery and help smart decision making based on data analytics. Before implementing Data-Driven Government, worldwide governments need make smart phone accessible to all in order to bring the public services at the fingertips of each citizen. The number of smartphone users in the world today has exceeded 6.37 billion, which translates to 80.69% of the world's population owning a smartphone. "Data is the new gold and governance becomes better, more transparent and more effective with data-driven government. The whole world is currently in various stages of digital transformation processes. While some are at the beginning of the process,

others are at an advanced stage of data-driven digital government," Abdul Mobeen Khan, Strategy Execution, Program Management, ITSM, Cybersecurity & Governance Practitioner and Trainer, UAE and Chairman of the 2nd Data-Driven Government Conference, says. "The UAE is one of the most advanced countries to have digitized its public services, while Dubai Government is the first to have become 100% paperless government in the world, which is a huge achievement." The Data-Driven Government will also expand the big data and bring all the citizens' individual data in one server. Race for excellence in effective governance gains momentum and is the focal point of discussions at the 2nd Data-Driven Government Conference. Globally governments are working on the digitization of the public sector, especially key government departments, authorities and regulators, to offer a seamless service delivery across all the channels. While some are at the beginning phase of data-driven government set up, others are migrating to the next-generation solutions. In his opening address at the 2nd Data-Driven Government Conference,

Aloufi says: "Almost all the countries in the Middle East are currently racing against each other to achieve 100% Data-Driven paperless government. However, most countries are lagging behind and needs to catch up fast. These countries need to expand their bandwidth and encourage people to start searching for public services online." The current rapid development of ICT has brought about high performance and increased integration of the computing environment, mobile computing, and hyper-connection. This led to a stratification in data quality and a sharp increase in quantity, according to a report, titled Data-Driven Smart Government by the United Nations. "While in the past, there was mainly 'passive data' that data holders or owners created while passively responding to the request of the data collecting actors, there is now a rise in 'active data,' which data holders volunteer to produce," it said. At the 2nd Data-Driven Government Conference, a distinguished expert panel of speakers will include government decision makers and international industry experts who will discuss the region's vision of data-

driven government and to efficiently implement them to drive the quality of life and support their national socio-economic development. Data-driven government is key to achieve sustainable development and the United Nations Sustainable Development Goals (SDGs) by 2030, while most countries have enhanced E-participation and data-centric approaches and increased the focus in building digital capacities, according to a recent United Nations report on E-Government. The conference, is supported by – The Saudi Ministry of Communications and Information Technology (MCIT), Jordan Ministry of Digital Economy and Entrepreneurship, UAE Ministry of Health and Prevention (MOHAP), Dubai Health Authority (DHA), Emirates Health Services, Sharjah Research Technology and Innovation Park, Saudi Digital Government Authority, Ajman Free Zone, International Association of Artificial Intelligence, Oman National Energy Centre (NEC) and Oman Information Technology Society.

Salam Taps Optiva BSS Platform to Launch New Saudi MVNO



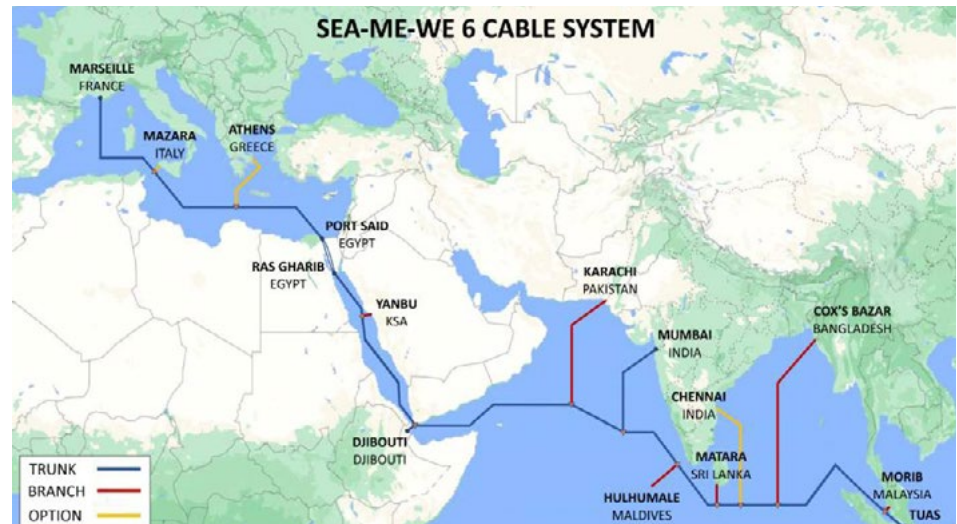
Saudi Arabia's Salam (formerly ITC) has selected Optiva's BSS Platform to enable its new MVNO. Branded as Salam Mobile, the MVNO aims to bring innovative digital services to Saudi Arabia's fast-growing consumer market segment. Through this partnership, Salam Mobile will deploy Optiva cloud-native BSS technology on its state-of-the-art, private cloud infrastructure. Optiva BSS Platform, a best-of-suite, end-to-end, pre-integrated customer and

revenue management solution, allows Salam to quickly and cost-effectively conceptualize and introduce new digital service offerings to customers. The platform provides real-time billing, charging and fulfilment that will differentiate Salam Mobile offerings. "Salam Mobile's line of business will be built upon our strong enterprise customer base. By collaborating with Optiva, we will accelerate our journey into the consumer segment and continue

our expansion into realizing the exciting possibilities of the digital services future," said Abdulmohsin Al-Joyan, Salam Mobile CEO. Optiva BSS Platform equips Salam Mobile with rapid launch capabilities and provides total cost of ownership (TCO) savings by addressing all of its end-to-end MVNO business monetization requirements. The turnkey BSS suite, architected as a cloud-native and designed for private and public cloud deployment, goes beyond traditional billing, allowing for real-time storefront provisioning, monetization and cross-service promotion delivery. These capabilities support Salam in creating a unique offering to grow its customer base with an enhanced, personalized digital experience. "The MVNO segment continues to proliferate worldwide and offers operators the opportunity to create – in a matter of minutes what used to take days – service packages that deliver unique customer experiences," said John Giere, President and CEO of Optiva.

Transworld (TWA) Announces Landing of Another Submarine Cable SEA-ME-WE 6 in Pakistan

Transworld has announced addition of another submarine cable SEA-ME-WE 6 in its portfolio, which will be ready for service by Q1 2025. The Southeast Asia-Middle East-Western Europe 6 is a 19,200 km-long submarine cable system connecting Pakistan with multiple countries between Singapore and France. SEA-ME-WE 6 will offer one of the lowest latencies available between Southeast Asia, Middle East and Western Europe, transferring more than 100 Tbps, the equivalent of 40,000 high-definition videos each second. The SEA-ME-WE 6 consortium includes Trans World Associates, Bangladesh Submarine Cable Company, Bharti Airtel Ltd. (India) Dhiraagu (Maldives), Djibouti Telecom, Mobily (Saudi Arabia), Orange (France), Singtel (Singapore), Sri Lanka Telecom, Telecom Egypt, Telekom Malaysia and Telin (Indonesia). "To meet ever increasing demand of bandwidth and to play a pivotal role in the forthcoming era of 5G, Transworld has joined the SEA-ME-WE 6 consortium, to build the latest state of the art high-capacity submarine cable system. Once commissioned, SEA-ME-



WE 6 coupled with SEA-ME-WE 5 and Transworld's 100% owned private cable TW1 will deliver resilient, robust and redundant network connectivity with more flexibility and improved reliability to our customers. Transworld is poised to maintain its role as operator of the choice in post 5G era" The new cable provides an additional layer of diversity and resilience for the high traffic density route between

Asia and Europe, strengthening the overall network of each consortium partner, through trans-Egypt's new geo-diversified crossings and landing points. The added flexibility means service providers in the consortium can rapidly scale capacity, protect traffic from faults and lower total cost of network ownership.

Jazz Investment Reaches US\$10 Billion in Pakistan

The merger of Mobilink and Warid in 2017 enabled Jazz to become the market leader for the cellular network in Pakistan with the largest user base. In a statement, Jazz said that it has invested more than US\$10 billion since its inception, including US\$ 560 million in the last couple of years alone after its merger especially to improve its Quality of Service. It further said that its top preference is to connect the fellow citizens with high-speed mobile broadband taking the population coverage of its 4G network to 65%. Jazz emphasized to have invested heavily to ensure optimum service experience for its customers, as for Jazz, quality of services is of utmost importance. Jazz's statement also says that its top performance through its infrastructure developments includes the company's 25,000 kilometers of fiber-optic cables around the country.

Additionally, the world's top telecom equipment manufacturers including Huawei, Nokia-Siemens, and ZTE are the primary vendors for networking equipment at Jazz. Furthermore, it has a workforce that is trained, competent, and has vast experience in the telecom industry. Currently, Jazz is the country's number one 4G operator and the largest internet and broadband service provider with 72.5 million+ subscriber base including 34.7 million 4G users and largest spectrum holding. Jazz has been recognized as the fastest mobile network four times in a row by a global leader in internet testing Ookla. In the statement Jazz said that its serves its valued customers with a technically superior network and reliable services. In addition to that, Jazz also strives for the digital progress of the country. In this regard, the company has set up Jazz Digital

Park (JDP) which was established with a staunch investment of over US\$ 8 million. The JDP will help in accelerating Pakistan's digital transformation ambition by greatly improving the existing level of IT services being provided to a number of sectors. Till now, JDP is the country's largest Telecommunications Industry Association (TIA) Tier-III certified data center in terms of space and power capacity. The company will utilize this digital park to provide secure IT infrastructure and hardware hosting facilities to businesses along with the local startups. All of these factors indicate that Jazz doesn't compromise on its quality of services in any regard. Though, minor technical faults occur with every telecom operator and they shouldn't be portrayed as a holistic fault in the quality of services as reported by certain media outlets.

Preparation Underway for Libyan-Tunisian-Algerian Conference on Digital and Economic Transformation

The Head of the Libyan-Tunisian-Algerian conference towards digital and free economic transformation in Africa, Yassin Abu Sreweel, said that the conference aims to promote the culture of the digital economy in light of the African countries' dependence on traditional economic methods. In a press conference at the headquarters of the Investment Promotion and Privatization Affairs Authority in Tripoli, Abu Sreweel added that the conference program aims to hold working sessions between the participating countries to exchange experiences in a way that develops a culture of the digital economy. He pointed out that there is an urgent need at the present time for economic transformation, amid expectations of a decline in global oil prices, with the continued weakness of African countries in managing economies through methods of diversification between the public and private sectors. Meanwhile, the



Chairman of the Preparatory Committee for the Conference, Abdelsamie Amer, confirmed that the conference comes as a continuation of the Mediterranean Conference that was held in November last year. It is noteworthy that the Libyan-Tunisian-Algerian conference towards

digital and free economic transformation in Africa will hold its first session on March 01, in the Tunisian capital, with the support of the Investment Promotion and Privatization Affairs Authority, the Financial Facility Fund and the National Planning Council.

QST Signs Data Center Agreement with Saudi's MCIT

Quantum Switch Tamasuk (QST), a Saudi company specializing in the design, build, financing and operation of data centers, has signed a key business principle agreement with the kingdom's Ministry of Communications and Information Technology (MCIT) to develop and operate new data centers with a total capacity of

300MW by 2026. QST says its data centers will be designed and built to meet the demands of hyperscale cloud service providers, international gaming and media platforms and global content delivery networks, with a view to attracting them to locate their main regional hubs in the kingdom. In addition, the data centers will host government digital infrastructure development initiatives, including the Saudi Internet Exchange Point scheme. They will also be centers for co-location of Saudi Arabian government workloads. It is expected that preferential rates for Saudi Arabian-owned start-ups will benefit from hosting and colocation services at the new sites – further stimulating innovation in the kingdom's digital economy. QST has committed to at least one third of these new roles being filled by Saudi Arabian nationals and will create dedicated training and skills development plans. Local contractors and suppliers will be used for construction wherever possible. The new sites will feature the latest designs to minimize cooling requirements. MCIT will work with QST to develop and secure sources of renewable energy to further enhance sustainability. Both parties are actively evaluating the feasibility of connecting solar PV facilities to the data centers. QST already has significant investments in the Kingdom; two data center campus facilities are already under construction. As we mentioned last week, activity in the data center sector seems to be ramping up in Saudi Arabia, where QST is just one of a number of internal and external investors that have announced big plans.



Subscribers to Telcos in Kuwait Reach 6.51 Million in Jan

The number of subscribers to the services of telecommunications companies in Kuwait reached 6.51 million in the month of January, according to the data of the international Data Portal Corporation, reports Al-Rai daily. According to statistics prepared by the daily in this regard, this represents 8.5 percent of the total of 76.67 million subscribers in the Gulf Cooperation Council (GCC). The statistics also revealed that the number of internet users in Kuwait is 4.3 million, which represents 5.8 percent of the total of 58.8 million users in the Gulf Cooperation Council countries. On the other hand, the percentage of social media users in Kuwait, which is a total of 4.05 million users, constitute about 6.9 percent of the total of 58.89 million users in the six Gulf countries. The number of local phone subscribers decreased by 7.4 percent on an annual basis, constituting about 149.5 percent of the country's population, which grew by 1.3 percent to 4.3 million people. According to Data Portal figures, the number of Internet users grew by 1.3 percent on an annual basis to reach about 4.3 million users, representing 99 percent of the number of residents in the country. The number of active social media users reached 4.05 million subscribers, which represents 93 percent of the population. Kuwait ranks third in the Gulf in terms of phone subscribers out of the total population. The UAE came first at about 169.4 percent with 17 million subscribers (10.04 million people). Qatar ranked second at about 151.8 percent with 4.48 million subscribers (2.96 million people). Kuwait came first in terms of the number of

internet users out of the total population, with 4.3 million users making up 99 percent of the population. The same percentage was recorded in Qatar, Bahrain and the UAE, which it was 97.9 percent in Saudi Arabia, and 95.8 percent in the Sultanate of Oman. Kuwait came third in the Gulf in terms of the proportion of social media users to the total population, reaching 93 percent with 4.05 million subscribers. The UAE came first with 106.1 percent (10.65 million users), and Qatar second with 99.8 percent (2.95 million people). The rate is 87.8 percent for Bahrain, 83.2 percent for the Sultanate of Oman, and 82.3 percent for Saudi Arabia. In Saudi Arabia, the number of telephone subscribers reached 41.03 million people, a growth of 3.3 percent. They constitute 115.3 percent of the Saudi population of 35.59 million people. The number of internet users in Saudi Arabia has reached 34.84 million people, with a growth of 1.5 percent on an annual basis, representing 97.9 percent of the population. The users of social media sites, whose number increased by 5.4 percent to 29.3 million subscribers, constituted 82.3 percent of the total residents in Saudi Arabia. As for the UAE, the number of subscribers to telecommunications companies is about 17 million, constituting 169.4 percent of the population, which grew by one percent to 10.04 million people this January. The number of internet users in the UAE is about 9.94 million users, with a growth of one percent on an annual basis, and constituting 99 percent of the population. The number of subscribers to social networking sites is 10.65 million people,

with a growth of 8.2 percent on an annual basis, and constituting 106.1 percent of the population. As for the Sultanate of Oman, the number of phone subscribers is about 5.87 million, which is down by 0.9 percent compared to January 2020. Their number represents 111.3 percent of the population, which in turn rose by 2.1 percent to 5.27 million people. The number of internet users reached 5.02 million users, with a growth of 2.1 percent on an annual basis, and constituting 95.2 percent of the population. The users of social media sites increased by six percent to 4.39 million users, constituting 83.2 percent of the residents in Oman. The number of Qatar's subscribers to telecommunications companies is about 4.48 million, which is a decrease by 2 percent on an annual basis, and constituting 151.8 percent of the country's population of 2.96 million people. The number of internet users in Qatar increased by 1.7 percent to about 2.99 million users. The number of active users on social media reached about 2.95 million people, with a growth of 2.8 percent on an annual basis, equivalent to 99.8 percent of the country's population. In addition, the number of phone subscribers in Bahrain has reached 1.78 million, with a growth of 1.6 percent on an annual basis, constituting 101 percent of the population of 1.77 million people. There are 1.75 million internet users in Bahrain, with an increase of 2.4 percent on an annual basis, representing 99 percent of the population. The number of social media users is about 1.55 million people, constituting 87.8 percent of the population.

Ooredoo Algeria Subscriber Base Up 2% in 2021

Ooredoo Algeria's customer base increased by 2 percent in 2021 to 12.8 million at year-end. The company reported strong numbers despite the continued devaluation of the Algerian Dinar, which depreciated by 8 percent year-on-year. Revenues stood at KWD 188.5 million in 2021, and in local currency terms, revenues were up by 8 percent, its parent company reported. EBITDA increased by 4 percent to KWD 65.1 million from KWD 62.6 million in 2020.

	Quarterly Analysis			Full Year Analysis		
	Q4 2020	Q4 2019	% Change	FY 2020	FY 2019	% Change
Consolidated Revenue (QAR m)	7,453	7,950	-6%	28,867	29,916	-4%
EBITDA (QAR m)	2,881	3,183	-9%	12,130	12,847	-6%
EBITDA Margin (%)	39%	40%	-	42%	43%	-
Net Profit Attributable to Ooredoo Shareholders (QAR m)	-342	460	n/a	1,126	1,725	-35%
Customers in million (consolidated)	121	117	3%	121	117	3%

Zong 4G and PTA Join Hands to Promote Gender Inclusion in ICTs



Zong 4G - Pakistan's cellular and digital services frontrunner and the CSR leader in the local ICT arena – has signed an agreement with the Pakistan Telecommunications Authority (PTA) to promote gender inclusion in the workplace and beyond. Since its inception, inclusion of women at all levels of employment and society has been as critical to Zong's CSR as social responsibility has been to Zong's professional ethos. The partnership with the Pakistani telecom regulator further broadens this very vision of gender diversity. Zong has always worked

relentlessly to build and promote a more gender inclusive workplace and society. Besides giving them a chance to prove their mettle at some of the most critical roles, the company provides women with an equal opportunity to excel at the workplace and in society. By focusing on Inclusive Growth, Zong has played a pivotal role in the uplift of women within and outside the organization. Some of Zong's initiatives for women's inclusion and empowerment within and outside the workplace include: Call centers with 49% female staff (both Pakistani and Chinese); International-

standard work from home model for call center staff; Career & development opportunities for female graduates through GTO program; Meaningful celebration of Intl. Women's Day every year; Focus on mental and physical wellbeing of female employees (sports, gym, yoga, breast cancer awareness, and more); Facilitation services for working mothers and State-of-the-art day care facilities; Setting up of digital labs, vocational training centers for girl students ; Digital training of women through Punjab Skills Development Fund (PSDF); Enablement of female doctors through Sehat Kahani; CSR Ambassador Program for Zong female volunteers to uplift women in society. Zong strongly believes that women play an integral role when it comes to a progressive society and realization of the Digital Pakistan vision. That is the reason why Zong has been accelerating women's inclusion and empowerment, and taking the lead on this front in the ICT sector. The gender inclusion agreement with PTA will help Zong broaden its horizon further and explore fresh and innovative avenues to not only to include more women in the workplace and give them the chance to grow in their careers, but also work for their enablement and empowerment in the society.

Saudi Arabia to Develop Cooperation in Digital Economy with Bahrain, Finland



Saudi Arabia's Minister of Communications and Information Technology Abdullah Al-Swaha held talks with Kamal Ahmed,

the Bahraini Minister of Transport and Communications and President of the National Space Science Agency. During the

meeting, which was held on the sidelines of the LEAP conference being held in Riyadh, they discussed ways to strengthen cooperation between the two countries in digital economy and opened investment prospects. They also discussed ways to support digital entrepreneurship and develop sustainable and green technology, Saudi Press Agency reported. Al-Swaha met separately for similar talks with the Finnish Minister for Development Cooperation and Foreign Trade, Ville Skinnari. They reviewed the Kingdom's digital strategy and stressed the need to strengthen bilateral cooperation and exchange expertise in the field.

Digital Transformation of Jordan Focused at Conference

Jordan has demonstrated that digital transformation is a top priority on the national agenda. The country has made enormous strides in building a digital infrastructure to accelerate its move towards a digital economy. More than 200 government and industry experts from several ministries and industries and 30 expert speakers will brainstorm on new ideas and discuss the roadmap for the future of digital transformation of the country - at the 2nd Digital Transformation Jordan, which took place on 14 – 15 March 2022, Kempinski Convention Center, Amman, Jordan. Under the patronage of H.E. Ahmad Al Hanandeh, Minister of Digital Economy and Entrepreneurship and organized by Great Minds Events Management, the 2nd Digital Transformation Jordan is the only event in Jordan to cover the entire digital ecosystem. Digital infrastructure, skills, entrepreneurship, and digital financial services and platforms are the main areas of focus for the Jordanian government to reach its vision of creating a secure and inclusive digital economy that achieves sustainable economic and social development. Some of these critical issues will be addressed at the forthcoming conference. The Minister of Digital Economy and Entrepreneurship, H.E. Ahmed Al-Hanandeh, confirmed the importance of the ministry's participation in such conferences to discuss the opportunities and challenges facing the Kingdom regarding how to implement digital transformation, and how it is possible to take advantage of current opportunities to achieve achievements in ideal time. He says, "The digital transformation is an important role for economic and social development because of its solutions in many financial, agricultural, industrial, health care, security services and other sectors and the development of new business models that could not have been developed in isolation from digital transformation and modern technologies. Among the government's priorities is to make digital technologies available and to ensure their efficient provision." Digitization improves the outcomes of both the private and public sectors by streamlining business operations, small and medium enterprises (SMEs) are enabled to enter the market and access finance and human talents. Digital transformation also provides the government the ability to distribute services and support to its citizens via digital mediums. Jordan which ranked 104th out of 193 countries in the Open Government Data Index (OGDI) in the UN E-Government Survey 2020, will start deploying 5G Network in the country in 2022 which is expected to be operational within 18 months, and currently implementing a major program to transform public service delivery on the digital channels. Realizing that the country needs to catch up, the government launched Jordan Digital Transformation Strategy in 2020 that represents a strategic framework for Jordan's digital transformation that outlines the changes and strategic requirements needed to keep pace with the progress of digital transformation globally, improve the delivery of government services, and enhance the efficiency of government performance. This also includes meeting the needs of beneficiaries (i.e. the government, citizens, residents, tourists, private sector, entrepreneurs, and civil society), improving the quality of life more effectively, sustainably and reliably, and achieving well-being. The Ministry of Digital Economy and Entrepreneurship has developed this strategy based on the Jordan Vision 2025, as well as applicable



international deliverables, trends, and practices adopted in this regard, and in line with the Sustainable Development Goals (SDGs) of 2030. In 2020, World Bank approved a US\$200 million project to increase access for Jordanian youth to jobs and expand government digital services. The Youth, Technology and Jobs project adopted an integrated approach to capitalize on Jordan's potential to grow its digital economy and absorb skilled labor to address two main challenges facing the country, economic growth and job creation. The project is expected to provide professional skills to 30,000 youth, a technology curriculum in public school grades 7 to 12, and workspaces in underserved communities. The project also supports access to markets for entrepreneurs and incentivise businesses to expand their operations in underserved communities. It will also improve access for youth to freelancing platforms and improve government digital services and digital payments. The project aims to generate 10,000 new income opportunities for youth in the coming five years, including women (30%) and Syrian refugees in freelance opportunities (15%). It aims to digitize more than 80 percent of government payments and mobilize around US\$20 million in new private sector investments in digital services. Information technology activities achieved a growth of 11.64 percent between 2014 and 2018 in Jordan, where annual revenues increased by about US\$300 million. Mobile and internet penetration rates reached 85 percent and 88.8 percent respectively in 2018. The 2nd Digital Transformation Jordan will focus on the legislative and regulatory framework needed to keep pace with the rapid development of digital platforms, as well as the strategy and technologies to be adopted to drive innovation forward. There will be industry discussion sessions, presentations by delegates and panel discussion on Jordan's digital transformation strategy, data and digital transformation, cloud adoption and integration etc. Delegates and experts from

several industries such as government sectors, banking sector, retail, telecom, transport and logistics, education, healthcare, utilities etc. will take part in this event. The profile of the delegates includes government officials and CEOs, directors, heads and specialists from important departments such as: Digital Transformation, Information Technology, Data Science, Data Analytics, Corporate Planning, Strategy Planning, Business Analytics, Business Intelligence, Innovation, Smart Services, Cyber Security, Cloud etc. With the newly approved National Strategy for Digital

Transformation, Jordan aims to improve the transparency, flexibility, reliability, and sustainability of digital services, as well as reduce digital services' time and costs, all consistent with Royal directives, and all consistent with global trends and national policies. Opening ministerial keynote speech will be delivered by H.E. Ahmad Al Hanandeh, Minister of Digital Economy and Entrepreneurship at the 2nd edition Digital Transformation Jordan. The speakers list for the event includes top names such as, H.E. Eng. Belal Al-Hafnawi, Commissioner & Board Member, Jordan Telecommunication Regulatory Commission – TRC; Abdelkader

Al Batayneh, Director of Policy and Strategy Department, Policy and Strategy Directorate, Ministry of Digital Economy and Entrepreneurship; Nada Khater, Head of Digital Transformation Policies and Strategies, Ministry of Digital Economy and Entrepreneurship; Lama Arabiat, Head of Artificial Intelligence, Ministry of Digital Economy and Entrepreneurship; Dr. Nisreen Al Sayyed, Director of National Information System, Ministry of Digital Economy and Entrepreneurship; Mohammad J Sear, Digital Government & Public Sector Consulting Leader, Middle East and Africa (MENA), EY and many other experts.

PropSure Digital Solutions Launches Digital Data of Pakistan's Planned Areas

PropSure Digital Solutions launches digital data of Pakistan's planned area, achieving an essential milestone in the country's real estate sector. The digital map of Pakistan was unveiled during a ceremony attended by the esteemed Chairman IMARAT Group and CEO Graana.com Shafiq Akbar, Chairman Advisory Board Lt. Gen (R) Haroon Aslam, Director PropSure Taimoor-ul-Haq Abbasi, Group Directors Mr. Farhan Javed, Mr. Sharjeel E. Ahmer and Mr. Arsalan Javed. Addressing the event hosted at National Science and Technology Park (NSTP), Chairman Shafiq Akbar said, "The launch of digital map of Pakistan's planned area is an important milestone in the history of the country's real estate sector." While lauding the team for their efforts, he added, "This contribution by the IMARAT Group ensures much needed transparency that would resolve the existing issues in Pakistan's real estate sector." While speaking at the occasion, Chairman Advisory Board Lt. Gen. (R) Haroon Aslam said, "A whole team of experts, comprising of experienced and equally seasoned young talent, is behind this digital transformation. This contribution is a testament that the country's destiny through the real estate sector can be changed through proper resources and planning."





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ARTICLE

AI Adoption: Not a Choice Anymore – Sooner the better!



Manish Kampani

Global Head – AI and Data analytics –
Communication, Media and Entertainment
Tech Mahindra Ltd



Last few years business 'have seen unprecedented growth of AI and Automation. CSPs are also participating in the bandwagon driven by needs of Customer acquisition and Customer Experience. As per McKinsey's online survey which ended in June 2021, garnered, responses from 1,843 participants representing the full range of regions, industries, company sizes, functional specialties, and tenures it clearly indicates that AI adoption is continuing its steady rise:

56 percent of all respondent's report AI adoption in at least one function, up from 50 percent in 2020.

The Middle East has remained one of the early adopters of tech and AI innovations.

The Middle East has remained one of the early adopters of tech and AI innovations.

Next decade 5G will define the direction for the CSPs. Around the world, 5G commercial launch is getting accelerated as organizations are digitizing faster than ever. 5G will enable the services which will touch every facet of life- health, work, home luxuries, education, transportation, etc. The range of services that 5G will offer will need speed, efficiencies, availability, and reliability with an ever-increasing demand for prodigious customer experience.

Such gigantic requirements would need flexible, scalable, agile, and adaptive networks with effective management of the resources at the edge too. The networks must adopt the technologies such as cloud-native, dynamic network slicing, Multi-access Edge Computing (MEC), smart IP network, ultra-high bandwidth, and AI-enabled end-to-end 5G services. To achieve dynamicity, AI is the holy grail that can ensure appropriate actions for the predefined expectations, learn, and evolve to cover a variety of scenarios and business processes. The evolution of deep learning, neural networks, and reinforcement learning promises to solve very complex problems. Hand-in-hand with data analytics and visualization techniques, CSPs can study the characteristics of networks, develop deep insights about the behavior of the networks and implement the right AI technologies.

The time is ripe to use AI with other technologies to address the optimal design of the physical layer, complex decision-making, network management, and resource optimization tasks in 5G networks.

Tech Mahindra has developed an end-to-end innovative, secure, and automated cloud Platform called "netOps.ai", powering Telco Networks to empower operators to accelerate digital transformation and enable rapid deployment of 5G Networks. The details can be accessed at netOps.ai – Powering Telco Networks.

The different functions in CSPs are also ramping up to cater to evolving business needs. CMOs are under continuous pressure to innovate new products, improve customer retention, improve campaign effectiveness and increase customer satisfaction. CDOs and CIOs are in dire need to improve infrastructure, reduce human dependencies, release low productive assets, improve customer response time, proactively reduce customer calls and reduce revenue leakages. Implementation of integrated and ingrained AI and Automation has helped innovate and terminate many long-standing issues.

As per the surveys by Gartner, Deloitte and PWC the functions where AI have taken firm positions are:

- **Operations**

- Service-operations management and optimization
- Contact-center automations - moving toward more predictive actions

- **Growth and Customer Experience**

- New Product-features and optimization
- Churn management, Campaign management, Customer-service analytics and Customer segmentation

- **Risk modeling and analytics**

- **Fraud and debt analytics**

Tech Mahindra has been an early adopter of AI and Automation with a mature assessment methodology for CSPs to baseline and identify the business processes that can be automated and

improved using AI. Tech Mahindra is successfully delivering many programs which are helping customers to achieve significant quantified benefits. In ASEAN and Europe region, Tech mahindra worked with CSPs to improve their net promoter scores (NPS) by identifying the issues in the network and customer care centers. The identification led to automation and improvements of many processes that helped CSPs position themselves as the preferred CSPs in the Geography. In another use case, we digitized the old contract documents so that AI robots read the documents resulting the re-rating of many contracts, and therefore an increase in the top line by 0.5%. The usecase was enhanced to identify the orders that exceed the defined cycle time to improve the revenue realization and recover the bills for the uncharged used services. The solution was automated and designed to learn and improve. Numerous benefit-driven usecases leverage AI and Analytics to make organization processes smarter every day.

"As per stats, the potential impact of Artificial Intelligence in the Middle East will reach \$320 billion by 2030. Additionally, with the current AI trends in the Middle East, we can expect annual growth of 20 to 34% across the area.

CSPs who are advance in AI adoption are in a journey to Industrialize the AI. Tech Mahindra is implementing AI Assets registers, complete MLOPs journeys, AI governance and democratization. Tech Mahindra invested in open source platform ACUMOS.org and has built an enterprise version GAiA™. GAiA™ is the enterprise AI/ML platform offering from Tech Mahindra, built upon the open-source Acumos™ platform for an enhanced end-to-end CX. Acumos™ is an open source AI lifecycle management platform, co-created by Tech Mahindra & AT&T in collaboration with Linux.Foundation.

Tech Mahindra's Subsidiary Comvivia used AI powered platforms to solve real time marketing automation and to enable the finance inclusion, MobiLytx™ Real

Time Marketing. It is an AI powered real-time interaction management and multi-channel marketing automation platform that delivers proven top-line results for CVM marketers.

Yabx, aims to enable the underserved with limited credit history to get fair access to financial services tailored to their needs. Yabx's core purpose is financial inclusion, and it manages the entire customer's credit lifecycle starting from acquisition to settlement.

Worldwide artificial intelligence (AI) software revenue is forecast to total \$62.5 billion in 2022, an increase of 21.3% from 2021, according to a new forecast from Gartner, Inc.

As per the recent studies by Forbes industry forecasts and other quantitative assessments of the progress of AI:

- 63% of executives whose companies have adopted AI report that it resulted in increased revenues in the business areas where it is used
- 44% of executives say AI has reduced costs
- 76% of executives report they struggle with how to scale AI

In essence, there are ample opportunities to put AI at work and solve legacy problems. CSPs should start the AI journey as soon as possible. Delaying and waiting for technology to mature is not a good idea. Org-wide AI adoption needs ample time as it needs contextualizing. Generic implementations will not produce desired results. AI adoption requires a clear long-term strategy that goes through multiple phases. These phases include defining business drivers, identifying, re-imagining, and re-engineering the existing processes, selecting the right technology, integrating with the ecosystem, employee training, and building closed-loop feedback with continuous learning systems. Those organizations which started early have a distinct advantage over the competition. They are now in the phase of building AI assets libraries, AI Governance, and Ethical AI. 🌱

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SATELLITE NEWS

Bahrain's First-Ever Satellite Launched into Orbit

A collaborative satellite launch by the UAE and Bahrain has “successfully launched into orbit” from the International Space Station, according to an Emirati state media agency WAM report. The Light-1 CubeSat was launched in cooperation with the Japan Aerospace Exploration Agency (JAXA) from the Tsukuba Space Centre (TKSC) after the UAE and Japan signed a cooperation agreement in 2016. The satellite will monitor and study Terrestrial Gamma-ray Flashes (TGFs) from thunderstorms and lightning, marking the region’s “first scientific mission,” according to WAM. High-energy gamma-ray emissions reportedly impact atmosphere, air traffic and human health. Flight crew are affected more commonly since these rays are known penetrate aircraft structures, reported WAM. It was developed jointly by the UAE Space Agency, Bahrain’s National Space Science Agency, Khalifa University of Science and Technology, and New York University (NYU) Abu Dhabi. Data gathered from the Light-1 CubeSat aims to leverage space science to support sustainable economic growth reported WAM. This will



be shared globally to “support scientific analysis and encourage cooperation” among researchers. “As this UAE-Bahraini nanosatellite reached its orbital position, we believe this collaboration initiative will stand out as the best example of what can be achieved by the scientists in the Arab world,” said Dr. Arif Sultan al-Hammadi, Executive Vice-President

of Khalifa University according to WAM. Salem Butti al-Qubaisi, Director-General of UAE Space Agency, said in a statement to WAM: “Coming close on our recent success with the Emirates Mars Mission, and our first space astronaut Hazza al-Mansouri’s journey to the International Space Station, this is an endorsement of our achievements in the cosmos.”

OneWeb Launches 34 Satellites, Bringing Constellation to 428

OneWeb confirmed the successful deployment of 34 satellites by Arianespace

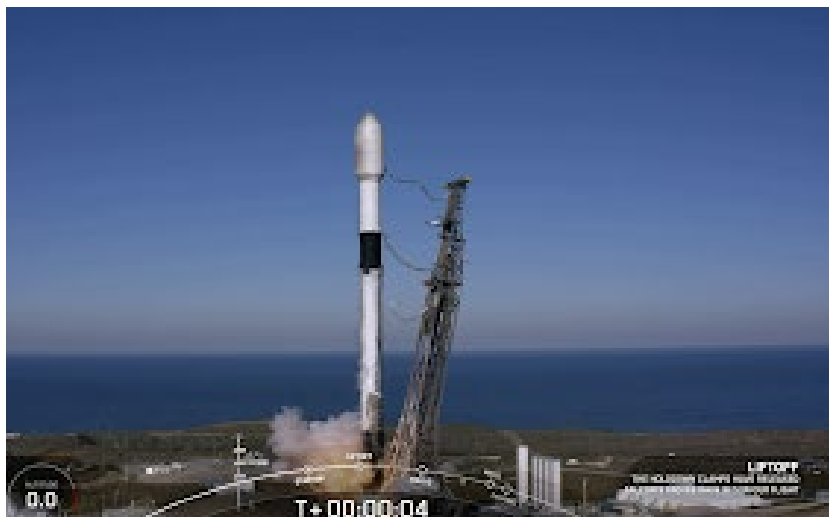
from the Guiana Space Centre in Kourou, French Guiana. The launch marks

OneWeb’s first in 2022 and 13th overall, bringing its total in-orbit constellation to 428 satellites. It represents 66 percent of OneWeb’s planned 648 LEO satellite fleet that will deliver high-speed, low-latency global connectivity. OneWeb notes that it has signed new distribution partnership agreements with several companies in the last month – including Hughes Network Systems, Marlink, and Field Solutions Holding. Neil Masterson, OneWeb CEO, commented: “Our first launch of the year marks our significant progress in completing a truly global LEO network later in 2022. We continue to see growing demand for OneWeb’s industry-leading services as we look forward to delivering on our ambition to build robust, secure, and global access to broadband services.”

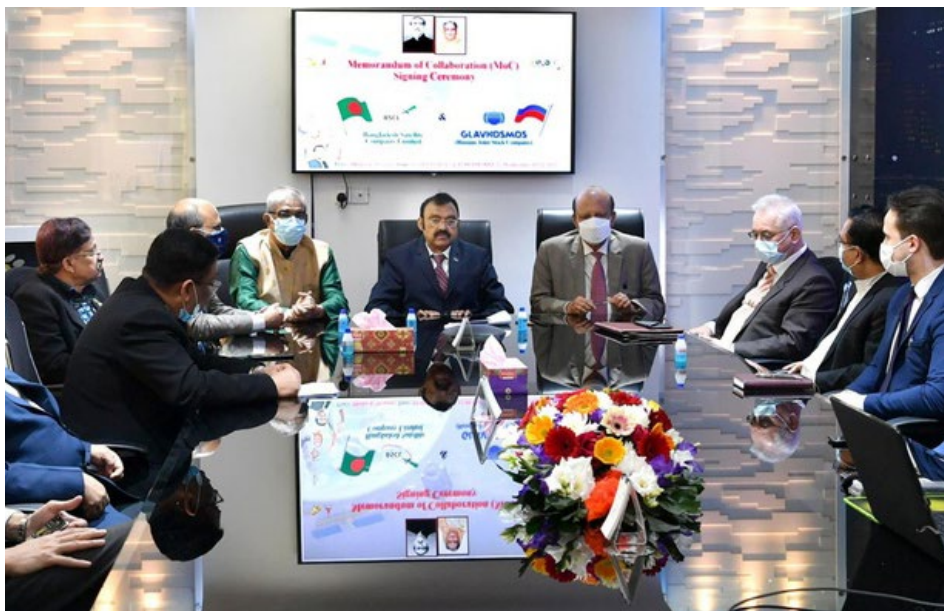


SpaceX Launched 50 More Starlink Satellites from Vandenberg

SpaceX has launched 50 Starlink satellites from Space Launch Complex 4 East (SLC-4E) at Vandenberg Space Force Base in California. The first stage was recovered on a drone ship in the Pacific. This was the eight launch of 2022 and the fourth flight for the Falcon 9 first stage booster supporting this mission, which previously supported Sentinel-6 Michael Freilich, DART and one Starlink mission. Starlink service is now available in Brazil and Bulgaria, bring the number of countries with Starlink service to 29.



Bangladesh Signs Deal with Russia's Glavkosmos to Send Bangabandhu-2 Satellite to Space



Bangladesh Satellite Company Limited and Glavkosmos, a unit of Russia's state space corporation Roscosmos, signed the deal in a virtual event on Wednesday, Post and Telecom Minister Mustafa Jabbar said. Dmitry Loskutov, CEO of Glavkosmos JSC, and Shahjahan Mahmood, chairman and CEO of BSCL, signed the memorandum. Jabbar witnessed the signing. Bangladesh's first satellite, Bangabandhu Satellite-1, was made by France's Thales Alenia Space and a SpaceX rocket blasted off from Kennedy Space Center in the US

on May 12, 2018. Jabbar described the deal for a second satellite three and half years after the launch of the first one as a "new milestone". The government's electoral manifesto for the telecom sector before the 2018 polls included a third submarine cable connection, fifth generation or 5G communication system and a second satellite, the minister said. The work on the second satellite had begun in 2019 and officials had expected the launch within 2023. Asked if it will be possible to launch the satellite by 2023, Jabbar

said, "We are trying. But it's a technical matter. You've seen even the launch of Bangabandhu Satellite-1 was delayed at the last moment after all preparations were completed. We are ready again. Let's see what happens." The government had first appointed a consultant and finalized the type of the satellite after reviewing its report. "After that, we decided whom we would appoint to do it and what would be the scope of cooperation. Now the memorandum has been signed," the minister said. The memorandum will be valid until the end of 2026, Glavkosmos said in a statement. "The Parties express their intentions to establish partnership relations to develop long-term, effective and mutually beneficial cooperation in the field of promotion of products and services of the Russian space industry in the People's Republic of Bangladesh including manufacturing and launch of Bangabandhu Satellite-2 Earth observation satellite system, manufacturing of ground infrastructure (satellite ground stations) for acquiring Earth observation data from the Russian and foreign spacecraft, launch services, educational programs in space domains, commercial orbital flights and consulting services," it added, citing the memorandum.

Surrey Satellite to Be Launched By SpaceX



Satellites constructed by a Surrey firm are to be sent into orbit by Elon Musk's SpaceX firm. The launch of Surrey Satellite Technology Limited's (SSTL), thermal data collection satellite, is the first in a planned constellation of seven UK built, low Earth orbiters. It will be launched aboard SpaceX's Falcon 9 rocket later this year. SpaceX is the private sector space exploration firm founded by Elon Musk. The Surrey based firm, which employs 380 people, built

the satellites for fellow UK space firm, Satellite Vu. One hundred people were involved in the construction of the space technology which designers describe as the: "world's highest resolution thermal imaging satellite." SSTL was founded in 1980. There are currently 14 SSTL built satellites operated from their spacecraft operations center. One of which has been in orbit for 35 years. The satelliteVu project will see the newly constructed models

collect thermal data in a bid to help lower emissions and tackle global warming. The satellites will be capable of doing so over any location on the planet. The full constellation, when operational, will have the ability to measure the heat signature of any building multiple times a day. This allows Satellite Vu to provide near real time insights on building heat loss, energy optimization investments and an ability to offer substantial cost saving benefits to both public and private sectors. SatelliteVu designed the craft with a 3.5m resolution mid-wave infrared imager with video capability and a temperature sensitivity of less than 2 degrees Celsius. The satellite video generation capability adds unique advantages over traditional imagery, allowing for the detection of highly dynamic features and the building of 3D profiles. This permits for a wide variety of applications, from monitoring the pollution of waterways from industrial processes, to reducing the cost of heating buildings, increasing energy efficiency, or assessing the activity status of solar farms among others.

Jio, SES Form Satellite Broadband Venture

India's red hot satellite internet sector received a boost, with Jio Platforms forging a joint venture with Luxembourg-based specialist SES to offer high-speed broadband connectivity to retail and enterprise customers, and for mobile backhaul. Jio Platforms will take a 51 per cent stake in Jio Space Technology and SES the remaining 49 per cent. The venture will use SES' multi-orbit space networks combining geostationary and medium Earth orbit satellite constellations to deliver speeds of up to 100Gb/s. The business will also develop gateway infrastructure across India. Jio Platforms is the digital services arm of Reliance Industries: it will be the anchor customer of Jio Space Technology and entered into a multi-year capacity purchase agreement with a total contract value of about \$100 million. In a statement, Jio Platforms director Akash Ambani noted



additional coverage and capacity offered by satellite communications services will enable it to connect the "remotest towns and villages, enterprises, government

establishments and consumers to the new digital India". SES CEO Steve Collar added the tie-up is "a great example of how SES can complement even the most extensive

terrestrial networks" to offer high-quality connectivity. Jio Space Technology will deliver SES' satellite data and connectivity services in India, except for some international aeronautical and maritime

customers, which may be served directly by SES. Jio Platforms will offer managed services and gateway infrastructure operations services. Indian authorities last month approved a joint venture between

Bharti Airtel and Hughes Network Systems to deliver broadband service via satellite. And satellite internet provider Starlink set up a local subsidiary in November 2021.

Thuraya Launches Its Innovative Push-to-Talk Communications Solution with Cobham SATCOM

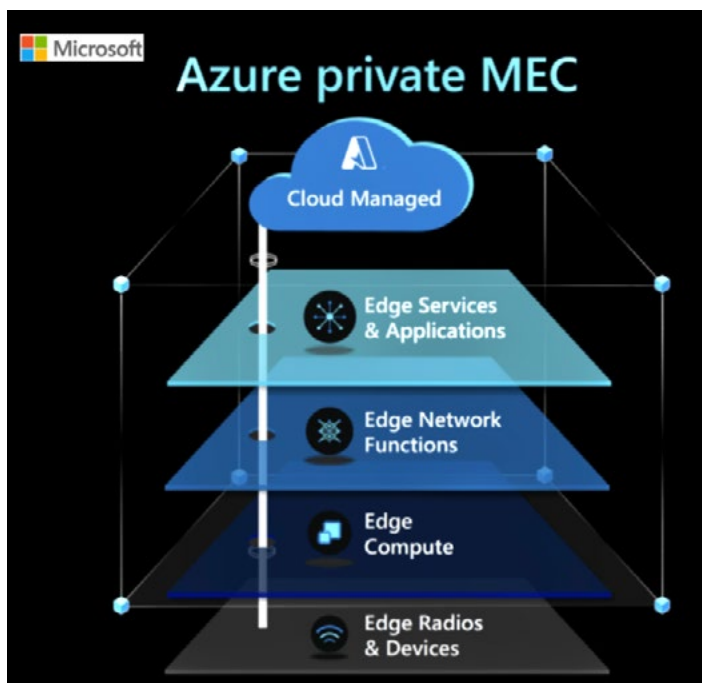


Thuraya Telecommunications Company, the mobile satellite services subsidiary of the UAE's flagship satellite solutions provider, Al Yah Satellite Communications Company PJSC ("Yahsat" or, together with its subsidiaries, "the Group") listed on the Abu Dhabi Securities Exchange ("ADX") under (SYMBOL: YAHSAT) (ISIN: AEA007501017) today announced that it has launched its new IP-based radio communications solution, Thuraya Push-to-Talk (PTT). Thuraya PTT has been developed with Cobham SATCOM, a market-leading provider of satellite communications solutions to the maritime and land markets. The solution will enable users across a wide spectrum of industries to extend the range of their voice communications beyond line of sight (BLOS) wherever their assets and teams are located. Thuraya PTT is an IP-based radio communications solution that works in conjunction with any Thuraya Broadband terminal to establish a private network. It gives users the ability to combine and integrate different technologies such as 3G/LTE/LMR (Land Mobile Radio) via

Thuraya's advanced satellite system for seamless voice and data communications. The new solution has been designed so that it is simple to use and guarantees secure interoperability among multiple users with different communication systems on land and at sea. The solution manages communications from multiple devices and locations and provide real-time, uninterrupted switching between satellite, cellular and LAN, ensuring cost efficient and reliable connectivity. Thuraya PTT is designed for mission critical operations to support organizations in remote areas that often struggle with a lack of reliable connectivity - particularly when there is an urgent need to communicate across different areas, countries or continents. Thuraya's PTT service enables organizations to overcome this challenge, enhancing overall workforce productivity and safety as a result. Sulaiman Al Ali, Chief Executive Officer at Thuraya, said: "We are proud to announce the launch of the Thuraya Push-to-Talk solution today. Satellite connectivity and push-to-talk technology will provide unparalleled

support to a wide range of sectors—most of which are currently being served and supported by Thuraya—by boosting efficiency, safety and security for troops and staff operating on-the-ground. The market has clearly shown a demand for PTT services which enables users to communicate through a single solution. We anticipate that market potential for such a service will continue to grow." "Our partnership with Cobham SATCOM has been a key component of this successful launch. It has enabled us to broaden and enhance our portfolio offering by creating a platform for further innovation and development of features and applications to increase our global market share. We're looking forward to more collaborations with Cobham SATCOM and reaching more milestones of this nature in the near future," he added. The global PTT (incl. hardware, solutions and services for all network types) market size is set to grow from USD 29.2 billion in 2021 to USD 45.2 billion by 2026, at CAGR of 9.1 % during this period, with the sectors of Public Safety, Government, Energy and Utilities occupying a significant proportion of growth. In addition, the global hybrid-satellite cellular terminal market is expected to reach around USD 700 million by 2031, with a CAGR of 22.81% during the forecast period 2021-2031. Thuraya PTT extends legacy push-to-talk capabilities to hybrid data networks such as terrestrial cellular networks where available, supplemented by the Thuraya satellite network where no terrestrial network coverage is present. With no user intervention required, the system automatically routes voice and data traffic via the least expensive and most reliable network available.

Intelsat and Microsoft to Demo Private LTE and 5G Network Using Global Satellite and Ground Network



Intelsat, operator of an integrated satellite and terrestrial network, reports the successful demonstration of a private cellular network said to be one of the first of its kind. The operator is collaborating with Microsoft Azure Private Multi-Access Edge Compute and FlexEnterprise using Intelsat's satellite-based global connectivity service. Held at Intelsat's office in McLean, Virginia, the demonstration establishes a reference architecture for deploying secure, high-performance private LTE and 5G networks and other cloud services over satellite networks to enterprise locations virtually anywhere globally, including those in remote and austere environments. The demonstration creates a private LTE service using Azure Private 5G Core deployed on an Azure Stack Edge

device. Connectivity to the internet and Azure services is enabled by Intelsat's FlexEnterprise. Via the private cellular network, users can access local enterprise resources via SIM-authenticated connections to the Azure Stack Edge and access remote resources through the FlexEnterprise connection, the IntelsatOne global network and Azure. Additionally, the LTE network powers a Wi-Fi access point and IoT applications. "As enterprises look to private cellular networks to improve the reach, security, and quality-of-service over Wi-Fi-only local networks, the ability to support deployments at any site is crucial to creating a fully connected organization," says Jean-Philippe Gillet, SVP global sales media & networks, Intelsat. "The applications demonstrated here with Microsoft highlight the increased automation and standardization of enterprise data processing services that globally-available private cellular networks will enable. Support for high-bandwidth, low-latency networks is central to Intelsat's vision of an end-to-end ecosystem for a global software-defined 5G network." "At Microsoft, we are committed to enabling an ecosystem of satellite operators through collaborations such as this one with Intelsat. As the world continues to move to 5G, Microsoft's Azure Orbital platform, together with our Azure hyper-scale computing platform, allows operators to deploy and maintain faster, easier, and more cost-effective solutions anytime and anywhere," says Tom Keane, corporate vice president, Mission Engineering. Mobile Experts Inc. expects the global private LTE and 5G equipment and services market to grow at around 20% CAGR to about \$10 billion (€8.91 billion) in 2025. Intelsat is one of the trusted integrated space and ground satellite networks with a 50-year record of delivering seamless and secure coverage across 200+ countries. Intelsat is building a unified global 5G network that will support virtually any access technology, enabling the next generation of global mobility, Internet of Things (IoT), and 5G services. Merging software-defined technology and multiple networks and orbits, we bring the world a single, more powerful way to connect easily.

EC Makes €6B Move in Space Race

The European Commission (EC) outlined a €6 billion investment plan to develop a new satellite system to provide connectivity to the continent and Africa, and support critical infrastructure and applications around economy, security and defence. The EC stated it would fund the move through a €2.4 billion contribution from the European Union (EU) from 2022 until 2027, with the rest coming from its budget, member states and private investments. When built, the system will add to the EU's other major satellite plays, including global navigation system Galileo and Copernicus, which is used for earth observation. The program will launch in 2023. The EC explained it wanted to use space-based connectivity as a "strategic asset" for the continent's resilience, enabling technological sovereignty, competitiveness and access to fast connectivity for people and businesses. As part of the initiative, system signals will be encrypted and also provide "connectivity

over geographical areas of strategic interest", including Africa and the Arctic, reducing global reliance on Chinese-built infrastructure. Thierry Breton, Commissioner for the Internal Market, said space was playing a growing role in daily lives, in addition to "economic growth, our security and our geopolitical weight". He added the pan-European project would allow for many start-ups and the continent as a whole "to be at the forefront of technological innovation". The EC's initiative will join and compete with commercial satellite systems including Amazon's Project Kuiper and SpaceX's Starlink. There was also proposal by the EC for regulation of space traffic, seeking to improve management in light of what the regulator described as an exponential increase in the number of satellites in orbit. It aims to use this to protect its assets and ensure a safe, secure and sustainable use of space by establishing international partnerships.

EnduroSat and SayariLabs Partner to Launch Kenya's First Software-Defined Nanosat

Kenyan space company SayariLabs and EnduroSat have signed a commercial agreement to launch Kenya's first 3U software-defined nanosat called Taifa-1 ('one nation' from Swahili). Taifa-1 will be launched by SpaceX's Falcon 9 in Q4 2022. In the past decade, East Africa has been hit with heavy droughts and wildfires, causing water crises, and damages of local agriculture and food supplies. TAIFA-1 will be loaded with a hyperspectral, Earth-observation camera that will help customers with environmental, wildlife, agricultural monitoring, and land use mapping, in their mission of preventing calamities in the region. EnduroSat and SayariLabs signed an MOU, which marks another milestone in the successful partnership and upcoming joint space projects between the two companies. EnduroSat organised two-week educational training, dedicated to space systems and engineering, covering all aspects of mission analysis, design, and spacecraft assembly for the engineering team of SayariLabs. Commenting on the partnership, Aaron Nzau, Founder & CEO SayariLabs, said: "Over the past decades, space and satellite industries have been



reserved for the wealthy and mighty. SayariLabs is on a mission of democratising these industries for all interested players in the African region and in making Kenya a space giant in the next generation. With the advancement of technology, this fantasy is quickly becoming a reality. Our partnership with EnduroSat, a leading company in this industry, is a major game-changer and it strengthens our hope and belief of being a major space and satellite solution provider in Kenya, the African region and other parts of the world." Raycho Raychev,

Founder & CEO EnduroSat, added: "I am really proud to have the opportunity to support SayariLabs in their efforts to bring space closer to thousands of people in Kenya. Working alongside their team has been an amazing experience for us and I cannot wait to see the innovations and the positive impact that they plan to have, realized in practice. EnduroSat has been for a long time a true believer in open, responsible and accessible space and this is yet another step in this direction."

OneWeb Founder Plans Satellite IoT with US\$50 Million Backing

A venture capital investor has pumped US\$50 million into a space start-up founded by Greg Wyler, previously of O3b and OneWeb. E-Space says it is planning a constellation of 100,000 satellites, which will also gather up space junk on their way. Wyler said: "We've built sustainability into everything we do. We are designing our systems to not only prevent space debris generation, but to eventually actively reduce space debris so generations to come will be able to access the power of space." E-Space says it will be "a foundational platform to help governments and large companies build space-based applications in a capital-light manner" – a description that seems to indicate a satellite-based internet of things (IoT). It aims to "provide the

world's first federated systems that can dynamically extend satellite capacity for a multitude of applications, ranging from secure communications to managing remote infrastructure". Wyler was one of the founders of O3b Networks – the abbreviation stands for "other three billion" – when its backers included Google and Liberty Global, as well as Luxembourg-based SES, which ended up in 100% control. Later he was one of the brains behind OneWeb, at first called WorldVu Satellites. But that went bankrupt in 2020 and was rescued by India's Bharti group and the UK government, with many of the initial investors – such as Qualcomm and Virgin Group – losing their money. The backer of Wyler's E-Space is Prime Movers Lab, a Wyoming-based investor whose interests

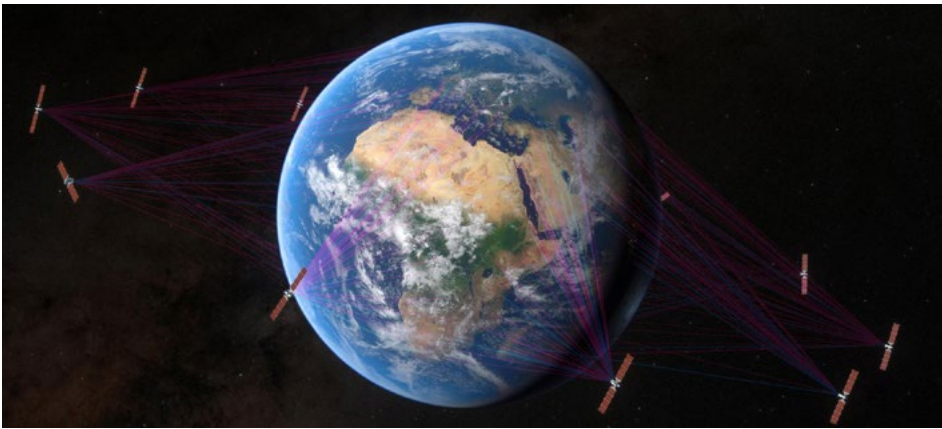
span from agriculture to transport. Anton Brevde, partner at Prime Movers Lab, said: "Greg is an icon of space innovation with an unparalleled track record of pushing the industry forward by turning bold ideas into everyday reality." The \$50 million investment fully funds E-Space's "beta 1" launch of its first test satellites in March 2022 as well as its second "beta 2" launch later this year, said E-Space. "Mass production is slated for 2023." Wyler said: "One of the best ways to understand and manage Earth is from space. We designed E-Space to democratize space, to enable the collection of continuous data about our planet with real-time information of sensors and devices across the world to combat climate change, and to upgrade our electric grids."

Marlink Gains SES Satellite Access

Network solutions firm Marlink signed a multi-million-euro agreement that will give its customers access to SES' next-generation system of satellites. Under the agreement, Marlink customers will gain access to SES' medium earth orbit constellation (MEO) of satellites known as O3b mPOWER, enabling dedicated connectivity services to customers with data-intensive needs. The system is scheduled to launch soon and become operational by the end of the year. O3b

mPOWER is an upgrade over the previous first-generation iteration O3b MEO, through its use of software to deliver coverage and speeds of megabits to multiple gigabits per second. It will be augmented by Marlink's Smart Network solutions, and in turn, Marlink will be able to enhance its hybrid network solutions and offer customers differentiated and secure connectivity products. Customers earmarked to benefit from this deal are those in the humanitarian, energy,

enterprise, mining, government, maritime sectors as well as superyacht customers. Customers in these segments require high download speeds and low latency to remain operational in remote locations. Marlink Group chief executive Erik Ceuppens said, "At Marlink we are driven by technology progress and committed to bring the full power of a connected and digital world to our customers' remote workplaces. This is why we are so excited to extend our long-term partnership with SES and to bring the game changing high-throughput low-latency capabilities of O3b mPOWER as part of Marlink's Smart Network solutions to our most demanding customers in all our market verticals." SES CEO Steve Collar added: "Fast, flexible connectivity represents an opportunity for all businesses – especially those operating in remote locations. Marlink's customers understand the strategic need for excellent connectivity, and the value of digitalization. SES's high-throughput, low-latency data connectivity represents a future-proof solution for these operators."



Anatel Approves Satellite Applications from LEO Firms Starlink, Swarm

Brazil's National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) has issued Starlink Brazil Holding a license granting it 'satellite exploration rights. Starlink, which is backed by Elon Musk's SpaceX venture, intends to deploy and operate a non-geostationary Low Earth Orbit

(LEO) satellite system comprising 4,408 satellites operating in the Ku- and Ka-bands for the provision of a fixed-satellite service constellation. The company's license runs until 28 March 2027. A second application – by California-based Swarm Technologies – was also approved by the watchdog. The concession, which

was awarded to Swarm Brazil Satellites, expires on 7 September 2035. Swarm's constellation will comprise 150 satellites in non-geostationary orbit. The company seeks to provide bidirectional data transmission services for telemetry and telecommand oriented to IoT applications.

SpaceX Lands in Tonga to Reconnect Island

Elon Musk's satellite company SpaceX is aiding the effort to restore telecommunications to the island nation of Tonga after the country was struck by the after-effects of a volcanic eruption. Fiji's Attorney-General Aiyaz Sayed-Khaiyum posted on social media that the SpaceX team is in Fiji to set up a Starlink gateway station to reconnect Tonga, reported Reuters. Starlink is a division of SpaceX and is tasked with

launching satellites and delivering high-speed broadband. The Hunga Tonga-Hunga Ha'apai volcano eruption destroyed Tonga's only fibre optic cable connecting to the internet and the rest of the world was greatly damaged by the eruption on Jan 15. It also caused a tsunami that destroyed villages and coated the capital city Nuku'alofa in ash. Tesla founder and CEO Elon Musk offered assistance on Twitter

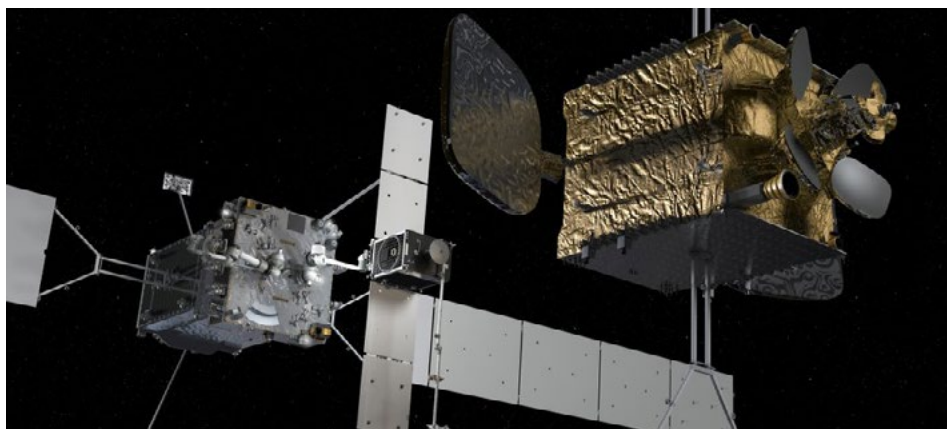
last month by sending Starlink terminals to the island. International calling returned to the nation last month, confirmed by Digicel, but only 400 calls could be made at one time. SpaceX joined a host of companies offering assistance to Tonga. Intelsat joined with Australian operator Telstra and New Zealand operator Spark to deploy emergency communications to support aid workers.

US Company Contracts SpaceX to Launch Second-Generation Satellite Servicing Spacecraft

SpaceLogistics, a unit of major US aerospace and defence group Northrop Grumman, has signed an agreement with space company SpaceX to launch the former's Mission Robotics Vehicle (MRV) in early 2024. The MRV is a second-generation development of SpaceLogistics' two Mission Extension Vehicles (MEV-1 and MEV-2). Like them, the MRV is intended to extend the operational life of orbiting satellites. Since 2020, the MEV-1 and MEV-2 have provided propulsion and pointing control to commercial satellites in geosynchronous equatorial orbit (GEO, also known as geostationary orbit). The MRV, however, will use a robotic arm to fit each client's orbiting satellite with a Mission Extension Pod (MEP). The MEP, also a product of SpaceLogistics, is a self-contained propulsion system, which can increase the life of a 2 000 kg GEO satellite by up to six years. The MEP will be owned and controlled by the client. Simultaneously with the MRV launch contract announcement, SpaceLogistics also reported that it had sold its first MEP, to Australian satellite owner and operator, Optus. The MRV will install an MEP on the Australian company's D3 satellite in 2025. "Our contracts with SpaceX

and Optus are tangible evidence of our momentum and commitment to deliver second-generation on-orbit servicing technologies to the satellite industry," affirmed SpaceLogistics business development VP Joseph Anderson. "We are thrilled to have Optus as our premier MEP customer as we continue pioneering the future of space and expanding the realm of what is possible with on-orbit servicing and sustainment." Both the MRV and MEP passed their preliminary design reviews in the northern autumn of last year and are on course for their critical design reviews, during this year. When launched in 2024, the first MRV will carry

several MEPs. In addition to fitting orbiting satellites with MEPs, the MRV will also be able to carry out detailed inspection, repair and relocation of satellites. It will be the first spacecraft capable of providing such services persistently, to GEO satellites. "Satellite owners are demonstrating enthusiasm and confidence for our life-extension solutions and the potential cost-savings they could provide," he highlighted. "Our Optus contract represents our third service contract with commercial satellite providers, and with several signed term sheets in queue our installation manifest for MEPs is already full for 2025 and nearly full for 2026."



Orange, Sonatel and SES to Deploy O3b mPOWER Gateway in Senegal

African telco Orange and subsidiary Sonatel are partnering with SES to deploy and manage the O3b mPOWER constellation's first gateway in Africa, the companies announced Wednesday. The gateway will be located at the Sonatel teleport in the Senegalese territory of Gandoul and will deliver low-latency, and cloud-optimized connectivity services in Africa. This agreement follows after Orange signed on in 2020 as the first

telco to adopt O3b mPOWER, with plans to start service from the constellation in the Central African Republic. SES said it will also use the gateway to support telemetry, tracking and command (TT&C) functions for the O3b mPOWER fleet. SES CEO Steve Collar said the gateway will enable Sonatel and Orange to deliver more bandwidth via O3b mPOWER to remote and underserved regions. "We continue to believe that satellite remains a promising technology

and that the many innovations it currently showcases will give it an increasingly growing position in the telecommunication field, in Africa as well as other countries," commented Jean-Luc Vuillemin, executive vice president of Orange International Networks. This partnership "will add a major new component to Orange's mission to build intelligent, open networks in order to foster usages and access to digital technologies for the greatest number of people." The Sonatel teleport was the site of Africa's first 30-meter satellite dish. Orange, Sonatel and SES also plan to establish a memorial on site at the Gandoul gateway to highlight the history of satellite connectivity in Africa.

Astrocast's Bidirectional Satellite IoT Service Launches Commercially

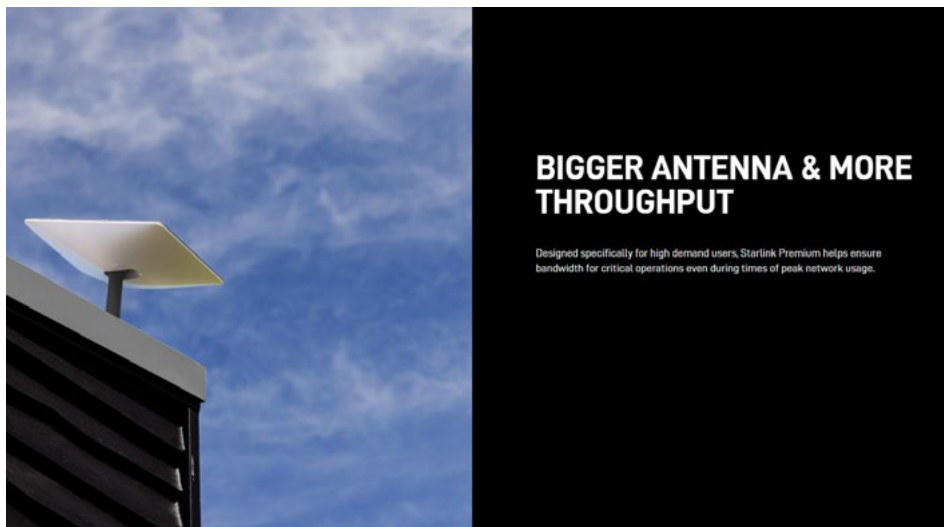
Astrocast has made its bidirectional satellite IoT service commercially available, aimed at connecting IoT devices globally for use outside of cell-based terrestrial networks. The service uses Astrocast's own recently launched nanosatellite constellation, in Low Earth Orbit, and it is bidding to support low-cost applications in asset tracking and telemetry. Target sectors include agriculture and livestock, utilities, transport and mining – involving remote locations such as mines, farmland, ships and oil platform. "So far, organizations have struggled to create a business case for deploying IoT solutions that can offer comprehensive global coverage, as well as efficient and reliable connectivity," said Fabien Jordan, CEO of Astrocast. "There is now an opportunity to use satellite IoT to increase visibility, transparency, and control over assets globally – and the potential for use cases across an array of sectors is almost limitless. What is more, in the past, these solutions have been too complex, costly, or simply unavailable. But, thanks to developments in satellite IoT technology, this is changing; and organizations that recognize the potential



of going beyond terrestrial IoT will be able to create new competitive advantages too." Possible applications for SatIoT Jordan cites the example, in New Zealand, of the need to remotely track cattle to identify individual animals that are unwell, allowing fast intervention and removal from the herd, to both reduce the spread of disease and minimize the need for medication. According to the company, the nanosatellite constellation uses a patented data protocol that was developed for satellite-based IoT in partnership with Airbus, CEA/LETI, the European Space Agency, and Thuraya. It developed

Astronode S, a module featuring low profile L-band antenna, ultra-low power consumption, and a small form factor. It will use Global L-Band frequencies and incorporate 256 bit encryption with multi-level security, says the company. Early in 2001, the Astrocast network went live with the initial launch of five nanosatellites. Since then, the constellation has grown, reaching ten with the launch of five more nanosatellites onboard a SpaceX Falcon 9 rocket in June 2021. The Swiss company says it is working towards deploying a 100-satellite constellation by 2024.

Starlink Launches 500Mbps Premium Satellite Broadband Plan



SpaceX's Starlink ISP, which provides ultrafast low latency broadband across the world and the UK via a mega constellation of compact satellites in Low Earth Orbit

(LEO), has soft launched an expensive new PREMIUM tier that will give you speeds of up to 500Mbps for \$500 per month (£369) and \$2,500 for the kit (£1843). At present

Starlink has 1,871 LEOs in orbit (1,846 are active) and their initial plan is to deploy a total of 4,425 by 2024. Customers in the UK typically pay a hefty £89 a month, plus £54 for shipping and £439 for the kit (dish, router etc.). But for that you can expect unlimited usage, fast latency times of 20-40ms, downloads of c. 50-250Mbps and uploads of c.10-20Mbps (such figures should improve as the network grows). However, SpaceX's boss man Elon Musk has just announced the soft launch of a new PREMIUM tier on Starlink, and it's easy to see why they've written that in ALL CAPS. The new service costs a whopping \$500 per month, which puts it well out of the reach of ordinary consumers. So what do you get for all that money? A much larger, more robust and more capable antenna, as well as the promise of download speeds in the 150-500Mbps range, uploads of

20-40Mbps and prioritized 24/7 support. In theory, the bigger antenna should also reduce the chance of disconnection events, which can sometimes cause problems on the existing kit. Starlink's website makes clear that their PREMIUM package is being aimed at "small offices, storefronts, and super users", although at that price in the UK you might be better off shelling out for a leased line or helping to self-fund a community FTTP build – where viable.

One catch is that the new product isn't due to launch until Q2 2022, and we don't yet know exactly what its UK pricing will be. In theory, this service could actually be quite handy if used to supply capacity for a small office network in a remote area, but it'll only really make any kind of sense if the new antenna does help it to perform noticeably better than the existing consumer tier. The fact that the speed range starts at 150Mbps, which is well into the current

consumer plan's range, may also make some potential customers nervous. One other issue is that we'd normally expect an expensive business tier to be backed up by a Service Level Agreement (SLA) or other advanced features, but aside from priority support, we couldn't see anything like that mentioned on their website. In order to be considered as a true business package, Starlink may need to go further.

Lynk Global Inc. Signs Contracts with MNOs to Bring Satellite-Direct-To-Phone Connectivity to Seven Pacific and Caribbean Island Nations



Lynk Global, Inc. (Lynk), the world's leading satellite-direct-to-phone telecoms company, today announced that it has signed multiple commercial contracts with Mobile Network Operators (MNOs) covering seven island nations in the Pacific and Caribbean, including with Telikom PNG in Papua New Guinea (PNG) and bmobile in the Solomon Islands. Lynk has seen a clear acceleration of contract signings with island nations in response to the recent disaster in Tonga. Islands create many difficult challenges for mobile connectivity, including hard to reach locations that drive up the cost of tower construction, exposure to the harsh maritime environment that constantly degrades towers, increasing maintenance costs, and reducing reliability, and populations that are dispersed across large geographies. Lynk's satellites offer a constellation of cell towers in space that will enable PNG and Solomon islands' subscribers to stay connected across their nations' vast terrain simply using their standard unmodified mobile phones. PNG has a land mass spanning more than 460,000 kilometers and a population of nine million residents of which more than 80% are considered rural and have limited



or no mobile phone connectivity with the current terrestrial cell tower infrastructure. The Solomon Islands are spread over 1.6 million kilometers and is the 22nd largest maritime exclusive economic zone in the world. Over 75% of residents of the Solomon Islands live outside urban areas, with 60% living in localities with fewer than 200 people. "Mobile phone connectivity across land and sea continues to be a major priority for Papua New Guinea and our neighbor the Solomon Islands," says Amos Tepi, Acting CEO, Telikom PNG. "As our government continues to re-evaluate the infrastructure needed to keep our people, including our fishermen, safe and connected. The option to bypass mobile base stations is increasingly relevant to our communities especially in far flung locations. Lynk's mobile phone connectivity – through mobile base stations-in-space via a network of satellites – is ideally suited to meet current and future demands of Papua New Guinea," he continues. With these agreements, Lynk eliminates much of the need to invest in land-based infrastructure and mobile towers for mobile connectivity throughout island nations. Lynk's satellite-direct-to-standard-phone

service solves the 0G connectivity problem for residents of the islands of all these nations, as well as the fishing villages across vast regions. Lynk also provides an 'everyone everywhere emergency' (EEE) alert service, which notifies populations ahead of natural disasters, while offering instant backup after disasters hit. "Lynk's global commercial service is poised to launch later this year. We continue to add carriers as launch partners and anticipate more in the coming months," notes Charles Miller, Lynk CEO. "0G, that is lack of any coverage, compromises people's safety. The recent Tonga disaster shows just how important connectivity is for people's health and safety during a disaster. It is not just volcanoes and tsunamis that we need to worry about ... it is hurricanes, earthquakes, fires, tornadoes and blizzards, too. Today, Lynk is solving the 0G problem in seven island nations. Tomorrow, we will provide the ultimate safety net that ensures everyone, everywhere in the world can access mobile connectivity, no matter what happens." Lynk's most recent test satellite (its fifth prototype cell-tower-in-space) has completed all its major technical milestones. It has connected thousands of unique devices across five different countries, (Bahamas, Canada, New Zealand, the United Kingdom and the United States), enabling direct two-way connectivity between devices and Lynk's satellites. 📶

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WHOLESALE NEWS

South African Regulator Holds Hearing on Mobile Termination Rates

South Africa's Independent Communications Authority (ICASA) will hold public hearings to review call termination rules, as the country's largest operators dispute over a rule change eight years ago. The hearings are taking place today (February 7). The regulator published a discussion document in November 2021 and received seven submissions from operators Cell C, MTN, Switch Telecom, Telkom, Vodacom, the Internet Service Providers' Association (ISPA) and telecommunications policy analyst Ewan Sutherland. ICASA councillor Dr Charley Lewis noted since halving mobile termination rates in 2014, consumer prices for voices calls have "tumbled" with the affordability benefitting both businesses and consumers. "We have gone through all submissions and have decided to engage further through public hearings. The intention is to interrogate the submissions so that we can have a clearer and deeper understanding of the views expressed by stakeholders. It is important to have a holistic view of all comments, and to engage with concrete and specific proposals on the key issues, so that we may arrive at informed, evidence-based decisions," said Lewis. Vodacom was vehemently against the cutting of mobile



termination rates eight years ago with executives stating the rule benefits players who have not invested in their networks, and detrimental to those that have. Mobile termination rates are also an issue in Kenya, where Telkom claims it is forced to pay half of its revenues to rival Safaricom, for its customers to end their calls on its network.

ComReg Issues Finding of Non-Compliance to eir Related to Wholesale Local Access Obligations

Irish telecoms watchdog the Commission for Communications Regulation (ComReg) has notified fixed line incumbent eir that, as per its findings, the latter has not complied with obligations imposed upon it related to the wholesale local access (WLA) market. In a press release regarding the matter, ComReg noted that it relates to the charges levied by eir for duct access, with the regulator having conducted an investigation in which it sought to

determine the telco's compliance with obligations imposed under the 'WLA Decision Instrument' published back in November 2018; that decision included price control obligations and transparency obligations for eir. According to ComReg, eir has been given until 28 March 2022 to make representations to the watchdog in response to its findings.

ARPT Cuts MTRs, Moves to Reduce Call Pricing

Guinea's Regulatory Authority for Post and Telecommunications (L'Autorité de Régulation des Postes et Télécommunications, ARPT) has announced that mobile termination rates (MTRs) will be halved to GNF100 (USD0.011) per minute with effect from 1 February 2022, as part of a range of measures designed to lower the cost of mobile services. The regulator notes that the cut – the first since the interconnection charges were introduced more than a decade ago – will result in wholesale off-net call charges falling by 18.2% for Orange and 20% for MTN and Cellcom. In addition, the

ARPT has also confirmed that a GNF20 per minute levy applied to on-net mobile calls following the adoption of Order A/2021/457/MPTEN/CAB/SGG of 29 March 2021 has been abolished. Recognizing the charge had adversely affected consumers and caused industrial unrest in the sector, the regulator said it hopes operators will now resume offering bonus call minutes to customers. Finally, the watchdog has also proposed that telcos stop charging for calls to their customer service numbers.

On Net Hits Three Million Homes Passed by FTTH

Wholesale fiber infrastructure provider On Net Fibra has reached three million homes passed by its fiber-to-the-home (FTTH) network, providing coverage of roughly half of all existing homes in Chile. In a statement the firm, which was spun off from Movistar Chile in July 2021 and is now majority owned by KKR (Movistar retains a minority stake in the business), claims to have invested around USD100 million over the first seven months of its operation to increase its network footprint by 20%. On Net

Fibra General Manager Jose Miguel Torres said of the milestone: 'Reaching half of the country's homes with the possibility of high speed access allows us to consolidate our leadership position in the deployment of fiber optic networks, with a unique potential and competitiveness in the market so that our current and future clients can use our network, and thus focus on delivering their services to homes and businesses in Chile.'

Romania, Moldova Agree to Cut Roaming, International Call Charges



The governments of Romania and Moldova signed an agreement on 11 February to reduce tariffs for roaming services and international calls between the two countries, Romania's National Authority for Management and Regulation in Communications

(ANCOM) has announced. The accord has been concluded for an initial period of five years, with the changes expected to be implemented within the next three months. According to the press release, the agreement aims to create the framework for a sustainable reduction in retail tariffs for international roaming services, including voice, SMS and data, as well as international calls between the two countries. ANCOM and its Moldovan counterpart, the National Regulatory Agency for Electronic Communications and Information Technology (ANRCETI), will ensure that network operators within their jurisdictions negotiate in good faith with any applicant the technical and commercial conditions for the provision of interconnection in order to terminate in its own network calls and SMS from numbers from the other party's state, as well as the international transit of calls and SMS to networks in its own state.

EC Withdraws Czech Plans for MVNO Wholesale Access

The European Commission (EC) stonewalled the Czech Telecommunication Office's (CTO) plan to force MNOs to give favorable wholesale access to MVNOs, deeming the move incompatible with EU law. In a statement, the EC said the regulator notified the EU's executive branch in November last year of its intentions, which it claimed will make the Czech mobile market more competitive and result in lower prices for customers. The EC informed the CTO it had "serious doubt" for the policy to go through due to incapability with EU law, and has closed its in-depth investigation on the matter, now demanding the CTO to withdraw its draft measure to provide wholesale mobile access. The body wrote the draft measure is not "sufficiently justified" and does not take into account the short to mid-term market developments. It added the criteria for joint dominance by the country's three largest operators had not been met. In the draft measure, the CTO stated retail prices for phones and plans are particularly high in the Czech Republic, and MVNOs are not able to provide competitive services due to incumbent

operators O2, T-Mobile and Vodafone commanding "significant market power". The EC pointed to concessions O2 made after the country's 2020 5G spectrum auction when it was obliged to provide national roaming of 5G spectrum at an attractive price to service providers CentroNet, Nordic Telecom and PODA. The point the body was trying to make was that interested parties must move earlier particularly when a spectrum auction is scheduled, as concessions are expected of bidders which usually results in better prices for wholesale networks. It also noted there are already favorable conditions for the market entry of a new mobile operator. The Czech regulator said in a statement it does not agree with the EC's decision and will consider further steps to lower prices for consumers, but did not state any detail. The CTO revealed its intentions to push through this measure last year and revealed there was a failure in keeping wholesale prices in check as data per megabit transferred between 2015 to 2020 was higher than or equal to the retail price. 📍



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TECHNOLOGY NEWS

Fourth Radio Interface Technology Added to 5G Standards

Members of the International Telecommunication Union (ITU) approved a fourth technology as part of ongoing standards development for 5G mobile services. Known as “DECT 5G-SRIT”, the new technology supports a range of uses, from wireless telephony and audio streaming to industrial Internet of Things (IoT) applications, particularly in smart cities. It was added in the first revision to ITU's key recommendation IMT-2020, which broadly encompasses fifth-generation, or 5G, networks, services, and devices. This ITU Radiocommunication Sector (ITU-R) Recommendation – providing a set of global technical 5G standards – reflects continual consultation and discussion among governments, companies, regulators, and other stakeholders dealing with radiocommunication worldwide. Along with fostering connectivity across borders, ITU promotes the global rollout of 5G as a key driver to achieve the UN's 17 Sustainable Development Goals. “New and emerging technologies like 5G will be essential to build an inclusive, sustainable future for all people, communities and countries,” said ITU's Secretary-General, Houlin Zhao. “Under the ongoing International Mobile Telecommunications

or IMT program, our diverse global membership continues its long-standing contribution to advance broadband mobile communications, furthering our mission to leave no one behind in connecting the world.” ITU – the United Nations agency entrusted with coordinating radio-frequency spectrum worldwide – today published the specifications for the new technology as Recommendation ITU-R M.2150-1. The technology is designed to provide a slim but strong technical foundation for wireless applications deployed in a range of use cases, from cordless telephony to audio streaming, and from professional audio applications to the industrial Internet of Things (IoT) applications, such as building automation and monitoring. The European Telecommunications Standards Institute (ETSI) laid the essential groundwork jointly with the DECT Forum, a worldwide association of the digital enhanced cordless telecommunications (DECT) or wireless technology industry. ITU's Radiocommunication Director, Mario Maniewicz, said: “The highly collaborative process involves substantial input from and coordination with the ITU Member States, equipment manufacturers, network

operators, standards development organizations, and the academic community. ITU provides a unique global framework to discuss the capabilities of new radio technologies.” Andreas Zipp, Chairman of the DECT Forum, welcomed the addition of the new technology to IMT-2020. “Inclusion as part of ITU's global 5G standards affirms the significance of this technology moving forward,” he said. Other candidate radio interface technologies underwent the international mobile telecommunication (IMT) evaluation process over the past year, although only one qualified to be added at this stage. The revised IMT-2020 recommendation now includes the new standard, which European standards developers recognized could support 5G uptake everywhere. “The ETSI DECT standard received IMT-2000 approval more than twenty years ago,” noted ETSI's Chief Technical Officer, Adrian Scrase. “5G therefore presented an ideal opportunity to develop this new, non-cellular, radio standard, which is particularly suited for smart meters, Industry 4.0, building management systems, logistics and smart cities.” Based on the requirements set out in ITU's evaluation process, the radio interface technology demonstrates worldwide compatibility in terms of operation, equipment, and roaming. It also addresses the ultra-reliable low latency (URLLC) capability stipulated by IMT-2020 – the underlying global coordination framework for so-called 5G services. IMT-2020 stands for the requirements issued by ITU's Radiocommunication Sector for 5G starting in 2015. Full-scale commercial deployment of 5G networks has only taken off in the past year, following ITU's publication of a key radiocommunication technology recommendation. ITU published the only globally agreed IMT standard for radio interface technologies in February 2021 under the designation Recommendation ITU-R M.2150. At the time of publication, three technologies met the stringent IMT-2020 performance requirements. Two of those (3GPP



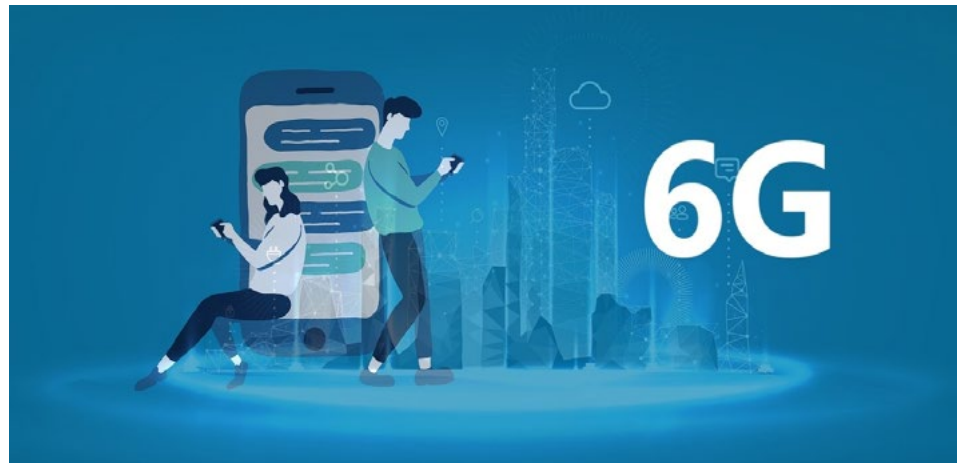
5G-SRIT and 3GPP 5G-RIT) came from the Third Generation Partnership Project (3GPP), while another (5Gi) was submitted by the Telecommunications Standards Development Society of India. ITU sought wide-ranging input to ensure the new recommendation would reflect the latest real-world requirements. In parallel, ITU

has initiated the development of IMT for 2030 and beyond, setting the stage for new research activities. ITU-R Working Party 5D, tasked with studying IMT systems, has started to consider the future requirements for the global uptake of the next generation of international mobile telecommunication. The next World Radiocommunication

Conference (WRC-23) hosted by the United Arab Emirates will address further aspects of IMT systems, among other topics. "Even as 5G becomes mainstream, research is well underway into the next generation of mobile networks," Secretary-General Zhao said.

Vietnam Pledges 6G Push In 2022

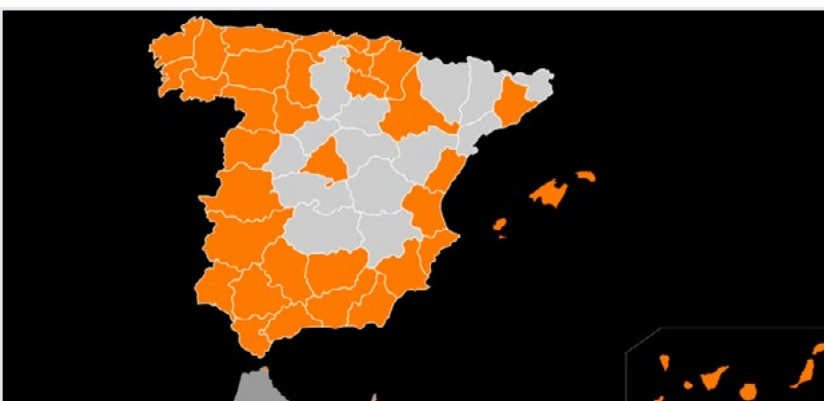
Vietnam announced it will begin researching and developing 6G technology this year with ambitions to become a global leader in the digital world, earmarking cloud computing and digital platforms as beneficiaries to the future standard. Minister of Information and Communications Nguyen Manh Hung said it was time for the nation to get ahead of infrastructure development and gain a footing in cloud computing and digital platforms, reported Vietnam News. The digital industry is estimated to grow at a pace of \$136 billion a year with more than 64,000 companies established. Nguyen said the government's objective is to become one of the world's leading nations in digitization and meet the demand for skilled workers. To do this, he stated the importance of cloud computing and digital platforms, which are the fastest-growing technology fields with an annual growth rate of 15% to 20% in the country. The Minister also noted the two fields will



meet or even surpass telecommunication which he claimed has reached a saturation point. The telecommunications sector must address long term issues such as rampant text messaging ads and calling before it is useful for a digital economy, said Nguyen. Vietnam is aiming to become one of the top 30 nations in the world for advanced and robust digital infrastructure

by 2025. "In order to realize these targets, the telecommunication sector must start now to get ahead of the competition to develop 6G technologies and hardware as well as to build the country's 5G network," said Hung. He rallied domestic companies to invest in the development of 5G and 6G pledging government support will be provided.

Orange Espana Unveils 700MHz 5G Rollout Plans



Orange Espana has commenced the deployment of a new 5G network using 700MHz spectrum. The network will be rolled out progressively throughout 2022, with a view to serving customers in more than 1,100 municipalities – 820 of which have populations between 1,000 and 50,000. In addition, 140 towns in 30 provinces with less than 1,000 inhabitants will also benefit from the new infrastructure. As of 30 September 2021 Orange Espana offered 5G coverage to 50% of the population and counted 620,000 5G subscriptions.

China to Deploy 2m 5G Sites by End-2022

Chinese mobile providers have deployed a total of more than 1.42 million 5G base stations, and are planning to roll out a further 600,000 in 2022, CCTime writes, citing a senior Ministry of Industry and Information Technology (MIIT) official. According to the Ministry, 5G networks currently cover all prefecture level cities, all counties and urban areas and 87% of townships.



Telstra Achieves 5.9Gbps Downlink Speed on Commercial mmWave 5G Network

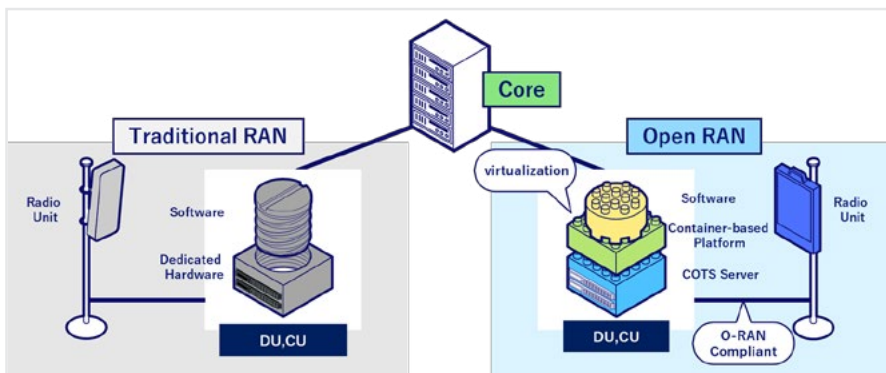
Australian mobile network operator (MNO) Telstra, in collaboration with Ericsson and Qualcomm, has reportedly set a new network download speed record of 5.9Gbps using a smartphone form factor mobile test device. In a press release regarding the development it was noted that the accomplishment had been achieved using Ericsson's NR-DC software feature with downlink eight-component

Carrier Aggregation (DL 8CC CA), in which eight contiguous carriers of 100MHz mmWave are combined with 100MHz of mid-band spectrum, resulting in higher data speeds on Telstra's mmWave 5G network. Meanwhile, the development comes as the MNO prepares to launch its third mmWave-compatible device, the NETGEAR Nighthawk M6 Pro, in April 2022. Iskra Nikolova, Telstra Network

and Infrastructure Executive, claimed that the achievement demonstrated how the operator was constantly testing and evolving technologies to implement in their commercial network. 'This time last year we pushed our network to a new top speed of 5Gbps, now, twelve months on we have added almost another Gigabit per second on top of that', the executive was cited as saying.

KDDI Claims World 'First' with Live 5G SA Open RAN Site

Tokyo-headquartered fixed and mobile operator KDDI (au), working with equipment manufacturers Samsung and Fujitsu, has announced the switch-on of



what its claims is the world's first commercial 5G Standalone (SA) Open RAN site powered by virtualized Radio Access Network (vRAN) in Kawasaki, Kanagawa prefecture. Launched on 18 February 2022, the 5G SA Open RAN site is carrying live traffic on KDDI's network thanks to the deployment of Samsung's 5G virtualized CU (vCU) and virtualized DU (vDU), Fujitsu's Massive MIMO radio units. Going forward, the three companies plan to extend the coverage of Open RAN in select parts of Japan, including rural areas, continuing 'its deployment and development, embracing openness and virtualization in KDDI's commercial network'.

Movistar Switches on 700MHz 5G Network

Telefonica Espana (Movistar) has launched its 700MHz 5G network to coincide with the Mobile World Congress 2022 event in Barcelona. A total of 700 towns are

covered from launch – a figure which will rise to 1,400 by end-2022 and 2,400 by the end of 2023. The telco currently delivers 3.5GHz 5G coverage to around 80% of the

population after switching on the service back in September 2020.

Internet of Things Times

Spain's Telefonica has launched an autonomous drone fleet management solution, with capabilities to send real-time images and on-demand data to a centralized autonomous management platform which synchronizes operations for security, surveillance, event verification and critical infrastructure maintenance tasks. The solution – which could 'detect and neutralize unmanned aircraft over long distances' according to the company – will be presented on 1 March during the Mobile World Congress event in Barcelona.

Vodafone **Spain** has installed a 5G Standalone (SA) private mobile network at the Galician Automotive Technology Centre to carry out tests for the development and validation of autonomous and connected vehicle projects. The dedicated network will allow the Centre to control and optimize its demand for system resources and apply its own security policies, while enjoying the performance benefits of 5G SA.

Latvian operator LMT has piloted an AI-based traffic monitoring system connected to its network in Riga and Liepaja, gathering an 'unprecedented amount of data' on cars that run red lights at intersections via plug-and-play traffic light cameras to share with the authorities. The system also analyzed driver behavior to identify the need for measures such as improved signage and speed bumps.

Astrocast has commercially launched its bidirectional satellite IoT (SatIoT) service, to connect IoT devices globally when outside of cell-based terrestrial networks at

a comparable cost. Utilizing a nanosatellite constellation in Low Earth Orbit, Swiss-based Astrocast focuses on affordable connectivity, supporting applications in asset tracking, telemetry and telematics across sectors including maritime, agriculture & livestock, environment & utilities, land, transport, freight & storage, mining, and oil & gas. Astrocast has also formed a partnership with IoT service provider UnaBiz, to develop an end-to-end IoT solution for asset tracking and monitoring, utilising UnaBiz's UnaConnect IoT device management data platform that currently manages around one million IoT devices. Henri Bong, co-founder of Singapore-based UnaBiz commented: 'The Satellite-IoT market is growing rapidly. UnaBiz is pleased to partner with Astrocast and leverage its cost-effective, low-power, bidirectional direct-to-satellite services to complement existing LPWAN projects that we are currently driving in the market.'

iBasis announced that its owner Tofane Global has acquired Simfony, a multinational IoT Platform-as-a-Service provider and Mobile Virtual Network Enabler (MVNE) headquartered in the **Netherlands**. A press release says the acquisition complements the iBasis IoT portfolio by adding a business management layer to its global connectivity offering, thus creating a one-stop shop for its customers who gain access to a fully-featured IoT Connectivity Management Platform for their remotely programmable SIMs (eSIMs), from online ordering, provisioning, product catalogue,

device lifecycle control, trouble ticketing, online rating, and billing, to account profitability.

Nokia has signed a contract with 450connect, a joint venture backed by **German** energy and water companies, to deploy a nationwide LTE-450 network targeting operators of critical infrastructure. Nokia says the LTE-450 technology – coupled with 'industrial-grade private LTE/LTE-M solutions' – is ideally suited to achieve wide-area coverage and is optimized for M2M/IoT applications and critical voice communications. Initial end-to-end tests will take place in the field by mid-2022 to ensure performance for the upcoming rollout. Radio services will be offered in the first regions of Germany in 2023. The nationwide rollout will take place by 2025. Nokia will manage the supply and performance of all LTE components, including maintenance services, until 2040.

The **Pakistan** Telecommunication Authority (PTA) has published its regulatory framework for the provision of IoT services. The regulations clarify the licensing requirements and general conditions for the provision of IoT services, including the introduction of a new concession for the operation of LPWANs using shared frequency bands. Under the new guidelines, mobile providers and other operators with licensed spectrum may provide IoT services over their assigned frequencies under the conditions of their existing license and without purchasing an additional concession. Companies wishing to provide long range IoT services over LPWAN bands – defined by the PTA as 433.05MHz-434.79MHz and 920MHz-925MHz ranges – must secure a new LPWAN license and comply with additional conditions regarding interference and installation of base stations. LPWAN licenses are valid for five years, and cost PKR100,000 (USD569) upfront plus an application fee of PKR1,000 and an annual license fee of PKR5,000 per base station.

Canada's Rogers Business is expanding its suite of Smart Cities and Smart Buildings IoT solutions, working with a broad ecosystem of partners to deliver a number of new solutions including: Smart Water Management (with Ayyeka); Smart Parking



(with Cleverciti); Smart Traffic (with NoTraffic); Mixed Fleet Management (with Titan GPS); Transit Fleet Management (with ISR Transit); Indoor Air Quality Monitoring and Purification (with IES Ventures); Digital Signage (with Corum Digital); Smart Security (with Caliber Communications); Smart Washrooms (with Mero Technologies); and Water Leak Detection (with Eddy Solutions).

Elsewhere in **Canada**, Telus has launched a Smart Cities initiative partnering Google Cloud for infrastructure and data analytics and utilizing the 'Smart City-as-a-Service' platform of NXN Digital, saying it aims 'to deliver the next-generation of sustainable, efficient, secure, and innovative IoT technologies that will empower businesses, communities, and their residents through a vast ecosystem of people-first solutions.' Applications will range from dynamic traffic signaling for reducing congestion and emissions, to data analytics for creating smarter, more efficient city planning. Telus' Smart City solutions fall into four categories: Infrastructure and environmental sustainability; Intelligent transportation; Public safety and security; and Healthcare services.

US tech firm Honeywell has inked a partnership with **Egyptian** mobile operator Etisalat Misr to develop advanced solutions for smart buildings, communities and cities, with the pair collaborating on the construction of a cloud-based IoT platform. Honeywell and Etisalat Misr will explore solutions based on AI, machine learning, connection and hosting technologies that can be applied to various vertical segments such as industrial, healthcare, hospitality, education, real estate and transportation. The development extends a strategic relationship formed in 2019.

In **Belgium**, the Antwerp Port Authority has selected the 6th NeTWorK consortium, a collaboration between DroneMatrix, Proximus and SkeyDrone, for the rollout of a large-scale drone project named 'D-Hive', deploying a network of drones capable of performing automated flights from strategic locations in the port. The drones will be deployed without manual intervention to support core processes and optimize operations, for example, the detection of oil slicks and floating debris, infrastructure inspections, safety coordination, vessel traffic management

support, calamity and incident support, site monitoring, environmental inspections and asset management. Proximus activated its 5G 3.5GHz network in the port in March 2020, with most parts of the port area today enjoying 5G coverage.

Telenor **Denmark** has announced it is establishing an independent unit under its B2B division responsible for private networks and IoT solutions, aimed at industrial and commerce sectors 'that can benefit from a tailored network with a guarantee of minimal response time and extra security'. Telenor says the move stems from the rollout of 5G (including Standalone 5G planned for this year) and the modernization of 4G, which offers new opportunities for building closed, tailor-made network solutions. Particular focus will be on manufacturers and heavy industrial companies who, with their special need to integrate robots and sensors in real time, will benefit from their own private wireless network without wires and cables. In addition, the solutions are also expected to be attractive for companies with office employees, where a private network adapted to the individual customer's needs can act as a replacement or supplement to the traditional Wi-Fi. The new unit will be responsible for sales, product development and marketing of the new private networks and IoT solutions,

Australia's Telstra announced a AUD100 million (USD72 million) deal with Intellihub that will see Telstra provide up to 4.1 million IoT SIMs to Intellihub over the next decade, representing the telco's largest IoT deal to date in terms of value and number of connected devices. Using the Cisco Jasper platform, the IoT SIMs will be incorporated into Intellihub's smart meters to deliver real-time monitoring and insights to help Intellihub and its customers better manage things like energy demand, solar feed-ins and peaks and troughs. Intellihub was founded four years ago and currently has more than one million meters installed. Telstra reports more than five million devices now connected to its IoT/M2M networks, including around 1.2 million devices connected to Cellular Low Power Wide Area Networks (LPWANs). Telstra claims the largest IoT network in Australia – with around four million square kilometers of NB-IoT coverage and around three million square kilometers of LTE-M

coverage.

Nepal Electricity Authority (NEA) is still without frequencies for its smart meters project, despite applying to the Nepal Telecommunications Authority (NTA) for the requisite Utility Frequency license in the 393MHz-398.5MHz band three years ago, reports NepaliTelecom. NEA plans to install smart meters for all its six million customers in phases, a project which under the current regulatory regime would cost an annual sum of over NPR20 billion (USD165 million) in frequency charges. NEA has long argued it is entitled to the frequencies free of cost. The Ministry of Energy, Water Resources & Irrigation is trying to find a resolution by taking the matter to the Council of Ministers, while NEA has so far provided only 44,000 customers with smart meters equipped with GPRS SIM cards in a pilot phase. NEA's Managing Director Kulman Ghising says such frequencies are allocated for free in other countries, and could be utilized as unlicensed spectrum, arguing: 'Such frequencies come for free but NTA is seeking unreasonable fees.'

UK-based IoT services provider Pangea has announced reaching the milestone of 400 IoT partners. The company says it is enabling partners to 'move beyond the game of undercutting [prices], to help their customers overcome real business challenges and reach tangible outcomes. All using intelligent mobile data and value-added services, like static IPs and mobile content filtering.' Pangea adds that it connects over 200,000 endpoints across various sectors, while last year it formed an IoT/mobile data partnership with another UK operator Daisy Communications.

France-based global IoT group Sigfox has entered insolvency proceedings following difficulties mostly beyond the company's control. In a statement, Sigfox confirmed that a judicial reorganization procedure for the benefit of the parent company and subsidiary Sigfox France would have an initial observation period of six months, with the aim of finding new buyers with the capacity to work for the long-term development of Sigfox and to preserve jobs. The report notes that lower-than-forecast growth in IoT devices has been significantly influenced by global electronic component shortages and COVID-19 related factors which slowed

IoT development activity, weighing heavily on Sigfox's financial situation, in particular its level of indebtedness. Spain's Sateliot is finalizing a first-phase capital increase for EUR10 million (USD11.3 million) via which Indra and Cellnex have become new shareholders and industrial partners, reports [Satellite-evolution.com](#). Sateliot – which is launching a constellation of 5G/IoT nanosatellites to act as coverage extension for mobile networks for true global reach – will issue respective stakes of approximately 10.5% and 3.5% to Indra and Cellnex, with the funds raised from the capital increase earmarked for advancing the development of the technology for Sateliot's project, which will merge mobile and satellite networks under the same standard – already approved by 3GPP in a first phase.

In **Portugal**, LoRin Network has chosen Cellnex to provide infrastructure to host a national LoRaWAN IoT network. Cellnex Portugal director Nuno Carvalhosa stated that Cellnex's infrastructure 'allows different operators, in this case LoRin Networks, to provide solutions and services aimed at improving the quality of life of citizens' and enabling 'improvement of the functioning of urban centers and the digital transformation of different sectors

of the economy.' A release added: 'These networks allow the installation of a range of IoT solutions favorable not only to improving connectivity in essential activity sectors, such as agriculture or transport and industry, but also to the acceleration and development of smart cities.'

UK-based global satellite firm Inmarsat has announced a distribution partnership with Libyan network operator Rawafed Libya for Telecommunications and Technology (RLTT). RLTT's Digital Oilfields business unit will use Inmarsat's IsatData Pro (IDP) and Broadband Global Area Network (BGAN) to provide secure, satellite-based data services to oil and gas companies, including always-on remote telematic and CCTV monitoring of vital infrastructure such as wellheads at drilling and production sites across the country. 'Inmarsat's experience in providing IoT-over-satellite connectivity for industry means that it understands the types of products and services we want to offer to the oil and gas sector in Libya,' said Taha Ellafi, Chairman at RLTT. The services are delivered through Inmarsat's ELERA L-band connectivity network and benefit from ultra-reliable 99.9% availability, security and small-form, robust terminals. The RLTT Digital Oilfields unit plans to

expand its satellite-based offering with the addition of pipeline monitoring, plus vehicle telemetry, tracking, and fleet management. 'More and more oil and gas companies are benefitting from the operational and safety improvements IoT provides,' said Mike Carter, President of Inmarsat Enterprise.

Canada's Rogers Business has launched a 5G Wireless Private Network (WPN) at Kirkland Lake Gold's Detour Lake Mine, the second-largest gold mine in Canada and the country's first mine to be fully connected over a 5G WPN, providing enhanced coverage, end-to-end reliability, full redundancy, and a low latency network across its 80-square-kilometre operation. New solutions supported by the 5G WPN include tele-remote operations, industrial IoT sensors to provide real-time insight into operations, drones that can deliver supplies to the bottom of the mine, future autonomous haulage vehicles, and exploration work. All applications will be monitored and managed through a digital dashboard to improve efficiencies and productivity at the site. Rogers worked with partners on the project including Cradlepoint, Dell Technologies, Ericsson and Expeto. 📍

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REGULATORY NEWS

GSMA Backs Mid-Band 5G to Deliver Global GDP Boost

The GSMA reiterated calls for governments to prioritize making mid-band spectrum available for 5G, backing services using the frequencies to contribute \$610 billion to global GDP by 2030 should sufficient allocations be available. The lofty prediction was made by the industry association in its Socio-economic benefits of mid-band 5G services report released. It forecast 5G spectrum in the mid-band range would drive a significant proportion of the \$960 billion socio-economic value created by the latest network technology. Among the areas the GSMA cited as having the greatest financial benefits are services including health and education, manufacturing and smart cities. However, the GSMA warned \$360 billion of the GDP growth expected to be fueled by mid-band 5G could be lost if spectrum was constrained to levels currently available,

noting as demand grows increased network congestion and deployment costs could “stifle” the technology. It added network quality would suffer without sufficient spectrum, limiting 5G adoption and hampering its economic

impact. The report analyses the impact of various government spectrum policies on economic development strategies, which the organization highlighted as a key area of its ministerial program during MWC22 Barcelona.



NTIA, FCC Commit to Spectrum Management Changes

US regulator the Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA) pledged to improve government coordination on spectrum management, an apparent response to a recent spat with the aviation industry over C-Band deployments. The agencies formed the Spectrum Coordination Initiative, committing to:

- Renew efforts to develop a national spectrum strategy. NTIA and the FCC vowed to cooperate to develop a national spectrum strategy, increase transparency and establish long-term planning and coordination.
- Recommit to scientific integrity and evidence-based policymaking. The agencies plan to create processes for spectrum engineering compatibility analysis, including a compilation of principles, guidelines, accepted technical standards, interference protection criteria

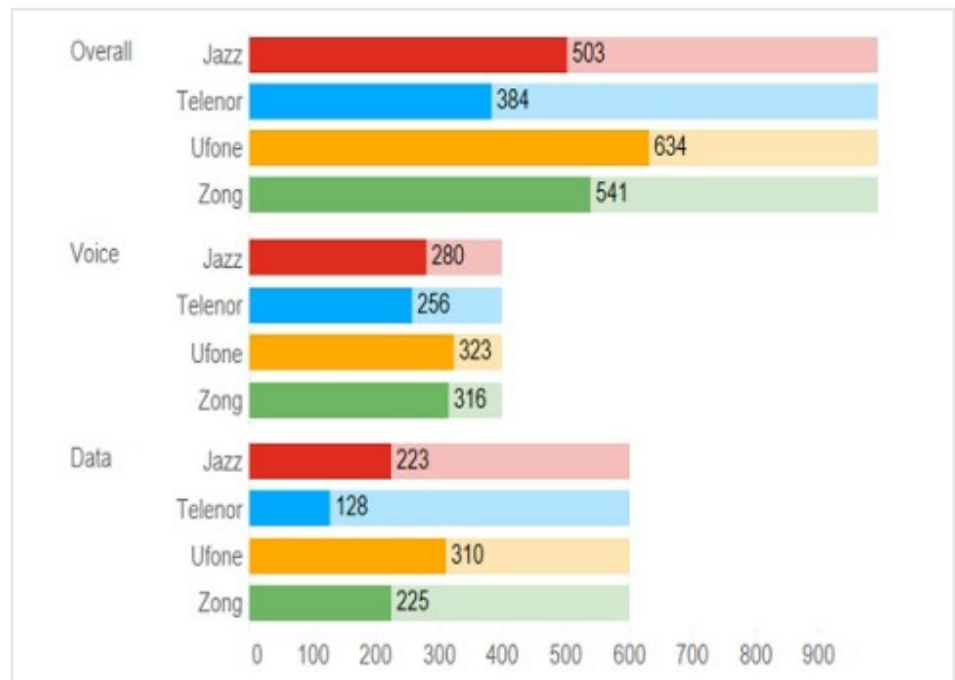
and propagation models, among other items.

- Revamp Technical Collaboration. A commitment to foster proactive technical exchange and engagement with industry and other federal agencies by participating in cross-agency advisory groups, beginning with the FCC participating as an observer in the a committee advising NTIA chiefs and vice-versa. Going forward, the FCC and NTIA pledged they would work together to resolve spectrum policy issues by holding regular formal meetings on joint spectrum planning. In a statement, the agencies explained the Spectrum Coordination Initiative will work towards improving their “ability to address gaps in governmental coordination” by updating a nearly 20-year memorandum of understanding between the two. The Initiative also includes recently-appointed NTIA assistant secretary Alan Davidson and FCC chair Jessica Rosenworcel

holding monthly meetings to focus on joint spectrum planning. Roger Entner, founder of research company Recon Analytics, told Mobile World Live the agencies’ commitment to put the nation “ahead of their respective turfs” was a welcome development. “We can only win when the FCC and NTIA are working together to bring more spectrum, more quickly and without hiccups to the best possible use. The new cooperation will accelerate and harmonize the approach to spectrum management.” Creation of the spectrum initiative follows a fierce spat between the US aviation industry involving the launch of 5G services in C-Band spectrum by Verizon and AT&T. The FAA has repeatedly expressed concerns the 5G services could interfere with aviation operations, with the operators agreeing to create buffers around some airports. Hope springs eternal the new initiative will plant the seeds for better cooperation going forward.

PTA Tests Operators' Performance

Pakistan Telecommunication Authority (PTA) carried out an independent Quality of Service (QoS) survey to measure the performance and quality of Cellular Mobile Operators' (CMOs) services being provided to their customers, a statement said recently. The authority surveyed in 18 cities and 9 motorways/highways/inter city roads of Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan. During the survey, the licensed KPIs of voice, network coverage, SMS, and mobile broadband/data were checked using automated QoS monitoring and benchmarking tool. The drive test teams selected survey routes in a manner to cover main roads, service roads, and majority of sectors/colonies in surveyed areas.



ARTA Ruling Good News for NOW Telecom

NOW Corp-backed NOW Telecom, which secured an extension to its provisional authority (PA) in September 2020 to install, operate, and maintain a nationwide mobile telecommunications system, has reportedly received a 'favorable' decision from the Anti-Red Tape Authority (ARTA) for its service. The Manila Standard writes that on 3 February ARTA reaffirmed its earlier ruling upholding NOW Telecom's allocation of 220MHz of radio frequencies (1970MHz-1980MHz paired with 2160MHz to 2170MHz, and 3.6GHz to 3.8GHz), including 5G-suitable spectrum for mobile and fixed wireless services. TeleGeography's GlobalComms Database writes that in March 2021 ARTA ordered the National Telecommunications Commission (NTC) to assign the necessary

frequencies to NOW Telecom allowing it to operate via its Cellular Mobile Telephone Systems (CMTS) concession. In an order dated 1 March 1, ARTA issued an order of automatic approval for the assignment by the NTC of certain frequencies which NOW needs as a CMTS licensee. In its order, the anti-red tape body said the NTC failed to approve or disapprove NOW Telecom's application for 'assignment of concomitant frequencies for the exercise of its CMTS provisional authority since January 2006 despite submission of all required documents and payment of all required fees and charges, and the issuance of the said provisional authority and the extension thereof.' Further it contended that: 'Under Section 10 of Republic Act No. 11302 (Ease of Doing Business and Efficient

Government Service Delivery Act of 2018), the said application or request for assignment of concomitant frequencies for the exercise of NOW Telecom's CMTS PA as attested to in NOW Telecom's affidavit of completeness is hereby declared complete, and is now deemed automatically approved by operation of law.' Commenting on the latest development, NOW Telecom's president, Rene Rosales, said: 'With the recent ARTA ruling, NOW Telecom will be able to continue pursuing its mobile broadband services aspirations that have been hampered for more than 16 years due to the lack of sufficient frequencies to operate. NOW Telecom has been a holder of a CMTS Provisional Authority alongside Smart Telecommunications and Globe Telecom prior to the third telco bidding.'

JCRA Restarts 5G Spectrum Award Process

Following communications with the Government of Jersey, the Jersey Competition and Regulatory Authority (JCRA) has announced it is now in a position to restart its 5G spectrum award process 'with immediate effect'. Previously, in May 2020 the

regulator had put on hold a consultation relating to the allocation of 5G frequencies, doing so 'in the context of the continuing economic and social situation and concerns expressed by the Government of Jersey regarding security of 5G infrastruc-

ture'. Now, the JCRA has said it intends to re-engage stakeholders through public consultation and discussions, with further details and an updated timetable for the allocation of 5G spectrum expected to be published in March 2022.

Cambodia Tightens Internet Control with National Internet Gateway



The National Internet Gateway proposed by Cambodia's government last year is set to launch on 16th February, granting the state greater surveillance powers over online content. The gateway will route all internet traffic through a state-controlled entry point. Government spokesperson Phay Siphon stated that the gateway would help the government protect national security and defend against cyber-crime, but many critics – including the UN – have countered that the measures look set to bring Cambodia's internet controls more in line with China's, quelling free speech and crushing the already stifled opposition parties. The Cambodian Centre for Human Rights (CCHR) believes that the gateway will be used by the government as a tool to silence

dissent, noting that during 2021 government censors arrested, detained or issued a warrant for the arrest of 39 individuals due to the content of their online posts. Many of these people had ties to opposition parties – including the son of an already jailed opposition leader - or had expressed an unfavorable view of the incumbent government. The government has ordered the gateway to block access to websites and connections that could have a negative effect on "national revenue, safety, social order, morality, culture, traditions and customs" – a sweeping definition that could be used to police opinions as Cambodia prepares for elections next year. The country's authoritarian Prime Minister Hun Sen has held power since 1985. Speaking to AFP, cybersecurity expert Matt Warren from Australia's RMIT University noted that the gateway could be used to silence high-profile opposition figures living in exile outside of Cambodia. He noted that the government feared the use of social media platforms for organized protest, as occurred in Myanmar, and was following in China's steps towards full surveillance. "It's the Balkanization of the internet. You've got the internet in China, you've got the Russian internet, you've got the internet in Saudi Arabia, where they are isolated and monitored. It's not just about censorship, it's also about control", said Warren. With the gateway set to come into effect imminently, many Cambodians are turning to VPNs, with British advocacy group Top10VPN noting that in December 2021 the number of VPN accounts in Cambodia grew by 56%. Thus far, authorities have not acted on this trend but the firm noted that it was likely a matter of time.

Deep and Meaningful: UScellular, T-Mobile Talk Up Acquired Spectrum

Following the conclusion of Auction 110 – the most recent spectrum sale held by the Federal Communications Commission (FCC) – two of the more notable participants have shared new details regarding their respective 5G strategies. Regional operator UScellular noted: 'Combining mid-band purchases of CBRS spectrum in Auction 105 and C-band in Auction 107 with the spectrum acquired in recently-completed Auction 110, UScellular will have mid-band spectrum in the great majority of its operating footprint and over 80% of subscribers will be covered with mid-band

spectrum depths of 100MHz or more.' In Auction 110, UScellular says it purchased 380 licenses covering 97% of its subscribers for a total cost of USD580 million. T-Mobile US, meanwhile, says it won an average of 21MHz of mid-band spectrum in key areas home to 184 million people across the US, which it will deploy to add additional depth to its 2.5GHz 'Ultra Capacity 5G' network. Going forward, T-Mobile plans to bring Ultra Capacity 5G to 260 million people this year and cover 300 million people in 2023.

Slovak MNOs to Swap Fragmented 1800MHz Spectrum

Slovakia's four mobile network operators (MNOs) have agreed a plan to swap frequencies in the 1800MHz band to give them contiguous packages of spectrum which will help to improve 2G, 4G and 5G network efficiency. Zive.sk reports that the deal was negotiated by the operators themselves, with the regulator

acting only as a moderator. The MNOs will each get 2x20MHz of spectrum in three parts of the country and 2x15MHz in one agreed area. Formal refarming begins on 14 February and will be completed around two months later, the report says.

Artificial Intelligence Turbo-Charges AI for Good



A new community platform powered by artificial intelligence (AI), launched today by the International Telecommunication Union (ITU), aims to step up global collaboration on the use of AI to drive sustainable development. The AI for Good Neural Network is designed to accelerate exchanges among government and industry, as well as to foster partnerships to achieve the Sustainable Development Goals (SDGs) set by the United Nations for 2030. The new networking tool features AI-enabled smart-matching to help users build connections with innovators and experts, link innovative ideas with social impact opportunities, and bring the community together to discuss AI applications for social good. AI for Good – organized by ITU in partnership with 40 organizations across the UN system and co-convened with Switzerland – provides the leading action-oriented, global, inclusive platform promoting AI to advance health, climate, gender, inclusive prosperity, sustainable infrastructure, and other global development priorities. “This new cutting-edge tool brings AI for Good to the service of the United Nations and our global community in ways that were not possible just a few years ago,” said ITU’s Secretary-General, Houlin Zhao. “With the ongoing pandemic shifting our work and learning environments largely online, the Neural Network now leverages the power of AI to stimulate meaningful action, bring more partners

aboard, and ramp up AI in pursuit of sustainable development.”

AI for Good in action

Expanding on ITU’s AI for Good program, the Neural Network offers content and collaboration opportunities aligned to each of the 17 SDGs. In exploring practical applications, AI for Good has helped spur innovation, foster knowledge exchange, and promote AI achievements across the UN and beyond.

“Artificial intelligence and machine learning (ML) offer some highly practical applications across multiple industries and sectors – applications with considerable potential to serve as a force for good,” explained Chaesub Lee, Director of ITU’s standardization bureau. “AI and ML are gaining ground in ITU’s standardization work, with research, analysis and stakeholder discussions focusing on network orchestration and management, multimedia coding, service quality assessment, and various aspects of telecom management, operation and services, as well as cable networks, all supporting accelerated digital transformation in key industry verticals.” Several ITU pre-standardization initiatives have turned to AI to find solutions and help set standards for better health care, autonomous and assisted driving, environmental efficiency, natural disaster management, machine learning in 5G networks and most recently, digital agriculture. The United Nations Activities on Artificial

Intelligence Report released in December 2021 highlights over 200 AI projects and initiatives from 40 UN organizations applying AI technologies for social good – largely reflecting the scope of ITU’s AI for Good. At the AI for Good Innovation Factory, start-ups pitch AI innovations addressing key socio-economic challenges. In the AI/ML in 5G Challenge, students and experts compete to solve real-world machine learning puzzles in 5G networks. These action-oriented initiatives and programmes are effectively creating the building blocks needed to deploy AI for Good at scale.

Smart matching for a better future

Through the Neural Network, community members can connect to each other, receive personalized content, and pursue engagement aligned to their profiles, goals and needs. Since no two human interactions are the same, the inclusive platform reflects both community and individual needs.

The smart matching mechanism – designed according to the principles of the Global Initiative in AI and Data Commons – will connect AI innovators to anyone with an AI-related problem, as a step towards globally scaled AI solutions. For example, it can generate matches for open data and AI algorithms, cloud storage and computing power, problem statements and expertise, funding and mentorships, domain transfer, SDG alignment, and more. The solution is meant to stimulate unprecedented cooperation across borders and boundaries, foster impactful SDG-focused partnerships in the field of AI, and directly serve Goal 17: Revitalize the global partnership for sustainable development. The AI for Good Neural Network is open to all with an interest in how AI can positively impact the future of humankind. Join the AI for Good Neural Network to help build the future of AI.

More about AI for Good

Originally presented as a five-day summit, AI for Good has become an “all year, always online” digital platform offering weekly live sessions, over 1,000 hours of on-demand content, networking opportunities, virtual exhibits, demos, poster walls and expert blogs – all searchable and mapped to the SDGs.

The 2022 AI for Good Program includes:

- Expert Discovery talks on ML in 5G, trustworthy AI, AI and health, AI and climate science, and GeoAI
- Interactive keynotes, panel discussions, and interviews
- Start-up pitching competitions and AI challenges
- Artistic Intelligence, where artists use AI to push the limits of creativity
- A newly launched Robotics for Good series.

Pakistan Begins Paving Way to 5G Spectrum Auction



Pakistan's government has established an advisory committee to prepare for the auction of 5G spectrum, the Express Tribune reports. The committee will be headed by the Finance Minister, and will include eleven other Ministers and senior officials, including the IT and Telecom and Science and Technology Ministers, the Chairman of the Pakistan Telecommunication Authority (PTA) and the Frequency Allocation Board (FAB) Executive Director. The group will review the available spectrum resources and submit a plan to maximize the utilization of the airwaves. Also, to be considered are telecom reforms and incentives for the promotion of the development of the 5G ecosystem. The government is aiming to complete the auction of 5G frequencies by January 2023 at the latest.

Australian Minister Issues Policy Statement for the 3.4GHz-4.0GHz Band

Paul Fletcher, Australia's Minister for Communications, Urban Infrastructure, Cities and the Arts, has issued a Ministerial Policy Statement (MPS) for the 3.4GHz-4.0GHz band, setting out 'policies of the Government that the Australian Communications and Media Authority (ACMA) must have regard to in performing its spectrum management functions and exercising its spectrum management powers with respect to the spectrum band in question'. In a press release regarding the matter, it was noted that the MPS is specifically intended to apply to the ACMA's decisions regarding the 3.4GHz-4.0GHz band (remote areas), the 3400MHz-3575MHz band (excluding remote areas) and the 3.7GHz-4.0GHz band (excluding remote areas), which were iden-

tified in the 2021-26 Five Year Spectrum Outlook for re-planning and future allocation. Four communications policies specified in the MPS cover: supporting the deployment of new and innovative technology, including 5G; supporting a range of use cases and users; supporting digital connectivity and investment in regional Australia; and promoting competitive markets. Notably, the MPS is the first released following recent reforms to the Radiocommunications Act 1992, which formalised the ability of the country's communications minister to provide high-level policy guidance to the ACMA with regards to the Government's policies for spectrum management through the issue of an MPS.

FCC Targets VoIP Duo Over Spam Call Failings

The US Federal Communications Commission (FCC) toughened its stance on voice-over-IP (VoIP) service providers Vonage and Bandwidth for failing to implement spam call protections within an agreed timeline. As a result, the FCC referred Vonage and Bandwidth to its Enforcement Bureau for failing to meet their respective STIR/SHAKEN commitments. For the past several years, the FCC has been adamant US voice carriers implement STIR/SHAKEN standards to combat robocalls. Bandwidth and Vonage were stripped of their respective partial exemptions from STIR/SHAKEN after they failed to meet certain

implementation commitments, the FCC stated. FCC chair Jessica Rosenworcel said the regulator was keeping a close watch as companies implement STIR/SHAKEN and "will hold companies accountable if they fail to meet their commitments to protect consumers from robocalls". Large providers were required to install STIR/SHAKEN throughout the IP portions of their networks by end-June 2021. The STIR/SHAKEN standards provide a common information sharing language between networks to verify caller ID information which can then be used by robocall blocking tools, FCC

investigators and consumers. Providers which met an early implementation target of December 2020 were granted certain conditional leniencies on implementing the framework up to the mid-2021 deadline for full deployment. The FCC's Wireline Competition Bureau handled Bandwidth and Vonage before the reference to the enforcement division. In an email to Mobile World Live, a Bandwidth spokesperson said a small amount of legacy equipment wasn't able to support STIR/SHAKEN, but it was working to remove traffic off of that equipment.

Norway Seeks to Calm 5G Interference Worries

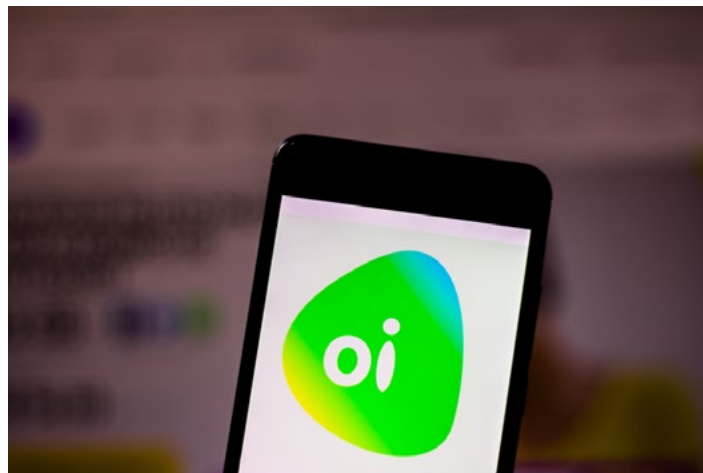
The Norwegian Communications Authority (Nkom) waded into the debate over interference from C-Band 5G networks with aircraft altimeters, claiming tests in Norway uncovered no problems. In response to US reports that radar-based altimeters on aeroplanes and helicopters may be affected by 5G signals, Nkom carried out its own tests involving the latter aircraft. "Observations and analyses so far show no operational effects on the radar altimeters in the helicopters that participated in the tests," the regulator stated. Nkom did concede that, compared with Norway and Europe, the spectrum used for 5G in the US is closer to the frequencies used by altimeters. US operators AT&T and Verizon last month launched services in the 3.7GHz to 3.98GHz range, a little higher than the 3.4GHz to 3.8GHz 5G band used in Europe, while altimeters and flight systems operate in the 4.2GHz to 4.4GHz band. Nkom explained it was nevertheless important to investigate whether or not there may be challenges in Norway



and Europe as well. It carried out the tests at Kjeller Airport in collaboration with the Armed Forces, the Armed Forces Research Institute (FFI), Telenor Research, Telia, the Air Force, the Police Helicopter Service and the Norwegian Air Ambulance.

Brazil Competition Authority Clears Oi Mobile Asset Sale

A sale of operator Oi's mobile assets to the Brazilian units of America Movil, Telefonica and Telecom Italia was approved by



the country's competition regulator with conditions, despite calls earlier this week for the deal to be blocked. Approving the sale Cade, Brazil's competition authority, noted although the deal meant a reduction in the number of providers, there would be wider negative impacts should the sale be scrapped and Oi subsequently become insolvent. Oi is currently in bankruptcy protection. Cade noted if the operator goes bust, it would impact the fixed, broadband, data communication services markets and various other industries using its infrastructure. Cade's approval is contingent on the buyers meeting a series of conditions, which include the divestment by public offering of around half of the base stations acquired; commitments for wholesale access to be given to MVNOs including 5G and IoT suitable frequencies; and potential deals to industrial players in each of the country's municipalities. The deal for the purchase and division of debt-laden Oi's mobile assets was struck in December 2020 following an auction. Telecoms regulator Anatel already cleared the arrangement with its own conditions.

Brazil Ended 2021 with 1.210 Million DSS 5G Subscriptions

Brazil's National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) has revealed that the country's mobile operators ended 31 December 2021 with a total of 1.210 million 5G subscriptions based on dynamic spectrum sharing (DSS) technology. DSS enables the parallel operation of 4G and 5G services via one frequency band. Telefonica Brasil (Vivo) accounted for the lion's share of 5G DSS subscriptions at year-

end, with 470,909 5G accounts. Claro claimed 455,768 5G subscriptions, with TIM Brasil registering 283,765. TeleGeography notes that both Algar Telecom and Claro activated new 2.3GHz-based 5G services in December, following the conclusion of Brazil's multi-band 5G spectrum sale in November 2021. All winning bidders are required to offer 5G services in all state capitals and the Federal District (Distrito Federal) by 31 July 2022.

MVNO Developments

Russian retail giant Magnit is poised to trial its long-gestating MVNO in the first quarter of 2022. When live, the proposition will be targeted at the company's loyalty program users, who will be able to redeem loyalty points against the mobile service. As of 31 December 2021, Magnit operated a total of 26,077 stores in 67 regions of Russia, serving around 14 million customers on a daily basis. In addition, 59 million customers are signed up to its cross-format loyalty program. Magnit received an MVNO license back in 2020, with Tele2 Russia named as its likely network partner. **Austria** will also see the launch of a new MVNO in the coming months, in the form of Raiffeisen Mobil, which will be launched by the Vienna-based financial of the same name. Raiffeisen Bank International (RBI) currently serves 19 million customers in 13

Central and Eastern Europe (CEE) markets via 1,800 branches. Ventocom will act as the MVNE for the project.

Orange **Morocco** has launched a new digital sub-brand called YOXO. Orange explains: 'yoxo.ma is aimed at Moroccans who are looking for autonomy and the privilege of extra-generosity. At yoxo.ma, everything is digital: ordering is done online in a few clicks, payment is made by credit card and customer interactions are supported by Djingo, the first robotic virtual assistant.' TeleGeography notes that the YOXO branding is already used by Orange in Romania, having been launched in September 2020.

In the **UK** B2B ISP XLN Telecom has been acquired by fellow business-focused provider Daisy Group in a deal valued at approximately GBP200 million (USD272

million). The deal includes roughly 120,000 fixed broadband/fixed voice/mobile subscriptions in the SME sector. XLN launched its XLN Mobile service in December 2009, via the Hutchison 3G UK network. Daisy Group does not currently provide MVNO services, but does offer its clients a 'white-label offering from O2 and *Vodafone*'.
Finally, Altice **USA** has reported that its Optimum Mobile MVNO unit ended 31 December 2021 with approximately 186,000 mobile subscriptions, after net adds of 5,000 in 4Q21 (+18,000 in FY 2021). Quarterly mobile revenue grew 18.1% year-on-year to USD23.8 million while annual mobile sales increased 7.8% to USD84.2 million. At the end of 2021 mobile take-up reached just 4.0% penetration of Altice's residential customer base. 📍

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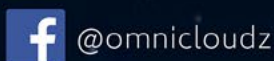
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A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION



Bahrain

Bahrain launched a new four-year strategy to push ahead with digitalizing the economy, including the telecoms and information technology (IT) sectors. The 2022-2026 Telecommunications, Information Technology and Digital Economy Strategy is in line with the objectives of the Economic Recovery Plan. Present were, and National Cybersecurity Centre chief executive Shaikh Salman bin Mohammed Al Khalifa. "Telecommunications and IT are a priority for the government as they are not only important to boost national production and create jobs, but they also play a crucial role in bolstering key economic sectors such as logistics, financial and tourism, among others," said Transportation and Telecommunications Minister Kamal Ahmed. "The world is transitioning towards a digital economy and if we want to increase the competitiveness of our national products on the global stage, we must invest in implementing sustainable technology in our sectors. "The backbone of any sustainable digital economy is a solid soft infrastructure which includes networks and telecommunications which facilitate our communication with each other and the world. With the increased

use and dependence on data we are focused now on Bahrain's connections to more international networks while also enhancing alternative routes to make communications more resilient." The Cabinet earlier approved list of 1,294 services and tasked a team to ensure their availability online on the government portal www.bahrain.bh. Major services, including the issuance of visas, marriage certificates, identity documents for new-borns and post-construction services will also be re-engineered. Information and eGovernment Authority (iGA) chief executive Mohammed Al Qaed said: "The iGA has several initiatives, programmes and projects in the pipeline to positively impact the economy and develop the performance of services provided in line with current developments. "Electronic governance is one of the key objectives that iGA is focusing on through a full digital transformation of all government documents and certificates created in Bahrain or abroad. We will also further develop the eKey services and provide more options which serves a large portion of society while protecting their data and facilitating the provision of services and electronic payments." (February 22, 2022) sovereigngroup.com



Bangladesh

Bangladesh ended December 2021 with 181.32 million mobile phone subscribers, down from 181.32 million in October 2021, according to data from the Bangladesh Telecommunication Regulatory Commission (BTRC). Grameenphone's customer base decreased to 83.46 million in December from 84.12 million in October, while Robi Axiata ended December with 53.67 million, up from 53.54 million in October. Banglalink had 37.22 million mobile customers in December, up from 37.17 million in October, while Teletalk ended 2021 with 6.67 million mobile customers, up from

6.49 million in October. The report also shows that there were 123.73 million internet subscribers at end-October, down from 129.46 million internet subscribers at end-October. The fixed-line internet user base slightly increased to 10.09 million in December from 10.07 million in October, while mobile internet users totaled 113.73 million in December, down from 119.11 million in October. Internet subscribers are defined as people who have used the internet at least once in the past 90 days.

(February 17, 2022) telecompaper.com



Egypt

The National Telecommunications Regulatory Authority (NTRA) has announced the allocation of new spectrum in the 2600MHz range to Orange Egypt. In a press release the regulator confirmed it had awarded a total of 30MHz in the 2600MHz band, in return for which Orange Egypt had agreed to pay USD440 million. The allocation comes after all three of the country's other mobile

network operators (MNOs) – Vodafone Egypt, Etisalat Misr and Telecom Egypt – all secured frequencies in the 2600MHz band in H2 2020. In announcing Orange Egypt's spectrum allocation, the NTRA noted that the value of frequencies in the band that have been allocated to quartet of cellcos has now reached a total of USD1.6 billion. (February 8, 2022) commsupdate.com



Iran

The Ministry of ICT has launched a new project to deploy fiber-to-the-home (FTTH) infrastructure past more than 20 million homes and businesses by August 2025. The first phase of the scheme will see 500,000 properties passed by networks in the cities of Mashhad and Qom. A report cities ICT Minister Issa Zarepour as

saying: 'Optic fiber should reach 20 million homes and business places to ensure there is a stable, high speed and safe network in place.' Iran had 540,000 premises reached by FTTH networks at the end of March 2021, according to Ministry figures.

(February 17, 2022) PressTV



Nepal

Mobile Number Portability could soon begin in Nepal. After not receiving any suggestions for its MNP's draft rules from telecom operators, NTA has proceeded to launch the feature. In November 2021, NTA had sought suggestions from telecom operators on its preliminary draft rules for Mobile Number Portability (MNP). But the regulator didn't receive instructions for any modifications. This is why NTA will now move ahead with the revolutionary cellular technology. Mobile Number Portability shortly known as MNP is a technology that allows phone users to switch between mobile network carriers without changing their SIM cards. If you are not satisfied with a particular mobile network due to various reasons including poor quality/weak signal, then you can port to

another mobile network, without changing your number. Such a service can revolutionize the user experience of mobile phone users. "We have received suggestions to our MNP guidelines from international telecommunications Companies. But we didn't receive any from domestic telcos", NTA Director Ambar Sthapit said. "We are taking this positively. Not receiving any suggestions from concerned telcos means the regulator can move ahead with its plan. This is why we have adopted a few instructions from stakeholders and proceeded with the MNP. Our MNP rules have reached NTA Board and we began working on it for two weeks already. With further discussions, the Board meeting will approve the rules," he added. (February 2, 2022) nepaltelecom.com



Oman

The Chairman of the Board of Directors of the Telecommunications Regulatory Authority (TRA), Nasser bin Khamis al Jashmi, has decision 15/2022 to regulate the interruption of telecommunication services. Interruption of telecommunication services results in the inability of the beneficiaries to obtain voice or data services. This interruption may be pre-planned by the licensee, or it may occur without prior planning.

Planned outage: The interruption of telecommunication services as a result of an activity related to the operation and maintenance of the network, which was previously planned by the licensee.

Unplanned outage: Suddenly stopping telecommunication services without prior planning from the licensee.

Article (2)

The service interruption, whether planned or unplanned, is classified according to the following levels:

Level one: The cessation of telecommunications services, which leads to the unavailability of voice or data services for less than 1% one percent of the beneficiaries, or the loss of telecommunications traffic by less than (1%) one percent.

Level two: The discontinuation of telecommunication services, which leads to the unavailability of voice or data services to a percentage ranging between (1%) one percent and less than (5%)

five percent of the beneficiaries, or the loss of telecommunication traffic by a percentage ranging between (1%) one percent and less than (5%) five percent.

Level three: The cessation of telecommunication services, which leads to the unavailability of voice or data services to a percentage ranging between (5%) five percent and less than 25 percent of the beneficiaries, or the loss of telecommunications traffic by a percentage ranging between (5%) five percent and less than 25 percent.

Level Four: Communications services cessation, which leads to the unavailability of voice or data services to a percentage ranging between 25 percent and less than 75 percent of the beneficiaries, or a loss of telecommunications traffic by a percentage ranging between 25 percent and less than 75 percent.

Level Five: The cessation of telecommunication services that lead to the unavailability of voice or data services to a percentage of 75 percent or more of the beneficiaries, or a loss of telecom traffic by (75%) seventy-five percent or more or isolating a governorate or a wide geographical area.

Licensee's Obligations

Article (3)

The licensee is obligated to:

A- Examine the performance of important elements in the telecommunication network at least once a year, such as switches, main transmission links, and basic databases, in order to ensure the readiness of measures for these elements, alternate links, redirection of telecom traffic, and measure the effectiveness of emergency plans, provided that the authority shall be notified in advance of the scope of these examinations, and a detailed report shall be provided to it upon completion. Executing and developing procedures and systems for managing the telecommunications network, and applying the technical and organizational measures approved by the Authority.

Article (4)

In the event of a planned service interruption in the main network elements or those that affect a wide geographical area as a result of the process of upgrading the network software or upgrading a large number of network elements, the licensee shall abide by the following: Implementation of the planned outage during the period of reduced traffic on the network. (February 28, 2022) omanobserver.om

The Telecommunications Regulatory Authority of the Sultanate of Oman (TRA) and Ookla®, an internationally recognized leader in network testing and intelligence, are engaging in a collaborative arrangement as part of TRA's aim to leverage the latest technologies and up-to-date insights for understanding mobile and fixed broadband performance across Oman. This comes at a time when 5G rollout in the country is gaining momentum, and Ookla's enterprise solutions and first-party data is set to empower TRA in assessing the adoption of 5G networks in the Sultanate. This collaboration should help drive network improvements in Oman, delivering significant new value to local mobile operators who build the networks and the consumers who rely on them.

"Millions of people use Speedtest to measure their internet performance every day," said Ookla co-founder and CEO Doug Suttles. "With our consumer-initiated methodology, powerful cross-platform testing engine and global network of high-throughput servers, Ookla is a definitive source for 5G network intelligence and measurement. Ookla works with many regulators in the GCC states and beyond to provide actionable insights into the performance of national 5G networks as they evolve. We are thrilled to assist and support the TRA as they seek to drive the development of the telecommunications sector in Oman." Given the complexity of today's telecoms networks, operators and regulators face significant challenges in understanding end-user network experience and in optimizing network performance. Simply identifying areas with inadequate connectivity can be a struggle. Ookla's high-caliber network intelligence solutions will give the TRA an insightful view of network performance in Oman, and allow it to benchmark against its regional peers. This effort further aligns with the goals of the Oman 2040 vision of preparing for the impacts of technology and the digital transformation taking place in the Sultanate. "Ookla's unique data insights will help TRA identify weak spots and consequently guide network operators to improve their networks, in turn creating a better experience for the Omani people," said TRA Executive Manager Strategic Planning Unit Engr. Ahmed Hassan Al Haddabi. "We look forward to leveraging Ookla's data to assist us in making informed decisions for advancing Oman's ranking internationally in support of the government's Oman 2040 vision." Over the course of their engagement, both companies will work together to analyze mobile and fixed broadband performance in order to drive improvement in the network performance landscape in Oman.

(February 9, 2022) businesswire.com



Pakistan

Pakistan Telecommunication Authority (PTA) has implemented a rationalization plan for 1,800 MHz spectrum to increase the efficiency of telecom sector. "PTA conducted a spectrum auction in September 2021 in accordance with the policy directive of the government of Pakistan issued on August 4, 2021," said a PTA statement. Accordingly, a rationalization plan in the 1,800 MHz spectrum band was issued by the authority in consultation with the Frequency Allocation Board (FAB) for the contiguity of spectrum by all cellular mobile operators (CMOs) for efficient spectrum utilization, it said. PTA stated that Jazz, CMPak, Telenor and Ufone implemented the rationalization strategy under the supervision and guidance of PTA and FAB in a coordinated activity for approximately three months. PTA underlined that technical teams of all stakeholders worked round the clock without causing any disturbance in services to the nation. "This will ensure efficient utilization of contiguous spectrum holdings and better user experience," PTA said. "Furthermore, it will be beneficial for the launch of future technologies in Pakistan." "It is a great step," information and communication technology (ICT) expert Parvez

Iftikhar remarked while talking to The Express Tribune. Until now, the cellular operators of Pakistan had small fragmented chunks of spectrum scattered here and there within the 1,800 MHz band, he said. This has now been rectified by PTA. Within the 1,800 MHz band, each mobile company would have one consolidated chunk of the spectrum, he added. This will allow the most optimal use of the spectrum, resulting in improved services. SI Global CEO Noman Ahmed Said explained that radio spectrum typically referred to the full frequency range from 3 kHz to 300 GHz that may be used for wireless communication. "Increase in demand for cellular services such as mobile phones and many others called for changes in the philosophy of spectrum management," he added. The CEO said that demand for wireless broadband soared due to technological innovation, such as 3G and 4G services, and rapid expansion of wireless internet services. He explained that the spectrum rationalization plan was aimed at reusing the spectrum and efficiently distributing it for a more holistic use. The existing spectrum facilitates prevailing networks and functions between the assigned spectrums of frequency under FAB, said the

SI Global CEO. He further explained that the rationalization plan optimized that use to enable all networks to reach audience more efficiently and broaden the areas of their reach, expanding the landscape they could cover as well as increasing access for the public. It would increase the scope of networks and allow better utilization of services, he noted. The spectrum rationalization plan will optimize the use of radio frequency spectrum, avoid and solve interference, design short and long-range frequency allocations and advance the introduction of new wireless technologies. Jazz CEO Aamir Hafeez Ibrahim said that "the rationalization exercise makes spectrum allocation in Pakistan more efficient". "Telecom users, businesses and society as a whole stand to gain from improved options for network coverage and quality," he added.

(February 20, 2022) [tribune.com.pk](#)

Sector regulator the Pakistan Telecommunication Authority (PTA) has published a public consultation paper for draft

regulations on tariffs. Under the proposed guidelines – 'Tariff for Telecommunication Services Regulations, 2022' – the PTA would have greater authority to regulate pricing for services, requiring operators with significant market power (SMP) to submit proposals for tariff changes in advance. The draft regulations set out a process for amendments to be made to tariffs, including the criteria for the PTA to approve or reject the tariff proposals. The regulations allow the PTA to set price ceilings and floors for basic telecommunications services. Also covered by the document are a number of consumer protection measures, such as requiring operators to: seek permission from customers before renewing subscriptions; inform users when they reach certain thresholds of usage (50%, 80% and 100% of their allowance); and publish detailed information on charges applicable to tariffs. As noted by TeleGeography's GlobalComms Database, the PTA published a similar paper in February last year.

(February 2, 2022) [commsupdate.com](#)



Saudi Arabia

The Communications and Information Technology Commission (CITC) has revealed that it will hold an auction for spectrum in the 2100MHz band for Non-Terrestrial Networks (NTN) technologies such as 5G-non-terrestrial networks (5G-NTN), mobile satellite services (MSS), internet on airplane (A2G), and internet of things via satellite (MSS-IoT) on 23 August 2022. The Information Memorandum and the Auction Rules will be released beforehand on 26 June 2022, the CITC said. The authority is aiming to award 2x30MHz of paired spectrum at 1980MHz-2010MHz/2170MHz-2200MHz, divided into two blocks of 2x15MHz each. Block A2 (1995MHz-2010MHz/2185MHz-2200MHz) will be initially limited to MSS services, with the successful bidder given the option to apply for an upgrade of the license for terrestrial technologies.

(February 28, 2022) [commsupdate.com](#)

The Communications and Information Technology Commission has published its "WLAN Regulations", which strengthens the Kingdom's regional and global leadership in the field Wi-Fi and license-exempt technologies, activates the latest generation of high-speed telecommunication technologies in the Kingdom, and enables the use of emerging and future technologies. The "WLAN Regulations" set out regulatory policy for the use of WLAN applications in the Kingdom and it makes available new spectrum in the 6 GHz and 60 GHz bands to stimulate further use of WLAN applications. CITC hopes to see these regulations lead to an acceleration in the adoption and deployment of Wi-Fi6E in the Kingdom. CITC plays a strategic role as a digital regulator to enable the digital transformation of the Kingdom and maximize its digital economical value. This role is being executed through its progressive spectrum policy to implement the National Spectrum Strategy 2025 and the CITC Outlook for Commercial and Innovative Use of Spectrum 2023, which has a main pillar focusing on enabling the new generation of wireless

services. Going forward CITC aims to consolidate its position for releasing large amounts of spectrum in an innovative manner to facilitate multiple use cases. This innovative approach led the Wi-Fi Alliance to endorse the Kingdom's leadership in enabling the next generation of wireless services which will unleash a wave of new Wi-Fi 6E products and services to Saudi Arabia's consumers, enterprises, and economy. CITC aims to ensure the regulatory transparency and to enable the latest emerging technology applications such as WiGig, virtual and augmented reality (VR / AR) and the Internet of Things (IoT). Underpinning this ambition is CITC's ongoing policy of engaging with industry stakeholders and collaborating with vendors and service providers that has resulted in its establishment of a flexible regulatory framework that increases capacity and creates the environment to facilitate the rapid deployment of a new generation of wireless services. In addition, CITC has collaborated with vendors in the industry to facilitate importing the new generation of Wi-Fi devices (Wi-Fi 6E) into the Kingdom. (February 22, 2022) [citc.gov.sa](#)

The Communications and Information Technology Commission (CITC) has issued the "Fixed Wireless Links Regulations" through which CITC offers Ultra Wide-band channels, adopts new licensing mechanism for fixed wireless links, and determines the guidelines to enable Fixed Wireless Access (FWA) applications in the Kingdom. These Regulations identify the fixed wireless links frequency bands, their channel allocation plans, the licensing mechanism in the Kingdom, in addition to the technical and regulatory conditions for using fixed wireless links for bands identified for these services. Following a previous public consultation and the assessment of the users' needs of fixed wireless links, CITC has developed this document which aims to optimize current spectrum use for fixed wireless links which will contribute to increase the spectral usage efficiency, support 5G

wireless backhaul and improve 5G rollout and enhance the quality level of internet service in the Kingdom. (February 14, 2022) [citic.gov.sa](#)

Saudi Arabia's Ministry of Communications and Information Technology (MCIT) and SAP, the global technology company, signed an agreement to explore collaboration areas regarding SAP's cloud services and software solutions. The collaboration will see both MCIT and SAP working in various areas of joint cooperation that will take advantage of SAP's cloud and on-premise software solutions, as well as training and knowledge transfer initiatives, reported Saudi Press Agency (SPA). MCIT and SAP will establish a specialized SAP training program to develop the skills of young Saudi professionals in core and emerging technologies. In addition, the areas of joint cooperation start with boosting Riyadh's position as a technology hub to accelerate technology adoption through an advanced eco-system. MCIT and SAP's planned collaboration will also include public sector digitization efforts, with a goal to support and accelerate the Kingdom's digital transformation. SAP will work with MCIT to accelerate the diversification of investments in the Kingdom through its presence and expertise, while providing cloud services and software technology solutions in the telecoms and smart cities domain. Nawaf Alhoshan, Deputy Minister for Technology at the MCIT commented: "Our partnership with SAP will accelerate our ambitious goals to accelerate the Kingdom's role as a global technology hub and will enable a more robust digital experiences across various sectors." "The collaboration will also ensure skills development and entrepreneurial enablement by assisting and helping start-ups scale through SAP.io, and optimize the Kingdom's economic diversification strategy towards a digital economy," added Alhoshan. (February 9, 2022) [gdnonline.com](#)

The Communications and Information Technology Commission (CITC) has issued the "Fixed Wireless Links Regulations" through which CITC offers Ultra-Wide-band channels, adopts new licensing mechanism for fixed wireless links, and determines the guidelines to enable Fixed Wireless Access (FWA) applications

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The Communications and Information Technology Commission (CITC), Saudi Arabia's digital regulator, has announced the launch of two new Mobile Virtual Network Operators (MVNOs). The licensing of Integrated Telecom Mobile Company (Salam Mobile) and Future Networks Communications (Red Bull Mobile) doubles the number of MVNOs in the Kingdom's market to four. Speaking on the sidelines of the global technology conference LEAP22 in Riyadh, Deputy Governor of Regulation and Competition at CITC, Eng. Omar bin Abdulrahman Al-Rejraje highlighted the significance of the development: "Expanding the telecom service market is an important step towards transforming the Kingdom into a digital society, in line with Saudi Vision 2030. The entry of two new players to the sector will also promote competition and ensure the product offering and customer experience continues to improve." Companies with MVNO licenses rent infrastructure from service providers to offer customers services such as voice calls, mobile internet and SMS messaging. The first MVNO licenses in the Kingdom were granted in 2014 to Virgin Mobile KSA and Etihad Jawraa. The new entrants will compete for business in the largest ICT sector in the Middle East and North Africa, with a market size of SAR144 billion at the end of 2021. As a 'G5 regulator', recognized by the International Telecommunications Union (ITU), CITC has a long-term objective of enhancing and stimulating the investment environment of the telecommunications sector - of which the issuing of new licenses is central. (February 7, 2022) [zawya.com](#)



Syria

The Ministry of Communication and Technology (MoCT) and the Syrian Telecommunications and Postal Regulatory Authority (SyTPRA) have awarded the nation's third mobile license to Wafa Telecom. The telco is set to begin operations over the next nine months, citing a statement from the Telecom Minister to parliament. The company will initially offer services via a two-year national roaming agreement with existing providers SyriaTel and MTN Syria whilst it builds out its own network. Wafa Telecom's license covers the use of 4G and 5G technologies, but further details – such as the price of the license or the spectrum bands that the operator will use – were not disclosed. Similarly, information

regarding Wafa Telecom is limited. Investors in the joint stock company were reported to include influential businessmen with ties to the government. Iranian investors, meanwhile, were said not to be amongst the company's shareholders, but Iranian firms are expected to be awarded tenders to supply infrastructure, according to Damascus-based industry sources. An Iranian firm was initially in the running for Syria's third mobile license but plans were scrapped over security concerns. Tehran has reportedly been pressuring Syria for business opportunities to recoup the investments made in the country over the last decade.

(February 22, 2022) [reuters.com](#)



United Arab Emirates

The Telecommunications Regulatory Authority and the Digital Government issued a report on the enablers of digital transformation in the UAE. The report included the most important stations that the digital transformation process has gone through in the country since its establishment. The report also presents a brief picture of the role of the Telecommunications Regulatory Authority and the Digital Government in empowering government agencies and society in the process of transformation. Digital, this role is consistent with the authority's mandate to work on two parallel and complementary tracks represented in regulating and enabling both the telecommunications and information technology sector on the one hand, and digital transformation on the other hand. On this report, His Excellency Eng. Mohammed Al Zarooni, Deputy Director General of the Authority for the Digital Government Sector, said: "Throughout the path of the union, and since the establishment of the state in 1971, modernization and development has always taken into account the latest developments and developments, especially electronic and digital technologies, which have become seen with the beginning of The millennium as a revolutionary way to facilitate people's lives and provide them with services around the clock. The United Arab Emirates, based on the future vision of the wise leadership, was one of the first countries to launch the e-government project at the beginning of the millennium, and then continued its leadership in the following various stages to reach the digital government in which we live Today, which is consistent with the fourth industrial revolution and the era of data and highly advanced technologies supported by artificial intelligence. He added: "The report monitors an important part of the march of our beloved country, a part that begins with the establishment of the General Information Authority in 1982, within a comprehensive and future vision of our wise leadership, leading to what we are witnessing today from the inauguration of a new phase represented in the next fifty years and the vision of the UAE Centennial 2071." The Digital Government Enablers report reviewed the results of the most important global indicators that reflect the country's leadership in digital maturity, as the UAE came among the best countries in the world in government digital transformation, to be the only Arab country in this group in the government digital maturity report issued by the World Bank. The country also ranked 21 globally in the United Nations eGovernment Survey 2020, advancing by 8 places over the results of 2016, and the UAE ranked eighth globally in the smart services index within the United Nations eGovernment Development Index in 2020. The report reviewed the most important digital initiatives undertaken by the Telecommunications Regulatory Authority and the Digital Government by virtue of its central responsibility for digital transformation in the country. The report also highlighted the main enablers of digital transformation in the country, such as the digital signature, the digital verification platform, the digital trust platform, the digital services store, the government services link, the UAE hackathon and the virtual market for software interfaces, and others, reviewing the most important facts, figures and results related to these capabilities. It is worth

noting that this report sheds light on some of the capabilities of the digital government supervised by the Communications Regulatory Authority and the digital government, and it does not cover all possibilities, as some of these possibilities are still under development and implementation, and the authority will work in subsequent versions to expand the dissemination of digital enablers, including achieve inclusivity. (February 14, 2022) tdra.gov.ae

The Telecommunications and Digital Government Regulatory Authority issued the UAE Digital Transformation Enablers report, highlighting the important milestones of the digital transformation process through a series of initiatives. The report reviewed the digital enterprises undertaken by TDRA, the most important of which are the Federal Network, UAEPass, the Government Service Bus and the national customer relationship management system (NCRM), the government agency said. "The UAE was one of the first countries to launch the e-government project at the beginning of the millennium and then continued its leadership in the next various stages to reach the digital government we live in today, which is consistent with the Fourth Industrial Revolution and the era of data and advanced technologies supported with artificial intelligence," said Mohammad Al Zarooni, TDRA deputy director general for the Digital Government Sector. The UAE leads the Arab world in digital progress and preparedness for the future, a separate survey issued by the Portulans Institute in collaboration with Google said. The Emirates stood third – with Singapore claiming the number one spot – among 27 emerging global economies, the Future Readiness Index survey said. The UAE was ranked 23rd out of 123 countries. The UAE has also ranked among the world's best countries in terms of government digital transformation, becoming the only Arab nation in this group, said the World Bank's GovTech Maturity Index 2021 that measured the reliance on modern tech in government work in 198 states. The Emirates also ranked 21st globally in the UN e-Government Survey 2020, advancing eight positions over 2016, in terms of online services, telecom infrastructure and human capital. The Gulf country also came ninth globally in the IMD Digital Competitiveness Ranking. The TDRA has a mandate to work on two parallel and integrated tracks, which are to regulate and enable the ICT sector and advance the country's digital transformation. The TDRA's report highlighted the main enablers of digital transformation in the UAE, such as the digital signature (UAEPass), the digital verification platform (UAE Verify), the digital trust platform, the digital services marketplace, the Government Service Bus (GSB), the UAE Hackathon and the API Marketplace, among others, to showcase the facts, figures and results related to these enablers. UAEPass, a platform that allows residents and visitors to access government services using a unified digital identity, has 2.66 million people registered to this service, the TDRA said in its report. The Digital Vault within UAEPass allows users to request their official digital documents and link them to their digital identity. It has 1.7 million registered users and facilitated 2.8 million transactions and shared 1.1 million digital documents. (February 6, 2022) thenationalnews.com

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION



Australia

The Australian Competition and Consumer Commission (ACCC) has launched a consultation on industry guidance related to broadband speed claims made by operators. According to the watchdog, developments in the way retail service providers (RSPs) display upload speeds and consumers' interest in upload speeds information has prompted it to consider updating the 'Broadband Speeds Claims – Industry Guidance'. Further, the ACCC has suggested that the growth of fixed wireless services on alternative fixed wireless networks 'also reinforces the need to promote transparency about the factors that may affect speeds on all fixed wireless access networks. As such, the

ACCC said it is seeking views on a number of issues related to the presenting of information to consumers about upload speeds and factors affecting speeds received on alternative wireless access networks. Interested parties have until 25 February 2022 to make submissions to the consultation. Previously, the ACCC released its guidance on broadband speed claims in August 2017 to outline good practices for RSPs to adopt in presenting the speeds of their broadband plans. Since then, the regulator has committed to reviewing the guidance periodically, and published updates to it in 2019 and 2020 in response to changes in the market. (February 1, 2022) commsupdate.com



Austria

The Telekom Control Commission (TKK) says it has decided to conduct an in-depth analysis of competition in the mobile communications market, in order to continue to enable sufficient competition in the future and to secure it in the long term. According to the regulator, in 2020 and 2021 complaints about non-competitive sales prices, cases of denial of access, and pressure to change business models were received from MVNOs and other upstream service providers. As a condition of Hutchison Drei's acquisition of rival Orange in 2012, the company agreed with the EC to provide wholesale network access to MVNOs for ten years. With this obligation set to expire at the end of 2022, the TKK says it must check whether competition in the wholesale mobile market and thus ultimately also the retail market can continue to be successful in the future, or whether there are tendencies that can have a lasting impact on the advantages that have been achieved for the entire market to date, particularly with regards to new technologies such as 5G and new business models. The TKK will conduct its

investigation with the Federal Competition Authority (Bundeszweitswettbewerbsbehörde, BWB).

(February 24, 2022) commsupdate.com

In order to create planning security for market participants, Austria's Telecom Control Commission (TKK), together with the Federal Ministry of Agriculture, Regions and Tourism, has drawn up a Spectrum Release Plan for the period 2022 to 2026. The legally non-binding plan is intended to reflect the authorities' current assessment of future spectrum awards. It envisages that frequencies in the 26GHz (totaling around 1.6GHz, some of which will be used for local connectivity such as campus networks and industrial use) and 3.4GHz-3.8GHz bands will be allocated in the first half of 2023, followed by 2.6GHz spectrum (as well as 2.3GHz and 6GHz spectrum, depending on availability) during 2025, while frequencies in the 42GHz, 60GHz and 26GHz bands are not expected to be awarded until after 2026.

(February 17, 2022) commsupdate.com



Brazil

The National Telecommunications Agency (Anatel) has reportedly approved the transfer of spectrum licences currently held by Oi Move! to its rivals, TIM Brasil, Telefonica Brasil (Vivo) and Claro Brasil. As per government documentation, the spectrum assets will be transferred via three holding companies: Garliava, Cozani and Jonava. Vivo will acquire the Garliava assets, which include authorizations for the use of the 900MHz, 1800MHz and 2.5GHz bands, chiefly in the Northeast. TIM, meanwhile, will assume control of the Cozani frequencies, which are said to include the 900MHz, 1800MHz and 2.5GHz bands, alongside

2100MHz spectrum; the Cozani assets encompass the North, Northeast and Southeast regions, notably Minas Gerais and Rio de Janeiro. While Claro will not gain any spectrum via the deal, Jonava is said to include secondary spectrum rights and RAN sharing agreements. Oi's mobile unit was sold at auction on 14 December 2020, generating a final bid of BRL16.5 billion (USD3.25 billion). Anatel approved the deal on 31 January this year and the Administrative Council for Economic Defence (Conselho Administrativo de Defesa Economica, CADE) green-lit the deal on 9 February.

(February 15, 2022) TeleTime

Telecom regulator Anatel unanimously approved the sale of Oi's mobile unit Oi Movel to a consortium of its former rivals in a vote held on 31st January. In December 2020, Claro Brasil, Telefonica Brasil and Tim Brasil lodged a joint bid of BRL16.5 billion (USD3.25 billion) for Oi's mobile operations. CommsUpdate notes that the offer was ratified by Brazil's Judicial Reorganization Court, with Oi executing the agreement on 28th January 2021. Anatel granted its approval after

an evaluation of competition in the market. To maintain a healthy competitive environment, operators will be required to submit Wholesale Product Reference Offers for national roaming. The consortium members must also make voluntary commitments around their use of Oi's spectrum, which Anatel claims will safeguard competition so that new operators can enter the market.

(February 1, 2022) developingtelecoms.com



Cambodia

Plans by the government of Cambodia to route all domestic and international internet traffic through a National Internet Gateway (NIG) have been postponed, an official told Nikkei Asia. The new gateway was expected to begin operating this month but So Visothy, a spokesman for the Ministry of Posts and Telecommunications (MPTC), confirmed that the plans have been delayed 'due to the disruption caused by the spread of the COVID-19 pandemic'. A sub-decree

on the establishment of the NIG states that the move is aimed at enhancing national revenue collection, saving costs and protecting national security, but its critics, which include the Asia Internet Coalition (AIC), say the move would undermine citizens' rights to internet access, and raises concerns about freedom of expression, media censorship and user privacy.

(February 16, 2022) commsupdate.com



Canada

Francois-Philippe Champagne, Canada's Minister of Innovation, Science and Industry, announced that the government has met its commitment to reduce the costs of mid-range mobile packages by 25% three months ahead of schedule. Prices for all tracked mid-range plans have decreased by 25% compared to the benchmark prices observed in early 2020, according to the newly published data for the latest quarter of pricing, covering October to December 2021. The benchmark is based on prices advertised on company websites of the three largest cellcos Rogers, Bell and Telus in early 2020 for three mobile plans offering 2GB, 4GB and 6GB of data respectively (all post-paid, bring your own device [BYOD], unlimited talk and text

4G LTE plans). The statement claimed that these benchmark packages continue to reflect Canadians' average mobile data usage, quoting an average figure of 3.8GB per user per month. The two-year tracking period to reduce prices is due to end in March 2022. The statement added that mobile prices in general have declined across the board, quoting the Statistics Canada cellular services price index showing a 26.9% decline from February 2020 to December 2021. The government has also observed decreases generally in the range of 22% to 26% for mobile plans with 10GB data volumes and larger, 'which builds on past reductions of 31% for 10GB plans in 2019.'

(February 1, 2022) commsupdate.com



Congo

The Congolese government has adopted a decision to end the controversial device registration (Registre des Appareils Mobiles, RAM) tax from 1 March 2022, following criticism regarding the collection of the fee and the lack of transparency surrounding the use of the funds raised by the levy. The decision will repeal legislation from March 2020 which amended rules setting the methods of calculation and rates of income for the Regulatory Authority of Post and Telecommunications (Autorite de Regulation des Postes et Telecom, ARPTC). Collection of the levy for 2G phones was scrapped in October last year. The device registration scheme was introduced in September 2020 in an effort to tackle phone theft and the sale of counterfeit devices. Under the scheme, consumers were required to register the International Mobile Equipment Identity (IMEI) number of their

devices with the regulator, which would directly charge an annual fee. Unregistered devices, or those for which the customer could not pay the fee, were blocked. The RAM tax was priced at USD1.00 for 2G devices or USD7.00 for 3G and 4G (or better) devices, paid via six monthly payments (USD0.17 per month for five months and a final payment of USD0.15 or five payments of USD1.17 and one of USD1.15). The monthly payments represented a substantial portion of the average consumer's spending on mobile services and payment of the RAM fee was reportedly prioritized above other payments, such as mobile money services. Further, advocacy groups have highlighted that the government has not made it clear how much money has been collected or how it is being spent, claiming that the funds were not accounted for in public records. (February 21, 2022) commsupdate.com



Cote d'Ivoire

The government says it expects the country's first 5G networks to go live next year. Ecofin cites Kanvoli Kacou Bi Dje from the Ministry of Digital Economy, Telecommunications and Innovation as saying that the government has already adopted a roadmap for the launch of the new technology. Local cellco MTN began trials of 5G equipment in December, with

testing expanded to nine sites in Abidjan earlier this month. The firm is currently in talks with authorities to determine which spectrum will be released for 5G services. Cote d'Ivoire wants 5G networks to go live ahead of the Africa Cup of Nations football tournament which will be held in the country next year.

(February 28, 2022) commsupdate.com



Estonia

The Consumer Protection and Technical Regulatory Authority (Tarbijakaitse ja Tehnilise Järelevalve Amet, TTJA) has announced that it will relaunch its auction of licenses in the 3.5GHz band which are suitable for 5G technology. Last week the Ministry of Enterprise and Information Technology finally confirmed the terms of the planned sale, following a series of delays caused by legal challenges and alterations to legislation. The public tender for three concessions in the 3410MHz-3800MHz range was initially announced on 19 February

2019 and then postponed later that year. Under the new terms, the starting price for each license will be EUR1.597 million (USD1.79 million), with potential bidders given until 4 April to submit an application to participate in the auction. The TTJA expects to begin the bidding process towards the end of April and for it to be completed by June. Estonia is currently home to three mobile network operators (MNOS), Telia, Elisa and Tele2.

(February 3, 2022) commsupdate.com



Finland

The Ministry of Transport and Communications (Liikenne- ja viestintäministerio, MoTC) has extended the deadline for the issuance of 700MHz spectrum licenses covering the Aland Islands. Having previously opened applications back in December 2021, setting a deadline of 20 January 2022, it has now confirmed that three companies have lodged bids, namely Elisa, Telia Finland and Aland Telecommunications (Alcom). However, with the MoTC noting that per a statutory timetable it should have made a decision about issuing

the new licenses by 3 March 2022, it has instead extended the deadline to 31 May 2022. In so doing, the watchdog said that in accordance with the Aland Self-Government Act, a state authority may grant permission to engage in public telecommunications in the province only with the consent of the provincial government. As such, the MoTC has justified extending the licensing process so as to allow the Aland authorities time to examine the matter 'to a sufficient extent'.

(February 28, 2022) commsupdate.com



France

French telecoms regulator Arcep has opened a public consultation on Orange's plan to decommission its copper network (submitted to the regulator at the end of January 2022). Arcep has invited comments on the plan – which envisions all fixed infrastructure to be fiber-based by 2030 – by 4 April 2022. Orange is aiming to complete the copper-based network closure in two phases; the transition phase, scheduled to run from 2020 to 2025, aims to prepare for the closure of the copper network while waiting for the completion of the main deployments of fiber-to-the-home (FTTH) networks at the end of 2025. This phase, which has already begun, aims in particular to enable Orange to conduct all necessary experiments, organize customer migrations and anticipate the eventual closure by limiting the creation of new copper accesses. The second stage (closure phase) will run from 2026 to 2030 and will see Orange stop the marketing of any new access on copper, technically close the network and prepare the removal of certain elements of the network. The technical closure of the copper network will be implemented by Orange in annual batches,

with the first one (approximately 170,000 premises) scheduled for the end of 2023.

(February 10, 2022) commsupdate.com

France had a total of 32,107 authorized 5G sites as of February 1, of which 23,085 were declared technically operational by the local mobile carriers, according to the latest monthly report published by France's spectrum agency ANFR. ANFR said that the number of authorized 5G sites during January increased by 1.4% compared to the previous month. The agency said that almost all of the 5G sites have been authorized on existing cellular sites, already used by 2G, 3G or 4G technologies. In France, mobile operators are already providing 5G services through the 700 MHz, 2.1 GHz and 3.5 GHz spectrum bands. ANFR said that a total of 19,056 sites are authorized in the 700 MHz band (Free Mobile), of which 13,942 are already technically operational. Also, ANFR said that 12,794 sites are authorized in the 2.1 GHz band (Bouygues Telecom, Orange and SFR), but 7,944 are technically operational. Meanwhile, 15,853 sites are authorized in the 3.5 GHz band (Bouygues

Telecom, Free Mobile, Orange and SFR), of which 9,718 are declared technically operational. Free Mobile had the highest number of operational 5G sites as of the end of January, with 14,019 followed by Bouygues Telecom (6,725), SFR (5,263) and Orange (3,264). Some of the authorized 5G sites are shared by the mobile operators, the agency said. In addition, 56,129 4G sites were authorized in mainland France as of February 1, of which 51,636 are in service. Iliad subsidiary Free Mobile previously stated that its 5G footprint currently covers 62% of the population, up from 52% in mid-May 2021 and nearly 40% at the end of 2020. Free Mobile said that its 5G network currently reaches 9,100 municipalities across France. It also said the firm had already commissioned a total of 10,200 5G sites. For its 5G network, Free Mobile uses frequencies in the 700 MHz band as well as frequencies in the 3.5 GHz band which

Free acquired in a French spectrum auction in 2020. Bouygues Telecom initially launched 5G in 20 cities across France in December 2020. The French operator said it expects to achieve nationwide coverage by the end of 2021. The current roll-out phase will rely on the 3.5 GHz and 2.1 GHz bands. French telco Orange has already activated 5G in over 160 cities across France, the operator's CEO Stéphane Richard previously said. Some of the initial cities covered by Orange's 5G network include Marseille, Nice, Le Mans and Angers. Orange initially launched commercial 5G services in 15 municipalities at the beginning of December 2020. Meanwhile, SFR initially launched its 5G commercial network in Nice in November 2020. According to recent press reports, SFR currently provides 5G services in 2,100 municipalities across France.

(February 7, 2022) rcrwireless.com



Germany

Telekom Deutschland, the domestic fixed and mobile unit of Deutsche Telekom, added an additional 159 new 5G locations last month, bringing the 5G antenna total to more than 63,000 to provide coverage to 90% of the population. The total includes 4,000 antennas

in over 180 cities and municipalities in the 3.7GHz band. Telekom revealed that it plans to use its 700MHz spectrum for 5G Standalone (5G SA) this year.

(February 16, 2022) commsupdate.com



Guernsey

The Competition and Regulatory Authority (GCRA) has launched a consultation regarding proposed changes to the mechanism for setting license fees. According to the watchdog, following the reversion to separate regulatory bodies for Guernsey and Jersey there is now a need to upgrade the current 'Information Note' so it is Guernsey specific. Further, the GCRA said that there are aspects of the current licensing framework 'where improvements seem appropriate'. In terms of two

specific changes that are being considered, these are: a proposal to increase the minimum level of license fee for all spectrum holders to GBP16,500 (USD22,337) per annum; and the possibility of invoicing licensees for the cost of pursuing late payments at a daily rate of GBP450. Responses from interested parties to the consultation have been requested by a deadline of 22 March 2022.

(February 16, 2022) commsupdate.com



Guinea

MTN Guinea, the country's second largest mobile network operator (MNO) by subscriptions, has been awarded a 4G operating license by the Regulatory Authority for Post and Telecommunications (L'Autorite de Regulation des Postes et Telecommunications, ARPT). The regulator announced in a statement that MTN's 2G and 3G licenses were also renewed on 4

February, although no further details regarding their duration or payment terms were disclosed. MTN is the country's second MNO to be granted a 4G permit; Orange paid USD90 million in March 2019 for a ten-year concession which also included extensions for its existing 2G and 3G licenses.

(February 7, 2022) commsupdate.com



Guyana

The Guyanese government has issued an Individual License and Frequency Authorization to would-be mobile provider Green Gibraltar. The operator, which is 100% Guyanese owned and also uses the GG Cell name, is planning to offer 5G services in seven of Guyana's ten regions. The company prematurely announced in November last year that it had been given permission to launch 5G services. The company retracted the claim citing a 'misunderstanding', after a statement from the Office of the Prime Minister (OPM) clarified that the

process was incomplete but ongoing. The operator's new license was published in the Gazette on 9 February but backdated to take effect from 1 January 2022. No further details were included in the publication, though the operator had previously applied for permission to utilize spectrum in the 3300MHz-3400MHz range in all but three regions. In a notice from the PMO, Green Gibraltar's directors noted that they would now begin work on a rollout plan and would make a public statement soon. (February 22, 2022) commsupdate.com



Hong Kong

The Office of the Communications Authority (OFCA) has published its spectrum release plan for 2022-24. The schedule includes the reassignment of 20MHz of frequencies in the 800MHz and 900MHz bands, where current licenses are due to expire in 2026; the earliest award date for new concessions has been set as

2023. Meanwhile, 90MHz licenses in the 2.3GHz range are set to expire in 2027 and the plan again sets an earliest award date as next year. Finally, 4GHz of new spectrum in the 39.5GHz-43.5GHz range is expected to be allocated in 2023 or 2024.

(February 24, 2022) commsupdate.com



Hungary

The National Media & Infocommunications Authority (Nemzeti Media- és Hírközlési Hatóság, NMHH) announced the availability of subsidies to assist consumers in exchanging their 3G mobile phones for 4G/5G devices ahead of the expected shutdown of 3G networks in the first half of 2023. An individual subsidy of HUF20,000 (USD63.4) can be claimed at one of 700 participating retail outlets, covering 250,000 device

purchases under the program's budget of HUF5 billion. The offer runs until 17 July 2022, or until the fund is exhausted. Although 3G devices are the main focus of the program, the NMHH confirmed that if any funds remain by 9 May 2022, from that date it will also be possible to claim the individual subsidy to replace a 2G-only mobile phone with a 4G/5G model.

(February 15, 2022) commsupdate.com



Iceland

The telecoms watchdog the Electronic Communications Office of Iceland (ECOI) has opened a public consultation on its plan to renew Vodafone Iceland's (Syn's) concession in the 3600MHz band until 31 March 2023. The ECOI received an application and a timed development plan from Syn for the renewal of the spectrum, with Syn committing to build 5G network in ten rural areas of the country (nine of which currently have no 5G access), deploy 40 5G transmitters and provide 5G to over 20% of the population. Interested parties are given until 24 February 2022 to comment on the plan. TeleGeography notes that the spectrum was initially awarded in May 2020 (effective until 31

December 2021) with a stipulation that a long-term allocation will be provided if the assigned frequencies are used in accordance with the ECOI's criteria for efficient utilization. At end-2021, however, ECOI highlighted that it faced uncertainty regarding the development of electronic communications legislation and the implementation of certain national security measures by the government to ensure the secure supply chain of mobile network equipment, and that the long-term allocation of the spectrum had been postponed. Instead, the regulator extended the concessions of Siminn and Nova for a short period (until 31 March 2023). (February 17, 2022) commsupdate.com



India

The Indian government has cancelled an INR190 billion (USD2.5 billion) tender for extending fiber connectivity to villages across 16 states due to a lack of eligible bidders. The BharatNet program was greenlit in June last year and would have utilized a public-private partnership model for the rollout, which was expected to cost around INR294 billion in total. The project had been split into nine tenders, and whilst the government had received applications from some firms, the participants had failed to qualify. An unnamed official source told the paper that the government would refloat the tender after taking feedback from the industry.

(February 28, 2022) [The Economic Times](https://www.economicstimes.com)

India's Finance Minister has confirmed that the auction of 5G spectrum will take place in 2022, with the rollout of 5G services to be carried out in the 2022-23 financial year. The Minister made the announcement as part of her Union Budget 2022-23 speech, which also included plans for a Production Linked Incentive (PLI) scheme for local manufacturing of 5G equipment. In addition, the Minister unveiled plans to award contracts for deploying fiber in all villages via a Public Private Partnership (PPP) model in 2022-23, with the works expected to be completed by 2025. The government also plans to use 5% of Universal Service Obligation Fund (USOF) contributions to finance research and development and commercialization of solutions for the provision of affordable broadband services in rural and remote areas. (February 1, 2022) [The Economic Times](https://www.economicstimes.com)



Ireland

Ireland's Department of the Environment, Climate and Communications (DECC) has opened a consultation on its 'Digital Connectivity Strategy', which is a sub-strategy of its recently-launched national digital strategy, 'Harnessing Digital – The Digital Ireland Framework'. According to the DECC, the Digital Connectivity Strategy is primarily focused on enabling the physical telecommunication infrastructure and services delivering digital connectivity. In terms of overall targets, the strategy envisages that: all Irish households and businesses will be covered by a gigabit-capable network no later than 2028; all populated areas will be covered by 5G by no later than 2030; and the delivery of digital connectivity to all 'Connected Hubs' and all schools will be achieved by 2023. In terms of actions the authorities are reportedly planning to implement to achieve its goals, these include: the deployment of gigabit connectivity in primarily rural areas via the state-led National Broadband Plan (NBP);

the introduction of a universal service obligation (USO) for broadband; and the 'immediate' deployment of high-speed connectivity towards key locations such as digital hubs, schools, Garda stations and other government facilities across the country. As part of the consultation, the government has invited commercial operators to submit details of their existing or future planned networks delivering broadband services to premises with at least 1Gbps download. According to the DECC, details should include the list of premises that are or will be covered and the expected date by which gigabit connectivity will be made available to each premises. Meanwhile, in terms of some of the specific questions asked by the consultation, these include: whether the ambition level set out in the strategy is considered appropriate; and whether the strategic enablers the strategy sets out are appropriate, or whether they need to be amended.

(February 24, 2022) commsupdate.com



Kenya

The Communications Authority (CA) has revealed plans to enable the rollout of pilot 5G networks this year. Matano Ndaró, the Director of Licensing, Compliance and Standards at the CA, told journalists that the regulator has developed a roadmap that outlines strategies to facilitate the deployment of 5G technology. Ndaró revealed that the country will begin to authorize the first 5G pilot projects this year, following which spectrum licenses will be allocated for the operation of commercial networks. 'We are now set to hold a validation workshop in the next one month to discuss the comments received. Once we adopt the input from the stakeholders, we shall establish a national 5G forum and allocate pilot frequencies,' Xinhuanet quoted Ndaró as saying at the launch of Chinese smartphone maker Vivo's 5G enabled device in the Kenyan market this week.

(February 25, 2022) commsupdate.com

Airtel Kenya, the local unit of Airtel Africa has reportedly reached an out of court settlement with the Communications Authority of Kenya (CA) related to a long-running dispute about its operating license. Under the settlement pact terms, Airtel Kenya will pay KES2 billion (USD17.5 million) to the telecoms regulator for the renewal of its license over the next

two years, bringing an end to a seven-year dispute. The concession was originally held by Essar Telecom Kenya (yu), which was partly acquired by Airtel at the end of 2014. Airtel's original 15-year operating license expired on 27 January 2015, since when it has been operating under the license of Essar which was issued on 1 July 2007 and will expire in January 2025. According to Airtel Kenya, at the time of acquiring Essar's assets, the CA had agreed to merge the two cellcos' operating licenses, but once the deal was finalized the regulator insisted that Airtel pay KES2.15 billion to renew its permit, arguing that Essar's license was non-transferrable. The settlement will enable Airtel to seek an exemption from a rule that requires telecoms companies to sell at least a 30% stake to local shareholders by March 2024. 'We have had this long-standing dispute with Airtel over the Essar transaction. The dispute has been there for seven years. But I am glad to report that we struck a deal and this is a major achievement for us,' stated CA director-general Ezra Chiloba, adding: 'Taxpayers are guaranteed of receiving about KES2 billion in the next two years. Airtel came up with a payment plan, which we agreed on. The idea was to have this matter resolved so that they can also start focusing on investing properly in this particular space.'

(February 18, 2022) [Business Daily](https://businessdaily.co.ke)



Kyrgyzstan

The Cabinet of Ministers has issued plans for the introduction of 5G mobile network technology which could potentially see a commercial launch this year. The 5G plans – with responsibility assigned to the Ministry of Digital Development – form part of the approved strategy for implementing the National Development Program of the Kyrgyz Republic (running

to 2026), with 5G projects set to be implemented within the timeframe of Q1 2022 to Q4 2023. A first stage involves 5G test launches in yet-to-be-determined pilot zones supported by frequency allocations to cellcos. Previous government proposals for implementing 5G rollouts by end-2021 were delayed.

(February 3, 2022) [Sputnik.kg](https://sputnik.kg)



Malaysia

Following the publication of determinations regarding the assignment of frequencies in the 2600MHz band by the Malaysian Communications and Multimedia Commission (MCMC) in May 2021, operators have now confirmed their acceptance of these spectrum allocations, confirming the prices they will pay in the process. In a filing with the Bursa Malaysia, Celcom parent company Axiata Group revealed it had accepted the MCMC's offer for a spectrum assignment (2530MHz-2540MHz/2650MHz-2660MHz), noting the Malaysian cellco had made an upfront payment of MYR11.76 million (USD13.3 million) for these frequencies. Further, Axiata also confirmed that Celcom's spectrum assignment will become valid from 1 July 2022 and be valid for five years, while noting an annual fee of MYR20.76 million will also be payable

for the frequencies – this is payable by 15 December each year. Similar filings were made by both Digi Telecommunications (2560MHz-2570MHz/2680MHz-2690MHz) and Maxis (2510MHz-2520MHz/2630MHz-2640MHz), which both confirmed they will pay the same one-off and annual fees for their respective 2x10MHz allocations in the 2600MHz band. Meanwhile, Telekom Malaysia also issued a statement confirming that its subsidiary Webe Digital had accepted the MCMC's assignment of an unpaired 20MHz block in the 2600MHz band (2575MHz-2595MHz). Telekom Malaysia noted that it has paid an upfront fee of MYR7.06 million for the frequencies, with the annual fee component to be paid throughout the assignment period being MYR5.98 million.

(February 14, 2022) commsupdate.com



Mexico

The Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) has confirmed that it has authorized America Movil (AM)-backed Telcel to introduce 5G technology. In order to facilitate the company's 5G ambitions, the watchdog has agreed to modify 18 fixed wireless access (FWA) concessions held by Radiomovil Dipsa (Telcel) for mobile use. In addition, the IFT has opted to switch the telco's existing 3450MHz-3550MHz spectrum holdings for 3350MHz-3450MHz frequencies to avoid interference issues. As a result of licensing tweaks, Telcel will be obliged to pay the government an annual usage fee of MXN900 million (USD43.9 million). Going forward, the regulator expects Telcel to 'put into operation the largest 5G commercial network in Latin America'. TeleGeography notes that chief rival AT&T Mexico is the country's other 3.5GHz spectrum holder. The 3550MHz-3600MHz concession – which was inherited via the 2015 takeover of Nextel Mexico – was renewed on 1 January 2020, for a period of 20 years. It is unclear if AT&T is awaiting further IFT action before it can use the frequencies to launch 5G mobile services. (February 13, 2022) commsupdate.com

The telecoms regulator indicated a long-awaited auction of 5G licenses is due to take place in 2022, after it was added to the work program for the coming twelve months. The Instituto Federal de Telecomunicaciones (IFT) said its Programa Anual de Trabajo 2022 includes plans to auction off 5G-enabling frequencies in the 600MHz, 3.3GHz and 3.5GHz bands, along with the L band (1500MHz range). An auction was expected to take place in the second half of 2020, but was delayed by Covid-19 (coronavirus). In December 2021, AT&T Mexico pressed ahead with the launch of 5G services, reportedly using its existing license in the 2.5GHz band. The IFT will no doubt be hoping the 5G tender will be more successful than an auction of unused 4G frequencies conducted in October 2021. At the time, only AT&T Mexico and Telcel submitted bids, picking up 800MHz and 2.5GHz frequencies respectively. Blocks in the 1700MHz/2100MHz and 1900MHz bands, as well as other 800MHz allocations, went unsold.

(February 4, 2022) mobileworldlive.com



The Netherlands

The Senate (First Chamber [Eerste Kamer] of Parliament) has approved a bill to complete the country's implementation of the European Electronic Communications Code (EECC) via amendments to the Telecommunications Act. The Senate Committee on Economic Affairs issued a final report on 8 February 2022 stating that the bill will be passed as a 'hamerstuk' ('hammer document') which does not require further debate or voting, on 15 February 2022. The House of Representatives (Second Chamber of Parliament) had passed the proposal on 28 October 2021. TeleGeography's GlobalComms Database notes that the EECC was due to be transposed by 21 December 2020 but on that date the Netherlands transposed only selected aspects of the Code covering: access

regulation amendments; further lowering barriers for subscribers to switch providers; and new powers for the government to obtain data about the geographical coverage of networks. Despite the EC opening infringement procedures against 24 EU countries including the Netherlands for failing to enact the EECC in February 2021, the Dutch government did not publish proposals for implementing the remainder of the EECC until 22 June 2021, requiring parliamentary scrutiny before subsequent adoption. The EECC aims to support the objective of universal broadband internet access set out in European Gigabit Society action plans, while strengthening the functioning of the EU electronic communications market, promoting competition between providers and improving the position of

consumers, simplifying the EU regulatory framework and expanding responsibilities at multinational regulatory organization BEREC. Furthermore, the Dutch Senate highlights that the country's EECC implementation bill supports 5G network rollout by

enabling easier small cell deployment and amending the rules regarding interoperability and interconnection of competing networks, and regarding providers' access to each other's networks.

(February 11, 2022) commsupdate.com



Nigeria

The Nigerian Communications Commission (NCC) has announced that the provisional winners of the recently concluded 3.5GHz spectrum auction, MTN Nigeria and Mafab Communications, have each made the full payment of USD273.6 million for their licenses by the deadline. In December last year the two operators emerged as the winners of one lot of 100MHz TDD spectrum in the 3.5GHz band each, while a third

company, Airtel Nigeria, also qualified to participate but walked away empty handed at the conclusion of the final round of bidding. Following the conclusion of the assignment stage, MTN also agreed to pay an additional USD15.9 million to select spectrum in the 3500MHz-3600MHz band, with the second lot (3700MHz-3800MHz) assigned to Mafab.

(February 28, 2022) commsupdate.com



Norway

The National Communications Authority (Nkom) has begun the process of assessing whether additional frequencies should be made available for 5G. In a press release the watchdog said it was seeking a dialogue with stakeholder to ascertain the need for more resources for fifth-generation technologies, noting that among its considerations was the possibility of allocating the 700MHz and 1500MHz supplemental downlink (SDL) bands – specifically the spectrum ranges 738MHz-758MHz and 1427MHz-1517MHz. According to Nkom, with these frequencies having recently been harmonized for mobile communications, it believes they could 'contribute to extra downlink capacity in

public mobile networks'. Meanwhile, in terms of the other spectrum bands being considered, the regulator has identified: the 2.3GHz band (2300MHz-2400MHz); the 26GHz band (25.25GHz-27.5GHz); and the 42GHz (40.5GHz-43.5GHz) band. As part of its initial work, Nkom has said it aims to map demand and the need for spectrum in the relevant frequency bands, while it also seeks to assess what is the most 'socially beneficial' use of these bands, and whether there would be synergies achieved by allocating several bands together. Discussions with interested parties regarding this matter are expected to take place 'during the spring'. (February 4, 2022) commsupdate.com



Peru

The Agency for the Promotion of Private Investment (Agencia de Promocion de la Inversion Privada, ProInversion), which manages the auctioning of spectrum rights in the country, has suspended the sale process for frequencies in the 1700MHz and 2300MHz bands. ProInversion did not provide a reason for the suspension, simply citing the terms of the bidding rules which allow the agency to suspend the process 'without giving any cause and without incurring any liability'. ProInversion had altered the timeline for the auction back in August 2021, extending by several

months the time allowed for interest parties to submit queries regarding the process. The concessions on offer comprised a 2x30MHz license in the 1700MHz band (1750MHz-1780MHz/2150MHz-2180MHz) and 1x30MHz in the 2300MHz band (2300MHz-2330MHz). The winner of the 1700MHz band will be required to provide network coverage of 1,171 rural towns, including at least 118 in the Valley of the Apurimac, Ene and Mantaro Rivers (Valle de los Rios Apurimac, Ene y Mantaro, VRAEM) region and in the jungle areas of the country. (February 23, 2022) commsupdate.com



Philippines

The House of Representatives and the Senate ratified Senate Bill 2094, opening up industries to foreign investors, including for public services such as telecommunications providers, by amending the 85-year-old law that caps foreign ownership of public utilities to 40%. The proposal will now pass to President Rodrigo Duterte for approval into law, noting that it could herald massive change in one of the world's 'most restrictive economies. Senate Bill 2094 passed through the House of Representatives back

in March 2020, and was approved in the Senate by a margin of 19 to three in favor, in December 2021. The measure seeks to clarify the definitions between the terms 'public utility' and 'public service', noting that under the 1987 Constitution, only corporations that are at least 60% owned by Filipinos will currently be given the franchise, certificate, and authorization to operate as a public utility. Going forward, telcos could now be considered as a public service and, as such, 'no longer bound by restrictions on foreign ownership'.

(February 3, 2022) Bloomberg



Romania

The National Authority for Management and Regulation in Communications (ANCOM) has adopted its work plan for 2022, which includes the long-awaited auction of 5G frequencies in the 700MHz, 1500MHz and 3400MHz-3800MHz bands during Q3. The tender, which is expected to raise around EUR600 million (USD672 million), follows the allocation in November last year of short-term user rights for 5G-suitable frequencies in the 800MHz, 2600MHz and 3.5GHz bands. The regulator's other main priorities for this year include the transposition of the European Electronic Communications Code, the establishment of minimum security measures to be taken by communication

network and service providers, and the continued implementation of Infrastructure Law No. 159/2016. Presenting the plan, ANCOM president Vlad Stefan Stoica said: 'Creating a legal framework adapted to current needs, which would support the development of the telecom sector and the protection of users, is the main objective of ANCOM for this year. The transposition of the European Electronic Communications Code into national law as soon as possible will allow us to review and update the national regulations in force, so that we all benefit from the advantages and opportunities offered by a single European framework, in line with the rapid evolution in this field.' (February 25, 2022) [commsupdate.com](#)



South Africa

All six bidders have qualified for participation in the auction phase of the ongoing licensing process for International Mobile Telecommunications (IMT) spectrum, or high-demand spectrum, the Independent Communications Authority of South Africa (Icasa) said. Information and communications technology groups Cell C, Liquid Telecoms, MTN, Rain Networks, Telkom and Vodacom submitted their applications by January 31 in response to the Invitation to Apply (ITA) issued on December 10. "The fact that all six applicants have qualified illustrates the robustness of our telecommunications sector in South Africa. We can officially proclaim the forthcoming March spectrum auction as an unparalleled milestone in our country's communications history as this will be the first ever spectrum auction held on our shores," said Icasa Chairperson Dr. Keabetswe Modimoeng. In line with the truncated timetable published by the Authority for this licensing process, and after extensive analysis of received applications, all six applications passed the pre-qualification stage of the licensing process and can now participate in the planned auction stage at the beginning of March 2022. (February 21, 2022) [engineeringnews.co.za](#)

respect of the international mobile telecommunications spectrum licensing process marking a step towards the auctioning of high-demand spectrum in March 2022. The Authority will announce the qualified bidders on 21 February 2022. This will mark the next critical milestone in the effort of the authority to finally release this much-needed economic stimulus input. The Chairperson of Icasa, Dr. Keabetswe Modimoeng expresses his utmost gratitude to all applicants and encourages them to continue supporting this process until its completion. "We thank all applicants for participating in the process. We intend to finally see the licensing of high-demand spectrum through to completion to ensure that all South Africans have access to a wide range of communications services, including data services, at affordable prices," says Dr. Modimoeng. Furthermore, the chairperson urges all role players to align their interests with their patriotic spirit, and to allow this critical regulatory intervention to be completed. "We value each milestone in this process, especially considering the mammoth legal challenges we have encountered along the way. Ultimately, public interest should prevail, as this process will yield positive spinoffs for the industry and society at large," concludes Dr Modimoeng.

The Independent Communications Authority of South Africa (Icaca) said it has received six applications in

(February 1, 2022) [bizcommunity.com](#)



South Korea

The Ministry of Science and ICT (MSIT) has confirmed that the auction of additional 5G-suitable spectrum will no longer take place this month as planned, amid a continued dispute between operators related to the terms of the frequency sale. With the spectrum tender having been expected to get underway in February, SK Telecom and KT Corp have continued to complain that smaller rival LG Uplus is at a relative advantage in the auction, as it is claimed it will cost LG Plus less to utilize the frequencies that are being offered. Now, with regards to the delay of the auction process an

MSIT official was cited as saying: "The auction will not open in February ... It's true the schedule is being slightly delayed from what we had initially announced.' In December 2021 the MSIT announced it would open bidding for a 20MHz block of spectrum in the 3.5GHz band (3.40GHz-3.42GHz), following a request by LG Uplus, before subsequently confirming the new frequencies would be priced at KRW135.5 billion (USD113 million).

(February 17, 2022) [Yonhap News Agency](#)



Spain

The Ministry of Economic Affairs and Digital Transformation (Ministerio de Asuntos Economicos y Transformacion Digital, MINECO) has reorganized the spectrum in the 3400MHz-3800MHz (3.5GHz) band assigned to the country's cellcos. The watchdog explained: 'The main objective of the reorganization is to facilitate a more efficient deployment of 5G wireless broadband services, take advantage of all the possibilities provided by 5G technology and, ultimately, reduce the costs of deploying mobile communications networks in this band.' Post-reorganization, a 20MHz block (3400MHz-3420MHz) has been preserved as a guard band, with allocation of the remaining

frequencies is as follows:

- Xfera Moviles (Grupo MASMOVIL, 80MHz): 3420MHz-3500MHz
- Telefonica de Espana (40MHz)/Telefonica Moviles Espana (60MHz): 3500MHz-3600MHz
- Orange Espana (110MHz): 3600MHz-3710MHz
- Vodafone Spain (90MHz): 3710MHz-3800MHz

As part of the process, all companies using 700MHz/800MHz telecoms licenses have guaranteed that their respective electronic communications services will not interfere with digital terrestrial television (DTT) operators using frequencies in the 470MHz-694MHz range. (February 22, 2022) commsupdate.com



Sweden

The Swedish Post and Telecom Agency (Post & Telestyrelsen, PTS) has opened a consultation into the allocation of spectrum licenses in the 900MHz, 2.1GHz and 2.6GHz bands. The award of licenses is scheduled to begin in September 2023, with permits valid from the start of 2026. 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 wireless signals alongside main road and rail routes. A spectrum ceiling of 2x20 MHz will apply in the allocation of the 900MHz band, while the 2.1GHz and 2.6GHz bands will have a cap of 120MHz per operator. Stakeholders have until 28 March 2022 to submit written comments.

(February 25, 2022) commsupdate.com



Trinidad and Tobago

The Public Utilities Minister Marvin Gonzales has denied allegations by opposition politicians that the planned restructuring exercise at state-owned telco Telecommunications Services of Trinidad and Tobago (TSTT) is a ruse to privatize the company. The Minister Gonzales dismissed the suggestion as a 'conspiracy theory', but said he would welcome any evidence to support the claim. The telco recently invited the representative workers' unions to discuss a plan

to restructure the company, which has been losing revenue in recent years. TSTT is 51% owned by the Government of Trinidad and Tobago, while co-owner Liberty Latin America (LLA) inherited its 49% stake in the telco when it completed the acquisition of Cable & Wireless Communications (CWC) in May 2016. LLA – which also owns local cableco Flow – has been obliged to offload its stake since March 2015, but no deal has ever materialized. (February 1, 2022) Newsday



United Kingdom

Britain's telecoms regulator said it was not ideologically wedded to retaining four mobile networks, signaling an open-minded approach to a possible tie-up between Vodafone and Three. Vodafone Chief Executive Nick Read last week listed Britain as one market where the company saw an opportunity for mergers, adding that it was pursuing deals in multiple European markets. European operators have called for in-market consolidation to encourage greater investment in networks, to keep pace with Asia and the United States, where three operators are common. Vodafone VOD.L, which is ranked third in terms of subscriber numbers in Britain, has previously held talks with fourth-ranked Three, which is owned by Hutchison. Regulator Ofcom in 2015 opposed the proposed merger between O2 and Three that would have created Britain's biggest operator because it wanted to retain competition between four networks. The merger was blocked by European regulators. Ofcom said, however, that it

would not block a merger solely because it reduced the number of operators to three from four, but would consider the specific circumstances of tie-ups and changes in the wider market. "The question of whether a particular merger is likely to result in a substantial lessening of competition will turn on the effectiveness of competition that can be expected in the market after the merger, rather than just the number of competitors," it said in a discussion paper. Europe's decision to block the O2-Three merger was overturned by the EU's General Court last year. By then O2, owned by Spain's Telefonica had formed a joint venture with Liberty Global's Virgin Media LBTYA.O broadband network. A combined Vodafone-Three would have around 31% of mobile subscribers in Britain, behind Virgin Media O2, with about 35%, and EE, with about 34%, based on Ofcom data for Q1 2021. Ofcom said competition between Britain's four networks had served the country well, but consumers were increasingly using other

networks such as Wifi at home or at work.

(February 10, 2022) reuters.com

Telecommunications watchdog Ofcom has published a statement confirming its final decision related to the implementation of the 'One Touch Switch' process, which is designed to facilitate easier switching between providers for fixed voice and broadband customers. Having begun consulting on proposals for the process back in February 2021, initial decisions were published by Ofcom the following September, and it has now published its final decision relating to the changes to the General Conditions (GCs) – the regulatory rules that all UK communications providers must follow in order to offer services. In short, the watchdog has confirmed that the revisions to the GCs will come into

effect on 3 April 2023 when all residential fixed voice and broadband subscribers will be able to use the One Touch Switch process to move provider, regardless of who their existing provider is, or the technology used by that provider. Meanwhile, Ofcom has also confirmed that it is making changes to its rules to implement a decision that mobile customers using the Auto-Switch process will, in the future, receive additional information when they switch. This will include any bundled services and specific services for disabled customers. In a press release regarding the matter, Ofcom noted: 'Difficulties in the switching process can put people off moving providers. Effective switching is also important to support competitive investment in, and take-up of, faster and more reliable broadband.'

(February 4, 2022) commsupdate.com



Zimbabwe

The Postal and Telecommunications Regulatory Authority of Zimbabwe (Potraz) has said anyone keeping personal information for more than 30 people must notify it and employ a data protection officer. Potraz gave the deadline for notifying it and submitting details of the data protection officer. The notice dated 13 February on data protection follows the enactment of the Data Protection Act in December last year, legislation which is meant to build confidence and trust in the secure use of information and communication technologies by data controllers, their representatives and data subjects. Potraz Director General Dr. Gift Kallisto Machengete said all data protection officers should have at least an Advanced Level qualification. "The Postal and Telecommunications Regulatory Authority in its capacity as the Data Protection Authority hereby notifies all Data Controllers and or Processors who hold or process personal information for individuals and have in their possession personal information belonging to more than thirty (30) people that they are required to notify the Authority that they hold or process data for more than 30 individuals, indicate the purpose for which the data is collected and processed," said Dr. Machengete. The new law also requires data controllers to comply with the authority's requirements regardless of whether their operations are physical or online. Dr. Machengete said controllers can be companies or individuals. "Any entity or body established in its own right including, a sole trader business, company, charity, club, association or public institution that processes personal data for any living

individual including customers, potential clients or members of the public and club or association members (in the case of voluntary organizations), is a Data Controller. "Any legal obligations imposed by the Data Protection Act and other laws including employment law, in processing personal data, on any person or entity automatically makes that person, entity or organization, a data controller, responsible for that process, even where it is outsourced," he said. The regulatory authority must also be provided with full details of the Data Controller's legal persona status if they are not an individual, their physical address and proof of residence in the form of a telephone, rates or electricity bill. The Potraz Director General said all Data Controllers and Processors must comply when called upon to do so in compliance with the requirements of the Data Protection Act and any existing Data protection legislation, including that relating to employment, anti-money laundering, record keeping of data subjects rights and record keeping of processing activities. Potraz must also be notified of any data breaches and if information is released without the owner's consent, a complaint must be lodged with the regulatory authority. "Data Protection officers are required to notify the Authority of any data breaches in terms of the Act, using the email address dataprotection@potraz.gov.zw. The Authority hereby advises members of the public, that any persons whose personal information is processed or disclosed to third parties without their consent should register a complaint on the Authority's website. 📍 (February 21, 2022) chronicle.co.zw

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