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## Data Flows and Regional Data Policy Considerations

Data flows are a reality of our times. With the global internet penetration rate standing at about 60%, the magnitude of the importance and the need for free data flows can be easily deciphered. Industry 4.0 is truly in play, for end-to-end digitalization and integration into the evolving and expanding digital ecosystem are accelerating before our eyes.

As 5G infrastructure gets deployed in the region and as cloudification speeds up, causing communications networks to become increased integrated and merged, data generation and flows will only increase. By default, 5G means more data, more cloud applications, and resultantly, more data flows. The impact of data flows is multifold, ranging from international trade to economic opportunities at a local level; from national security to citizen data privacy; and from digital economy to financial inclusion at the microlevel. SAMENA Council brought the economics of data flows in countries to discussion in its Beyond Connectivity 2017 industry conference, where it was established that the data flows give competition advantages to societies and catalyze innovations in digital services, creating better possibilities and new opportunities via digitalization.

In this part of the world, off-shoring of data has been so far difficult to achieve, preventing aggregation across markets and allowing multi-network regional Telecom Operators from taking full advantages that

network virtualization and cloudification, especially in the 5G environment, offers. Thus one of the greatest issues the current data management policies continue to trigger, is the inefficiency and duplication in investments that each multi-network Operator has to make on a country-per-country basis; an undertaking that could be much more effectively and meaningfully carried out with better cross-border data access and flows. It is already well-known that free flows of data reduce transaction costs and the constraints of distance, and can immensely increase network efficiencies; which results in multiple benefits, including better customer digital experience and progress in the development of the region's IoT ecosystem – a matter discussed during the SAMENA Council's SALT 2021 meeting.

This year, 5G technology in the region will mature, supported by cloud infrastructure, new intra-industry and cross-industry synergies. This will cause ever new 5G applications and services to surface, triggering data avalanches. Therefore, to tackle the prevailing data management challenge in most countries of the SA-MENA region, and for the region to become competitive vis-à-vis other regions' data management and data protection regulatory approaches, decision-makers should make incremental changes to data policies to help boost data flows across the region, and introduce common frameworks or standardization measures for different



**Bocar A. BA**  
Chief Executive Officer  
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Council

classes of data across the region. One of the ways to improve the enabling regulatory environment would be to adopt regulatory sandboxes in understanding data management and free flow requirements for data. In doing so, the goal should be to agree on common principles, such as of privacy and data-related risk management, and to achieve legitimate regulatory goals without compromising economic growth and network business efficiencies that are fostered by free flow of data across borders. 🌱

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## SAMENA COUNCIL ACTIVITY

### SAMENA Council Emphasized on Two Key Implementable Areas of Future-Oriented Policymaking at the WTPF, to Re-Energize Sustainable Development and Universal Connectivity Drives

SAMENA Council, represented by its CEO - Bocar BA, who also delivered a keynote in support of the Private Sector, participated and contributed to the Opinions adopted during the Sixth World Telecom/ICT Policy Forum (WTPF-21), held virtually in December 2021. The Forum brought together representatives from all stakeholder groups belonging to 90 ITU Member States, 40 Sector Members, including SAMENA Council, and various Observers. Deliberations at the WTPF-21 delved into identifying actions that can be taken to mobilize new and emerging technologies and ICTs for sustainable development, as well as practical measures to boost universal, affordable and secure connectivity. Delegates recognized the need to re-energize sustainable development and drive faster and more inclusive connectivity, and to ramp up digital skills. The essential requirement for setting best policies and practices for adopting and utilizing new and emerging technologies and services to facilitate the use of ICTs for sustainable development was recognized as being crucial. It was also agreed that an enabling environment for the development and deployment of new and emerging telecommunication/ICT services and technologies to advance sustainable development is critical for a sustainable digital future. (SAMENA Council noted that this was in accordance with the earlier acknowledgement by the global community of the role that the Telecom/ICT industry, especially the Telecom Operator community, has been playing in digital development worldwide and more so throughout the 2020-to-date pandemic response and future preparedness processes.) Aligned with the Report presented by the ITU Secretary General, H.E. Mr. Houlin Zhao, and Opinions 3 & 4 agreed to during the WTPF-21 regarding the need to *adopt effective future-oriented policy approaches for building the digital*

*Deliberations at the WTPF-21 delved into identifying actions that can be taken to mobilize new and emerging technologies and ICTs for sustainable development, as well as practical measures to boost universal, affordable and secure connectivity. Delegates recognized the need to re-energize sustainable development and drive faster and more inclusive connectivity, and to ramp up digital skills.*

*future*, SAMENA Council stressed upon two particularly important aspects for future policymaking and governance: One, adopting innovative and sustainable funding, financing and investment models that need to be much broader and include contributors apart from Telecom Operators alone and predictable and sustainable contributions from all those that benefit from infrastructure investments. Two, understanding and meaningfully utilizing the vast data flow landscape that now exists, and for which Policymakers and Regulators should help in the harmonization of data categorizations such as global definitions and data-related concepts; developing common technical data-related standards; exploring emerging forms of data governance, and agreeing on digital and data-related rights and principles at the top of their data-centric policy and regulatory approaches. Bocar BA, in his keynoted, stated that "Focusing on these two aspects will help establish a foundation on which the future of connectivity can be built. SAMENA Council suggests that the Policymakers and Regulators consider extending the regulatory sandbox approach to understand and address new challenges associated with cross-border data flows, which are an integral part of the global connectivity system we have recognized today for building a sustainable digital future for all." BA also reiterated that "In the age of collaborative regulation, policy and regulatory approaches should aim to

more effectively address the needs of the Private Sector, in particular of Telecom Operators. The success of the Governments and the success and sustainability of the Private Sector are closely interlinked. Consequently, in support of the Opinions adopted regarding future-oriented policy approaches, it is almost inevitable that we'd also need to focus specifically on the need for reducing Taxation and incentives in investment, adopting future-friendly Spectrum allocation approaches and rectification of Spectrum Interference issues and supporting innovation in the creation, adoption, and championing by the government sector of the adoption of new digital services." WTPF-21 brought together policy-makers from across the globe, providing a venue for exchanging views and knowledge to create shared vision on issues arising from the emergence of new telecommunication/ICT services and technologies. It is the sixth such Forum, previous having taken place in 1996, 1998, 2001, 2009 and 2013. The Forum was convened at the request of ITU Membership to discuss new and emerging technologies. The Sixth World Telecommunication/ICT Policy Forum (WTPF-21) was due to be held on 16-18 December 2021 in Geneva, Switzerland. However, given the deterioration of the epidemiological situation and the announcement of travel restrictions and quarantine requirements in Switzerland and many other countries, WTPF-21 was only held as a fully virtual event. 📺

## 2021 IN REVIEW

### SAMENA Council's Perspectives on the Year as It Unraveled New Trends and Contributions

The Digital Communications Industry's multi-dimensional role, led by Telecom Operators, was highlighted once again throughout 2021, and remains undoubtedly at the nucleus of the society's efforts to embrace digitization and to keep hopes of achieving digital inclusion for all; an imperative that has now been extensively defined by regional governments through their ICT visions.

Following the events of the past two years, a new opportunity landscape has now emerged. In this landscape, creating the right enabling environment, especially with new policy approaches and regulatory measures that can benefit all stakeholders in a sustainable manner, is a major policy and regulatory imperative. The need to ensure sustainability of the Industry demands transformational steps across the business, and putting right policies and right methods in collaboration to effective use.

In the post-pandemic era, sustainability of Operators' business is critical, for they are the providers of the infrastructure that supports the now-ever accelerating digital and related economic activity. While trying to understand the impact on their businesses from new digital



technology developments and identifying the right digital transformation strategies,

regulatory authorities and governments need to adjust legacy regulatory and economic frameworks to new data-driven technology and market realities.

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A lot of questions are surfacing regarding the new disruptions caused, including what to do about cross-border data flows, taxation in the digital economy, spectrum availability, 5G and digital services use-cases and much more. To bridge the gaps in understanding of different stakeholder issues, and to align policy-, regulatory-, and private-sector priorities, SAMENA Council focused its 2021 work on addressing core issues that Operators are contending with, including but not limited to enablement of Cross-border Data Flows, rectification of

Signal interference, implementation of the Collaboration Regulation model, especially in alignment with Operators' needs and Regulators' priorities, transitioning to IPv6 and overcoming hurdles in the Deployment of Fiber, and adoption of new approaches in Funding and Financing Digital Infrastructure, among a host of other areas.

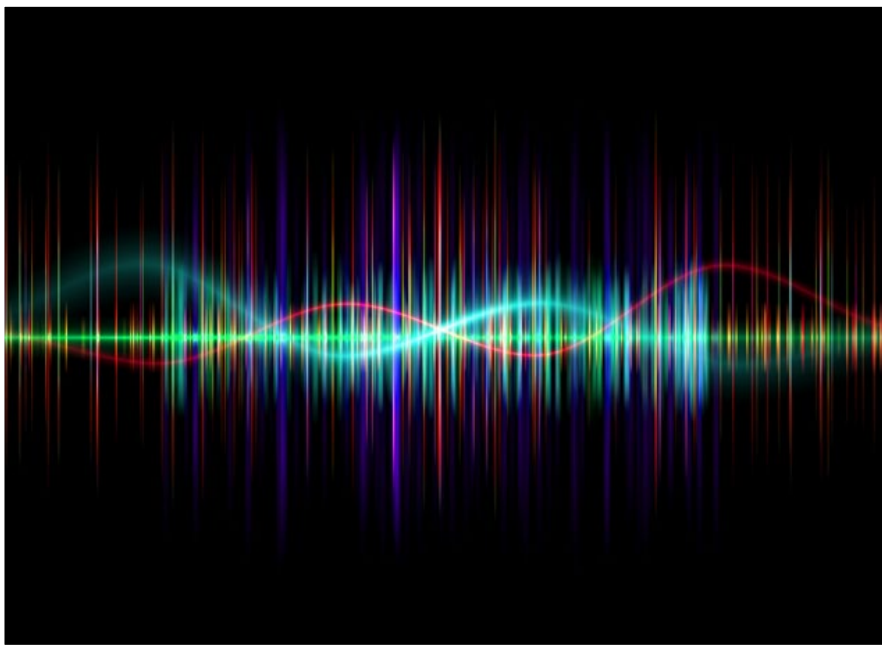
Representing a community of the largest multi-network operator groups in the SAME-NA region, SAMENA Council is a fully regionally-focused but globally active telecommunications and ICT advocacy and regulatory reach organization. In this regard, the Council values the confidence provided to the SAMENA Council by the Industry's top decision-makers, who constantly remain involved

in what the Council does as a pan-regional telecommunications and ICT industry association, working diligently as an advocate for sustainability of the Industry and a support of national ICT visions throughout the SA-ME-NA region.

Given below are the areas that made 2021 another foundational year for the region's ICT industry:



## Greater Spectrum Availability for Mobile Use Achieved



Since 2020, SAMENA Council has been re-emphasizing on the need to (1) do more of what has worked well throughout the COVID-19 crisis, (2) consider temporary spectrum awards during Covid times for permanent allocation, (3) think beyond short-term revenue-generation from spectrum awards, (4) address spectrum needs of both Terrestrial and Satellite Operators, (5) rethink taxation and license fees, (6) award as much contiguous spectrum as possible, (7) prioritize the release of

unallocated portions of 600 MHz, 700 MHz and 800 MHz spectrum; and release of 3.8 – 4.2 GHz frequencies, (8) consider deferred payment facility and extension of spectrum licenses to 25 years, and (9) promptly tackle spectrum interference issues in the SA-ME-NA region.

During 1Q-2021, progressive policy and regulatory steps in Saudi Arabia set a global milestone in spectrum availability, unlocking the potential of radio spectrum in Saudi Arabia for a smarter and safer

future by 2025. The Communications and Information Technology Commission of Saudi Arabia (CITC), by issuing a 3-year Outlook for Commercial and Innovative Use of the Spectrum, expressed its plans to allocate or improve access to more than 23 GHz of spectrum for a wide range of digital communication uses, specifically by allocating the 600 MHz band and the 3.8 – 4 GHz band for mobile use, and by allowing secondary mobile use in the 28 GHz band. This important development underpinned Saudi Arabia's national aim to expand the range of resources and services in the country, while ensuring that the digital ecosystem will thrive and Telecom Operators have access to more spectrum resources for incentivizing further investment. As a result, this development makes Saudi Arabia the country (and SA-ME-NA region) with the most spectrum allocated for mobile use globally in the Sub-6 GHz and Sub-30 GHz frequency ranges.

Through meaningful collaboration with the Private sector, Policymakers need to promote innovation in the commercial use of spectrum, by increasing access through licensed and unlicensed approaches, and by ensuring that spectrum management practices account for competitive dimensions





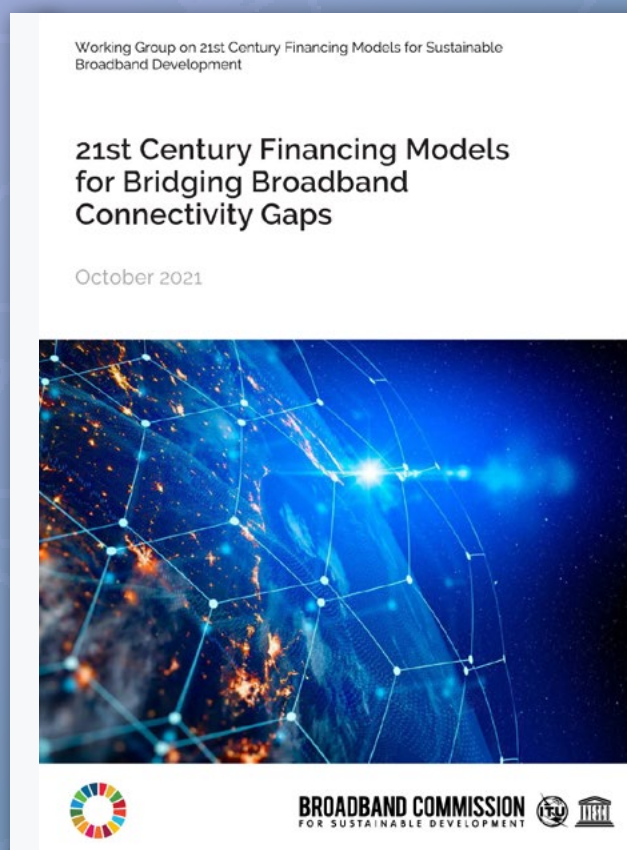
## New Multi-Stakeholder Approaches to Fund and Finance Broadband Infrastructure Emerged

To tackle the financial resource gaps for building advanced digital infrastructure, including 5G networks, which can empower the Middle East, or any region for that matter, massive public-private efforts are required. However, to make that happen, transformation is required on at least two fronts: one, on reality-based policy-making and evidence-based regulatory approaches, and, two, on unity among industry stakeholders

to tackle the challenge of building new broadband infrastructure.

To this effect, SAMENA Council, leading a globally important outcome from the work of the UN Broadband Commission's Working Group on 21st Century Financing & Funding Models, co-chaired and contributed to the creation of four key strategic recommendations that capture the essence of how ICT stakeholders need

to move forward in the post-2021 world to close connectivity gaps by developing future broadband infrastructure. The four strategic recommendations set forward the principles of (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 among necessary requirements for achieving the UN 2030 SDGs.



Download the Report

<http://www.broadbandcommission.org/download/4323/>



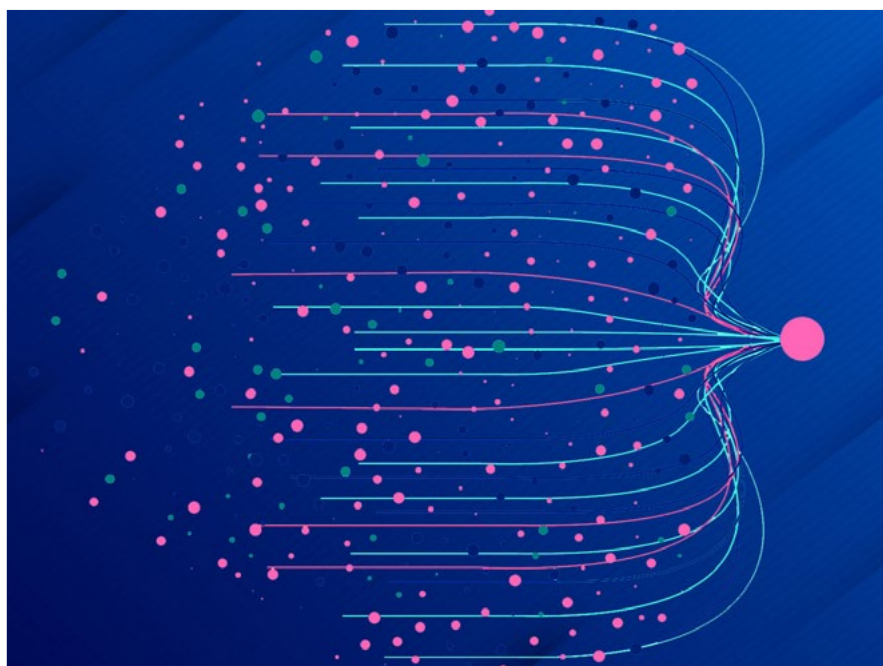
## Regulatory Sandboxing for Cross-Border Data Flows Promoted

During September 2021, SAMENA Council held its 5th SAMENA Leaders' Roundtable (SALT), organized under overarching theme of "IoT Development in the Region". It was discussed that whether standalone or in the context of enabling IoT development across the region, the issue of cross-border data management requires timely attention. Doing so would help to enhance the region's competitiveness globally, while also enabling Operators to achieve reasonable scale in their business.

With many of SAMENA Council's member Operators inherently multi-market service providers, there is a dire need to allow Operators to transfer and access data across borders. Current data management policies prevent data aggregation across markets and deprive SAMENA Council's member Operators as well as other market players from accessing the full advantages and scope that virtualization and cloudification offers, for example. At present, there is no GCC-wide data privacy and protection framework that would allow smooth data flow across borders, and each country has its own data sovereignty rules.

Thus the region's progressive regulators need to spearhead the removal of incongruous elements that exist at both national and regional level in data flows to accelerate IoT and to facilitate Operators' business scalability.

In this regard, as suggested during its 2021 SALT Meeting, SAMENA Council, in consultation with its Members, has started promoting the "Regulatory Sandboxing Approach" for tackling



the challenge of cross-border data management. Such approach would allow for the creation of an environment within which prevailing regulatory controls are temporarily suspended, or substantially modified, for a defined period of time, and during which alternative approaches to the regulation of the industry can be tested.

The sandboxing approach would also help explore the minimum data protection and privacy requirements and, at the same time, could also be used by the relevant data authorities in a country by any corresponding and collaborating jurisdictions to better understand any requirements for relevant bi-lateral arrangements based either on equivalence (whereby each country party to the sandbox accepts the

data protection and privacy frameworks of the other) or as an extension (whereby Binding Corporate Rules are implemented to safeguard data flows across borders). Binding Corporate Rules would allow for off-shore transfer of data within a multi-network Operator and the processing of data outside the home country to occur as though the data was still resident in the home country. Through either equivalence or extension, the ultimate benefit is reaped by all the stakeholders (end-Users, Operators, Authorities) as positive outcomes are generated for the economy and the nascent digital ecosystem benefits, considering new services are offered, providing impetus for ecosystem expansion with the participation of new players and the availability of new choices.



## IPv6 Migration Prioritized



In 2021, SAMENA Council emphasized on the need to promote IPv6 industry development through collective responsibility, will and determination, and plan ahead to accelerate IPv6 transition. Not only does this open new door of opportunity across business, society, security, and overall sustainability of the ecosystem; it will literally help create the Intelligent Internet of everything, which is the ultimate goal of digitalization transformation. By ensuring a timely and effective transition towards IPv6 and taking steps to facilitate peering and interconnection between networks, the Internet in the SA-ME-NA region can continue to deliver on its potential, leading to economic growth in the region.

In order to achieve accelerated transition from IPv4 to IPv6, the Private and the

Public sectors need to consider some important factors that can contribute in the right direction when it comes to IPv6:

- Global IPv6 deployment is vital to the continued growth and stability of the Internet. This alone is a major reason to accelerate collaboration to overcome challenges in transitioning from IPv4 to IPv6.
- Private-sector entities should aim for realizing rich interconnectivity, and should aim for building consensus on approaches to implement IPv6 as smoothly as possible
- The transition from IPv4 to IPv6 has its own Cybersecurity/network security, and infrastructure/asset security considerations, which demand timely placement in the agenda of the industry
- While transitioning or thinking

transition, it may be necessary to create learning modules that would allow for gaining understanding necessary for their role to manage the changes coming with the shift from IPv4 to IPv6

- The region's economic development is greatly dependent on robust ICT/IT infrastructure, and thus the private sector should work in synch with entities like the national IPV6 Task Force in Saudi Arabia and TRA in the United Arab Emirates
- Funding mechanisms being discussed to accelerate meaningful connectivity (and to connect the remaining 46% of the world's population), similar approaches may be necessary to fund IPV6 transition
- Regionals Governments should play their role in driving adoption of IPv6, communicating IPv6 as a national priority, and encouraging cross-stakeholder and cross-industry participation in capacity-building opportunities
- Policymakers and regulators should incentivize investments and "future-proof" those physical infrastructure and cloud investments
- Accelerated cooperation building for harmonized adoption of 5G and to make proper use of Ultrabroadband networks, timely adoption of IPv6 is critical
- Transforming networks in terms of artificial intelligence, cost-cuttings, and a host of other features, transition to IPv6+ is a milestone for which all mobile networks should aim

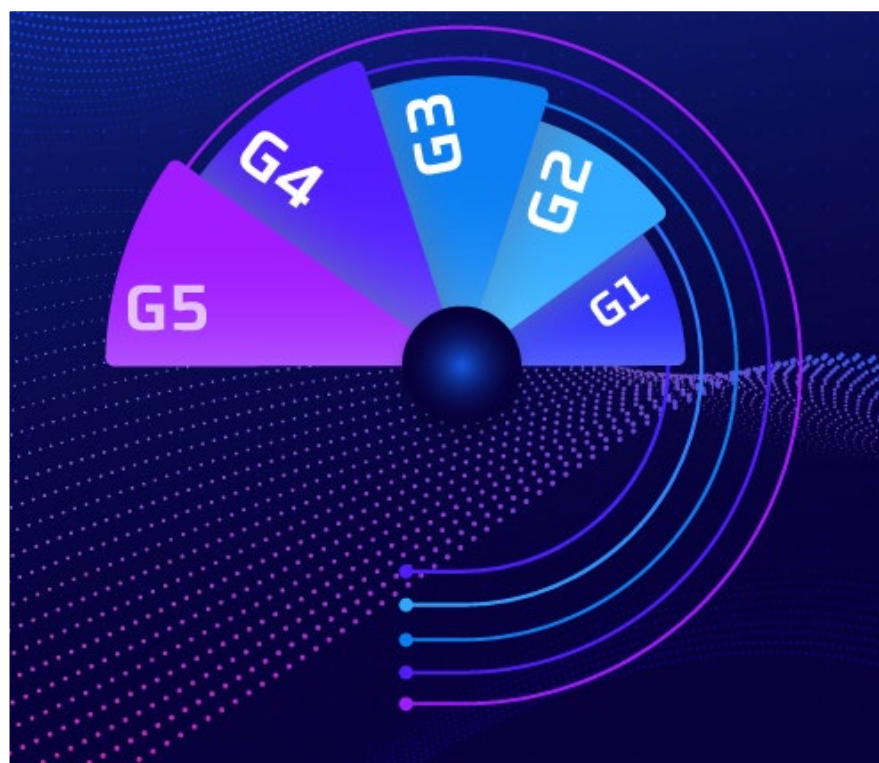


## Fifth-Generation Policy & Regulatory Evolution Tracking Gained Momentum

In 2021, SAMENA Telecommunications Council became a Member of the Review Board of the “G5 Benchmark”, also known as the Gold Standard for Collaboration among Regulators. The Benchmark of Fifth Generation Collaborative Regulation helps fast-track collaboration among regulators and policy-makers from the information and communication technology (ICT) sector and other sectors to drive digital transformation for all.

SAMENA Council contributed to the econometric model and indicators selection. The Benchmark enables SAMENA Council as a Board Member to directly track and grade Regulators on the design and evolution of enabling regulatory frameworks, and make its recommendations on effective regulatory approaches, aligned with the needs of the region as well as those of the Private Sector.

The G5 Benchmark aims to reveal regulatory gaps, and help with building custom roadmaps for navigating the digital transformation. It allows for the tracking of evolution of regulatory frameworks with respect to advancements in the digital economy and dives deep into policy trends. It enriches global policy debate and sets out new goals for regulatory excellence. The G5 Benchmark identifies policy



and implementation shortcomings in pursuit of the 17 SDGs, and points to how collaborative regulation can remedy them. The G5 Benchmark is based on data provided by ITU Member State Administrations through annual ITU surveys.

The Benchmark's overall score is calculated based on 66 (52 when

grouped) indicators, grouped around four pillars: (i) National Collaborative Governance, (ii) Policy Design Principles, (iii) Digital Development, and (iv) Digital Economic Policy Agenda. Each pillar focuses on a specific institutional, process, and framework of regulation and policy making.

### Reasons as to why the G5 Benchmark is important at this time:

- Economies in the course of digital transformation in this decade follow a very different path, and Regulation must change as digital markets mature
- G5 Benchmark's three clear regulatory tracks expose new perspectives and new insights, previously not apparent
- Regulation is multi-layered and complex in the post-2020 digital age, and rules are increasingly giving way to principles – which are made integral to the Benchmark
- It is necessary for sector and multi-sector regulatory authorities to collaborate; a core pillar of the G5 regulation
- Policymakers can benefit from a tool that can simply and quickly evaluate as well as model regulatory setups and systems 📊

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## MEMBERS NEWS



## Forbes: stc, The First in The MEA While Advancing a 7th Position Globally For 2022, With a Brand Growth Of 16%

stc ranked first among the communications and information technology companies as per the MENA classification of Forbes magazine, with its brand value growth by 16% year-on-year to reach \$10.6 billion. The Saudi digital enabler stc also advanced 7 positions globally to rank 184th Most Valuable Brands in the Middle East and Africa for 2022. This global progressive ranking came in as a conclusion of

the recent achievements performed by the company, especially after its successful secondary public offering of its 100.2 million shares, which represented 5.01% of its shares by the Public Investment Fund. The offering represented a significant achievement for stc as a joint stock company, as it led to enhancing the liquidity of its shares, making it accessible to a larger group of investors, and diversifying its investments

and strategy in investing in various fields, including the financial technology "Fin-tech" after stopay obtained its license as a bank Digital, from the Central Bank of Saudi Arabia (SAMA). stc has also established the largest data center project in the region with an area of more than 180,000 square meters during the third phase with 16 data centers, which included 17,000 storage units, serving 8 sites distributed over 6 cities. stc Group's achievement reflects the affirmation of the success of its strategy, by focusing on providing a distinguished customer experience and a pioneering market growth. It was also able to maintain its leadership and enhance its brand's strength in the Kingdom and the region, based on its several unconventional paths enriching the experience of its customers, with digital solutions and services, as it did during 2021. This ranking came after the Brand Finance brand classification that was recently issued, which topped stc as the most valuable brands in the telecom and digital sector and ranked it as the strongest in the Middle East for the second year in a row, with a 32% growth in brand value since the rebranding in 2019.



## stc Announces Its Accession to the UN Global Compact

stc's announcement of its accession to the UN Global Compact aims to encourage companies around the world to adopt sustainability and social responsibility, to be one of the local networks of the UN Global Compact worldwide. stc's accession to the UN Global Compact emphasizes of the sustainability strategy that stc adopts in all its businesses, to be one of the leading global companies that support the global movement towards a more sustainable future for the benefit of stakeholders in achieving the SDGs, and the success of the companies' future plans on the long run. The UN Global Compact operates under a principles-based framework for

businesses by aligning its strategies and operational processes with global principles including human rights, labor, environment and anti-corruption. This will take place by taking strategic actions to enforce broader societal goals like those of the UN sustainable development while focusing on cooperation and innovation, in addition to creating a local network and a platform for discussion and exchange of information regarding the UN Global Compact. This is the outcome of the stc's commitment to sustainability in its comprehensive and applying responsible business practices since it established a sustainability program in 2019 to ensure

the continuity of business management using the most sustainable methods. stc's sustainable strategy, identified 9 goals that were effective in implementing a deeper level of conformity of its action strategy with sustainable development goals of global compatible priority including health, education, decent work, climate action and others. These goals were effectively achieved due to integrating the mentioned social, economic and environmental goals with stc's administrative systems, actions and strategy management so it can contribute positively to ensuring a positive future for all.

## stc Achieving New Milestone With O-RAN Carrier Aggregation on Live Network

stc the leading digital enabler, announces that in collaboration with Solutions by stc, Rakuten Symphony and Cisco became one of the first operators in MENA region to successfully deploy a Carrier Aggregation capable O-RAN Mobile Infrastructure. Deployment was made on a truly open stack nature with different radio suppliers which showcases the true potential of O-RAN technology to transform Radio Access Networks towards an Open and Fully Interoperable RAN. Development and

deployment of new emerging technologies in cloud-native RAN technology is in alignment with stc's strategic drive to deliver the foundation for a strong digital future, while augmenting the Digital Transformation Strategy of the Kingdom of Saudi Arabia. With the global race to adopt O-RAN for broader network deployment, stc's latest success demonstrates its direction and leadership in the development of O-RAN with maturity to fulfill variety of capabilities required by our customers.

Eng. Bader A. Allhieb, VP, Infrastructure, stc, said: "Our commitment has always been to deliver a best-in-class Mobile Network to our deserving customers. Technological transformation is a keystone of stc's business strategy and Carrier Aggregation feature is an exciting milestone in stc's O-RAN journey. stc will continue to endeavor to always lead the market towards digital transformation, in line with the Kingdom's Vision 2030."



## Etisalat Digital and Oracle to Host Business Solutions for Transguard Group

Etisalat Digital has announced that Transguard Group, the UAE's leading business support and outsourcing provider, has selected Oracle Cloud Infrastructure (OCI) to migrate their on-premises solutions. This will lower the total cost of ownership (TCO) while giving Transguard the flexibility to serve requirements of mission-critical systems and respond quickly to dynamic market conditions, emerging technologies and customer demands. Transguard Group, an Emirates Group company, has over 60,000 employees located at the customers' facilities and their own, on the road or, now, working at home. The company will move its existing Oracle Database Appliance to the Oracle Cloud Dubai Region. Moving to

an OCI cloud solution enables Transguard to better operate from anywhere. The migration will also allow the company to re-use its existing infrastructure, which will bring down the CAPEX and OPEX of hardware, maintenance and IT. "Transguard Group chose to migrate to OCI mainly to effect faster, more powerful performance across our enterprise," explained Dr. Greg Ward, Managing Director, Transguard Group. "Moving to the cloud offers us greater cost savings and supports the business to be as lean as possible, all while delivering greater scalability. The ease of migration and support was also a major deciding factor because we are able to move our entire on-premises environment to the cloud

with minimal downtime and operational impact." Salvador Anglada, CEO Etisalat Enterprise Digital & Group Chief Business Officer, said: "Today more customers are moving to the cloud, enabling Transguard to be flexible and automate their functions, achieving its business objectives and meeting customer demand cost-effectively and sustainably. Transguard will reduce its total cost of ownership by over 40 percent for five years with this implementation. We look forward to working with \*Oracle and guiding Transguard Group in their cloud journey by helping it to accelerate their digital transformation and adapt to ever-changing market conditions. "OCI's next-generation architecture provides a high-performing, resilient foundation for cloud services, while its design maximizes performance and security," said Abiy Yeshitla, Vice President, Technology, Middle East and Africa, Oracle. "By transitioning its existing core ecosystem to OCI, Transguard Group will be able to run any application, faster and more securely for less. It will also make it far easier to manage security, performance and scalability," Transguard Group will leverage Oracle's Bring Your Own Licenses (BYOL) program for database licenses into the Oracle Cloud; it also includes providing OCI FastConnect with last mile connectivity to Transguard locations provided by Etisalat.



## Etisalat Ranked the World's Strongest Telecom Brand



Etisalat has been ranked as the world's strongest telecom brand and is the first in the Middle East and Africa (MEA) region to achieve this milestone recognition by Brand Finance, the world's leading brand valuation authority. With a telecom portfolio of well over US\$ 12.5 billion, Etisalat not only retained its AAA brand rating but also its position in MEA as the strongest brand across all categories and the most valuable brand portfolio. These accolades underline the UAE's leadership position globally in its cutting-edge telecom infrastructure and strategic advances in digital transformation. Eng. Hatem Dowidar, CEO, Etisalat Group, said: "To be recognized as the world's strongest telecom brand and as the most valuable telecom brand portfolio in MEA underline the success of our strategic initiatives to build a robust telecom infrastructure that creates added value for our customers wherever we serve. With our relentless focus on being customer-centric, we continue to push our horizons by investing in next generation technology that enhance our service offering and help shape the digital future." He added: "In this digital-first era, our focus is to be agile to meet the evolving requirements of our customers and deliver relevant and flexible services. Since our inception in 1976, we have been led by a vision to create a world-class telecom infrastructure that is central to economic progress. We are inspired by the support and guidance of the UAE leadership to stay innovative and future-focused so that we can continue to empower communities and enrich lives." Brand Finance also named Eng. Hatem Dowidar to the Elite

List of Brand Guardians globally. This recognizes the ground-breaking initiatives that he launched since he joined Etisalat in September 2015, which played a key role in propelling Etisalat's business growth. Assuming the role of Group CEO in 2020, he stewarded the company's growth through the fast-changing telecom and technology landscape following the COVID-19 pandemic. His astute brand stewardship served as the foundation for enhancing Etisalat's brand reputation as well as employee engagement. David Haigh, Chairman and CEO, Brand Finance, said: "Guided by the vision to 'drive the digital future to empower societies', Etisalat is the world's strongest telecoms brand of 2022, as well as retaining its status as the strongest brand in the Middle East and Africa for the second consecutive year. Etisalat's brand focuses on togetherness and plays its part by providing a first-class telecoms infrastructure across its footprint. Exceptional rollout of 5G technology has also meant that the Etisalat Group's portfolio of brands is the most valuable amongst telecoms organizations in the Middle East." Attributing the success to his team at Etisalat, Dowidar added: "Our significant brand value growth is the result of the contributions and dedication of our employees across all the markets where we operate. Alongside our partners, they are the cornerstones of our efforts to be a digital-first company that is future-ready, while upholding our vision to empower societies, and turn challenges into opportunities." With the UAE leading the world in fiber-to-the-home (FTTH) penetration rate, Etisalat's robust fiber-

optic infrastructure enhances the customer experiences across all business operations. Etisalat raised the benchmark as the world's fastest network by delivering the best 5G experience at Expo 2020 Dubai as its official telecommunication and digital services partner, surpassing the expectations of millions of visitors. Etisalat has built a dedicated network for Expo 2020, which is the first 5G commercial site in MENA with more than 8,000 Wi-Fi access points, 8,500 mobile access points, and 700 km of fiber-optic cable. As the UAE celebrates its 50th anniversary, Etisalat has leveraged its 46 years of telecoms experience and its investment in telecom infrastructure to enable the progress of the people and business alike, in addition to supporting vital sectors such as healthcare and education, especially following the pandemic. As the telecom sector continues to evolve at breakneck speed, Dowidar is focused on strengthening Etisalat's strategic role in empowering the communities it serves in global markets. "Our proven ability to deliver seamless connectivity is our differentiating strength. We are fully equipped to unlock the potential of digital technologies to drive digital transformation at all levels – from government to business to individuals. Our recognition as the world's leading telecom brand further fuels our ambition to expand to new geographies and build innovative partnerships, underpinning Etisalat as a brand that makes a positive difference." Etisalat's digital arm has already made great strides in its digital B2B services, particularly in cybersecurity, the Internet of Things (IoT), and cloud connectivity. Help Ag, Etisalat Enterprise Digital's cybersecurity arm, protects customers against identity theft and serve as an effective digital transformation vehicle. Brand Finance is the world's leading independent branded business valuation and strategy authority. Founded in 1996 and headquartered in the City of London, it aims to 'bridge the gap between marketing and finance.' Brand Finance evaluates over 5,000 brands across all sectors and geographies every year. The 500 most valuable brands are included in the Brand Finance Global 500 report.



## Etisalat to Offer First of Its Kind Digital Insurance Services Platform in UAE

Etisalat announced Easy Insurance, the latest addition to its insurance programme offering and a new innovative insurance platform hosting various digital insurance products, providing a state-of-the-art experience and instant policy issuance. Both Etisalat and non-Etisalat customers can use Easy Insurance through partnerships with key local and global insurance leaders. In addition, they can enjoy a seamless experience by accessing the product through Etisalat's digital channels, My Etisalat app or [www.etisalat.ae](http://www.etisalat.ae). Khaled ElKhouly, Chief Consumer Officer of Etisalat, said: "Etisalat's Easy Insurance program is heralding a new era of insurance offerings for the country. Customers will now have full control to select and customize their insurance product of choice conveniently and subscribe to plans that start from AED25 per week. This sets a benchmark in the way

conventional insurance products are offered today. The latest addition to our insurance program offering ensures a secure and seamless transition towards a fully empowered digital society in line with the vision of the UAE government." Since the onset of the COVID-19 pandemic in early 2019, customers have preferred to conduct all their transactions online, with the majority moving to use various digital platforms for their purchases. With its insurance partners, Etisalat aims to meet the growing requirement in the insurance sector by digitalizing the insurance buying journey via its website and My Etisalat app. Easy Insurance's offering through the application of AI, machine learning and Intelligent Automation enables UAE citizens and residents to obtain insurance services for health, auto and travel in the most convenient, fast and efficient manner. It is an extension of the company's current insurance offerings of device insurance, home protection and Takaful accidental starting at AED1 a month. Etisalat's suite of insurance products aims to meet customers' daily needs ranging from health insurance to auto insurance and travel insurance. They can choose customized health insurance plans for essential and comprehensive coverage for themselves, their family members and domestic helpers. For auto insurance, car owners have access to third-party or comprehensive insurance coverage for either new car registration or renewal of existing car registration. Customers and their families can also get coverage of up to AED734,600 (or USD200,000) for a single trip or an annual multi-trip whenever they purchase an insurance policy before travelling abroad or visiting the UAE. The travel insurance product also includes COVID-19 coverage for inbound and outbound travelers, starting from AED25 per week.



## Mobily Makes Major Announcements at LEAP22 Tech Conference

Etihad Etisalat, known as Mobily, said it launched a range of innovative and disruptive digital solutions during LEAP22, the technology event held in Riyadh at the start of February. Mobily made announcements in the area of the Internet of things, artificial intelligence, smart cities, smart health care systems and others, it said in a statement. "LEAP is a turning point in the Kingdom's journey toward digital transformation, elevating its position at the forefront of global players who develop and empower the latest technologies that shape the future of our world," said Mobily

CEO Eng. Salman Al Badran. "As the Kingdom moves toward enabling a leading digital economy, Mobily seeks to provide individuals and corporates with the tools they need to unlocking opportunities and pursue their ambitions." "At Mobily, we

persistently contribute to the realization of Vision 2030 through providing advanced telecommunications services and digital solutions that contribute to transforming the Kingdom's digitalization ambitions into reality, he said.



## Formula E and Mobily Announce Partnership with The Diriyah E-Prix



Formula E and Etihad Etisalat Co (Mobily) have today announced a new partnership with the Diriyah E-Prix races of the ABB FIA Formula E World Championship, beginning with the upcoming double-header race, in support of sustainability in sports. The partnership reflects Mobily's commitment to support and encourage sustainability as part of the company's wider strategy to enable an environmentally aware society across every aspect of life, and the Diriyah E-Prix is the best example of how sports can follow sustainability measures and deliver experiences like no other. Formula E fans in Saudi Arabia will be able to access original Formula E mobile content throughout the season on Mobily's fast and secure network, unlocking opportunities to engage with the motorsport community around the world. In addition, Mobily will engage fans during the race weekend with online and offline gaming and ticket promotions, elevating their experience at the event. The Diriyah street circuit around the historic town walls of the UNESCO World Heritage site will host the opening rounds of Season 8 of the ABB FIA Formula E World Championship with the only night races on the 16-race calendar, illuminated by low-power LED technology. Formula E is a platform for change across society and supports the Vision 2030 project, with the first Diriyah E-Prix in 2018 making history as the first-ever international motorsport event to be held in Saudi Arabia. As the only all-electric motorsport World Championship, Formula E actively promotes electric mobility and renewable energy solutions to contribute to

reducing air pollution and fighting against climate change. Prince Khalid Bin Sultan Al Abdullah Al Faisal, Chairman of the Saudi Automobile and Motorcycle Federation (SAMF), Ministry of Sport, said: "We are very pleased to welcome Mobily as a new partner of the Diriyah E – Prix, one of our flagship international events in the Kingdom. This partnership aligns perfectly with our future vision for motorsport with a partner that is equally committed to driving forward new technologies. As a sport Formula-E is at the pinnacle of pioneering innovation so Mobily's support of the race in Diriyah is the perfect combination." Muhannad Kadi, SVP Corporate Branding and Communication, Mobily, said: "We are thrilled to partner with the ABB FIA Formula E World Championship's eighth season at the historic city of Diriyah, to present one of the largest global sporting events committed to sustainability, which is at the heart of everything we do at Mobily. We strive to nurture a community that is environmentally aware and embeds sustainability at every aspect of life. "From its first running, the Diriyah E-Prix has been a game-changer for Saudi Arabia in delivering thrilling motorsport action. With the emphasis of Formula E being on sustainability and diversification in energy, it is the perfect fit with Mobily's commitment to support and enable Vision 2030 and the Kingdom's commitment to reach net zero emissions by 2060, all while bringing new levels of connectivity to Saudi Arabia." Carlo Boutagy, founder of CBX, promoter of the Diriyah E-Prix, said: "We are delighted to welcome Mobily to the family of partners at the very heart of our race and feel great excitement about the working together. The opportunity to come together with a partner such as Mobily brings with it exciting opportunities to bring the experience of Formula E and the year-round content that it provides to Saudi fans instantaneously as well as forming a significant and valuable presence when we host the series each year." Alberto Longo, Co-Founder and Chief Championship Officer, Formula E, said: "We are excited to welcome Mobily as a partner for the Diriyah E-Prix. Mobily will bring fans in Saudi Arabia closer to the Championship than ever before with original content and new ways to interact as the 16-race season unfolds around the world. We look forward to returning to Saudi Arabia in just a few weeks and working with a new and committed partner to continue to grow the Formula E fanbase."



## Omantel Leads the Innovation Scene in Oman

Omantel, the leading and first telecommunications company in Oman and a key role-player in MENA, officially launched its path-breaking Innovation Labs on January 10. Along with the Labs, the Company also inaugurated its 5G experience center, the Omantel Innovation Oasis, and E-Dukkan, Middle East's first unmanned convenience store. The launch event was presided over by Guest of Honor His Highness Sayyid Dr Fahad bin Al Julanda Al Said, Vice Chancellor of Sultan Qaboos University and witnessed the

presence of representatives from various ministries and local start-up support entities and partners. The Omantel Innovation Labs have been launched to leverage Omantel's expertise, partnerships, reach and access to technology to contribute to Oman's Vision 2040 and promote innovation and entrepreneurship in new and emerging technologies namely 5G, Internet of Things, Cybersecurity, Customer Experience technology and Big Data. Omantel Innovation Labs initiative is based on three broad goals



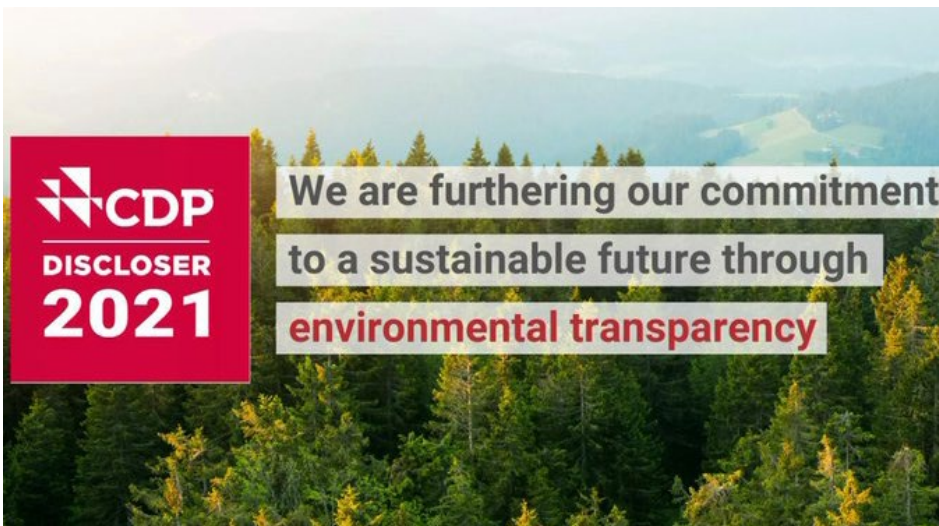
– Ecosystem, Innovation and Investment. It aims to create an ecosystem of partners that can catalyze the rapid growth of technology start-ups in Oman; develop a platform that can identify and support relevant innovations in Oman to maintain Omantel's prominent position as the leader in technology and identify and invest in a portfolio of start-ups that are strategically aligned with Omantel's strategic growth plan. Participating start-ups benefit from a 1,100 sqm space that inspires and promotes knowledge-sharing and co-working within themselves and with Omantel teams. The space has nine well-equipped meeting rooms, a community square, a hardware lab, co-working space and individual offices. The space will not just host the tech start-ups but also be the venue for multiple ecosystem activities that engage and link them with corporate partners, academia, investors and government entities. The Omantel Innovation Oasis is a showcase of uses of 5G technology and other frontier technologies. It complements the Omantel Innovation Labs as a place where incubated tech start-ups can potentially showcase their innovations in the future. The Innovation Labs will organize, participate in, and host multiple activities to support Omantel's internal innovation agenda by providing systematic spaces, approaches, events and activities that can accelerate product conceptualization, prototyping, testing and deployment of solutions to Oman and Omantel-centric challenges. Both the Innovation Labs and the Omantel Innovation Oasis will enable and empower

Omani tech entrepreneurs and pave the way for Omani companies to lead the digital transformation in the sultanate. E-Dukaan at the Omantel headquarters is powered by artificial intelligence and IoT. It brings queue-free, cashless, grab-and-go shopping experience and is an example of how important sectors of the economy can function seamlessly and efficiently using IoT. Shoppers can walk out with their items, without having to get their purchases scanned for prices at the counter or having to deal with physical money or bank cards. AI sensors automatically detect items in the shopping basket and bill the customer directly from his virtual wallet through an App. The store has no billing counters or cashiers. His Highness Sayyid Dr Fahad bin Al Julanda Al Said commented, "I congratulate Omantel on these path-breaking launches. They are yet another step towards realizing Oman's digital future and economic diversification objectives and align with Oman Vision 2040 objectives. Seeing these start-ups harness frontier technologies under Omantel Innovation Labs and contribute towards national growth while being examples of entrepreneurial spirit gives us immense pride. I have complete faith and confidence in the sharp young Omani minds. They have the talent, and Omantel is playing the enabler by guiding and shaping their ideas into successful, profitable ventures." His Highness Sayyid Dr. Fahad bin Al Julanda Al Said further said, "The parallel launch of Omantel Innovation Oasis and E-Dukaan underscore their symbiosis and synergy with Omantel Innovation

Labs. While the Labs incubate, the Oasis showcases the potential of frontier digital technologies while the smart store is a real-world application of innovation. I once again congratulate Omantel as well as the start-ups." Talal bin Said Al Mamari, CEO, Omantel said, "We are excited and proud of these launches. The Omantel Innovation Labs are a platform that will channelize the Company's resources in a way that they are invested in the growth of Oman's tech entrepreneurial domain. We are aligned with the goals of Oman Vision 2040. The Labs are a vital component in our journey towards a digital future. They will put expertise in the right and deserving start-ups that are looking to push the boundaries of economic growth through self-reliance, riding on technology. We wish the start-ups the best and I am sure that it will be a symbiotic relationship where we learn and gain from each other. We look forward to more local innovation through Omantel Innovation Labs." He added, "We want the world to know that 5G has more applications than perceived. E-Dukaan is an initiative Omantel is very proud of as it is the first smart store in the entire Middle East. Omantel provided the necessary smart technologies while OOMCO introduced a mix of products compatible with the technologies used in the store. We are certain that shoppers will enjoy the experience." Five Omani start-ups are already honing their market preparedness under Omantel Innovation Labs' Accelerator Program designed in collaboration with local and international partners. The program is tailored to the needs of each participating start-up to ensure that they commercialize, grow rapidly, and scale effectively, while ensuring the technical feasibility, market desirability, and financial viability of their products and operations. The companies are Autoplant an AI and IoT solutions for the farming industry to improve agricultural decision making, Lamma, Oman's first super app, a unified communication platform with payment integration, Mamun, an embedded credit, payments & insurance platform, Pixel Tech, a subscription-based tool that allows sellers in the GCC to easily set up digital stores and sell their products online and Remedy.om, a platform that connects patients with clinics and therapists.



## Zain Upgraded to A- in Latest 'CDP Score Report – Climate Change 2021', Ranking It First in Region and Among Leaders Globally



Zain Group, a leading mobile telecom innovator in seven markets across the Middle East and Africa has scored an A- in the latest CDP Score Report – Climate Change 2021, which ranks the company within the Leadership band. This ranking is higher than the regional average for Asia of B-, and higher than the Media, Telecommunications & Data Center Services sector average of B. CDP is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts. Earlier in 2021, Zain announced its inclusion in the global list of the CDP, with an advanced rating in Management Scope B in the Climate Change Index.

The company's latest ranking of A- elevates it from being the highest ranked and only telecom operator in the Middle East and Africa to achieve this positive rating initially with respect to its efforts to address climate change, to joining respected global companies such as BT Group, Cogeco Inc., Deutsche Telekom AG, and LG Uplus in being regarded as among the leaders in their efforts to combat the effects of climate change. Zain is committed to implement programs that make it a cleaner, more efficient, and environmentally friendly organization. As staunch advocates of managing the negative impacts of our activities on the climate, Zain will continue on delivering its promise to bring about systemic change

by integrating technologies to generate safe energy to help reduce global warming. The CDP Score Report allows companies to understand their score and indicate which categories require attention to reach higher scoring levels. This enables them to progress towards environmental stewardship through benchmarking and comparison with peers, in order to continuously improve their climate governance. Investors additionally receive a copy of the CDP Score Report upon request. Zain's climate action plan has set targets to reduce emissions, reduce waste, and align with UN Sustainable Development Goal number 13. The company is committed to building climate change scenarios that would help limit global warming to 1.5° C compared to pre-industrial levels, and Zain strongly believes this strategy will help achieve a reduction in emissions, and operating costs, while also mitigating risks related to climate change. Zain's climate change initiatives and beyond are detailed in the company's comprehensive annual Sustainability Report, which can be found here: <https://www.zain.com/en/sustainability/> Zain has been an active member of the GSMA Climate Action Team since in 2019, when the company began disclosing its environmental impacts, energy consumption and carbon emissions through the CDP. It remains one of the most transparent organizations in the region in disclosing these details.



## AT&T Touts Sustainability Potential of 5G, SDN

An AT&T executive highlighted the green credentials of technologies including SDN, 5G and multi-access edge computing (MEC), noting particular benefits for SMEs engaged in carbon footprint reduction efforts. In a blog, regional president for AT&T Asia Pacific and Canada Bernard Yee argued companies could lower emissions by replacing on-site hardware with cloud-

based alternatives which consolidate multiple network functions on a single server. Yee added 5G and MEC could help boost management of resources including electricity, fuel, water and raw materials, with AI enabling predictive analytics he noted could highlight inefficiencies. AT&T cited compressors, boilers and motors as equipment which could benefit from

monitoring advances. The operator argued IoT connectivity could help SMEs lower emissions by improving the efficiency of transporting goods, with a related boost to the bottom line. Yee highlighted AT&T's commitment to be carbon neutral across its global operations by 2035, adding many other large corporations have established similar goals.

## AT&T Ranks Highest in Wireless Network Quality in The Southwest Region According to J.D. Power

Connection is at the heart of everything we do at AT&T, especially for our customers. We're dedicated to bringing them closer to family or friends and giving them the freedom to know that anything they need is just a phone call away. With our focus around serving customers first, we're proud to be the first in the Southwest region\* by J.D. Power. AT&T ranks highest in wireless network quality in the recent

study, with the lowest reported issues per 100 connections<sup>1</sup> for data quality in the Southwest region. This region includes Texas, Arkansas, Kansas, Missouri, and Oklahoma. The J.D. Power 2022 U.S. Wireless Network Quality Performance Study – Vol. 1 was based on the responses from wireless customers that had used their devices within a 48-hour timeframe. "We're proud to be recognized by J.D.

Power and are committed to being the leading wireless network that customers can count on," said Cristy Swink, Regional President-West, AT&T. "People rely on and trust us to make their lives easier and more efficient, which is more critical now than ever to keep them connected to what's most important to them."

## AT&T Ranks #18 on 2022 JUST 100 List



AT&T Inc is #18 overall on the JUST 100 rankings, our fifth straight year on the top 100 list published by JUST Capital and CNBC. The JUST 100 recognizes top-performing companies across all industries based on their performance in priority areas – employees, customers, communities, the environment and shareholders – as identified by a comprehensive survey of the public. The ranking recognizes the hard work and investments that AT&T, our dedicated team members and our partners have made toward the betterment of our communities, our customers' lives and the environment. It also recognizes our commitment as a company to treat our people fairly and provide them good wages and benefits and a safe and respectful working environment. AT&T was ranked #1 in the telecom industry in the priority areas of communities, customers and shareholders & governance. Why is this important? AT&T strives to create connection and have a positive impact in the communities

in which we live and work. These efforts include: Connected Learning Centers that provide free access to AT&T Fiber internet and Wi-Fi as well as educational tools to underserved students who face barriers to accessing the connectivity that is vital to long-term success. This effort is part of the AT&T Connected Learning Initiative and our \$2 billion commitment to address the digital divide through low-cost broadband service and community investment. So far, we've opened or announced plans to open Connected Learning Centers in Dallas, Houston, Cleveland and Los Angeles. Our response and support related to disaster relief and critical issues facing the communities we serve from natural disasters to the COVID-19 pandemic. We do this through corporate giving, employee support, and volunteerism as well as through FirstNet®, Built with AT&T – the award-winning network purpose-built for America's first responders. With FirstNet, we deploy, operate and maintain the only high-

speed, nationwide wireless broadband communications platform dedicated to the public safety community. Engagement efforts to help address challenges in our local communities and leverage our scale to positively impact society. These efforts range from participating in the Affordable Connectivity Program to committing more than \$600 million since 2008 to advance education and create opportunity, particularly in historically underserved populations. Our teams also help support their communities by giving back. In 2020, our teams volunteered more than 520,000 hours and donated \$26 million in employee giving. Our commitment to be carbon neutral by 2035 across our entire business and other efforts to create a better, more environmentally sustainable future using our scale and technology. We've also set a goal to develop connectivity solutions that help our customers collectively reduce a gigaton of greenhouse gas emissions by 2035. We're assessing the risks of climate change to our business, so we can make smarter, climate-informed decisions for the future and help build resilience for the communities we serve. Fortifying our network is critical for the millions of people who rely on the connectivity we provide. The rankings from JUST Capital evaluate the 1,000 largest public companies in the United States across 20 stakeholder-focused issues as identified through the most comprehensive ongoing public opinion research on Americans' attitudes toward responsible corporate behavior, engaging more than 150,000 participants since 2015.

## AT&T Launches 2Gbps, 5Gbps Fiber in 70 Metro Areas

AT&T Communications has introduced multi-gigabit transmission speeds for its fiber-to-the-home (FTTH) customers. Nearly 5.2 million customer locations in parts of more than 70 metro areas – including Los Angeles, Atlanta and Dallas – will be able to take advantage of symmetrical 2Gbps and 5Gbps speed tiers. The

2Gbps package is priced at USD110 per month, while the 5Gbps service costs USD180 per month (tariffs exclude taxes). The telco says it will continue to introduce multi-gig-capable technology across its existing fiber footprint throughout 2022 and seeks to cover 30 million customer locations by year-end 2025.

## AT&T Delay C-Band 5G Launch to Appease Airline Industry

AT&T Communications and Verizon Wireless have agreed to suspend the commencement of their planned C-band 5G deployments from 5 January until 19 January in order to appease the aviation industry. The two companies had previously pushed back their initial rollout start date from 5 December 2021 to 5 January 2022. The two companies had found themselves

under pressure from Pete Buttigieg, the Secretary of Transportation. A statement issued by AT&T confirmed: 'At Secretary Buttigieg's request, we have voluntarily agreed to one additional two-week delay of our deployment of C-band 5G services. We also remain committed to the six-month protection zone mitigations we outlined in our letter. We know aviation safety and 5G

can co-exist and we are confident further collaboration and technical assessment will allay any issues.' According to CNN, the two cellcos had offered to implement restrictions on their 5G antennas similar to those currently used near French airports for a period of six months, but this measure was not deemed sufficient.

## AT&T Rolls Out Super-Fast 5G+ Across the U.S.

AT&T delivers our customers two flavors of 5G – AT&T 5G, using low-band spectrum, which offers the America's Most Reliable

5G Network<sup>1</sup> to our customers anywhere and AT&T 5G+, which is our name for 5G that delivers super-fast speeds

and unprecedented performances via millimeter wave spectrum. AT&T will soon deploy its C-Band spectrum as part of its 5G+ technology. This 80 MHz of C-Band spectrum is mid band and sits between the other two bands at between 3.7 and 4 GHz. AT&T 5G+ delivers the faster speeds and increased connectivity needed to enable incredible innovation and unlock immersive experiences in high-traffic venues like stadiums, arenas, school campuses, hospitals, entertainment venues and more! AT&T 5G+ is available in parts of 44 cities in the U.S. as well as in various public and private venues across the country... with more to come!



## AT&T Activates C-Band 5G in Eight Metro Areas

AT&T Communications switched on its C-band 5G network yesterday (19 January), covering 'limited parts' of eight metro areas from launch. The service initially went live in parts of Austin, Chicago, Dallas-Fort Worth, Detroit, Houston, Jacksonville, Orlando and South Florida, but the telco has promised that its footprint 'will expand rapidly as our thoughtful and efficient deployment ramps up throughout the year'. AT&T notes that users can currently access the service using one of 17 C-band-capable devices.

With reference to the ongoing dispute with the Federal Aviation Administration (FAA), Chris Sambar, AT&T's EVP of Technology Operations, commented: 'Following a six-week voluntary pause and the implementation of additional precautionary measures to allow the FAA and aviation industry to complete evaluations, today's introduction of C-band spectrum begins turbo-boosting our 5G wireless service with our newest AT&T 5G+ service.' As previously reported by CommsUpdate, AT&T and Verizon Wireless agreed to

suspend the commencement of their planned C-band 5G deployments from 5 December 2021 to 5 January 2022 and again until 19 January in order to appease the aviation industry. The issues relate to perceived interference concerns between 5G signals in the 3.7GHz-3.98GHz band and aircraft radio altimeters which use 4.2GHz-4.4GHz spectrum. It is understood that both telcos have reluctantly agreed to create 'buffer zones' in selected areas around 50 airports.

## AT&T and Smart Meter Improve Remote Patient Monitoring

AT&T is teaming up with Smart Meter to improve health outcomes for patients with chronic conditions like diabetes and high blood pressure. Smart Meter supplies healthcare providers with cellular remote patient monitoring (RPM) devices and services, including the SmartRPM™ solution, iGlucose®, iBloodPressure 2.0™, iScale™ and soon, the iPulseOx™, being unveiled at CES 2022 in Las Vegas. These devices run on AT&T's nationwide IoT network, known for its reliability and coverage. Chronic diseases are the leading causes of death in the U.S., and they're on the rise. Hypertension can lead to 2 of the biggest killers in this country - heart disease and stroke - while diabetes ranks 7th for deaths. But studies show remote patient monitoring can help change this. For example, 84% of diabetes and 88% of hypertension patients at highest risk for severe disease complications experienced

significant improvements in their health when using the Smart Meter iGlucose and iBloodPressure as part of RPM programs. Consistent use is a must for an effective RPM program. So, the simpler the solution, the more likely the patient will use it. Smart Meter's cellular-enabled devices simplify RPM. They are an easy out-of-the-box solution; just insert the included batteries and press the start button. The monitoring devices contain IoT SIM cards, so they automatically send the patient's data over the AT&T IoT network to the SmartRPM cloud. The healthcare provider then accesses the data there via secure log-in. Unlike cellular-enabled RPM devices, Bluetooth-enabled monitoring devices require the user to pair the device with a smartphone or tablet, download the data, and then send it to the doctor. It's a more complicated solution that oftentimes involves troubleshooting. This can be

intimidating and frustrating for users and can lead to them not continuing with the RPM program. Cellular RPM devices help lessen the technological divide and are more accessible to patients of all ages, regardless of digital literacy and access to connectivity. For patients, Smart Meter's cellular RPM devices mean easy access to improved healthcare with the peace of mind that comes from frequent assurances and support. For health care providers, the benefits include ready access to more complete patient data and the ability to act on it in near real-time, while automatic record keeping meets requirements for reimbursement. Because of these benefits, a growing number of doctors are embracing RPM. A recent survey found 43% of clinicians believe RPM adoption will be on par with in-patient monitoring in 5 years.



## Batelco Launches Three New Digital Companies

Bahrain Telecommunication Company (Batelco) has launched three new independent digital companies that will provide ICT, cloud computing, cyber security, and digital communication services. The principal telecommunications company in Bahrain said in a press release that the new brands Beyon Cyber, Beyon Solutions, and Beyon Connect join the Beyon

portfolio. "The new companies provide state-of-the-art solutions that cater to the emerging needs of today's business in areas such as ICT, cloud computing, cyber security, and digital communications," it said. Batelco Chairman, Shaikh Abdulla bin Khalifa Al Khalifa said, "We are extremely delighted with the progress we've accomplished in turning our long-term

digital transformation strategy into reality. Today, we're witnessing the outcome of three years of strategic planning and hard work." "The newly launched companies are independent entities that are positioned to cater to emerging business needs in today's corporate world. Innovative digital solutions and cyber security are key requirements for



any business today," he added. Beyon Cyber is provider of advanced end-to-end cyber-security solutions, providing managed services and advisory to organizations across Bahrain and beyond. Equipped with a team of highly skilled professionals, the company leverages an exclusive network of global partnerships to provide simple, cost-effective, world-class security services to customers, and enable them to accelerate their digital potential. Beyon Solutions caters to the full range of technology needs of the public and private sectors. Capitalizing on

its solid partnerships with ICT providers from across the world, BEYON Solutions is an agile IT and digital transformation consultancy offering cutting-edge system integration solutions to businesses of all sizes, to help them build scalable, efficient, and secure IT landscape. Beyon Connect is focused on delivering new technologies with great innovation potential, Software-as-a-Service platforms, and advanced IT solutions to both the public and private sectors in the MENA region. Batelco Chief Digital Growth Officer, Shaikh Mohamed bin Khalifa Al Khalifa said, "We have been

motivated by the positive response we've received since the launch of Beyon Money back in December, and accordingly, we have accelerated our efforts to launch our new digital brands and establish our presence in different verticals." "The new companies will be positioned as key players in the digital solution space across the region and bring to market innovative products and services that respond to the needs of the public and private sector, addressing challenges they are facing in the evolving digitizing economy," Shaikh Mohamed concluded.

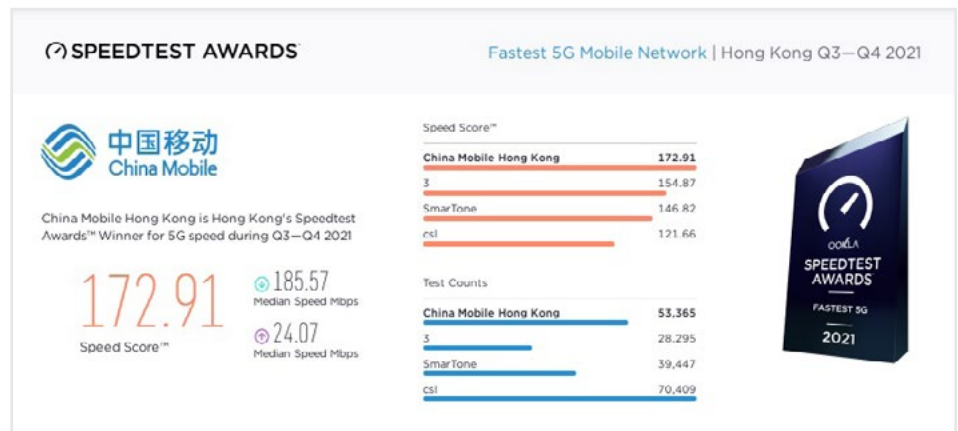


## China Mobile 5G Network Ranked Fastest in Hong Kong

Speed testing company Ookla rated China Mobile Hong Kong's (CMHK) 5G network as the fastest in the territory during the second half of 2021. Ookla registered a median download rate for the operator of 185.6Mb/s, with 3 Hong Kong at 166.4Mb/s, SmarTone 148.5Mb/s and HKT's CSL brand 125.1Mb/s. CMHK's average upload rate was 24.1Mb/s, SmarTone 23.5Mb/s, CSL 21.8Mb/s and 3 Hong Kong 18.9Mb/s. Ookla reported CMHK also had the lowest typical latency at 12 milliseconds, with 3 Hong Kong on 13 milliseconds, and SmarTone and CSL both on 16 milliseconds. The ranking was based on data obtained by consumers running Ookla's Speedtest app on iOS and Android devices. A total

of 194,932 tests were initiated during the period. In a statement, CMHK CEO Sean Lee highlighted it "invested immense resources into building a fast, high-quality

and reliable 5G network" for Hong Kong. Operators launched 5G services in 2020 using the 3.5GHz band.



## China Mobile Claims a 5G SA Speed Record of 3Gbps

China Mobile (CMCC), Nokia, and MediaTek have successfully verified the world's first 3 Components (3CC) Carrier Aggregation (CA) technology in Shanghai, China. "Achieved a new 5G Standalone speed record of almost 3Gbps in downlink throughput using Nokia's commercial 5G Airscale portfolio, China Mobile's network, and MediaTek's mobile platform in Shanghai," said a press release from the vendor. The move will enable communication service providers to deliver higher throughputs and better coverage to more customers such as superior mobile

broadband services and HD video, it said. The trial, which utilized Nokia's AirScale 5G baseband and MediaTek's Dimensity 9000 5G flagship mobile platform on CMCC's network, is the first time the n28 (700MHz band; 30MHz) and n41 (2.6GHz band; 100+60MHz) frequency bands have been successfully combined to reach 190Mhz bandwidth (n28 + n41) with carrier aggregation technology. The trial saw the user experience increase under a 700MHz/2.6GHz converged network to reach a peak downlink speed rate of 2.94Gbps. "CA uses Primary Cell Switch

functionality which works by combining frequency bands to offer superior network capacity by maximizing the spectral efficiency of 5G networks resulting in higher data rates, increased coverage area, and superior indoor performance," the release claimed. The test activities will continue using CMCC's network in Shanghai. According to the release, CA combines frequency bands for higher data rates and increased coverage, delivering superior network capacity by maximizing the spectral efficiency of 5G networks. The combination of 5G FDD and TDD bands,



supplemented by carrier aggregation, can give full play to the advantages of spectrum synergy, greatly reducing the cost of network construction while improving network coverage and user experience.

Nokia has been a strategic partner of CMCC, the world's largest mobile operator, for over 20 years. CMCC is building out its network with the convergence of the 700MHz and 2.6GHz band. "With CA

technology, the spectrum advantages of these bands can be used to greatly improve the network performance and deliver a superior customer experience," it claimed.



## Cisco Expands Enterprise-Grade Switching Capabilities into Industrial Networks to Modernize and Secure Critical Infrastructure

Cisco has announced an expansion of the Cisco Catalyst 9000 portfolio, based on the powerful Unified Access Data Plane (UADP) ASIC silicon, to bring more enterprise-grade switching capabilities to the industrial edge for industries operating in harsh environments and supporting critical infrastructure like utilities, oil and gas, roadways, and rail. Operational connectivity in industrial spaces is growing exponentially as organizations seek to improve efficiencies, employee safety, business agility, and support hybrid work. As the operational world evolves, IT expertise is required to scale and secure the network as operational technology (OT) systems are brought onto the corporate networks. Unified solutions level the IT/OT playing field. According to Gartner, "Most CIOs have responsibility for OT systems decisions: Eighty-two percent report their CIO responsibility for OT systems has increased in the last three years, and 89% say it will increase in the next three years." IT and OT are collaborating more than ever and need common tools to scale and secure the network. Automation, segmentation, and capabilities to proactively identify and resolve issues become paramount for success. These capabilities are widely deployed in the enterprise, though are not as pervasive in industrial networks. Without

enterprise-grade network infrastructure features, IT/OT resources are increasingly strained, putting deployments at risk. A new solution is needed to connect and secure the growing number of industrial devices. To bridge this gap, the new Cisco Catalyst Industrial Ethernet 9300 switch integrates enterprise capabilities with industrial protocols in a form factor built for rugged, industrial spaces – a truly unified solution for IT/OT to ensure business success. "Our customers are taking on massive challenges like transitioning to cleaner power sources and enhancing electric grid reliability, and the critical nature of these environments demands a network infrastructure with enterprise-grade security, visibility and automation for scale," said Vikas Butaney, VP/GM of Cisco IoT. "We're empowering our customers to modernize their large-scale industrial environments and build an agile network, while protecting their assets from cyber threats." The Next Generation of Industrial Switching Architecture Based on our high-performing UADP ASIC silicon, the Catalyst IE9300 delivers the highest density feature switch on the market. It provides enterprise-grade switching in a ruggedized form factor with advanced visibility, security and edge compute. The Catalyst IE9300 is based on

the Cisco IOS-XE Operating System and managed by Cisco DNA Center. It provides security through the Cisco Identity Services Engine, enabling customers to leverage their IT knowledge and existing investments to modernize and secure their industrial and outdoor networks.

New features include:

- Unrivaled performance at scale: Enhanced network scalability and reliability with features such as the ability to stack up to 8 switches and manage them as one, zero packet loss failure recovery, and high precision time synchronization.
- Unprecedented visibility to assets and applications: Improve efficiencies by identifying connected endpoints for asset inventory, automatically enforcing QoS policies via application traffic recognition, and proactively detecting and resolving issues with network health monitoring.
- Enterprise-to-edge, industry-leading cyber security: Assess and strengthen the security posture of connected industrial assets and enable zero-trust security with the embedded Cisco Cyber Vision sensor and SD-Access fabric edge capability. Catalyst IE9300 is the first switch to enable zero-trust security in operational environments.



## Comviva to Offer Next-Generation BlueMarble Solution on IBM Cloud for Telecommunications

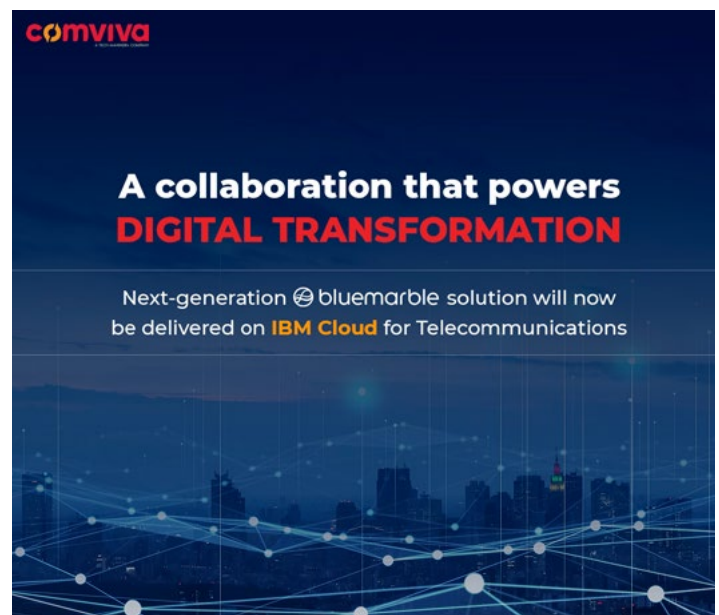
Comviva, the global leader in mobility solutions, today announced a collaboration with IBM (NYSE: IBM) to deliver its next generation BlueMarble solution on the

IBM Cloud for Telecommunications. The integrated solution shall power digital transformation for Communication Service Providers (CSPs) globally in the

5G and Edge era. Comviva's BlueMarble, which is now ready to run on IBM Cloud for Telecommunications, enables CSPs to modernize their business platforms

without having to go through large complex transformation cycles. Offering a complete digital customer lifecycle from discovery, shopping, ordering, and billing to payment and care, the solution is designed to provide a digital platform with ready-to-configure microservices and flexible user interface components to enable a new-age customer experience across different channels, as well as a scalable and agile market solution for CSPs to monetize infrastructure and accelerate their digital transformation initiatives. Manoranjan 'Mao' Mohapatra, Chief Executive Officer at Comviva, said, "5G introduces fundamental changes to the way Business Support Solutions work for evolving digital services. It is essential for CSPs to embrace Cloud native technologies that provide differentiated competitive advantage for supporting new revenue models. Our BlueMarble solution is 5G native and now ready to run on the IBM Cloud for Telecommunications. The integrated solution is designed to empower CSPs with a future proof next-generation platform for rapid transformation and monetization of existing network infrastructure as they prepare for 5G evolution." This collaboration is in line with Comviva's parent company, Tech Mahindra's NXT.NOWTM charter, that focuses on investing in emerging technologies and solutions that enable digital transformation and evolving needs in the 5G era. Tech Mahindra is part of IBM's partner ecosystem collaborating on the IBM Cloud for Telecommunications to help network equipment providers, independent software vendors (ISVs), software-as-a-service providers, and hardware partners accelerate business transformation by unlocking the power of 5G and edge. The IBM Cloud for Telecommunications is engineered to integrate advanced AI and automation processes at the edge and speeds services deployment while simultaneously reducing overall costs. Bill Lambertson, Vice President and Distinguished Industry Leader for IBM Global Telecommunications said: "We are excited to bring together Comviva's BlueMarble order capture solution with IBM's Sterling Order Management using Telco standard TM Forum Open APIs that are enabled on IBM Cloud for Telecommunications. We look forward to extend this API driven integration on joint client engagements." Mahadev Subramaniam, IBM Global Business

Unit Head at Tech Mahindra, said, "5G is a significant part of our portfolio and growth agenda. A frontrunner in this domain, we have been making sustained investments to expand our 5G capabilities, and in the process, strengthen the ecosystem. This collaboration is a testimony to our long-standing alliance with IBM. In line with our CloudNXT.NOWTM framework, the work with IBM is aimed at generating new revenue streams from 5G and solidifying our vision to further scale our IBM ecosystem." This collaboration aims to allow Tech Mahindra and IBM to establish a standards-based integration of new Telco solutions with clients' existing systems using TM Forum APIs enabled on IBM Cloud for Telecommunications. Comviva's BlueMarble solution implements these APIs to help enable agile adaptation, as well as the ability to address specific client needs, such as integrating solutions from IBM and its partner ecosystem. Additionally, the BlueMarble solution can integrate with IBM's Sterling Order Management to offer clients a choice of billing solutions.



## 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 Ranks No. 5 in U.S. Patents in Sign of Chinese Growth

Huawei is continuing to move up the list of companies getting the most U.S. patents, according to a new study of patenting activity that shows Chinese firms are increasingly responsible for a greater share of the world's innovation. Huawei received 2,770 U.S. patents last year, putting it

at No. 5 behind perennial top patent-getter International Business Machines Corp. according to the study by Fairview Research's IFI Claims Patent Services. Huawei's success in obtaining patents comes even as its networking equipment is shut out of the American market and it's

been cut off from procuring components needed for its phones by the Biden administration. The U.S. government has accused the Shenzhen-based company of being a security threat, charges that Huawei denies. Huawei jumped from ninth place in part because of declines by other companies as the U.S. Patent and Trademark Office issued 7% fewer patents last year. Samsung Electronics Co., Canon Inc. and Taiwan Semiconductor Manufacturing Co. rounded out the top five patent recipients. Chinese companies also dominate when considering global patent ownership, according to the analytics firm. Samsung remains the biggest holder of patented inventions globally. But six Chinese entities, including Huawei and the Chinese Academy of Sciences, hold more patents on inventions than IBM, which ranks No. 8 on that list. "Everywhere you turn, they seem to be

### Huawei Ranks No. 5 in U.S. Patents



## Huawei Retains Leadership in 5G RAN Portfolio

Huawei's 5G RAN portfolio has been ranked a leader for the third year in a row in GlobalData's recent H2 2021 report 5G RAN: Competitive Landscape Assessment. This report is released every six months to evaluate the competitive advantages of 5G RAN products from major RAN vendors. In the H2 2021 report, Huawei's product portfolio outclassed its competitors in all four criteria: radio unit portfolio breadth, baseband unit (BBU) capacity, ease of installation, and technological evolution. In terms of radio unit portfolio breadth, Huawei's radio product range greatly facilitates ubiquitous 5G gigabit experiences. Through continuous innovation, Huawei has amassed various advantages that allow it to deploy across different scenarios and spur the industry forward. For example, MetaAAU improves both coverage and energy efficiency, BladeAAU Pro simplifies 5G deployment at sites with limited antenna space, 400MHz ultra-wideband AAU allows operators to utilize fragmented spectrum and construct shared multi-operator networks, and sub-



3 GHz 4T-8T-Massive MIMO multi-antenna ultra-wideband products improve spectral and energy efficiency while reducing costs. These offerings can help operators upgrade their networks. According to the report, Huawei offers the largest variety of 5G radio products for deployment in different scenarios. The report also shows that the Huawei BBU5900 leads

the pack in terms of BBU capacity, with the largest number of cells per unit volume, as well as industry-leading 400 MHz mmWave cell capability. The Huawei BBU5900 safeguards operators' return on investment and their ability to cope with future traffic growth. Ease of installation was another criterion, and Huawei's 5G RAN portfolio is already far ahead in terms

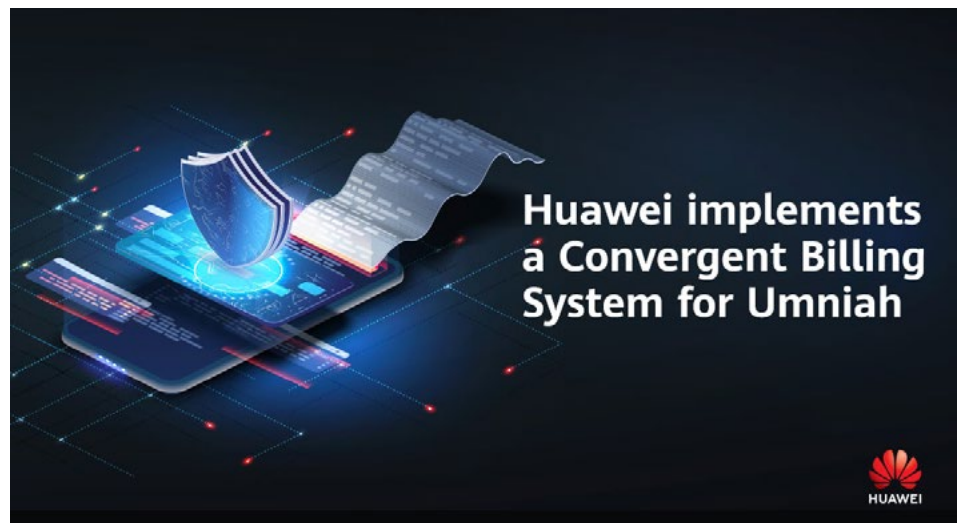
of engineering and installation, including lightweight devices and compact form factors. Furthermore, Huawei provides a variety of innovative solutions to simplify 5G deployment. These include: a 19 kg 64T Massive MIMO AAU, which is light enough to be carried and installed by one person; a 10 kg 32T Massive MIMO AAU, which can be easily deployed in streets capacity scenario; and a Super BladeSite, which simplifies 5G deployment with its modular design, removing the need for equipment

rooms and cabinets. Finally, with regards to technological evolution, Huawei's innovations can be seen in a variety of different areas. For example, its Adaptive High Resolution (AHR) algorithm improves network capacity and user experience, its SingleCell solution makes good use of mid- and low-band spectrum, the CloudAIR and SuperBAND solutions enable efficient coordination between 4G and 5G networks for operators, and PowerStar 2.0 improves energy efficiency. Software

innovation is also an important area of interest for Huawei. Moreover, Huawei was the first to propose new directions for 5.5G, with the aim of promoting sustainable development for 5G into the future. Huawei will continue to place its utmost focus upon user experience and industry demand. Through innovation, and in conjunction with partners around the world, Huawei hopes to take consumer experience to new heights and bring digital to all industries.

## Huawei Successfully Implements Convergent Billing System for Umniah Jordan to Provide an Enhanced Digital Customer Experience

Huawei Technologies Co., Ltd., announced the successful implementation of its Convergent Billing System for Umniah, a leading Jordanian telecommunications company. With Huawei's Convergent Billing System, Umniah was able to successfully migrate its legacy billing platform to the new one in a transformation program that took ten months of meticulous preparation and planning. Umniah's Jordan Billing Transformation Program focuses on time-to-market and delivers a rich digital experience with personalized offers and promotions, smart packages, real-time alerts and notifications. The program can facilitate Umniah's business to grow and monetize its LTE investment. The Huawei Convergent Billing System is a compact convergent platform for different networks from mobile 2G to 5G SA, fixed network and business for B2B, B2C and B2H. This convergence will help Umniah improve their customer experience, shorten time-to-market, and achieve better business and operation agility. Speaking about the new system, Umniah CEO Ziad Shatara said, "At Umniah, we have consistently offered our customers state-of-the-art solutions, and through our partnership with Huawei



in deploying the Huawei Convergent Billing System, we can effectively harness the power of a single billing platform to offer our customers a unified and effective experience." Shatara went on to add that the strategic partnership between Umniah and Huawei dates back several years, and it is one that has been instrumental in the Jordanian telecom's successful introduction of innovative technologies to the local market. "The Huawei-architected, best-of-suite CBS will help Umniah open

revenue ceilings, improve customer experience and enable ecosystem monetization, empowering business agility and a smooth migration to new businesses. With mutual and continuous cooperation, we will be looking forward to creating new success stories that will take Jordan's ICT sector to a higher and more advanced level," said Ethan Wang, CEO of Huawei Jordan and Lebanon.



## Microsoft Taps Chip Expert for Azure Cloud

Microsoft lured an experienced chip architect away from Apple with the goal of creating custom semiconductors for its

Azure cloud service, Bloomberg reported. The news outlet stated Microsoft hired Mike Filippo, an electrical engineer who

designed chips for Intel, Arm and, most recently, Apple. At Arm, Filippo was the lead architect for Neoverse V1, a CPU

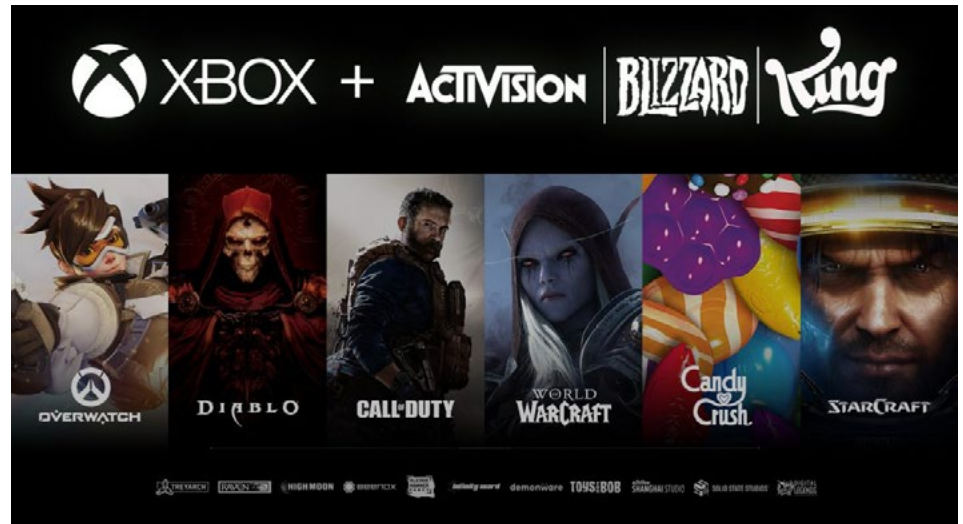
design covering servers, storage systems and networking equipment. Bloomberg reported Filippo will work under Rani Borkar, corporate VP of Azure hardware systems and infrastructure. Public cloud rivals Amazon Web Services (AWS) and

Google are both investing in their own server chips. AWS claims its Graviton processors are ideally suited to handle its public cloud workloads and Google is working with Intel, after successfully launching its Tensor processor for Pixel

smartphones. Currently, all the public cloud providers rely on Intel, AMD and Nvidia for many of the processors used to power cloud-based servers.

## Microsoft Agrees \$69B Activision Blizzard Acquisition

Microsoft struck a \$68.7 billion deal to acquire Activision Blizzard, citing the game publisher's strong presence in mobile as one of the primary motivators. The Xbox games console creator stated its biggest ever deal will make it the world's third-largest gaming company by revenue after Tencent and Sony. The deal will bring Microsoft access to key mobile titles including Candy Crush, along with console-oriented hit Call of Duty. Microsoft aims to boost its presence in the mobile, PC and console sectors, though CEO Satya Nadella stated gaming "will play a key role in the development of metaverse platforms". Nadella said Microsoft's focus areas for investment in gaming are "content, community and the cloud". The deal is expected to close in Microsoft's fiscal 2023, which commences on 1 July. Activision Blizzard CEO Bobby Kotick will remain, reporting to Microsoft gaming



CEO Phil Spencer. Kotick has been under pressure to resign in the wake of reports he failed to adequately respond to allegations of sexual harassment against employees. Microsoft's move comes around a week

after Take Two Interactive penned a \$12.7 billion deal to acquire games developer Zynga.

## Microsoft, GNIoT Partner to Expedite Digital Transformation in Jordan



Microsoft announced a strategic partnership with the General Network-IoT (GNIoT) to accelerate Jordan's digital transformation mission through IoT technologies. GNIoT was recently granted a class communications license by the Telecommunications Regulatory

Commission (TRC) of Jordan, enabling it to equally provide services to the public and the government, according to a Microsoft statement. "Through this strategic partnership, GNIoT and Microsoft will establish IoT infrastructure to provide coverage across Jordan," said

Ali Shibli, Chairman of GNIoT, adding that it would enable the government to achieve aspirations and benefit from IoT technology to push digital transformation into all sectors. Regional Business Group Director at Microsoft Maher Al-Khaiyat said that GNIoT, supported by Microsoft, will install IoT networks across the campus of Princess Sumaya University for Technology in Amman, delivering access to IoT technologies, which will be taught through the university's newly introduced specialization course in Internet of Things Communications Engineering. The second agreement with the Hashemite University will provide practical, field and applied training opportunities in partner institutions for engineering students in the university, he said, indicating that the employment priority, when partners have relevant job opportunities, will be for the university's graduates.




## Nexign Ensures New Opportunities for the Expansion of Ucell's Subscriber Base

Nexign (an ICS Holding member), the global provider of transformation solutions for telecom operators, has successfully replaced the BSS system for Ucell, one of Uzbekistan's major mobile operators. As of late 2021, Ucell has been servicing 7+ million subscribers with its 4G networks covering nearly 75% of the country's major cities and towns. The company was the first one to roll out a 5G network in Uzbekistan. Nexign and Ucell have announced their cooperation in 2020. The pre-existing BSS solution faced a hard time processing new tasks and servicing the continuously expanding customer base. Numerous local upgrades and the billing system's closed architecture hindered its further development and support. On top of that, customer data was spread across several systems that required continuous synchronization. Eventually, Ucell decided to replace the legacy BSS platform and selected Nexign as the supplier of the new solution. Nexign replaced the outdated software complex with Nexign Converged BSS (Nexign CBSS), a system supporting different business processes, technologies, and billing options within

a single platform. The implementation of Nexign CBSS helps the operator increase its revenues and slash TTM for new products. Nexign's solution is designed for a doubled network load compared to Ucell's legacy BSS system, and currently supports Ucell's operating 5G network. Thus, the new capacities brought about by Nexign's solution will enable Ucell to expand its customer base and increase the number of data transmission channels without compromising the system's operability and integrity, which enables the operator to respond to new market conditions and to monetize innovative services. Despite the complexities caused by the pandemic

and remote work, the project successfully reached its final phase. Nexign Converged BSS will reduce the load on the operator's technical department, help Ucell launch new services sooner, and take the user experience of its subscribers to a whole new level,' says Igor Gorkov, the CEO of Nexign. Thanks to Nexign's solutions, Ucell can further reinforce its leadership. With new services launched on the solid foundation of Nexign Converged BSS, we will be able to offer our customers a higher quality of communication while helping them solve new problems and making their lives simpler and more fascinating," says Denis Kozlov, Chief IT Officer at Ucell.



Nexign's solution  
to underpin the expansion  
of Ucell's subscriber base



## Nokia Confirms Seven-Year RAN Contract with GO Malta

Nokia has released more details of its 5G equipment contract with GO Malta. The

Finnish vendor says it has been awarded a seven-year deal to supply RAN equipment

from its AirScale portfolio as part of a nationwide network rollout. Nokia and GO have been working together since the Maltese operator first launched 3G mobile services in 2007. Tommi Uitto, President of Mobile Networks at Nokia, stated: 'We are delighted to continue our partnership with GO with the introduction of 5G services in Malta. Our latest AirScale portfolio will support GO's ambitions for super-fast mobile connectivity that will support the foundations for cutting-edge new use cases.' GO announced the availability of its first services for customers with 5G-capable handsets last month in urban areas such as St Julian's and Sliema.



NOKIA

Nokia selected by GO Malta  
for nationwide 5G deployment  
in seven-year deal

## Nokia and Nordic Semiconductor to Simplify IoT Standard Essential Patent Licensing

Nokia and Nordic Semiconductor have announced a pioneering new approach to licensing the use of cellular IoT Standard Essential Patents. Companies purchasing IoT hardware from Nordic will now be given the opportunity to acquire licenses to Nokia's industry leading portfolio of cellular patents. This new agreement, which is the first of its kind, will simplify and speed up the Standard Essential Patent (SEP) licensing process and provide greater transparency and predictability to companies delivering IoT products and services. Licenses will be available at the end device level and companies will continue to have the option to license directly with Nokia. Nokia has defined, and contributed to open standards, many of the fundamental inventions used in virtually all cellular devices and LTE-M and NB-IoT technologies. In practice, this means any device that is connected to any cellular network automatically uses Nokia's intellectual property. Kjetil Holstad, EVP Product Management at Nordic Semiconductor said: "Nordic Semiconductor is all about making IoT easy for its customers. Through this

collaboration with Nokia, we have now added transparency and predictability early in the design process, giving the increased clarity and certainty Nordic cellular IoT customers have been seeking over the past three to four years." Jenni Lukander, President of Nokia Technologies, said: "Nokia has a history of working closely with industry to find effective licensing solutions and this innovative new approach is another example. It's a win-win for Nordic's customers and Nokia, simplifying the SEP licensing process

in the IoT space and making it easier for licensing agreements to be concluded amicably and efficiently. The move will support the future growth of cellular IoT and ensure that consumers benefit from an even greater range of connected products and services." Geir Langeland, EVP Sales at Nordic Semiconductor added: "This is our first step in making the licensing of cellular IoT technology more predictable and transparent. If there are ways to make the process even simpler in the future, we will pursue them."



## Nokia Selected by Capital Online to Upgrade its IP Backbone Network

Nokia has announced it has been chosen by Capital Online, a cloud computing service provider headquartered in Beijing, to upgrade its IP backbone network to complete the company's Network 2.0 plan. This will enable Capital Online to provide reliable cloud services while improving the customer experience. Under the agreement, Capital Online will deploy the Nokia 7750 Service Router (SR) and 7250 IXR interconnect router platforms to specifically support Capital Online's ambitious Network 2.0 plan. This entails that the converged backbone provides performance certainty for all traffic flows under all network conditions, the versatility to converge edge and core routing functions onto a common platform, smart traffic engineering with

segment routing-MPLS, and granular QoS to address different traffic demands for reliable service delivery. The Nokia 7750 SR and 7250 IXR platforms offer unique advantages for building Capital Online's backbone network. Based on the industry-leading Service Router Operating System (SR OS), Nokia's portfolio provides end-to-end advanced IP routing protocols, including Segment Routing, to achieve fast and efficient service delivery along with end-to-end service assurance for all traffic flows. By building a cost-effective converged backbone network based on high-density routers having 100GE/400GE interfaces, Nokia's platforms are geared to help Capital Online succeed in its cloud business. Xu Xiaohu, Chief Architect of Capital Online, said: "As a trusted partner

of critical networks, Nokia has abundant experiences helping its global customers build high capacity and quality IP networks. We're looking forward to collaborating with Nokia to accelerate the transformation of our network to provide faster, more reliable network services for our global customers throughout the U.S., Europe and Asia." Markus Borchert, CEO of Nokia Shanghai Bell, said: "Capital Online is known for being specialists in delivering exceptional online experiences for global business. We are pleased to help it create an industry leading IP network that will upgrade its existing backbone network to the Network 2.0 era, paving the way to increase its footprint in the global Cloud market in the future."

## Nokia Core Networks Business Chooses AMD EPYC™ Processors to Help Lower Energy Use, Costs for CSPs

Nokia announced that its Core Networks business is using 3rd Gen AMD EPYC™ processors to power the servers that deliver Nokia Core cloud-native software products, expanding the server-chip choices available to Nokia communication service provider (CSPs) customers in order to drive new levels of performance and energy efficiency improvements of 5G networks. The announcement represents an extension of Nokia's broader efforts to accelerate digitalization to help the ICT industry reduce its environmental footprint and to support other industries becoming more resource efficient. Nokia is targeting up to a 40% reduction in server power consumption to run Core workloads using AMD EPYC™ processors. Nokia CSP customers can purchase the AMD EPYC powered servers\* through Nokia or direct from other suppliers when they become commercially available during the first half of 2022. Existing servers using other chips that deliver Nokia Core software will continue to be available. Nokia has committed to decreasing its emissions by 50% by 2030 across its value chain,

including its own operations, products in use, logistics, and final assembly supplier factories. Dan McNamara, SVP & GM, EPYC, Server, AMD said: "We are excited to collaborate with Nokia to provide their customers with the performance, efficiency and overall sustainability benefits of 3rd Gen AMD EPYC processors. With our unique capability to offer high core counts in an energy efficient package, we are enabling outstanding performance for telco and 5G workloads, while supporting Nokia and the ICT industry's quest to improve energy

efficiency and the overall performance of its operations." Fran Heeran, SVP & Head of Core Networks, Cloud and Network Services at Nokia, said: "Through the latest generation of AMD EPYC processors and Nokia's cloud-native Core software, we are helping CSPs shrink the carbon footprint of their networks. This is critical as advanced 5G service roll-out accelerates, with the associated implications for new demands on energy consumption and our continued innovation push to minimize the impact of those demands."



## Nokia Upgrades Backbone Network for WINDTRE

Italian telco WINDTRE has selected Nokia to deploy a high-performance optical backbone network. The scalable solution will support line rates up to 600Gbps.

Benoit Hanssen, Chief Technology Officer at WINDTRE, said: 'Nokia's solution ... will help us provide next generation broadband services to both consumer and business

customers in the most efficient way. It will also enable us to grow our subscriber base and provide best-in-class experience to WINDTRE's existing customers.'

## Nokia and OIV Digital Signals and Networks to Deliver First 5G SA Industrial Private Wireless Campus Network in Croatia for AD Plastik

Nokia has announced it is partnering with OIV, a leading provider of national strategic communications infrastructure in Croatia, to deliver a 5G private wireless network solution that will enhance operational efficiency and enable new capabilities at AD Plastik's automotive component manufacturing facility in Croatia. Nokia Digital Automation Cloud (DAC) application platform will enable low latency and secure, reliable 5G wireless connectivity for equipment, machinery, and a set of applications at AD Plastik's

manufacturing campus in Zagreb, Croatia. It will replace and overcome the limitations of the existing Wi-Fi infrastructure to allow AD Plastik to implement new Industry 4.0 use-cases and enhance operational efficiency. The solution offers capabilities beyond connectivity, such as local edge computing, video services and a catalog of applications. It is a compact, easy-to-deploy platform, comprising network equipment, a cloud-based operation monitoring system and industrial connectors that ease standard and

industry-specific protocol connectivity. Marinko Došen, President of AD Plastik Group, said: "Further digitalization and automation of business in our industry is simply a necessity. Just as your chances on the market are significantly reduced if you produce vehicles that cannot be connected, so you have to keep up with trends in the production of automotive components. Industry 4.0 is our reality, and we must be ready to continue its implementation. 5G technology, in addition to being a hundred times faster than the



existing one, allows us to simultaneously connect smart and digital devices that we use every day in our production, and which will be even more represented in the future. Simply put, at the moment it is the basis for connecting devices that will help us in the production and delivery processes, and for the future we create the preconditions for building a modern, digital and promising company." Andrej Skenderović Project Manager at OIV Digital Signals and Networks, said: "OIV as a modern digital company is constantly looking for new

solutions for existing and future clients. We see the Private 5G network as a key technology for further development in the next decade. That is why we launched this project with the aim of expanding the range of our services. In this technology, which is characterized not only by a large capacity of the network, but also by many other possibilities, we see the potential to start the recovery and further development of the industry. We hope that with this project we will continue to be the leading provider of innovative services in our

country." Michael Siegel, Director Nokia Enterprise South-East Europe, said: "By implementing the Nokia DAC, AD Plastik will benefit from the highest reliability and lowest latency connectivity for all their operations, allowing the company to accelerate its digitalization and industry 4.0 transformation for greater efficiency and flexibility while maintaining quality and safety in its manufacturing facility in Croatia"

## Nokia, SK Telecom Collaborate on New Virtualized RAN Network in Korea

Nokia and SK Telecom have successfully completed a proof-of-concept (PoC) and demonstration of the world's first 5G 64TRX wireless-based cloud Radio Access Network (vRAN) in Korea. The trial highlighted Nokia's technological leadership in wireless network architecture. Both companies plan to start field testing a vRAN in 2022. The demonstration included the process of virtualizing the baseband based on Nokia's design, including its comprehensive infrastructure solutions such as NADCM (Nokia AirFrame Data Center Manager), separating hardware and software, and operating each independently. In particular, the network flexibility and performance were tested at the same time by dividing the infrastructure into two separate functions: a cloudified virtual distributed unit (vDU) and a virtual central unit (vCU). Through this 5G vRAN demonstration, both companies were able to confirm the agile response to computing requirements such as high performance, large capacity and the possibility of rapidly launching new services. Jongkwan



Park, Vice President and Head of Infra Technology Office, SK Telecom, said: "Through the verification of 5G cloud RAN technology provided by Nokia, SK Telecom, as a leader of the evolution of 5G wireless network architecture, was able to confirm its technological prowess once again. Based on the resilient and flexible 5G network infrastructure and vRAN that can maximize efficiency, we will continue to lead the next-generation communication

network services." Kevin Ahn, Head of Korea, Nokia, said: "This demonstration once again confirms the leadership of both companies in 5G technology, and serves as an opportunity for full-scale commercialization of 5G vRAN. We will continue to actively cooperate with SK Telecom to quickly introduce market-leading services based on the best 5G network."

## Nokia and Tele2 Expand 5G Partnership in the Baltics

Nokia announced that it is extending its partnership with Tele2 to deploy 5G RAN in Estonia, Latvia, and Lithuania in a long-term deal. The deal will continue to build on the 25 years of strong and close cooperation between Nokia and Tele2 in the Baltic region. Nokia's 5G solutions will enable Tele2 to deliver connectivity and capacity benefits at ultra-low latencies to their customers as well as reduce complexity. Nokia is the incumbent and

sole supplier in the deal. Nokia will provide equipment from its latest ReefShark System on Chip-powered AirScale equipment portfolio to modernize Tele2's nationwide radio network. The rollout will begin once Tele2 has acquired sufficient spectrum with auctions for both low and high band frequencies happening this year. Tele2 has previously acquired 5G spectrum in the 3.5 GHz band and the 700 MHz spectrum in Latvia. Nokia's AirScale

RAN portfolio is designed for seamless, simple, and efficient 'plug-in' deployment and reduced power consumption. It covers all deployment scenarios including dense-urban environments and wide-area coverage. Nokia has partnered with Tele2 on 2G, 3G, 4G, and 5G network deployments in the Baltics since 1996. Petras Masiulis, CEO Baltics at Tele2, commented: "We now have a strong and reliable partner for our complete 5G rollout

in the Baltics and together we will provide a major upgrade to the connectivity in each country, providing our customers with better speeds, reliability, and coverage. Nokia has been a great partner to us throughout previous generations of mobile technology and we look forward to continuing this partnership as we deploy the next generation of infrastructure in Estonia, Latvia, and Lithuania." Tommi Uitto, President of Mobile Networks at Nokia, stated: "We are delighted to extend our long-standing partnership with Tele2 in the Baltics and take great pride in being selected as their trusted 5G partner for this important deployment. Our best-in-class AirScale portfolio will deliver cutting-edge connectivity to their customers across



multiple markets and I look forward to and beyond." working closely with them on this project

**PCCW Global**

## Viu Doubles Down on Original Productions For Asia

Viu, PCCW's leading pan-regional OTT video streaming service, looks towards the new year with more than 30 Viu Originals currently slated for production. This builds on Viu's robust growth in 2021, which saw local and pan-regional original productions rated highly on the platform. Ms. Marianne Lee, Chief of Content Acquisition & Development, Viu, said, "In 2022, we continue to build a strong pipeline of Viu Originals with strong local content in Thailand, Malaysia, the Philippines, and Indonesia as well as pan-regional titles in Korean and Chinese that have established Viu's reputation and presence in the market." Under Viu Original Studio, headed by industry veteran Mr. Felix To, Chief of Viu Original, Viu is set to increase its focus on creating original content assets and developing IPs with regional and global appeal. Over 30 new productions will be released in 2022, which include returning seasons of popular shows like Close Friend in Thailand and Assalamualaikum My Future Husband in Indonesia, and new local originals including the Thai musical WANNABE and the much-awaited Korean Original Again My Life. Viu-ers can also expect more original Chinese content lined up for the year, tapping on the creative experience of Mr. To, with his track record in creating and producing many well-received Hong Kong dramas and variety shows. His experience in developing original series will bring to Viu more distinctive Asian content for Asia. Mr. To said, "With an original series release almost every month, we want to continue to delight users when they come to our platform. They will get a unique mix of Asian content, including more original Chinese content. It will further cement Viu's leading position in the OTT entertainment market." 2022 will continue to see popular local talents helming Viu Originals. Thailand is one such market where

established and rising Thai stars alike headline a slew of local Viu Originals. WANNABE is a coming-of-age drama series and musical starring Chanon (Nonkul) Santinatornkul, the multi-award-winning actor who will be making his vocal debut as a young rapper in the series. The star-studded cast includes guest crew member Sunny Day - Nay Mayo "Day" Thot of the hugely popular Thai rap group, Thaitanium. The demand for Thai dramas can be seen in other highly anticipated and refreshing titles lined up for 2022 which will cover a range of genres such as romantic drama Finding the Rainbow, romantic comedy My Coach, thriller Remember 15 and action series Real Fake. Viu-ers can also look forward to Viu Originals sci-fi comedy AI5YA, created by Malaysia's most beloved comedian Afdlin Shauk, and starring Zizan Razak, who is one of Malaysia's popular comedians, and Malaysian fantasy romantic comedy Seribu Nina, which will be particularly appealing to Millennial and Gen Z audience. In the first half of 2022 alone, Viu will also launch much-awaited Korean Originals such as Again My Life starring Lee Joon-Gi, Lee Geung-Young and Kim Ji-Eun, based on a web novel of the same title published on KakaoPage, and From Now On, Showtime starring famous actor Park Hae-Jin and Jin Ki-Joo, who has featured in The Secret Life of My Secretary and Come & Hug Me. The drama is also penned by writer Ha Yoon-Ah, who wrote the script for the fantasy-comedy drama Mystic Pop-up Bar (2020). Another upcoming Viu Original is Why Her? a romantic legal drama starring popular actors Seo Hyun-Jin, known for her roles in Dr. Romantic and the Beauty Inside, and Hwang In-Yeop, who received attention for his role in True Beauty.



## 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? The full report including data collection & measurement methodology can be found here: <https://www.speedcheckercdn.com/pdfs/africa-mobile-network-champions-award.pdf>

| Rank | Country | Average Country Download speed (Mb/s) | Mobile Network Champion | # Samples |
|------|---------|---------------------------------------|-------------------------|-----------|
| 1    |         | 23.57                                 |                         | 147,819   |
| 2    |         | 19.20                                 |                         | 62,294    |
| 3    |         | 18.19                                 |                         | 59,133    |
| 4    |         | 15.76                                 |                         | 55,509    |
| 5    |         | 13.71                                 |                         | 36,443    |
| 6    |         | 13.56                                 |                         | 19,537    |
| 7    |         | 13.35                                 |                         | 49,990    |
| 8    |         | 13.24                                 |                         | 18,300    |
| 9    |         | 13.08                                 |                         | 46,891    |
| 10   |         | 12.80                                 |                         | 66,452    |
| 11   |         | 11.89                                 |                         | 27,374    |



## stc Bahrain Signs MoU with Diyar Al Muharraq Developer to Build 13 Telecom Towers

Diyar Al Muharraq, one of the largest real estate development companies in the Kingdom of Bahrain, announced that it has signed a Memorandum of Understanding with stc Bahrain, a world-class digital en-

abler, to construct and operate additional telecommunication towers, significantly improving network connection and internet services in these areas. Following the plan issued by the Telecommunica-

tion Regulatory Authority to rectify and reduce the number of telecommunication towers. These sites will be shared by all telecommunication companies operating in the Kingdom of Bahrain. Following the completion of the project, the masterplan will include a total of 13 operating towers. Commenting on the occasion, Eng. Nezar Banabeela, Chief Executive Officer of stc Bahrain, said: "At stc Bahrain, we continuously invest in Bahrain's telecommunications infrastructure by providing coverage to various locations in order to serve a larger segment of customers. Due to the increase in the number of interested customers, we aim to offer the best services to meet their daily needs and stay closer to them. We are also working on supporting the national telecommunications plan and strengthening our presence as a leading telecommunications company across new areas in Bahrain with the aim to cover more locations across the Kingdom."





## 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. 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 cooperations 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".



## Tech Mahindra and Nokia Collaborate to Drive Enterprise 5G Private Wireless Adoption Globally

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services & solutions, announced a collaboration with Nokia, to drive 5G private wireless adoption globally. The collaboration will further strengthen the already standing relationship between Tech Mahindra and Nokia. Tech Mahindra will leverage Nokia's private wireless DAC solution for customers across industries and facilitate in automating 5G Private Wireless network management on a cloud (managed as a service model). Tech Mahindra's industry knowledge to provide specialized services to customers, 5G enterprise solutions capabilities, such as Factory.NXT, Mining.NXT, and its domain expertise in planning, designing, deployment and management of private wireless networks for enterprises, combined with Nokia's flagship offering for Private Wireless Networks – Nokia Digital Automation Cloud (DAC) will benefit enterprise customers and accelerate adoption of transformative network technologies like 5G, across the globe. Together, this will enable end-to-end IT/OT transformation for customers across industries and sectors such as Manufacturing, Transportation, Healthcare, Oil & Gas, Logistics, Smart Agriculture, and Entertainment, among others, thereby helping enterprises to scale productivity, enhance efficiency, and implement new revenue streams. Tech Mahindra's Enterprise Network Services cover the entire network stack and support new age technologies to help enterprises gear up for a complete digital transformation, resulting in an always-available enterprise network. Nokia DAC provides a reliable, secure, and high-performance private wireless network that is scalable according to needs. An industrial-grade digital automation service platform that provides edge computing capabilities, low latency 4.9G/LTE and 5G connectivity and a suite of applications for enterprises and multiple verticals. It offers an easy-to-use self-service interface for network management tasks, addition or removal of devices and features, real-time information on Nokia DAC manager with the status and utilization of network and devices as well as radio network and edge cloud health. Nokia DAC also enables access to other network management and operations solutions and integration with 3rd party applications via well-defined application program interfaces (APIs). Manish Mangal, Global Head of 5G & Network Services Business, Tech Mahindra,

said, "5G adoption has become critical for enterprises to achieve the next level of industrial automation and digital transformation that enable higher level of productivity and reduce operational complexity and costs. We are pleased to partner with Nokia as we continue to build 5G ecosystem, and drive innovation and growth in the future. We are committed to help customers achieve their "enterprise of the future" vision." Chris Johnson, Head of Global Enterprise Business for Nokia said: "Nokia has supported the digital transformation of over 380 enterprises globally with our private wireless offerings. We are excited to collaborate with Tech Mahindra to bring our global private wireless expertise to upgrade their offering and customer experience worldwide". 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.



## Tech Mahindra Bets Big on Digitally Transforming Insurance Industry; Acquires Com Tec Co IT Ltd and Invests in Two Leading InsurTech Platforms

Tech Mahindra announced 100% acquisition of Com Tec Co IT Ltd (CTC) for €310 million including earnouts and synergy linked payouts. CTC is an IT solutions and service provider serving the insurance and financial services industries with development centers in Latvia and Belarus. The acquisition will enable Tech Mahindra to tap onto the potential industry disruption in the Insurance sector, expand its offerings to high-end digital engineering services for some of the largest insurance, re-

insurance and financial services organizations globally and scale its nearshore delivery presence. Tech Mahindra is also investing a cumulative amount of €20 million, in SWFT and Surance, for a 25% ownership in each of these two InsurTech ventures funded by the same founding group as CTC. SWFT is a SaaS-based digital customer engagement platform. It offers multiple functionalities for insurance sales & distribution and is designed for digital brokers, price comparison websites, and insurers wanting to



directly reach their customers through digital channels. Surance is an end-to-end personal cyber insurance solution that focuses on vulnerability assessment, cyber protection, and cyber insurance coverage. Vivek Agarwal, President - BFSI, HLS, and Corporate Development, Tech Mahindra, said, "The Insurance industry is currently undergoing a significant transformation which is driven by new emerging business models, that are powered by disruptive digital technologies. In order to enable this digital transformation, we are investing in strengthening our capabilities to support

insurers in accelerating their transition to cloud-based platforms and provide end-to-end engineering with a strong European nearshore presence. We welcome the CTC team into the Tech Mahindra family, and we expect to achieve significant market and service line synergies through this combination." Through these investments, Tech Mahindra will bolster its global leadership and demonstrate its commitment in building differentiated capabilities for accelerating the digital transformation in the insurance, reinsurance, and financial services. CTC's expertise and experience in delivering marquee solutions for customers will complement Tech Mahindra's offering to provide end-to-end digital engineering, Artificial Intelligence, Machine Learning and DevSecOps capabilities. The acquisition will also help Tech Mahindra to scale its European presence with over 700 highly skilled IT professionals in contemporary technologies and processes. Avraham Shaked, Co-Founder, Com Tec Co IT Ltd, said, "Since our inception over 20 years ago, we have scaled sustainably entirely through customers' recommendations and delivered award-winning strategic solutions for them in the insurance and reinsurance industry. Becoming a part of a global entity like Tech Mahindra will give us immediate access to global scale and create a tremendous growth and development opportunity for our people and the business." The acquisition underlines Tech Mahindra's focus on digital growth, under the NXT.NOWTM framework, which is focused on leveraging next generation technologies to deliver disruptive solutions today, and further enable digital transformation, meet the evolving and dynamic needs of its customers.

## Tech Mahindra Achieves Data Analytics Specialization in Google Cloud Partner Advantage Program

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services & solutions, has announced that it has achieved the Data Analytics specialization certification in the Google Cloud Partner Advantage Program, solidifying its expertise within the data analytics space. This is the fourth recognition for Tech Mahindra's partnership with Google Cloud. As a premier partner for Google Cloud, Tech Mahindra has been at the forefront of enabling cloud adoption for enterprises globally. Suri Chawla, Global Head, Cloud.NXT, Tech Mahindra said, "At Tech Mahindra, we are committed to continuously develop our ability to bring the latest state of the art technology to our customers and enhance business value across various industries by leveraging Google Cloud. We are uniquely positioned to leverage Google Cloud Edge technology, 5G, and securely manage network centric solutions with Google Cloud Anthos for our clients. Being accredited with Data Analytics Specialization is yet another testament to our commitment towards the same." Derrick Thompson, Global Head of Partner Differentiation, Google Cloud said, "We're thrilled that Tech Mahindra has achieved the Data Analytics Specialization in the Google Cloud Partner Advantage Program. This specialization shows Tech Mahindra's continued commitment to providing customers

with the expertise and solutions they need to get the most out of their cloud investments." Tech Mahindra is a Google Cloud Partner with over 1000 trained resources. The company is slated to triple their Google Cloud workforce by 2023 to help customers enable digital transformation by leveraging Google Cloud with a focus on Anthos, IOT, AI/ML and digital workspaces. It has built a dedicated Google Cloud Practice which includes consulting services for assessing the migration of workloads, including SAP, to Google Cloud; Managed Services for providing ongoing services and Domain Solutions based on Next-Gen technologies like IOT, Analytics and AI/ML. Tech Mahindra is also a Strategic GSI partner for Google Cloud across North America, EMEA and APAC regions. 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.

## Tech Mahindra Strengthens Its Leadership in the Engineering R&D Services Space For the 6th Consecutive Year in Zinnov Zones 2021 Rankings

Tech Mahindra, a leading provider of digital transformation, consulting and business re-engineering services, announced that it has been named as a leader across 24 verticals and micro verticals in the Zinnov Zones for ER&D Services – 2021 assessment. The study witnessed participation of 50 Global Service Providers that were evaluated on their ER&D and IoT services prowess and capabilities. Zinnov, for the first time, has assessed the Service Providers for their investments, client success, and delivery capabilities for engineering services across specific geographies such as USA, Germany, and Japan. Among the 25 categories on which the assessment was made, Tech Mahindra emerged as a leader in the following 24 categories – ER&D Services, IoT Services, Digital Engineering Services, AI Engineering, ER&D Services – USA, ER&D Services – Germany, Aerospace, Automotive, ADAS, Telematics, Consumer Software, Enterprise Software, Cybersecurity, Software Platform Engineering, Medical Devices, Telehealth, Semiconductor, Telecom, SDN-NFV, OTT, Industrial, Digital Thread, Contactless Retail, and Public Infra. “Tech Mahindra’s sharp focus on our Engineer your NXT.NOW™ approach has been pivotal in refreshing our core, strengthening our capabilities, and thus helping our customer organizations reshape their

digital future. Tech Mahindra’s engineering services business unit endeavors to create a new digital economy with a razor-sharp emphasis on emerging market trends like digital engineering, intelligent workplaces, adoption of tele-everything, end-to-end connected and immersive approach covering smart manufacturing and the need for an overall resilient business framework. The company is also making significant investments to build and improve its engineering talent pool. This significant industry recognition of our engineering expertise comes at a time when the company is celebrating its 25th anniversary and it will only get better from here.”, said Narasimham R V, SVP and Global head – Integrated Engineering Services, Tech Mahindra. Sidhant Rastogi, Managing Partner, Zinnov, said, “Tech Mahindra’s rich ER&D expertise across Automotive, Telecom, Semiconductors and other verticals has made it a trusted partner for transformational services for their clients. The firm’s targeted acquisitions of Lodestone, WMW, and other niche technology providers and start-ups, a range of targeted IPs, platforms, and frameworks across industry verticals, have helped it anchor its leadership position across the 2021 Zinnov Zones ER&D and IOT ratings.” Tech Mahindra offers a blend of talent, technology, business acumen, and domain expertise to collaborate with

enterprises on their engineering journey – helping them accelerate positive outcomes from existing engineering initiatives and investments, invent new products and IP (Internet Protocol), and transform business models in alignment with the dynamic market requirements, while traversing towards a sustainable future. Tech Mahindra’s Integrated Engineering Solutions (IES) delivers solutions enabling tomorrow’s Digital Engineering Enterprise across diverse industries such as Aerospace and Defense, Automotive, Industrial, Telecom, Healthcare, Energy & Utilities, and ISVs. With 50+ exclusive global engineering centers supporting new program launches and 350+ active global customers, Tech Mahindra’s IES is an established leader for Engineering Services in the industry. With 25+ years of expertise across cutting-edge engineering services, products, opti-shore delivery, and flexible business models via a well-defined framework, Tech Mahindra is Engineering Your NXT.NOW™. As part of the NXT.NOW™ 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.



## Zain KSA Wins the "Best 5G User Growth" Award from Telecom Review

Zain KSA is once again recognized by the Telecom Review Leaders' Summit, during the summit's 15th edition held in Dubai on December 8th 2021. Zain KSA won the "Best 5G User Growth" award, cementing its position in building 5G networks, deepening innovative experiences, and developing 5G use cases and deploying them across the Kingdom. Commenting on this new accolade, Zain KSA's Chief Technology Officer, Eng. Abdulrahman

bin Hamad Al-Mufadda said: “We are proud of this new recognition, which once again confirms our excellence in 5G services, reflected through the top-quality network experience and data services we provide to our clients. Additionally, by successfully developing new 5G use cases across multiple verticals during 2021, Zain KSA has cemented its position as one of the largest 5G providers, leveraged by the Kingdom-wide expansion of its

network, currently covering 51 cities through more than 5,000 towers. These accomplishments contribute immensely to our commitment to enhance the quality of life for our community and support our contribution to the Kingdom's digital transformation, in line with Saudi Vision 2030's goals.” To enrich its users' experience, Zain KSA entered into a partnership with OSN, through which it has leveraged the potential of high-speed

internet and rich content – granting its 5G users free access to OSN Streaming app. Additionally, to support e-gaming fans, Zain KSA has partnered with NVIDIA, the leader in accelerated computing, to launch GeForce NOW in KSA, the first 5G cloud-gaming platform to deliver an end-to-end digital journey, offering gamers access to 300+ games on multiple devices anywhere, without the need for downloads. It is worth noting that Zain KSA ranked first in the "Meqyas" report, Q3 2021 edition, issued by the Communications and Information Technology Commission (CITC), with the biggest 5G network and the fastest mobile 5G in Riyadh. It also topped the list in terms of 5G deployment across the Kingdom, ranking first in 10 out of 13 regions. In the first half of 2021, Zain KSA was recognized as the provider of Saudi Arabia's fastest fixed internet for the third consecutive time



by Ookla, owner of the globally acclaimed website Speedtest.

## Zain Cloud Receives Highest Rating for Cloud Computing Services



Zain Cloud, the cloud computing service provided by Zain KSA, has achieved Class (C) classification from the Communications and Information Technology Commission (CITC). This is the highest 'Service Provider Registration Class' rating awarded by CITC to cloud computing service providers. This endorsement confirms that Zain Cloud has implemented all of the necessary cybersecurity controls for cloud computing, and thereby provides a secure cyberspace for Zain Cloud subscribers, supported by world-class cybersecurity risk management in line with global best practices and local

cybersecurity requirements. Commenting on this classification, Chief Business and Wholesale Officer at Zain KSA Eng Saad bin Abdul Rahman Al-Sadhan stated: "We are proud to achieve this classification from the Communications and Information Technology Commission, the regulator of this vital sector, because it reflects two important pillars. Firstly, it demonstrates that Zain KSA's strategy is fully aligned with Saudi Vision 2030 and supports all related goals, not only in the fulfillment of the kingdom's digital transformation, but also through ensuring security and reliability, and preserving the privacy of customers

and their data. Secondly, it echoes our commitment to our plans to become a leading provider of telecommunications and Internet services through delivering future-proof digital solutions and services, enabling our customers to be ready for the next phase of their business' growth and prosperity." 'Zain Cloud' is distinguished as a public cloud provider locally based in Saudi Arabia, which is secure, easy to use and completely, and compatible with the kingdom's data protection requirements. Customers, whether in the government or private sector, can benefit from robust cloud infrastructure services and their outstanding speed, as well as a wide range of programmes in the 'Zain Cloud Market place' to manage their businesses and take appropriate strategic steps in an interactive and digital way without human intervention. Notably, 'Zain Cloud' has recently passed all the ISO quality checks necessary to obtain the highest rating in the field of security and safety of customer data, and received a number of certificates in this area, including: ISO9001, ISO 27001, ISO 27017, ISO 27018, and CSA-L2. This is part of the company's implementation of the necessary measures to protect customers' personal information and data from cyberthreats at various levels: Public, Confidential, Secret, and Top Secret Data. 🌱



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## ARTICLE

# Full 5G - Taking 5G Further to Bring You a Fuller Experience



## Nasser Al-Hamlan

General Manager - Network Planning & Design  
stc Kuwait



**stc**, a world-class digital leader providing innovative services and platforms to customers, enabling the radical transformation of the telecom industry in Kuwait into an as-a-Service model in line with Kuwait's 2035 vision "New Kuwait". stc has been the first to launch 5G End-To-End Standalone (SA) network in MENA region, and has successfully accomplished the widest network coverage using 5G Sub 3GHz which is the 1st of its kind in the Middle East region.

*The 5G SA enabled with Sub-3Ghz technology allows 5G signals to pass through buildings to provide better 5G coverage both indoors and outdoors, and lets consumers enjoy better constant 5G broadband experience and deeper 5G indoor coverage.*

**stc** updated its network to support both Standalone & Non-standalone 5G devices, while continuing to enhance its 5G SA with initial focus on eMBB (enhanced Mobile Broadband) and now with the 5G SA launch enhancing the value chain to support of uRLLC (Ultra-Reliable Low-Latency Communication) and mMTC (Massive machine type communications), to fulfil a wide-range of industry transformations and business model requirements serving needs of startups, SMEs, large enterprises and government sectors.

**stc** launched the unique campaign of FULL 5G Experience to maintain and reinforce our pioneering position as a digital transformation leader as we have always been a pioneer of change, offering enriching experiences. FULL 5G is here to ignite the next big leap in 5G experience and we've named it FULL 5G for a reason - it takes 5G further to bring you a fuller experience in 3 distinct ways by ensuring Full coverage, Full speed and Full experience of 5G to our customers as it's based on the most advanced 5G Standalone Technology (SA), introduced by stc for the first time ever in Kuwait. Operating exclusively on 5G core and 5G equipment, it opens new possibilities.

The Full 5G will unleash a digital transformation in a wide range of fields by enhancing the 5G coverage to higher floors as compare to 4G network, and to deeper indoor 5G coverage. The features provide enhanced experience to delay sensitive applications like gaming, CCTV, and enable to launch new emerging services, such

as VR, AR, connected drones, and so on. The 5G SA enabled with Sub-3Ghz technology allows 5G signals to pass through buildings to provide better 5G coverage both indoors and outdoors, and lets consumers enjoy better constant 5G broadband experience and deeper 5G indoor coverage. 5G Sub-3Ghz has the potential to change consumer expectations making internet download and upload speed less of a problem. The 5G Sub-3Ghz technology is already supported and consumers can get its full benefits by new smartphones from leading smartphone manufacturers.

5G SA technology enables different verticals to get advantages of stc's 5G network by creating end-to-end isolated logical private networks that share resources in a secured, isolated and efficient way – so called Network Slicing. The 5G based Private Network based on Network slicing allows public and private corporations increase their levels of efficiency and increase revenue when building their private networks, without the hassle of investing in new infrastructure, acquiring new spectrums, developing coverage, and getting capital assets. stc will also be able to offer diversified digital services to verticals, such as guaranteed SLAs through SA, especially the enhancement in uplink and lower latency to enhance its "Dedicated Access" portfolio with new Cloud based services like Cloud CCTV with AI, Smart Office, Safe mobility with 5G live

bus and VR/AR applications commercially offered to enterprises with high-end speed and latency experience tailored to their service needs.

Both 5G Sub-3Ghz and Stand-Alone Services realize improved coverage experience to delight consumer broadband hungry application requirements, such as online gaming, social media and residential mobile broadband services, without worrying about data or bandwidth! Compared to the legacy 4G technologies, 5G brings massive latency improvements to the gaming experience enables quick response interactions. Nowadays, stationary or on-the-go online gamers can feel performance different whether they are playing online or lively streaming their gaming, thanks to 5G low latency and enhanced uplink data

*5G advanced Sub-3Ghz and SA enhanced capabilities of high speed, low latency and massive connectivity will act as a bridge towards valuable new opportunities in industrial business Powering the fiber like experience for mobility scenarios...*

speeds. Mobile Consumers enjoy wider 5G coverage connectivity which allows more "headroom" for higher-definition images and video, and faster upload speeds saving their time and effort to quickly reach their social communities. Social consumers who have 5G logo displayed on their smartphone screen become more intimate and offer interactions that are more fluid, more personalized, and highly contextual. 5G advanced technologies facilitate subscribers to quickly consume and produce more and more high-quality visual contents – photographs, memes, GIFs, and videos with the most famous YouTube, Instagram, Snapchat, TikTok, and more platforms.

stc's 5G subscription plans offer unlimited maximum data-rates and consumers can also experience a 5G internet at uninterrupted 5G speed using state-of-the-art technology (stc Baity) that gives them the best possible 5G signal for the best internet speeds across their home with unlimited data usage which provides them with consistent, and reliable online gaming and 4K/8K video streaming experience.

5G advanced Sub-3Ghz and SA enhanced capabilities of high speed, low latency and massive connectivity will act as a bridge towards valuable new opportunities in industrial business Powering the fiber like experience for mobility scenarios such as construction projects, mobile ATM points, or major broadcast venues can benefit from greater 5G downlink and uplink speeds. Schools, universities, retail malls or hospitals can greatly get benefits from the reliable and high-speed internet connectivity 5G can offer. In Kuwait market, **solutions by stc** was the 1st service provider targeting different industries in different 5G B2B segments by launching connectivity solutions (i.e. 5G Dedicated Access), AI services (i.e. Unified Communications and VAaaS) , Cloud (i.e. CCTVAaaS) and cybersecurity solutions (i.e. DDOS), and has strategic plan to support enterprise innovative solutions like managed campus, cloud, and other industrial applications. with guaranteed Service Level Agreements (SLAs) enabling the radical transformation of the telecom industry into an as-a-Service model. 🇰🇼

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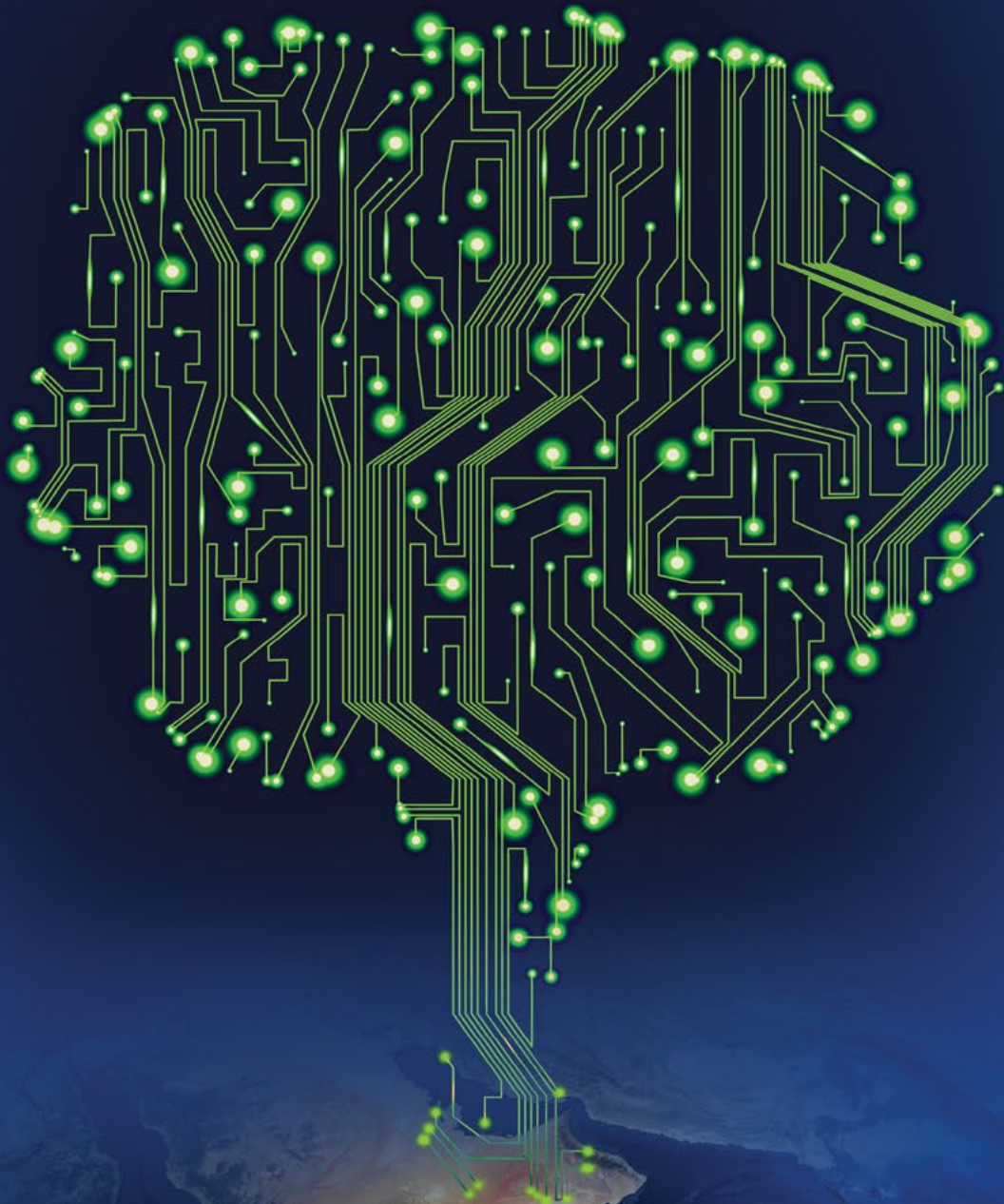
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## REGIONAL NEWS

### UAE Launches 'Big Data for Sustainable Development' at Expo 2020

The UAE's government has announced the launch of the United Nations (UN) platform, "Big Data for Sustainable Development", as part of their efforts to meet the data and technology needs of the Middle East and North African (MENA) region. The UAE was one of four countries chosen to host a regional headquarters for the platform. The official announcement was made during the 'Mobilizing Big Data and Data Science for the Sustainable Development Goals' forum, which is currently being held at Expo 2020 Dubai, in cooperation with the United Nations. Reem bint Ibrahim Al Hashemy, Minister of State for International Cooperation and Chairperson of the National Committee for Sustainable Development Goals, said that the UN's decision to make the UAE the MENA headquarters of the platform was testament to the country's stature and will enhance the UAE's position as a global hub for technology and big data. Al Hashemy also said that it reflects the UAE's commitment to attaining the sustainable development goals (SDGs) through the use of AI and big data. The UN's SDGs include supporting comprehensive and sustainable manufacturing and promoting innovation, Al Hashemy noted, adding that the Ministry of Industry and Advanced Technology has adopted a strategy aimed at fostering innovation and adopting advanced industrial tech solutions. Omar bin Sultan Al Olama, Minister of State for Artificial Intelligence, Digital Economy, and



Teleworking Applications, stated that data is the true wealth of governments of the future and the main tool for developing the next-generation government services. The UAE cooperates with several countries and international organizations to align data protection efforts, by drafting legislation and establishing partnerships to ensure aligning laws issued by countries that produce digital technology and social media platforms, he added. Hanan Mansour, Acting Director of the Federal Centre for Competitiveness and Statistics, said that the center's experts collaborated with a UN team to create the

ideal infrastructure for the platform. The UAE will aim to establish an environment conducive to fostering talents in advanced data to achieve the UN's SDGs, by focusing on improving the efficiency of AI and big data utilization across vital sectors. The new centre will manage 578 national statistical indexes and is connected to over 40 authorities to ensure data security, she added. Bill Scudder of AspenTech recently wrote an editorial for ITP.net on the importance of big data and the role it can play in improving operations.

### Turkcell Seeking Foreign Partnership

Turkish operator Turkcell is actively seeking strategic foreign partnerships for its subsidiaries, its CEO Murat Erkan told newspaper Hurriyet during the Consumer Electronics Show (CES) in Las Vegas. 'We have opened up our subsidiaries Paycell, Bip [OTT communications] and

Superonline [fiber broadband operations] to investors. Funds from the United States, Asia and the Middle East have shown interest in our companies. We are not looking for financial investors, but partners to speed up expansion abroad,' he said, adding that individual stakes of up to 10%

could be offered to foreign partners in the coming months. Turkcell has authorized JP Morgan to find investors for payment processing company Paycell, with talks ongoing with around ten potential partners.

## UAE Telecom Regulator Says Country's 5G Services Don't Disrupt Aircraft's Navigation System

The UAE's Telecommunications and Digital Government Regulatory Authority (TDRA) assured that the deployment of the

5G mobile services in the country has no impact on the aircraft's navigation system. The UAE regulator's statement comes af-

ter many airlines - including Emirates, British Airways, Air India, All Nippon Airways, Japan Airways and Lufthansa - suspended flights to the US, due to the rollout of C-Band 5G service which could interfere with sensitive aero plane instruments such as altimeters and affect low-visibility operations. But the US telecom operator AT&T and Verizon later announced that they would delay the deployment of the 5G telecom services at the US airports so that airlines can resume operations. The UAE regulator clarified that this issue due to 5G deployment is exclusively related to the US airports referred to, as new spectrum frequencies have been allocated to 5G that differ from the frequencies designated for use in our region, and there is no disruption or interference in the UAE between 5G networks and air navigation systems." TDRA said it bases its 5G plans on studies that take into account the safety of frequencies and potential impact on other sectors. It said 5G stations in the UAE have been installed in multiple places for many years, and no negative impact on the safety of air navigation systems has occurred.



## Vodafone Oman Becomes Sultanate's Third Mobile Network Operator

Vodafone Oman, which is owned by Oman Future Telecommunications (OFT), has launched commercial mobile operations in the Sultanate, making it the country's third mobile network operator (MNO) alongside Omantel and Ooredoo. The firm says it has 5G network coverage across Muscat and 'ultrafast network coverage all over the Sultanate of Oman'. Its tariff launch offer includes a post-paid plan with 77GB of data, 777 voice minutes and 777 SMS per month for OMR9 (USD23.3) per month. The shareholders of OFT represent Omani institutions such as government pensions and investment funds, as well as private investors. TeleGeography's GlobalComms Database states that in September 2019 Vodafone Group confirmed the signing of a strategic partnership agreement with the OFT consortium, as part of the UK-based operator's Partner Markets program.

Under the 15-year non-equity agreement, the pair will work together to roll out a new mobile network and develop a number of new services using the Vodafone brand in Oman. In January last year OFT was formally awarded its Class I license to

establish and operate public mobile networks and services, while the following September Ericsson signed an agreement with OFT to deploy, operate and maintain its new 4G and 5G core and greenfield radio access network (RAN).



## Iraq's Telecommunication Giant, Asiacell, Announced "Best Mobile Network" as it Receives 2 Awards From Ookla

Asiacell, commenced the year of 2022 with two awards that reinforced its position as the leading mobile network in Iraq. Asiacell announced today the results of over 240,000 user initiated tests taken using Speedtest® by Ookla® which confirmed Asiacell has the Fastest Mobile Network and the Best Mobile Coverage in Iraq based on H2 2021 results confirming it as Iraq's Best Mobile Network.\* This premium ranking came after Asiacell's enhancements which allowed the telecom to provide its customers with 4G+ services. This was all made possible by the massive investment which Asiacell did in the near to non-existent infrastructure the telecommunications sector had in Iraq and the dedication and hard work which the Asiacell team did to ensure that their services remain premium even through the COVID-19 pandemic. Speedtest® results confirmed Asiacell as Best Mobile Coverage in Iraq by providing network coverage in over 99% of Iraqi locations observed. It also named Asiacell as Fastest Mobile Network thanks to its

Speed Score™ of 48.73. This asserts how Asiacell provides its subscribers in Iraq with the most superior experience with the nation's best mobile coverage. The telecom sector has been long suffering from many challenges. Asiacell has aided the government to overcome these challenges by working on fixing the infrastructure and investing in improving the quality of services the telecom industry has to offer. The tag comes at a time when customers are heavily dependent on a mobile network's speed to remain digitally connected. Asiacell was able to prove its leading status as the true and only mobile provider to offer both the fastest connection and best coverage based on H2 2021 results. Mr. Omer Faleh, Director of Public Relations and Communications at Asiacell, said: "It is our pleasure to be presented with the award for Fastest Mobile Network in Iraq and Best Mobile coverage. This recognition is testament to Asiacell's exceptional performance based on Ookla's rigorous analysis of consumer-initiated tests taken.

Asiacell has been consistently offering the fastest 4G experience for many quarters and with our continued efforts to provide superior experience. With the launch of our 4G+ experience, it is now the fastest mobile network in the country, as verified by Ookla. We believe in helping our customers thrive in the digital era - be it for learning & development, work, entertainment." Doug Suttles, CEO at Ookla, said: "Speedtest Awards, presented by Ookla, are reserved for an elite delegation of network operators that have delivered exceptional internet performance and coverage within a market. It is our pleasure to present Asiacell with the awards for Fastest Mobile Network and Best Mobile Coverage in Iraq. This recognition is testament to their exceptional performance in Q3-Q4 2021 based on Ookla's rigorous analysis of consumer-initiated tests taken with Speedtest.\* Based on analysis by Ookla® of Speedtest Intelligence® data Q3-Q4 2021. Ookla trademarks used under license and reprinted with permission.



## Libyan-Tunisian-Algerian Conference for Digital Transformation Creates New Investment Opportunities

The head of the Libyan-Tunisian-Algerian Conference for Digital and Free Economy Transformation in Africa, Yassin Abusriwill, has confirmed that Tunisia will host a conference next March that will focus on

creating new investment opportunities in the three countries. Abusriwill said to the Tunisian Diwan FM that the conference will enhance the role of the digital and free economy in Africa, stressing the failure

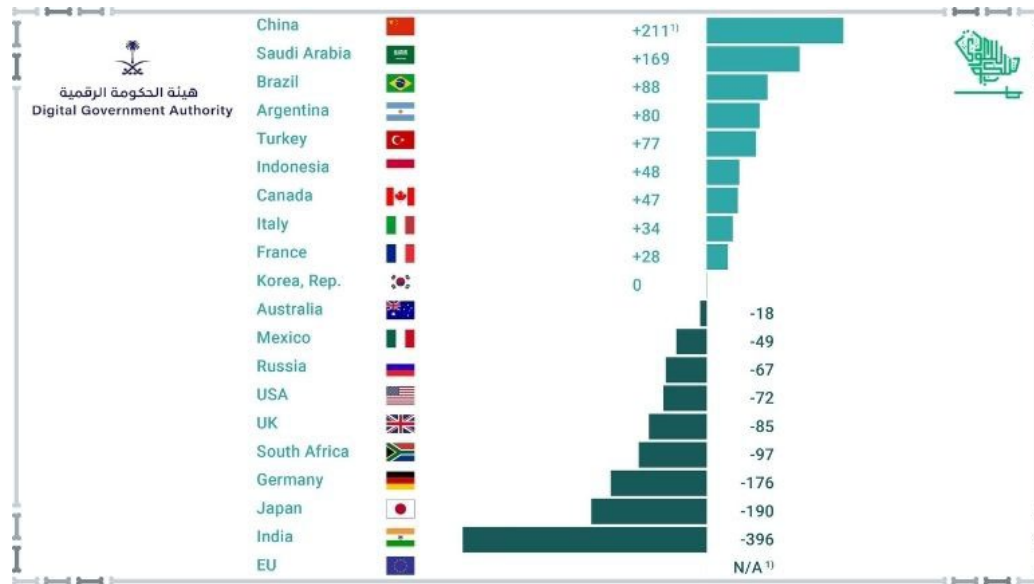
of many countries to adopt this type of economy, compared to other countries that have achieved huge profits, close to 11.5 trillion dollars.

## Saudi Arabia Rises in Digital Government Rankings by Japan University

According to the most recent survey of the 64-country index, issued by the Institute of digital government at Japan's Waseda University in cooperation with the International Academy of CIO (IAC) since 2005, Saudi Arabia ranked 30th in the general index and 11th among the countries of the Group of Twenty. The annual indicator measures progress in

government digital services, their tie to innovation and integration, contribution to improving the efficiency of administrative and financial work as well as the quality of life for beneficiaries, and their contributions to promoting Sustainable Development Goals (SDGs). The report praised the efforts made by the government of Saudi Arabia in the field of community participation

and digital legislation, in addition to establishing the Digital Government Authority. The report also indicated that digital government services could provide effective solutions to societies in times of crises, citing the solutions adopted by the government during Covid-19 pandemic in the years 2020-2021.



## BNET Holds Strategy Workshop Under the Theme "One Team, One Vision"

BNET, the national company responsible for telecommunications infrastructure, held its first workshop of the year to launch its revamped corporate strategy, attended by Chief Executive Officer Ahmed Aldoseri and senior management. The primary objective of the Strategy workshop is to drive operational excellence by fostering innovation and optimization, led by an inspired team, and based on the principle "One Team, One Vision". The workshop presented BNET's revamped strategy; including a renewed vision and mission and improved corporate objectives. The renewal of BNET strategy aims to support Bahrain's vision to become a "Smart Kingdom" with a reliable and secure Fiber infrastructure. BNET CEO Ahmed Aldoseri said: "Through this Strategy workshop, BNET aims to ensure our internal business units' strategies align with our

stakeholders' expectations, following a customer centric approach. We aim to ensure smooth customer experiences, added value and a positive impact in our community". The Strategy workshop followed an open discussion approach

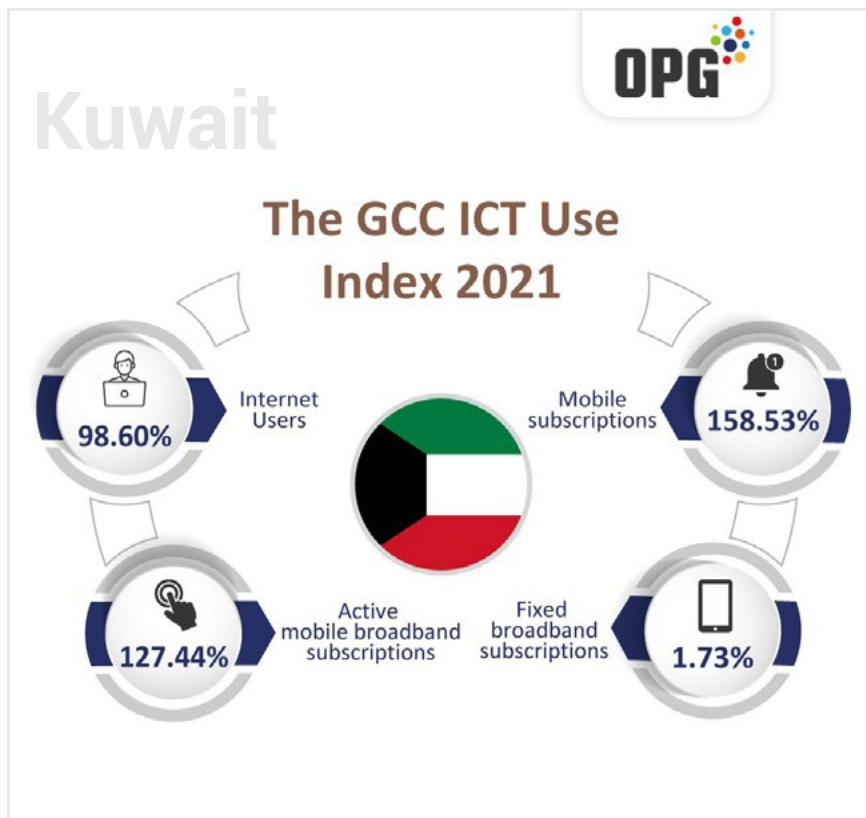
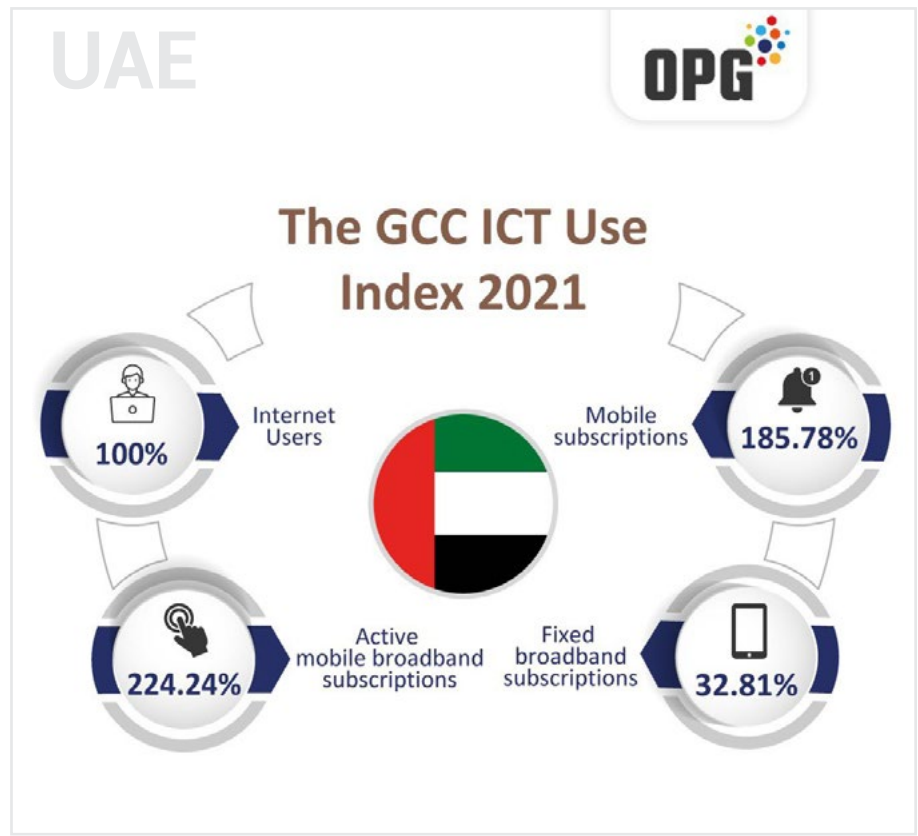
where all business units' strategies were presented. This approach aimed to establish comprehensive and optimized goals and an integrated executive plan that the entire company works to achieve as one team over the next three years.





## UAE Tops ICT Index in Gulf with 5.43 Points

The Information and Communication Technology (ICT) use index in the Gulf Cooperation Council countries for the Year 2021, said the percentage of Internet users in the GCC countries, which occupied a leading position at the regional and global levels, exceeded 98 percent, and that the percentage of mobile phone subscribers reached 137.66 percent of the total population during 2021, reports Al-Rai daily. The report issued by "Orient Planet Research", the independent unit of the "Orient Planet" group, showed that the Gulf countries were able to achieve a major leap in the use of information and communication technologies during the past two decades that made a difference in the services provided to users through the development of digital infrastructure. The UAE topped the ICT use index for the Gulf countries for the year 2021, which measures the rate of Internet penetration and communication services, achieving 5.43 points, while Kuwait came second with 3.74 points, followed by Saudi Arabia third with 3.64 points, Qatar fourth with 3.62 points, Oman was fifth with 3.49 points and Bahrain sixth with 3.38 points. On



the index of the number of Internet users, Kuwait came fourth with 98.6 percent, second in the index of the number of mobile phone subscribers with 158.53 percent, sixth in the index of the number of fixed broadband subscriptions with 1.73%, and second in the index of the number of mobile broadband subscriptions at 127.44 percent. The mobile phone services and information technologies, the report said, developed rapidly in the GCC countries, in light of private sector companies entering the communications market, which significantly increased the number of users, to enhance the usage of digital economy in the region, and its contribution to increasing productivity levels, competitiveness, and the development of new mechanisms for accessing government e-services, to keep pace with the upcoming industrial revolution, and update artificial intelligence and the Internet. As for the number of fixed phone lines, the UAE topped the GCC countries in terms of the number of fixed phone lines relative to the population with 24.07 percent, followed by Saudi Arabia with 16.51 percent, Qatar with 15.78 percent, while Bahrain ranked fourth with 15.67 percent, Kuwait fifth with 13.66 percent, and Oman last with 12.68 percent.

## Kuwait Continues to Benefit From 5G Investment

Kuwait's telecom infrastructure is well developed, with a focus on mobile infrastructure and services. The telecoms sector is important to the country's economy, and this will become more pronounced in coming years as the economy is purposefully transitioned away from a dependence on oil and gas to one which is increasingly knowledge-based and focused on ICT and related services. The MNOs have focused investment on 5G networks, which support and promote the growth of data traffic. This in turn has been a catalyst for revenue growth in recent quarters. While Kuwait's mobile sector shows considerable progress; the country's fixed broadband penetration is the lowest in the region. However, the government has stepped up efforts to build up fixed broadband networks, and ultimately this sector offers a potential future growth opportunity. Improvements to the fixed

broadband infrastructure will help develop sectors such as e-commerce, along with smart infrastructure developments, and tech start-ups. BuddeComm notes that the pandemic continues to have a significant impact on production and supply chains all around the world. During this time, the telecoms sector to various degrees is likely to experience a downturn in mobile device and ICT equipment production, while it may also be difficult for network operators to source necessary equipment or manage workflows when maintaining and upgrading existing infrastructure. Overall progress towards 5G may also be postponed or slowed down in some countries. On the consumer side, spending on telecoms services is likely to be impacted by large-scale job losses and the consequent restriction on disposable incomes. In contrast, the demand for mobile and broadband services is expected to rise, as

more citizens will require online services for work, entertainment, education, tele-health, and social purposes.

Key developments:

- STC Kuwait launches 5G standalone services;
- Telecom regulator supporting infrastructure sharing in Kuwait;
- Kuwait noted as having the fastest 5G download rates in the region;
- Improvements to fibre-broadband infrastructure continue;
- Report update includes the regulator's market data to Q1 2021, telcos' financial and operating data to Q3 2021, Telecom Maturity Index charts and analyses, assessment of the global impact of Covid-19 on the telecoms sector, recent market developments.

## Pakistan Turns to Fingerprint Liveness Detection to Shut Down Fraudulent SIM Business

Stolen fingerprints in Pakistan have pushed the government to deploy live finger detectors. Government regulator the Pakistan Telecommunications Authority will use the biometric devices specifically for issuing mobile device SIM cards. Fraudulent SIM cards hide the identity of a device's owner. Pakistan began enforcing SIM ownership in 2008 using biometric verification. At the time, would-be buyers provided their national ID number and a fingerprint. The publication ProPakistani reports that there are more than 300,000 older government-approved biometric verification devices nationwide. Each will be replaced with the live detection version. There reportedly are around 700,000 active fake SIM cards in the country. Most false prints come from deceased individuals. Others are from official documents such as voter cards, sometimes obtained through collusion with insiders. When Pakistan launched its biometric SIM registry, the idea was still somewhat novel. Since then, other countries such as Nigeria, Bangladesh and

more than a dozen others have followed suit, like Pakistan hoping to cut down on crimes carried out under the anonymity provided by mobile phones. A similar proposal has met with staunch resistance in Mexico. Liveness and presentation attack detection for fingerprint biometrics have likewise advanced significantly in recent years, as shown by the participation

of more than a dozen technology providers in the LivDet challenge. Pakistan appears to be the first nation to deploy fingerprint liveness detection for SIM registration. The stakes for weeding out fraudulent SIM cards are made even higher by a plan to launch digital wallets based on the biometric SIM registry, in an effort to improve financial inclusion.



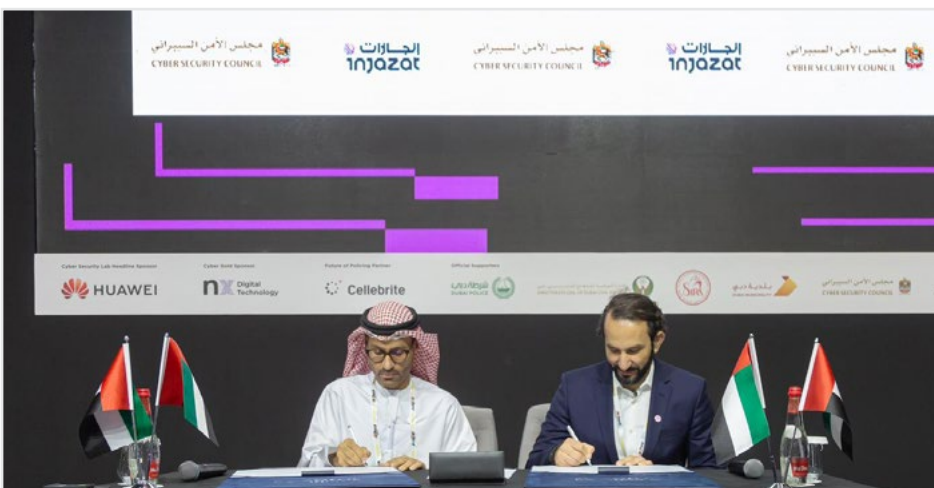
## UAE Cyber Security Council, Injazat Collaborate to Improve Cyber-Attack Detection and Response

The UAE National Cyber Security Council and Injazat, the UAE's home-grown technology champion in digital transformation, cloud, and cyber security, today announced the signing of a strategic Memorandum of Understanding (MoU) with the aim for further improving coordination and response time to potential cyber-attacks in the UAE. The MoU was signed by Ussama Dahabiyeh, Chief Executive Officer at Injazat and Mohammed Hamad Al-Kuwaiti, Head of Cybersecurity for the Government of the UAE, at Intersec, the largest security exhibition in the Middle East region, currently underway in Dubai. The MoU will enable all government and semi-government entities to be safeguarded by Injazat's Cyber Fusion Centre's 'Detection and Response' services. Underlining the UAE's proactive approach to addressing the challenges caused by rapid digital technological development, the MoU will allow Injazat to provide standardized 'Detection and Response' services to all government entities at competitive rates and also train and equip UAE nationals in cyber security. In addition, it will enable Injazat to co-create and develop future-facing cyber defense products to proactively mitigate cyber risks and secure the digital infrastructure of the UAE, enhancing local and regional cyber security capabilities as well as demonstrating leading practice. The MoU will help ensure business continuity and digital protection while supporting the vitally important national sectors to achieve total digital transformation. The "Detection and Response" services would also



involve cyber threat intelligence, threat defense operations and digital forensics, offering an integrated view of the continually evolving threat landscape with contextualized and actionable data at the council level to help make informed decisions and responses. Highlighting the importance of the partnership, Al Kuwaiti said, "Maintaining business continuity in strategic sectors is a top priority in the council's strategy to confront suspicious cyber-attacks proactively and with high efficiency. Injazat's state-of-the-art Cyber Fusion Center will centralize and streamline incident detection, enable coordinated responses, and provide a unified approach to neutralize potential threats which is an absolute necessity today when countering cyber-crimes. The fact that we are able to protect and strengthen the readiness of our relevant authorities and sectors through a home-grown entity gives me immense pleasure and pride and we look forward

to further collaborations in the future." For his part, Dahabiyeh said, "As the digital enabler and technology champion of the UAE, we are delighted that such a strategic and significant partnership will help further the digital advancements goals set out by the government. Today's announcement is a testament to Injazat's expertise and commitment towards developing and deploying next-generation cyber capabilities and solutions that are intelligence-driven, collaborative, and automated for countering advanced security threats. Given the growing complexity of cyber-attacks and how interconnected our systems are, a proactive and single integrated function is essential to ensure the cyber resilience of our critical infrastructure. This agreement between the Injazat and the National Cybersecurity Council will be beneficial in the areas of cyber threat intelligence sharing, cybersecurity exercises, national talent development, and will also help cement what is already a strong and fruitful partnership between the two organizations." Injazat launched the region's first-ever Cyber Fusion Centre (CFC) in June 2020 to boost protection against data breaches and cyber-attacks. The CFC stands apart from any competitor in its radically different approach to cyber defense by proactively managing advanced threats, unlike traditional Security Operations Centers, which is more focused on identifying and reacting to incidents. Cyber Fusion Centers also help organizations streamline their systems and assimilate information into actionable strategies and tactics while improving productivity and reducing costs.



## Jordan to Launch 5G Services

Jordan's Prime Minister Bisher Al-Khasawneh said his government would work with telecom operators to launch 5G mobile infrastructure services in the country. He made the remarks during a press conference when he revealed government procedures and strategies to advance customs reforms, develop the telecommunications industry and improve employment, the state-run Petra news agency reported. Bisher Al-Khasawneh said 5G networks are an economic facilitator and an investment-attractive framework. He also pointed out that the technology will have a favorable impact on education, health, banking, agriculture, media, transportation and entertainment. In terms of Jordan's economy, the Prime Minister said the Central Bank of Jordan (CBJ) had implemented a series of procedures to mitigate the economic

impact and repercussions of the Covid-19 pandemic, with the cost of these procedures totaling 2.7 billion Jordanian dinars (\$3.8 billion), or 8.6 percent of the kingdom's gross domestic product. CBJ programs benefited 6,000 firms and projects, resulting in the protection of 140,000 jobs, according to him. He also said that the government had introduced a program to empower the private sector and solve unemployment. The government has set aside 80 million dinars from its budget for 2022 to encourage the private sector to create 60,000 jobs for Jordanians, according to him. The Prime Minister also talked about the restructuring of customs fees in order to boost the kingdom's economic competitiveness, a new tax on the usage of energy and the kingdom's strategic commodity reserves.

## Pakistan On Way to Digital Transformation

The rapid digitization across the globe is transforming almost everything on face of the earth from economy to government-citizens' interaction, market-customer relations to healthcare and education by bringing down the whole new world to the pocket size minicomputer. The digital landscape has grown tremendously in Pakistan with a population of over 200 million people. The incumbent government has enlarged the spectrum of digital transformation in the country by taking a number of initiatives to modernize and reform the centuries-old system to catch the pace of technological development. In order to ease the conditions of exhausting paperwork, the government has upgraded digital banking infrastructure for digital services: e-payments, online transactions, and issuance of credit cards, its use in online stores or in-store shopping, at petrol pumps, online utility bills and university fee payment gateways. The country has over 165 million mobile subscribers, 70 million active internet users and 60 million Smartphone users. The Covid-19 pandemic has also brought about an exponential growth in use of electronic gadgets as alternate option for online learning when people were restricted to work from their homes for following the government guidelines against the spread of virus. Therefore, in an increasingly digital world, there remains little doubt that connecting people can open up new possibilities and bridge the gaps of inequality, both social and economic. As the internet penetration has gone up to 70 percent in the country, countless case studies emerge that people successfully achieving their ambitions and turning their dreams into reality. Historically, there have been various times when digital evolution and innovation has truly amazed the world. The digitization and technology hold the promise of progress and prosperity for almost every country including Pakistan. However, it really needs tweaks in policies and growth in IT infrastructure which can act as catalysts for growth. The information technology (IT) has become a fundamental part of industry and manufacturing. The technologies like Internet of Things (IoT), big data, robotics, automation, cloud computing, artificial intelligence, mobility and others continue to have a growing effect on the society, economy and environment. The digital medium is considered cost-effective with a wider reach which comes with many benefits – people

around the globe get easy access to information anytime and anywhere through multiple digital devices. Likewise, the digital means of marketing and communication are also considered quicker, result driven and adaptable. Therefore, a large number of companies in Pakistan have flourished through a digital approach by providing customers with effective solutions to their problems through compelling marketing strategies. Management & Reforms Unit (PMRU), Chief Secretary Office, Khyber Pakhtunkhwa, Dr Akif Khan said that like elsewhere, the Covid-19 has also speeded up the digital transformation in Pakistan alongside changing the peoples' mindset for rapid digitization. He said, "The technology has made it possible for the high officials to hold more frequent meetings (virtual) with the subordinates to improve the performance." Chief Executive Officer (CEO) of App desk, a Rawalpindi-based software house, Muhammad Tanveer Khan told APP that digitization makes public service delivery more efficient and speedy by ensuring 'one window operations' of different official tasks – taking less time, charges and labor. Dr Akif Khan has however said that the government needs to create an enabling environment for the evolving paradigms of digital transformation. He said, "Without capacity building and changing mindset, people wouldn't be able to fully utilise technology." The Pakistan Citizen Portal was one of the successful case studies of digital transformation of the PTI-led government where millions of citizens have been registered to get access to thousands of officials with their concerns with the highest resolution rate, he added. Tanveer Khan said that technology also decreases the chances of deliberate/un-deliberate human errors and the online record could be easily authenticated from any part of the world. The IT expert said, "The digitized procedure of public procurement can create the possibility of flawless and corruption-free record of the data with centralized mechanism." Majid Khan, an Islamabad-based IT expert while talking to the agency said that due to the pandemic, a spike was witnessed in the sale and purchase of smartphones and laptops for online teaching and learning in the country. He said that people in general and students in particular had learnt a great deal about new software and productive use of android phones and computer technology during the new normal.

## ATRC Announces New Commercialization Arm, Three New Specialized Research Centers



Abu Dhabi's Advanced Technology Research Council (ATRC), the overarching entity mandated to shape Abu Dhabi's advanced technology R & D ecosystem, announced the launch of VentureOne, a new commercialization arm to bring innovative research solutions to market at speed, and monetize all IP being generated at TII's centers and beyond. Three specialized advanced technology research centers – in Propulsion, Alternative Energy, and Biotechnology – were also launched to coincide with ATRC's first anniversary celebrations, bringing the total number of deep-tech research entities within its umbrella to 10. VentureOne is to help facilitate IP creation, strengthen the start-up ecosystem, and boost the market viability of the research breakthroughs to ensure that they go mainstream and impact the broadest cross-section of the global population. The three new research centers are set to add value to the thriving advanced technology ecosystem already in place in Abu Dhabi while strengthening its credibility as a preferred R & D hub that attracts global experts and nurtures local STEM talent to carry out ground-breaking research. With aerospace and space becoming key national priorities for the UAE, the Propulsion Research Centre is engaged in technologies that enable aerial vehicles to increase performance with regard to speed and range, fuel efficiency, emissions, noise, landing field length and handling. Meanwhile, as the impact of climate change reaches critical levels, the Alternative Energy Research Centre is focused on enabling

water security and ensuring improved and varied tech applications. Based on the experiences of the last two years, the Biotechnology Research Centre is engaged in strengthening the UAE's R & D capabilities in genetic engineering, biomaterials, and autonomous devices, to name a few core areas. The breakthrough solutions the center is working on will add immense value in the food and agriculture as well as healthcare sectors. Speaking about the new centers, Faisal Al Bannai, Secretary-General of the Advanced Technology Research Council (ATRC), said, "We commend the vision of His Highness Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, for his unwavering support and direction in establishing a transformative R & D hub in Abu Dhabi. "There was initial skepticisms about the ability of a young entity to achieve what many established research hubs have been unable to do – attract global talent and patent breakthrough solutions right here to give the country greater autonomy in the advanced technology space." Al Bannai also noted that ATRC's growth plans for TII, its applied research pillar, and ASPIRE, its program management pillar as well as their entities, are well aligned with the UAE's Principles of the 50 and Projects of the 50 that aim to make the nation's economy one of the best and most dynamic in the world. He also underscored the focus on growing human capital, and driving the UAE's digital, technical, and scientific excellence as higher goals for the entities.

In the past 12 months, TII's research centers have signed 65 global partnership agreements with 37 universities, research centers, and industrial stakeholders worldwide. In addition, the centers have welcomed on board 101 nationals as associate researchers and scientists – surpassing its target for 2021. TII has also developed over 200 publications to its credit and filed five patents. TII boasts 34 globally renowned expert Advisors on its Scientific Advisory Boards at its centers. The Cryptography Research Centre has developed the National Crypto Library, shaped a Post Quantum Cryptography software library, and launched the UAE's first secure cloud technologies program. The Directed Energy Research Centre has opened the region's first electromagnetic compatibility lab and shaped the prototype of a ground-penetrating radar for the detection of unexploded landmines. Meanwhile, the Quantum Research Centre has commenced efforts to build the region's first quantum computer and launched the first simulation version of "Qibo", a versatile open-source quantum computing programming framework, in collaboration with researchers worldwide. The Secure Systems Research Centre has partnered with Purdue University on a first-in-the-region motion capture facility, and gained membership of DroneCode, a US-based non-profit run by Linux Foundation to foster the use of open-source software on flying vehicles. In addition, SSRC is an accredited member of RISC-V, a non-profit organization controlled by its members, which directs the future development and drives the adoption of the RISC-V free and open Instruction Set Architecture (ISA). Furthermore, ASPIRE, ATRC's technology program management pillar has launched the Mohamed Bin Zayed International Robotics Challenge's Maritime Grand Challenge 2023. The competition will bring together universities, research institutions and individual innovators from all over the world to collaborate on finding a practical solution to global maritime security challenges such as illegal fishing, piracy, smuggling, and human trafficking.

## NTA's Free Broadband Service Reaches 15 Thousand Centers

The Nepal Telecommunications Authority has expanded its free broadband service in more than 15 thousand locations across Nepal. The project aims at setting up a 20 Mbps connection in public offices, schools, and colleges to keep them connected by reliable fiber broadband. The initiative is a part of the Rural Telecommunications Development Fund under NTA. As per the latest reports, NTA has broadened its free internet service to 15 thousand, 3 hundred and 93 areas around Nepal. Till Mangsir, 6 hundred 79 local level offices have benefited from the free broadband connectivity courtesy of the Funds. The RTDF broadband project consists of a total of 18 packages where separate ISPs connect the public offices with fiber broadband. So far 16 of those packages in 65 districts have completed the entire project. Meanwhile, in one package, NTA has fulfilled 50% of the broadband project in 5 districts. In another, over 30% of the is complete in 4 districts. NTA started this project from 8 districts that were severely affected by the earthquake of 2072. These districts are Dolakha, Ramechhap, Okhaldhunga, Rasuwa, Nuwakot, Sindhupalchok, Kabhrepalanchok, and Sindhuli. But

NTA has included public institutions across the country for the free broadband project. Likewise, the regulator says 5 thousand, 6 hundred, and 64 ward offices and 5 thousand and 23 Secondary Community schools have received 20 Mbps fiber connections under this project. In the meantime, 4 thousand, 27 health centers have received their internet connection. Now, the project is nearing completion with just 5 hundred, and 89 locations in line for connections. The regulator has sanctioned a total sum of almost 5.7 billion rupees for the project. NTA provisions that each operator contribute 2% of their profit to NTA's RTDF annually. It uses the Funds to increase connectivity in public offices in rural areas. The regulator bears all the installations costs and the offices can use the service for free for 2 years. Afterward, they will need to pay as a regular customer. Internet penetration is reaching higher with each passing month but the digital divide exists. How NTA should play an even more important role to promote digital inclusivity in Nepal? Do share your insights on the topic in the comments below.

## PTCL and SCO Ink MoU for AJK/GB Collaboration

State-backed telcos the Pakistan Telecommunication Company



Limited (PTCL) and the Special Communication Organization (SCO) have signed a Memorandum of Understanding (MoU) to cooperate on the development of telecommunications services in the Azad Jammu and Kashmir (AJK) and Gilgit Baltistan (GB) regions. The deal will facilitate passive network sharing and SCO's backhaul support for the PTCL's launch of fixed wireless access (FWA) services over its 3500MHz spectrum. In addition, the pair will offer their respective fiber assets for backup and redundancy on a reciprocal basis to ensure uninterrupted provision of services and will jointly build access networks in cantonments and other locations. Other measures covered by the MoU include collaboration on multi-operator RAN (MORAN) and various ICT services. SCO DG Major General Muhammad Shahid Siddeeq was quoted as saying of the tie-up: 'We are pleased to partner with PTCL for upscaling telecom services in AJK and GB, where SCO has played an instrumental in connecting the masses through high-quality internet and cellular services. Through our efforts, we hope to provide an inclusive and equitable environment that will ensure progress and growth.'

## Sovereign Fund Asks Turk Telekom's Shareholder Banks to Finance Buyout of Their Own Stakes

Turkey Wealth Fund (TWF) has approached banks holding a majority stake in Turk Telekom (TT) to finance a planned buyout of the telco, Bloomberg reports. The sovereign fund is in preliminary talks with the banking consortium – represented by a special purpose vehicle (SPV), LYY Telekomunikasyon – and wants to secure a loan from the banks to buy their collective 55% stake in TT,

according to unnamed sources close to the matter. The stake could be worth around USD1.4 billion based on its current market price, data compiled by Bloomberg show. In a statement to Bloomberg, TWF confirmed negotiations with the banks are ongoing, without providing further details.

## Pak-China to Enhance Cooperation in IT & Digital Economy

Hosted by Chinese Institute of Electronics (CIE), the China-Pakistan Seminar on New Generation Information Technology was held to further strengthen all-round cooperation in IT and digital economy between both countries. According to

Gwadar Pro, the occasion, representatives of the two sides expressed their hope that with the help of the seminar, more Pakistani youths could have access to professional education and training programs in IT. Also, joint projects and initiatives should be

launched to promote exchanges between academicians and professionals in the high-tech industry between Pakistan and China.

## GCC Leads Smart Cities Push

GCC governments are global drivers in developing physical and digital smart infrastructure as they seek to create safe, green and sustainable cities of the future, a leading tech innovator has said. According to Borsan Doru Aurelian, chief executive of Germany-based Smart City Technologies and Neotech Finance, the pandemic has accelerated digitalization and more and more areas in the public and private sectors are implementing "creative-intelligent ecosystems". Mr Aurelian told the GDN that the two companies are in the business of enabling the use of digital technology and data by cities to improve decision-making and quality of life. "We provide an intelligent and high-resolution 3D image database, which enables clients to service their infrastructure and carry out building design work directly from their computer – whenever and wherever they are. "Taking the powerful data of the real public space, we engage AI and blockchain to create the link between reality and digital 3D virtual reality." Last November Bahrain announced plans to invest more than \$30 billion via 22 signature projects across key sectors – including telecoms, tourism, education, manufacturing and health. New projects include the creation of five cities on newly constructed islands, increasing Bahrain's total land area by more than 60 per cent and a new metro network of more than 109km connecting all major population hubs in the country. These are opportunities that Smart City and Neotech are keen to contribute to, says Mr. Aurelian. "Our solutions serve multiple purposes, for a broad spectrum of industries, including infrastructure management, urban planning, rail, construction and civil



engineering, tunneling." The official sees Bahrain as a sandbox for the wider region where Smart City plans to deploy its smart solutions, giving public authorities a better understanding of current conditions along with the ability to forecast future changes and optimize city functions. "Our software provides the big picture of a city but we can go up to a single pixel point that has its own stereo 70 co-ordinates, and in doing so, we consider ourselves to be the perfect tool in the hand of any public or private manager," he explains. "Our plans for the region include creating a digital 3D copy of all major communities. Bahrain, Dubai and Abu Dhabi are the main focus for us here." He adds that this part of the world has "unique natural challenges and there is a need to provide investments that will tackle these difficulties". The official is looking forward to the second Royal

Investment Summit in the UAE later this month organized by The Private Office of Shaikh Abdulaziz bin Duajj Al Khalifa The summit, themed 'Future of Investments in the GCC', is set to take place at the Ritz Carlton JBR, Dubai, on January 23 and 24 with in-person attendees for the first time. "I hope that by being present at this major event our technology that is now well known in Europe and other parts of the world will have the chance to meet a new world, where the latest smart trends are used to generate profitable investments and improve people life." Mr. Aurelian strongly believes in Smart City's ability to help transform and improve the technical decision-making process, supporting city planners and public and private stakeholders that need fast and precise tools for development of physical infrastructure. 📍

# Lighting up the Future

Building a Fully Connected, Intelligent World





## ARTICLE

## Persistence in Innovation, Lighting Up The Future



### An Jian

President of Carrier Network Business Group  
Huawei Middle East



In the past five years, the biggest progress in our industry has been 5G. We all know that, beyond the consumer market, 5G is now bringing new revenue streams to carriers and enabling carriers to deeply participate in the digital transformation of other key industries.

Nevertheless, 5G's development is only one part of the changes we're seeing in the world. In addition, there are other key trends that will have a long-term impact on our industry.

*According to the World Economic Forum, by 2030 digital technology could also help reduce global carbon emissions by 15%. Building a green ICT network will not only cut emissions and improve power efficiency. It will help realize significant OPEX saving, which is a key target that all carriers are pursuing. It is recognized as instrumental for their sustainable development and to fulfill their social responsibility.*

For one, vertical industries' digital transformation has accelerated greatly during the pandemic, by some estimates accelerating by as much as seven years. Right now, for instance, 81% of enterprises use cloud-based applications. According to Gartner, Enterprise ICT spending is projected to total USD16 trillion in the next five years. The governance budget spends more on OPEX than CAPEX, and 65% of CIOs from verticals indicate that they would prefer to purchase outsourced services rather than self-built IT systems. More and more enterprises are willing to purchase full-stack IT services instead of fragmented services. These trends require greater connectivity and cloud capabilities which present tremendous opportunities for carriers. Take China as an example. In 2020, China Mobile's ICT basic services increased by 59.4%, compared with 2019. Its B2B business grew rapidly, reaching 34.6%, and its cloud services increased by 353.8%.

According to the World Economic Forum, by 2030 digital technology could also help reduce global carbon emissions by 15%. Building a green ICT network will not only cut emissions and improve power efficiency. It will help realize significant OPEX saving, which is a key target that all carriers are pursuing. It is recognized as instrumental for their sustainable development and to fulfill their social responsibility.

All these factors require the telecom industry to be persistent in innovation across multiple domains. These include connectivity, cloud services, industry solutions, energy saving and emission reduction, and more. On the one hand, this innovation will lead to continuously reducing costs and improving efficiency. On the other hand, it will lead to unprecedented and extraordinary service experiences for end users.

Only by doing both can carriers stand out from their traditional telco competitors and hyperscalers, setting sail to a new blue ocean.

#### **Persistence in ICT technological innovation for vertical digitization**

According to a recent FlexEra state of cloud report, 92% of enterprises will choose multi-cloud/hybrid cloud for access. In the next five years, given the size of the Middle East cloud market, carriers' participation could increase from USD2.3bn in 2021 to more than USD5.6bn in 2025. These kinds of services highly rely on the network's guarantee of quality of service.

In this regard, carriers possess the natural capabilities to deploy, run, operate, and optimize a connectivity network securely and reliably. Meanwhile, governments and large enterprises generally trust carriers to a higher degree, encouraging more and more carriers to explore opportunities in vertical industries.

To match carriers' strategies, Huawei has deeply engaged in R&D across multiple domains, including:

- **Network:** As the cornerstone, the seamless network is the priority to meet industry-oriented connection requirements. We continuously innovate RAN technology that facilitates ubiquitous 5G gigabit

experiences across different scenarios. Our latest 5G RAN portfolio improves both coverage and energy efficiency through algorithms, architecture, and through software/hardware integration. 5G deployment is also simplified at sites with limited antenna space, and enables operators to utilize fragmented spectrum. Furthermore, through joint innovation in more than 5,000 5GtoB projects around the world, unique technologies such as 5G super uplink and 5G+X (AR, remote control, etc.) applications are delivered for on-demand requirements. With our continuous innovation in RAN, it will continue to focus upon user experience and industry demand, to take the consumer experience to new heights and bring digital to all industries.

- **Cloud-network synergy:** Carriers have the unique advantage to be able to optimize enterprises' multi-cloud access using the network. Carriers can offer bespoke service requirements to different organizations based on their size, objectives, and vertical. By doing so, they are guaranteeing SLAs for various services and improving the user experience overall. With innovations in SDN and SRv6, for example, we are supporting carriers to achieve the four 'ones' experiences for enterprises: 'one' hop to cloud, 'one' network for multiple clouds, 'one' click to fast scheduling, and 'one' connection for multiple services.
- **Cloud services:** The development trend of cloud services has gone from traditional IT services to virtualization, and now to cloud-native. Together with developers and partners in the cloud market, today we can provide more than 220 types of cloud services. We work with more than 100 local cloud service partners in all countries across the Middle East. From NaaS to PaaS, IaaS, and SaaS, we have built a full-stack solution to enable the evolution of traditional IT services in the Middle East to be cloud-native.

#### **Persistence in innovation for OPEX saving**

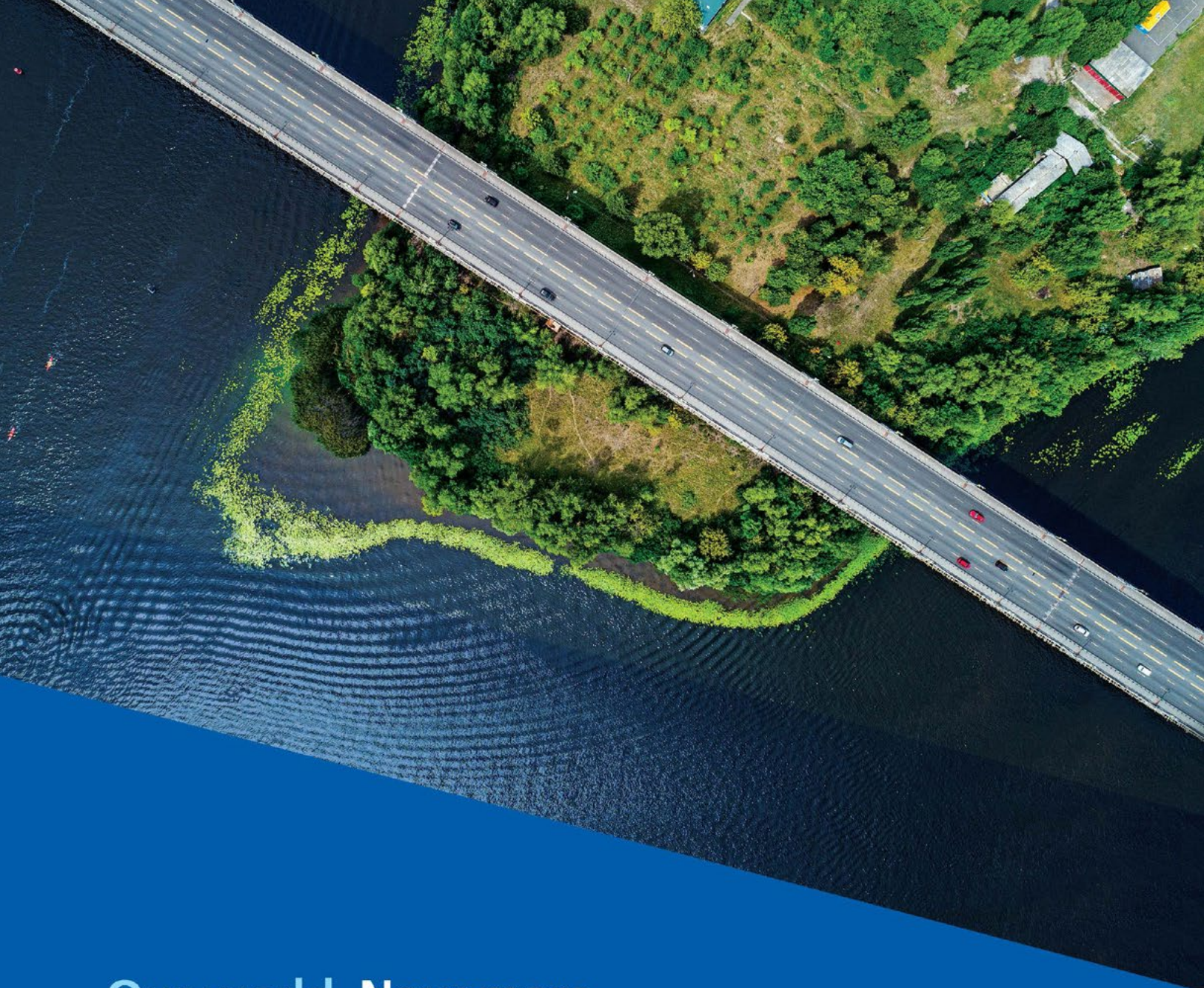
The launch and expansion of 5G makes users' traffic consumption at least 5 to 10 times greater than 4G, which brings new value but also makes the telecom industry

pay even more attention to network energy consumption. Sites and data centers are the most power-hungry assets in our industry.

To support green development models and carbon neutrality, we are continuously innovating at multiple levels including equipment, sites, networks, and O&M for reducing costs and improving efficiency.

- At the site level, our latest simplified site solutions help carriers to lower labor cost, energy consumption and rent cost through lightweight devices and compact form factors, using new materials and algorithms. Now in our latest 5G RAN portfolio, the lightest one could be carried and installed by one person. Furthermore, through algorithms and software/hardware integration, it enables efficient coordination between 4G and 5G networks for operators, which improves network capacity and the user experience.
- At the equipment level, we use components with higher power efficiency to make hardware platforms more energy efficient. With our innovative solutions, for example, 5G equipment working in low and high bands can share a cabinet. As a result, less energy is used.
- At the network level, we have launched a multi-band and multi-RAT power saving solution. This solution can cut energy consumption in wireless networks without compromising network performance. When it comes to multi-band equipment power saving, our goal is to make the traditional one-plus-one model less than one.
- At the O&M level, we're now using AI to enable more intelligent management techniques such as mobile network intelligent power saving, and intelligent energy optimization for Data Centers that optimizes heat and power management.

More innovations can bring even greater intelligence and enable digital management for carriers to realize "more bits with less watts", cutting emissions and achieving OPEX savings moving forward. Finally, they can realize a "green network" to implement corporate social responsibility and sustainable development. 🌱



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## SATELLITE NEWS

### Oman Issues Omansat-1 Satellite Tender

Omani Space Communication Technologies has launched a tender for the design, manufacture and launch of its first satellite called "Omansat-1", Al Arabiya reported citing state television. The Sultanate intends to launch its first satellite dedicated to telecommunications in 2024. The company intends to launch a high-capacity communications satellite and its related services, covering the whole Sultanate, its economic waters and the foreign markets associated with it, the company said in a filing. It invited technical and commercial bids and said the last date to purchase the tender document is July 15, while bids are due by September 21. Space Communication Technologies is one of the Omani Telecom and Information Technology Group companies.

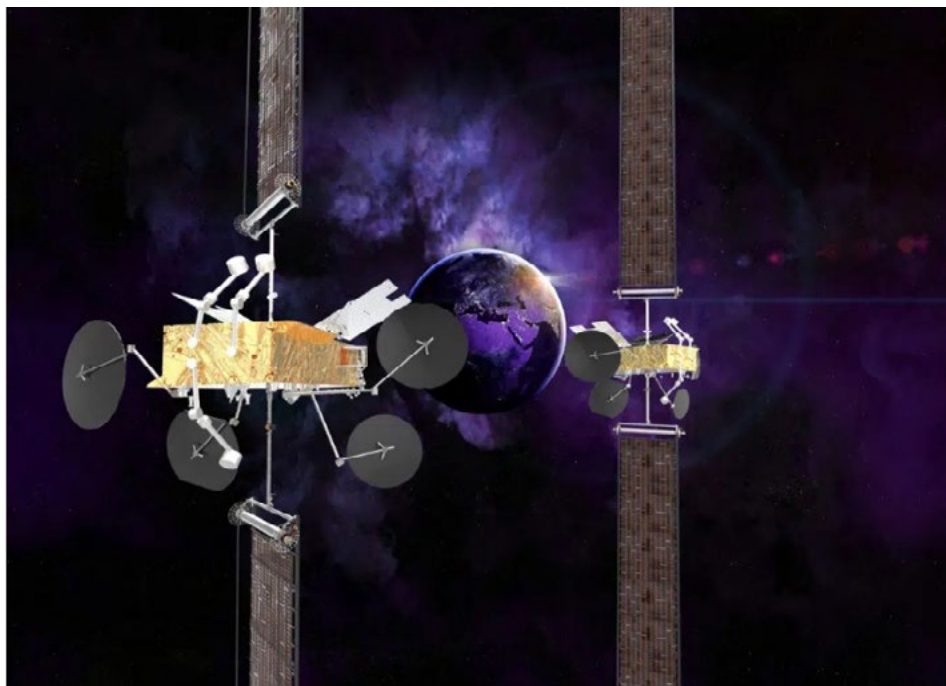


### Intelsat Taps Thales for Latest Satellites

Intelsat, which is set to emerge from bankruptcy protection this year, arranged the purchase of two satellites from Thales Alenia Space to support its aim to provide 5G services from space. The US-based satellite service provider signed an agreement with the joint venture company of Thales and Leonardo to build the geostationary orbit satellites. Intelsat 41 and Intelsat 44 (IS-41 and IS-44, respectively) are scheduled to be in service in 2025 and will complement two Airbus-built satellites, IS-42 and IS-43, which were announced in January 2021. IS-41 and IS-44 will provide capacity over Africa, Europe, the Middle East and Asia for commercial and government mobile services, and backhaul. Intelsat CEO Stephen Spengler stated the latest satellites will enable it to "blanket the earth" with software-defined satellites, "progressing the world's first global 5G software-defined network, designed to unify the global telecoms ecosystem". Several companies are pursuing space-based connectivity. For example, aerospace and defence company Lockheed Martin is also developing a satellite-based 5G system to supplement

terrestrial coverage, after teaming with start-up Omnispace. In January 2021, OneWeb secured \$400 million in additional investment from Hughes Network Systems and SoftBank Group, and is targeting completion of its first full commercial fleet

this year. Vodafone Group-backed AST SpaceMobile plans to begin offering mobile service from its network of satellites in 2023, while Russian operator MegaFon is exploring options to close coverage gaps.



## Intersat Boosting Satellite Internet Services in Gambia, Guinea Bissau, Senegal Via Eutelsat Konnect

Intersat – a provider of VSAT internet solutions across Africa – has signed a multi-year deal with Eutelsat Communications to utilise the latter's Eutelsat Konnect high-throughput satellite for meeting the connectivity needs of

enterprises, institutions and individuals in Gambia, Guinea Bissau and Senegal. A press release highlighted that Intersat will take advantage of Eutelsat Konnect's reach to 'provide a robust and high-quality Internet service to customers

located beyond the limits of terrestrial infrastructure'. The agreement represents the entire available capacity of the satellite across the three countries ('several hundred Mbps').

## Rural Satellite Internet Service Initiative to Improve Internet Access in 200 Locations in Kelantan

The Kelantan government has identified 200 locations in the state that still do not have internet access, said Menteri Besar Datuk Ahmad Yakob. He said at the moment, the state government was working to improve internet access in all the locations through cooperation between Kelantan Gate and BinaNet. "Insya Allah, through this cooperation, we will be able to provide internet services via satellite to the

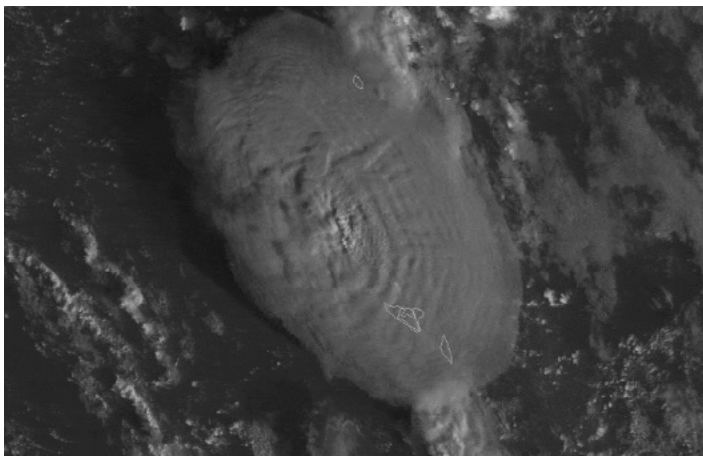
people in the state, especially those in rural areas," he told reporters after officiating the Rural Satellite Internet Service (PeSAT) initiative at Jeram Mengaji, Selising, here, today. Elaborating, Ahmad said telecommunication transmitters would be installed in 50 schools under the supervision of Yayasan Islam Kelantan (YIK). "This will also enable students at the schools to get better internet access to

facilitate their learning process," he said. On the cost of using the Internet, Ahmad said it would be determined by the service provider. He added that, focus would also be given to improving internet access in 18 Orang Asli villages in the state with the support of the Malaysian Communications and Multimedia Commission (MCMC).

## Intelsat Makes News in Both Disaster Relief and Aviation Services

Integrated satellite and terrestrial network operator Intelsat has made news recently – both in disaster relief and in the more sedate area of commercial and business aviation services. Intelsat has joined a number of big names in telecommunications that have been supporting the relief effort in Tonga, where last week a volcanic explosion and subsequent tsunami knocked out a number of undersea internet cables, disconnecting a region that is home to over 100,000 people. Intelsat, in cooperation with Australian operator Telstra and New Zealand operator Spark, has deployed

emergency communications services to support humanitarian aid to Tonga and the archipelago for Digicel Tonga (whose efforts we reported late last week) and Tonga Communications Corporation. Intelsat is providing space-based broadband connectivity on Horizons 3e and Intelsat 18, while partners Telstra and Spark are providing the ground infrastructure, including VSAT hubs at their teleports, uplink, internet access and remote kits. The services provided are now fully provisioned, expanding broadband and voice services. Additionally, Intelsat is providing services in conjunction with Optus, owned by Singapore's Singtel, to the New Zealand Defence Force, which will provide humanitarian support in Tonga. Intelsat has also been in the news after satellite networking technology company Gilat Satellite Networks announced that it was expanding its strategic partnership in commercial aviation with the operator. To enable the expansion of commercial and business aviation services in Asia, Intelsat will be using Gilat's SkyEdge II-c system, which, in addition to providing in-flight connectivity, is designed to deliver fixed and mobility services for maritime and land mobility. Its management system, TotalNMS, enables full configuration, control and monitoring of all system elements and remote terminals. SkyEdge II-c is a proven operational system that, Gilat says, allows aviation service providers like Intelsat to streamline service fulfilment and provide a superior user experience to airline passengers.



## Digicel Satellite Link Restores International Calling in Tonga

Digicel has confirmed that limited international calling capabilities have been restored in Tonga, and that it is working on improving capacity. The operator group's regional CEO Shally



Jannif stated that international calls were now possible on the islands of Tongapatu and 'Eua via a satellite link which uses 2G networks. Currently only 400 calls can be made at any one time, but Jannif confirmed that Digicel is receiving additional amplifiers and satellite modems to boost output power and capacity. TeleGeography reported that the islands of Ha'apai and Vava'u will be connected in the coming days by additional satellite antennas, although Jannif noted that damage to Tonga's international submarine cable must be repaired before normal services can resume, saying: "We expect to put up all basic services in the next few days and then we hope to install more equipment to bring GPRS and 3G basic data services up so bank ATMs, EFTPOS and other services can be up in Tonga." On 15th January, Tonga was hit by devastating tsunamis created by several eruptions of the Hunga Tonga-Hunga Ha'apai volcano, which is situated 65km north of Tonga's main island Tongatapu.

## SpaceX Completes 2nd Starlink Mission of 2022

SpaceX successfully launched 49 Starlink satellites to low Earth orbit Launch Complex 39A (LC-39A) at Kennedy Space Center in Florida. The Falcon 9 booster supporting this mission previously launched GPS III-3, Turksat 5A, Transporter-2, and six Starlink missions. The booster was recovered on the A Shortfall of Gravitas dronship in the Atlantic. Each of Falcon 9's fairing halves previously supported one Starlink mission.



## Argentina Takes Agricultural IoT into Orbit

Argentina has joined the market for satellite-supported Internet of Things (IoT) services in agriculture with the launch of its first pico-satellite. The satellite was created by the firm Innova Space, a satellite services company that offers IoT solutions for maritime, environmental, mining, oil, gas and agricultural applications. It was launched from the SpaceX platform at Cape Canaveral in the US late last week. The General San Martín pico-satellite (named after a famous 18th-century military commander) will enable agricultural companies in provinces or areas without internet access to apply IoT technology to optimize production. According to news website BNamericas, the San Martín pico-satellite project is being financed by the Mar del Plata Neutron start-up accelerator run by Grupo Núcleo, a partner of the Argentine Chamber of Electronic, Electromechanical and Lighting Industries (CADIEEL),

a non-profit society that represents more than 2,200 industries from different sectors. The pico-satellite project was designed to be exportable and can contribute to the process of substituting imports of equipment and services, according to a government-supplied press release. The term picosat is usually applied to artificial satellites with a wet mass between 0.1 and 1 kg. In this case the PocketQube satellites weigh around 1kg and measure approximately 50cm x 50cm x 150cm. Productive development minister Matías Kulfas pointed out that the country is making a strong commitment to the development of the satellite sector. The ministry has allocated around 50 million pesos (about \$480,538) to the pico-satellite project. In fact the launch is expected to be the starting point for a constellation of 100 pico-satellites to be sent into space over the next three years.

## Argentina's State-Owned Satellite Company to Enable Free Internet Access

Arsat, Argentina's state-owned satellite company, is to run a 289 million peso (about \$2.8 million) project to provide connectivity for free internet access in towns across the country. Arsat will connect towns that still lack access to telecommunications services in the 24 provinces of the country. The installation of services will be carried out using fiber optic, satellite/VSAT and Wi-Fi infrastructure. News website bnamericas says that Arsat was among

the bidders in a process launched by the open government and digital country undersecretariat, which is part of the public innovation secretariat (SIP). The site says that the 12-month agreement between Arsat and SIP includes the installation of 40 VSAT antennas, 231 local access loops, 1584 Wi-Fi subscriptions, 120 VSAT subscriptions, 1848 Wi-Fi and VSAT subscriptions and 6,804 subscriptions that integrate terrestrial and Wi-Fi links, along

with just under 300 Meraki brand access points. We still await a comprehensive list of locations, though we do know that about 28 percent of the new facilities will be located in the central region, 23 percent in the city of Buenos Aires and Buenos Aires province, 18 percent in the northwest, 15 percent in Patagonia, 11 percent in the northeast and 5 percent in the Cuyo region. Arsat already operates a nearly 32,000-metre fibre optic wholesale network, while its geostationary satellites ARSAT-1 and ARSAT-2 offer coverage in Argentina and the entire Americas. The planned third satellite in the fleet, ARSAT-SG1, will become the first national satellite to operate in the Ka-band. This is not the only major win for the state-owned satellite company this year. Last week Arsat reported that it had received approval and funding for a satcoms and cellular-based IoT service for asset tracking.



## Russia's Sphere Satellite Constellation Moves Towards Implementation

After several stages of discussions and approvals in the government, the Federal Sphere project received a development plan supported by funding. In the coming years, emphasis will be placed on developing technologies and creating the first samples of spacecraft. The final decision on the number and composition of satellite constellations will be made based on the results shown. The pandemic and the need to address priority state tasks have made certain adjustments to the plans for the implementation of the federal project "Sphere". The creation of a national multi-satellite constellation of communications and Earth remote sensing (ERS) will continue, but the process will be phased and more variable. Behind the long – over two years – coordination in the federal executive bodies. "After we presented the project to the government for the last time, a number of meetings were held, including with the Ministry of Finance, under the leadership of Deputy Prime Minister for the Defense Industry Complex Yuri Borisov, as well as under the leadership of the President. As a result, the Ministry of Finance provided funding for priority work on the Sphere project – 7 billion rubles [US \$92.47 million] for this year [2021] and another 7 billion [US \$92.47 million] annually from 2022 to 2024," Sergey Prokhorov, Director of the Department of Prospective Programs and the SFERA Project, told Russian Space. The top manager of Roscosmos believes that a combination of circumstances had an effect: "Recently, there have been several well-known events that have entailed colossal government spending. This is both a pandemic, the consequences of which affected the socio-economic situation in the country, and sanctions, which affected a number of Russian enterprises and

industries. "Nevertheless, all this time Roscosmos continued to develop and promote the frontal development strategy of the State Corporation, which is based on the Sphere project. In general, the upcoming three-year stage of the "Sphere" can be called preparatory: within its framework, various technologies will be tested and prototypes of equipment will be manufactured. It depends on the results of the stage, along which path the process of mass production and deployment of groupings in orbits will go. With all the changes, the main idea of the project – space for humans – remains the same. Sphere is one of the key projects of Roscosmos aimed at developing space information technologies and eliminating the so-called digital inequality. Thanks to it, the most modern communication and monitoring system will be created, including both the existing and future space infrastructure. A significant part of the territory of our country is located in high latitudes, where the population density is low, and the zones of taiga, tundra and permafrost interfere with the laying of fiber-optic communication networks. In such places, satellites will help to provide a full range of telecommunication services for stationary and mobile objects. It is planned to achieve these goals by deploying groups with Yamal and Express communication satellites in geostationary and Express-RV in highly elliptical orbits, with SKIF broadband Internet access devices in medium orbits and satellites to provide the Internet of things. Earth observation in various wavelength ranges will be conducted by the constellations of the SMOTR, Berkut-O, Berkut-VD, Berkut-X and Berkut-XLP spacecraft. As a result, integrated services will develop for the growth of all sectors of the country's economy.

## South Africa Makes Plans to Launch Communication Satellites

The South African government is fast-tracking plans to develop local satellites for connectivity and tracking. This is according to the Nation's Communications and Digital Technologies Minister, Khumbudzo Ntshaveni. Addressing a technology conference, Ntshaveni said the department is considering ways to condense the satellite program. Typically, the program would take between eight and ten years to develop. According to her, the revised program could be ready to launch in just three to four years. The minister said that this will depend on funding, with the government hopeful that telecommunications and mining companies will help co-fund the project. Furthermore, Ntshaveni has stated that they are targeting the financial year's end to finalize the revised proposal. She noted that they had started engaging with industries and satellite technology users to discuss pulling resources together. "We already have, as a country, capacity through the space-tech to manage satellites. There are satellites that at a particular level or orbit level, their management is done from South Africa, so we've got that capacity so we can go all the way and own a satellite," says Ntshaveni. Additionally, a President Cyril Ramaphosa-established commission had previously recommended that government build and launch a



geostationary telecommunications satellite. The commission noted that it would offer its services to the entire Southern African Development Community (SADC) region. The SADC includes Angola, Botswana, Eswatini, Lesotho and Zimbabwe. Alongside South Africa The commission also noted that the satellite would provide free and quality connectivity for marginalized communities in the SADC region. This would enable them to access 4IR applications, especially for smart health, smart learning services. It would also allow access to smart ammunition, smart minerals, smart agriculture, smart contracts and smart financial services.

"The satellite would create an enabling environment that opens opportunities for a shared economy that would empower all Africans to change their material social conditions and alleviate poverty, inequality and youth unemployment. We would create much-needed redundancy by large global enterprises," it said. The commission also expressed that the geostationary satellite would also add value in setting up an African central exchange for voice, data and other communication media – and enable smart contracts for the African Continental Free Trade Agreements (AfCFTA)



## China Launches New Communication Technology Experiment Satellite

China successfully sent a new communication technology experiment satellite into space from the Xichang Satellite Launch Center in southwest China's Sichuan Province. The satellite was launched by a Long March-3B carrier rocket at 0:43 a.m. (Beijing Time) and has entered the planned orbit. The launch marked the 405th mission of Long March series carrier rockets.



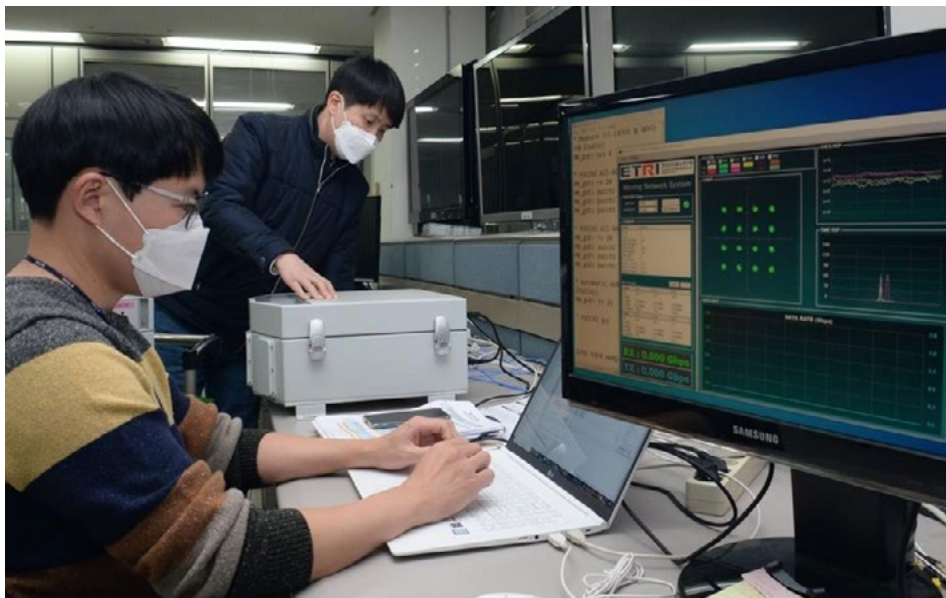
## Google Cloud Inks Satellite Connectivity Deal with SpaceX

Google Cloud and SpaceX recently announced a new partnership to deliver data, cloud services, and applications to customers at the network edge, leveraging Starlink's ability to provide high-speed broadband internet around the world and Google Cloud's infrastructure. Under this partnership, SpaceX will begin to locate Starlink ground stations within Google data center properties, enabling the secure, low-latency, and reliable delivery of data from more than 1,500 Starlink satellites launched to orbit to-date to locations at the network edge via Google Cloud. Google Cloud's high-capacity private network will support the delivery of Starlink's

global satellite internet service, bringing businesses and consumers seamless connectivity to the cloud and Internet, and enabling the delivery of critical enterprise applications to virtually any location. Organizations with broad footprints, like public sector agencies, businesses with presences at the network edge, or those operating in rural or remote areas, often require access to applications running in the cloud, or to cloud services like analytics, artificial intelligence, or machine learning. Connectivity from Starlink's constellation of low-Earth-orbit satellites provides a path for these organizations to deliver data and applications to teams distributed across

countries and continents, quickly and securely. Urs Hölzle, Senior Vice President, Infrastructure at Google Cloud said that we are delighted to partner with SpaceX to ensure that organizations with distributed footprints have seamless, secure, and fast access to the critical applications and services they need to keep their teams up and running. SpaceX President and Chief Operating Officer Gwynne Shotwell said that combining Starlink's high-speed, low-latency broadband with Google's infrastructure and capabilities provides global organizations with the secure and fast connection that modern organizations expect.

## S. Korean Lab, EU Develop Intercontinental 5G-Satellite Network System



Omani Space Communication Technologies has launched a tender for the design, manufacture and launch of its first satellite called "Omansat-1", Al Arabiya reported citing state television. The Sultanate intends to launch its first satellite dedicated to telecommunications in 2024. The company intends to launch a high-capacity communications satellite and its related services, covering the whole Sultanate, its economic waters and the foreign markets associated with it, the company said in a filing. It invited technical and commercial bids and said the last date to purchase the tender document is July 15, while bids are due by September 21. Space Communication Technologies is one of the Omani Telecom and Information Technology Group companies.

## SpaceX Now Has 1,469 Active Starlink Satellites

In July 2021, Musk said that laser links in orbit can reduce long-distance latency by as much as 50 per cent, due to the higher speed of light in vacuum and shorter path than undersea fiber. A recent report said that the satellite internet division of SpaceX now has more than 1,45,000 users across 25 countries globally.

"We're, I think on our way, to having a few hundred thousand users, possibly over 500,000 users within 12 months," he added. He said Starlink is already running in 12 countries and expanding. Starlink shipped 100,000 terminals to customers recently. The project aims to provide global broadband connectivity via a constellation

of satellites. Last year, Musk at the Mobile World Congress (MWC) conference said Starlink should have roughly 500,000 users within the next 12 months. Until November 2021, SpaceX had added roughly 11,000 users per month since beginning service in October 2020. 📡

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## WHOLESALE NEWS

### Support Grows for an End to Roaming Charges in Latin America

After news that Peru and Ecuador have indicated that they support the proposal of the Andean Committee of High Telecommunications Authorities (CAATEL) to extend the elimination of international roaming costs in the Andean region to the countries of Latin America and the Caribbean, who – or where – will be next? Already, as we have reported, roaming charges for mobile communications have become a thing of the past for the countries of the Andean Community – the CAN countries: Bolivia, Colombia, Ecuador and Peru. This happened on 1 January this year. Now, however, the CAN countries are considering extending free roaming. If a consensus is reached among the CAN countries, the proposal will be presented in February at the meeting of the Inter-

American Telecommunications Commission (CITEL). This isn't a completely unexpected development. At local level, a number of agreements are already in force, notably bilateral agreements to eliminate roaming charges between Brazil and Chile, agreed last week. Chile hopes to extend this sort of deal to Argentina and Peru, while Peru is reportedly working on similar agreements with Brazil. In addition, the Mercosur member countries, 19 nations from North, South and Central America and the Caribbean, are said to be working towards eliminating roaming fees in the region in the longer term. There are also a number of initiatives in place from mobile operators in Latin America that include international roaming at no additional charge.

### Brazil, Chile to Scrap International Roaming Charges From 2023

International roaming charges for mobile users travelling between Brazil and Chile will be scrapped from January 2023, it has been confirmed. Decree No. 10,949 was published in Brazil's Official Diary of the Union (Diario Oficial da Uniao, DOU) on 26 January 2022, concluding a process that got underway with the signing of a Free Trade Agreement between the two countries in Santiago on 21 November 2018. As per the document, roaming charges must be cancelled within one year of the decree being signed.



### EE, Vodafone UK Push Back EU Roaming Moves

Operators Vodafone UK and EE delayed the reintroduction of roaming charges for customers travelling to destinations in the European Union (EU), which were originally scheduled to be imposed early this month. In respective statements, Vodafone blamed the requirement for further testing for shifting its activation date, while EE cited technical hindrances. Vodafone plans to begin charging for roaming within the EU at the end of the month, with EE setting a new date of 3 March. Under plans revealed in August 2021, Vodafone

intended to impose an additional levy of at least £1 per day on customers roaming in the EU from today (6 January). It noted the extra time would allow for "further testing to ensure the best possible experience for customers". EE announced the introduction of a £2 daily charge for using tariff allowances across the EU in June 2021, with the change meant to be effective this month. It provided limited detail on its postponement beyond citing technical delays. The operator's fee does not apply to pay monthly customers with

a plan starting before 7 July 2021. Neither operator intends to impose the levy on users travelling to the Republic of Ireland. Rival 3 UK also plans to reintroduce the charge, though its new policy doesn't apply until May, while Virgin Media O2 is yet to announce any additional fees, but imposed a fair usage cap. Prior to the UK leaving the EU, the country's four operators were bound by legislation to provide free roaming services to subscribers travelling within the region.

## TeleYemen Launches Wholesale SMS Services in Yemen with Support from telXira

TeleYemen, the exclusive provider of international telecommunications for Yemen, has launched wholesale SMS services with the support from telXira, a global business messaging provider based in Switzerland. The launch enables organizations and service providers to deliver world-class wholesale SMS services across Yemen with a simple and seamless experience. telXira has supported the TeleYemen team through the development of its SMS offering, from platform deployment to service delivery. The end-to-end SMS platform will support the long-term growth of TeleYemen's SMS services and enable the company to innovate and evolve with new products and features. "The launch of our SMS services is a true milestone for TeleYemen and telXira has played a critical role in making our vision a reality. By incorporating business messaging into our offerings, we're helping local businesses reach wider audiences and broaden their communications with new success rates," said Rasheed Almohalleb, Tariff and Traffic Officer at TeleYemen. "The telXira team provided excellent support end-to-end and have helped to make the rollout of our SMS services seamless. This is the next evolution of our business and I'm looking forward to seeing what the future brings." TeleYemen



has been the sole licensed provider of the international telecommunication services in Yemen since 1972. In 2004, TeleYemen became a 100% fully state-owned entity with 75% of shares owned by PTC and 25% owned by the Yemeni Post & Post Saving Corporation. TeleYemen is committed to continuously developing its International Telecoms Gateway to cope with the growing demands of international voice and data services. "It has been great to be part of TeleYemen's journey and deliver an SMS platform that will transform its business and support its customers across the country," said Ellen Velickovska, Managing Director at telXira. "We took time to listen, understand, and provide

a solution that combines the power of our platform with the knowledge and experience to make business messaging successful for TeleYemen. We are proud to support TeleYemen and play a key role in evolving the communications landscape for businesses in the country." telXira makes it simple, efficient and easy to meet customers' business goals with business messaging. Whether it is indirectly via service provider partners or directly to enterprises, telXira provides the insights and guidance to get started in business messaging and an intuitive platform for optimizing and growing business messaging in the long-term.

## Kenya's Mobile Termination Rate Debate Hots Up

The Consumers Federation of Kenya (Cofek) and two of the country's operators, Airtel Kenya and Telkom Kenya, have joined in the controversy over a case involving mobile termination rates (MTR) – the charges levied by a mobile service provider on other telecommunications service providers for terminating calls in its network. Business Daily reports that the country's leading operator, Safaricom, has petitioned the Communications and Multimedia Appeals Tribunal to block the decision by the regulator, the Communications Authority of Kenya (CA), to cut mobile termination rates to Sh0.12

per minute from the current Sh0.99 per minute (one shilling is just under one US cent at present rates). The current rate has been in place since 2015. Safaricom argues that the CA's model uses a benchmarking methodology as opposed to long-run incremental costing, which, it suggests, is the preferred model in determining MTR. Airtel and Telkom have been criticizing Safaricom for allegedly only being interested in protecting its revenues. Indeed, Safaricom argues that the move to cut the charges will adversely affect its revenues. Safaricom, with a dominant position in the voice market,

does well out of a higher MTR. The smaller operators, by contrast, favor the cut as their users are likely to spend more time on other networks than their own. The CA's view, with which consumer group Cofek presumably agrees, is that the cut will have a positive impact on both consumers and operators and that, if charges across networks come down, there will be less need for consumers to own multiple SIM cards. However, the cuts – expected to be implemented from the start of this year – will now have to wait until the appeal is heard and determined.

## GCRA Launches Wholesale Leased Line Price Control Consultation

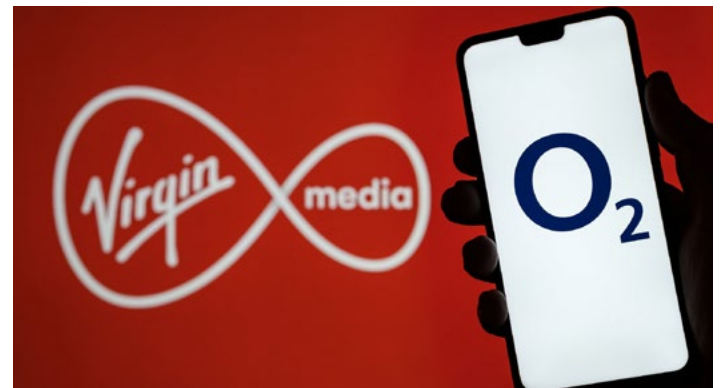
The Guernsey Competition and Regulatory Authority (GCRA) has launched a consultation on price control for wholesale on-island leased lines and is seeking comments on the matter by a deadline of 11 February 2022. In publishing its consultation paper, the GCRA said that it was of the opinion that the prices for 'very-high bandwidth' ('VHB') retail leased lines – i.e. those offering speeds of 1Gbps and above – were 'significantly higher than comparable jurisdictions and are excessive'. Further, the regulator suggested that wholesale prices charged by Sure – which it said is dominant in the wholesale market – exhibited a similar pattern. According to the GCRA, with the financial services sector being a significant user of VHB leased lines, excessive retail prices have the potential

to reduce the Bailiwick's ability to compete in this key economic sector with major offshore competitors, such as Jersey and the Isle of Man. Meanwhile, the regulator has also suggested that excessive wholesale pricing of VHB leased lines also impacts the provision of cost-effective backhaul solutions for current generation mobile network operators, while arguing it could constrain the future cost-effective rollout of 5G infrastructure. With the non-statutory consultation paper setting out the GCRA's preliminary views on an alternative pricing approach for Sure's on-island wholesale leased lines, it said this would replace the retail-minus mechanism for VHB products with a benchmarked price cap that would 'reduce wholesale prices substantially'.

## Virgin Media O2 Stands by Free EU Roaming Policy

UK operator Virgin Media O2 pledged to retain free roaming for its customers travelling within the European Union (EU), making it the only one of the country's major service providers not planning to reintroduce the charge. In a statement, the company confirmed it was sticking with its position of providing free roaming in the EU, a policy initially adopted by all four of the UK's operators in the immediate aftermath of Brexit. Vodafone UK, EE and 3 UK have since backtracked and plan to impose fees later this year. During 2021, as rivals one-by-one revealed intentions to revive the charge, Virgin Media O2 stayed tight-lipped. It did, however announce a related fair usage cap. Virgin Media O2 noted its analysis of rates planned by rivals suggested a family of four could be charged more than £100 in fees. The operator said the latest pledge was part of its ambition to be the "biggest telecoms challenger in the market", an aim outlined on its formation from a merger of Telefonica's mobile operation O2 UK and Liberty Global fixed provider Virgin Mobile. CCS Insight director Kester Mann commented Virgin Media O2 had "blown the roaming door wide open" and "its decision to hold firm will raise eyebrows across the sector and is a blow to rivals. As EE, Vodafone and then 3 each confirmed they would reinstate the dreaded fees, it left the door ajar for Virgin Media O2 to break

rank and disrupt the market." "This move could hit 3 UK hardest," Mann added. "It was the first to begin to phase out roaming in 2013 and has assertively promoted its Go Roam offer as it looked to differentiate by overcoming common customer pain points. If it goes ahead with plans to bring back roaming in May, it risks undoing much of this effort." Prior to the UK's departure from the EU its operators were bound by legislation banning surcharges for roaming within the economic bloc.



## Andean Roaming Agreement Takes Effect

International roaming charges for travelers moving between Bolivia, Colombia, Ecuador and Peru were scrapped on 1 January 2022, as per an agreement signed

back on 18 February 2020. Decision 854 of the Andean Community (Comunidad Andina, CAN) saw the member states agree not to charge additional fees for roaming

from this year. According to TeleSemana, however, roaming charges have only been abandoned for users with post-paid mobile subscriptions. 🇪🇺



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## TECHNOLOGY NEWS

### Telefonica Activates First Open RAN Mini-Radio Cells

Telefonica Deutschland, which provides services under the brand name O2, says it has activated Germany's first mini-radio cells with Open RAN technology in Munich. The firm said that the move will provide customers with more capacity and higher bandwidths at busy locations in city centers, such as squares, shopping streets and public transport stops, in the future. The mini-radio cells, attached to a building facade in Munich's Gartnerplatz district, supplement the 4G/5G mobile network installed on rooftops in the city Centre, but do not replace it. In addition to a power supply, the small cells required a connection via fiber-optics. The installation of pure 5G Open RAN mini radio cells (5G Standalone) will follow later this year, again in Munich. 'With our Open RAN Small Cells, we are launching a model project for major German cities in Munich. From the customer's point of view, they are a particular benefit where a particularly large number of people are out and about

with their smartphones. Inconspicuously integrated into the streetscape and cityscape, they provide every customer with reliable access to a high-performance 4G network in many public places, and in the future also 5G,' said Mallik Rao, CTO at Telefonica Deutschland. Open RAN is more

software-based and offers significantly greater flexibility in the selection of manufacturers in the future, as less fixed infrastructure needs to be replaced or exchanged, since updating the software is largely sufficient to bring new services onto the network.



### Vodafone 5G Reaches Over 50% of Germans

Vodafone Germany has announced that coverage of its 5G network now reaches more than half of the population. Around 18,000 antennas in 6,000 locations are now live, enabling around 45 million people in both rural and urban areas to connect to 5G services. The firm is now aiming to

increase network coverage to more than 60 million Germans by 2023. Vodafone is using the 1800MHz band to provide 5G in densely populated cities, residential areas and suburbs with speeds of more than 500Mbps, while the 700MHz range is being deployed in rural areas to offer data

rates of up to 200Mbps and the 3500MHz band is being rolled out in high traffic areas such as stadiums and train stations, where it is able to support speeds of 1Gbps. Furthermore, in the Red Bull Arena in Leipzig Vodafone has also activated its first 5G antenna in the 26GHz band.

### TIM Brasil Stages 3.5GHz VoNR 5G Trial with Huawei

TIM Brasil has teamed up with Chinese vendor Huawei to test 5G voice-over-New Radio (VoNR) services using the 3.5GHz band. TeleSintese quotes Marco Di Costanzo, Network Director at TIM Brasil, as saying: 'We want to offer a complete,

end-to-end experience, with the best and most advanced 5G network in the country.' In November 2021 TIM Brasil successfully bid on 5G-suitable spectrum in the 2.3GHz, 3.5GHz and 26GHz bands. TIM paid BRL1.05 billion (USD190 million)

for eleven lots of spectrum and is obliged to offer 5G services in all state capitals and the Federal District (Distrito Federal) by 31 July 2022.

## Chinese Lab Announces 6G Speed Breakthrough

Chinese government-backed institute Purple Mountain Laboratories said that a research team had achieved a 6G-level wireless transmission up to a speed of 206.25 gigabits per second for the first time in a lab environment. According to local media reports, the project was achieved through collaboration along with the country's telecom giants, including China Mobile and Fudan University. The 6G speed recorded was about 10-20 times faster than the current 5G technology in China. The speed achieved claims to be a world record for real-time wireless transmission within the terahertz frequency band, which is considered to be the base for future 6G mobile communications, the reports said. The speed achieved is a world record for real-time wireless transmission within the terahertz frequency band

around 300GHz to 3THz, which is already considered to be the bedrock for the futuristic 6G mobile communications, based on the statement from Purple Mountain. While countries in the other parts of the world are still rolling out the 5G technology, China is expected to see 6G technology enter its market around 2030, according to the Chinese telecom's equipment giant Huawei, said the reports. According to the lab, the achievement provides a range of application prospects, which include integration with existing fiber optical networks to expand 100-1,000Gbps outdoor and indoor ultra-high-speed wireless access. It could also "significantly" reduce costs and power consumption by "replacing the huge number of cables in the data center, allowing a more efficient Internet communication."

## Telia Launches 5G in Vilnius Using 2100MHz Spectrum

Having tested 5G technology in Lithuania for three years, Telia Lietuva has announced the launch of services using its existing commercial frequencies in the 2100MHz band. A total of 20 base stations have started operating in the Vilnius districts of Antakalnis, Sauletekis and Naujoji Vilnia. The firm has deployed Dynamic Spectrum Sharing technology, which allows the same frequency band to be used in parallel for both 4G and 5G connection. The move comes ahead of the long-awaited auction for spectrum in the 700MHz band which is expected to take place in the next few months. Telia has been testing non-commercial frequencies granted by the Communications Regulatory Authority (RRT) since December 2018. Starting from November 2020, private and business customers were also able to trial the network free of

charge in Vilnius, Kaunas, Raseiniai and Klaipeda. Customers can use Telia's 5G networks on both commercial (2100MHz) and test (3.5GHz) frequencies at over 110 base stations at no additional charge, but they require an unlimited data plan and a device that supports 5G, such as the latest Asus, Huawei, Nokia, OnePlus, Sony, Xiaomi smartphones, and Huawei and ZTE modems. 'We are entering a new stage of development of 5G networks in Lithuania. This is an important signal both to consumers and equipment manufacturers – 5G technology is becoming increasingly more mature in Lithuania. Certainly when adding additional commercial frequencies for 5G technology, we will be able to offer 5G services to an even larger group of users with even more devices,' said Dan Stromberg, CEO of Telia Lietuva.

## Chunghwa Telecom Selects Keysight to Accelerate Verification of Open RAN Equipment

Chunghwa Telecom Has Contracted Keysight Technologies To Provide The Taiwanese Communications Provider With Its Keysight Open Radio Architect (KORA) Solutions, Which Will Reportedly Accelerate Verification Of RAN Equipment Based On Standards Defined By The O-RAN ALLIANCE. In A Press Release Regarding The Development, It Was Noted That Chunghwa Has selected Keysight's user equipment (UE) emulation solution (UeSIM) and O-RAN radio unit (O-RU) emulator (RuSIM), both which are part of the KORA portfolio. Commenting, Chung-Yung Chia, vice president at Chunghwa Telecom Mobile Business Group, said: 'We are committed to creating an optimal communications environment based on O-RAN, 4G LTE, 5G, IoT, cloud computing and artificial intelligence (AI), among other key technologies ... Keysight enables us to quickly and confidently deploy advanced technologies that underpin Chunghwa's digital transformation strategy.'





## Vodafone Spain Launches 700mhz 5G in 109 Municipalities

Vodafone Spain has launched 700MHz 5G connectivity in 109 municipalities across 30 provinces. The initial 700MHz deployment includes 54 municipalities with more than 50,000 inhabitants and 55 with less

than 50,000 inhabitants. Notably, 17 of the 25 cities already covered by 3.5GHz 5G networks will see their connectivity augmented with 700MHz access, including the likes of: Madrid, Barcelona, Valencia, Seville,

Malaga, Zaragoza, Valladolid and Murcia. As previously reported by CommsUpdate, Vodafone Spain paid EUR350 million for a 2x10MHz block of 700MHz spectrum in July 2021's frequency auction.

## Hutch Lanka Partnering edotco For Open RAN Trial

Hutchison Telecommunications Lanka (Hutch) is teaming up with infrastructure partner edotco Services Lanka on the launch of an Open RAN trial in Sri Lanka. The two firms ultimately aim to drive down the per-GB cost of data on the island and to that end have deployed their first trial Open RAN site at Polatthapitya in Kurunegala District. The trial will reportedly be carried out using edotco's 'multi-purpose lamp pole site, which is a small-cell antennae enabled telecommunication infrastructure known to facilitate seamless connectivity at both urban and rural settings'. The Malaysia-based vendor currently operates a solid infrastructure network of 500 multi-purpose lamp pole sites.



## Zain Jordan Selects Infovista for End-To-End Autonomous Wireless Network Testing and Benchmarking

Infovista, the global leader in Network Lifecycle Automation (NLA), has announced that Zain Jordan, the leading Jordanian mobile network operator and part of the Zain Group, has selected Infovista's TEMS Sense, TEMS Director and Planet products to provide next-generation mobile network testing, benchmarking, planning and optimization solutions contributing to the modernization of Zain Jordan's network. By collaborating with Infovista, Zain Jordan will be equipped with market leading solutions to examine the service quality from an end-user perspective, and then use that data to inform and optimize both how its networks are managed today, and how they will evolve tomorrow. TEMS Sense provides powerful multi-mode network testing and measurement which Zain can use to undertake active testing statically, on foot, or in-vehicle of all of

Jordan's live mobile networks. KPI data gathered will include network quality, efficiency and throughput, all of which will enable Zain to monitor the Quality of Experience being delivered by each operator and assist in its own network optimization. This data among other can be then combined with Planet, Infovista's market-leading RF planning software and optimization solution, to give Zain powerful and accurate tools to plan, design and optimize its 3G and 4G networks. Zain has partnered with Infovista to measure performance and examine service quality from an end-user perspective, helping inform decisions on how to manage and improve its networks. "We are excited to be providing Zain Jordan with a state-of-the-art autonomous network testing and benchmarking solution which includes data collection and analysis across the

Kingdom," said Faiq Khan, president Global Networks Europe, Asia and Africa at Infovista. "Measuring end-user experience is a crucial tool not only to verify network performance, but also for informing decision-making around planning future network investments." Infovista's TEMS Network Testing Portfolio enables network optimization of quality and application performance by measuring and benchmarking end user experience. For Network Operators and Regulators, TEMS delivers the ability to walk test, drive test, and dynamically analyze service performance under real-life conditions—indoors, outdoors, and around the clock. Infovista's Planet, market-leading RF planning software and optimization solution, gives operators powerful tools to plan, design and optimize 3G, 4G, networks easily and accurately. 📍

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## REGULATORY NEWS

## Algeria Connects to More International Internet Cables

Algeria has a steadily developing telecom infrastructure with growth encouraged by sympathetic regulatory measures and by government policies aimed at delivering serviceable internet connections across the country. Fixed internet speeds remain slow, and the country ranks poorly in international tables. Some efforts are ongoing to address this, with the government having pressed Algérie Télécom in early 2021 to increase the minimum rate available from 4Mb/s to 10Mb/s. Mobile broadband is largely based on 3G and LTE, and the data rates are also low in global terms. Although LTE is available in all provinces, much investment is required from the MNOs to improve the quality of service. The government is encouraging the MNOs to undertake upgrades to LTE infrastructure before investing in commercial 5G services. Intensifying price competition between the three MNOs – Mobilis, Djezzy and Ooredoo Algeria – together with increases in taxes on voice and data services, have had a negative effect on operator revenue. The difficult operating climate encouraged VEON to sell its entire share in Djezzy in mid-2021, allowing it to focus on its more profitable markets. BuddeComm notes

that the pandemic continues to have a significant impact on production and supply chains globally. During the coming year the telecoms sector to various degrees is likely to experience a downturn in mobile device production, while it may also be difficult for network operators to manage workflows when maintaining and upgrading existing infrastructure. Overall progress towards 5G may be postponed or slowed down in some countries. On the consumer side, spending on telecoms services and devices is under pressure from the financial effect of large-scale job losses and the consequent restriction on disposable incomes. However, the crucial nature of telecom services, both for general communication as well as a tool for home-working, will offset such pressures. In many markets the net effect should be a steady though reduced increased in subscriber growth. Although it is challenging to predict and interpret the long-term impacts of the crisis as it develops, these have been acknowledged in the industry forecasts contained in this report. The report also covers the responses of the telecom operators as well as government agencies and regulators as they react to the crisis to ensure that

citizens can continue to make optimum use of telecom services. This can be reflected in subsidy schemes and the promotion of tele-health and tele-education, among other solutions.

Key developments:

- Regulator again provides MNOs with additional spectrum to address poor services;
- Government approves procedures for implementing MNP, argues for upgrades to LTE networks before MNOs invest in 5G;
- MNO's LTE infrastructure reaches all 48 provinces, though QoS is considered poor;
- Government initiates national infrastructure project to replace copper network with fiber;
- VEON sells its entire 45.57% stake in OTA to the Algerian National Investment Fund;
- Report update includes the regulator's market data update to June 2021, telcos' financial and operating data to Q3 2021, Telecom Maturity Index charts and analyses, assessment of the global impact of Covid-19 on the telecoms sector, recent market data developments.

## AT&T, Dish Network Dominate US 3.45GHz Auction

The Federal Communications Commission (FCC) announced results of Auction 110, revealing AT&T, Dish Network and T-Mobile US as the biggest winners of licenses to use the 3.45GHz mid-band spectrum. AT&T outspent its competitors and secured more licenses than any other bidder, committing just over \$9 billion for 1,624 permits. Dish Network, bidding as Weminuche, spent \$7.3 billion on 1,232. T-Mobile US committed \$2.9 billion for 199 licenses. The operator already has a mid-band spectrum portfolio acquired through its takeover of Sprint, and is ahead of AT&T and Verizon in mid-band 5G deployments.

The auction generated a total of \$22.5 billion for the US government, making it the third-largest spectrum auction in the nation's history behind a C-Band sale in 2021 (\$81 billion) and the AWS-3 sale in 2015 (\$44 billion). FCC Chair Jessica

Rosenworcel stated Auction 110 "saw a substantial increase in the number of winning bidders per market" compared with the C-Band auction. She argued this is a positive sign for competition in the markets with multiple winning bidders.

The five bidders with the largest total gross winning bid amounts from both the clock and assignments phases were as follows:

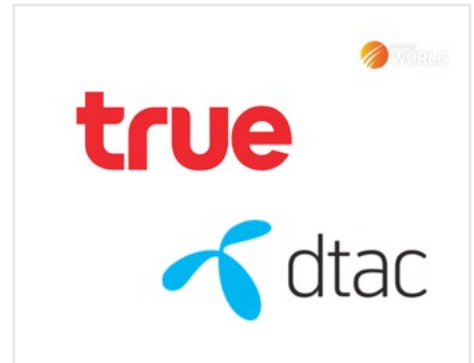
| Bidder                         | Total Gross Winning Bids |
|--------------------------------|--------------------------|
| AT&T Auction Holdings, LLC     | \$9,079,177,491          |
| Weminuche L.L.C.               | \$7,327,989,290          |
| T-Mobile License LLC           | \$2,898,418,995          |
| Three Forty-Five Spectrum, LLC | \$1,379,489,483          |
| United States Cellular Corp.   | \$579,646,526            |

## True and DTAC Set to Merge Before End of First Quarter

Thailand's National Broadcasting and Telecommunication Commission (NBTC) has stated that the merger between DTAC and True Corporation is set to go ahead, with the companies submitting confirmation of their intent. According to local outlet prachachat.net, the merger is expected to close in Q1 2022 after receiving approval from the operators' respective boards of executives on 19th November 2021. The companies will take equal stakes in the newly merged entity. TeleGeography reports that the firms agreed to a swap ratio

that would see one share in DTAC equate to 24.5 shares in the merged entity, while one share in True would equate to 2.4 shares. The companies expressed an intention to list the merged unit on the SET. DTAC and True's respective parent companies Telenor Asia and Charoen Pokphand (CP) Holding have formed a joint venture known as Citrine Global Company, and it is this unit which will make a conditional voluntary tender offer for the entire shareholding of the two companies, with True shares priced at THB5.09 (USD0.15) and

DTAC's at THB47.76.



## MTN Opposes Telkom's Application to Halt ICASA Spectrum Auction

MTN has filed papers to oppose rival Telkom's urgent application to interdict ICASA from proceeding with Invitations To Apply (ITAs) for IMT spectrum. Icasa published the final ITA on 10 December 2021, giving

stakeholders until 31 January to submit their applications. MTN South Africa CEO Charles Molapisi said: 'While the current ITA is not perfect, we believe the regulator has tried to strike a delicate balance for all

players. We cannot have a repeat of 2021, where the entire process was delayed for another full year, and that on the back of 14 years of no additional spectrum being added to the industry.'

## EU Offers €258M Fund For 5G and Gigabit Networks

The European Commission (EC) invited interested parties to bid for fresh funding aimed squarely at improving 5G, cloud infrastructure and high-speed Gigabit networks throughout the



European Union. A total of €258 million is currently up for grabs, and appears to be spread over 11 projects with a submission deadline of 22 March. A particular focus is being placed on 5G coverage along cross-border corridors and for local communities. The call for proposals comes under the digital part of Connecting Europe Facility (CEF Digital), a key EU funding instrument. The move follows the adoption of the first work program for CEF Digital in December 2021, which earmarked more than €1 billion in funding for the period from 2021 to 2023. A total planned budget for CEF Digital is up to €2 billion by 2027. The entire Connecting Europe Facility program, which supports investment in trans-European digital, transport, and energy networks, is worth €33.7 billion from 2021 to 2027. A initial generation of CEF, covering 2014 to 2020, contributed to free Wi-Fi program WiFi4EU, along with other cross-border digital infrastructures and services, the EC noted.

## China Cyberspace Regulator Says It Will Build Solid National Cyber Security Barrier

China will speed up establishment of a comprehensive internet governance system and build a solid national cyber security barrier, the cyberspace regulator said recently. China will win the

battle for core technologies in the information field, it said in a statement on its website. It also stressed the need to expand and strengthen mainstream online opinion.

## EC Reimposes €79M Telefonica Fine



The European Commission (EC) reimposed a fine of more than €79 million on Telefonica and Pharol (formerly Portugal Telecom), after previous penalties relating to

a non-compete agreement were rejected by Europe's top court. Spain-based Telefonica is again being fined €66.9 million, with Pharol liable for €12.2 million. The

EC originally imposed the penalties 2013 over a deal the operators struck to avoid competing in Iberian telecommunications markets. The EC stated its latest decision "takes full account" of a European General Court ruling in 2016 which upheld a conclusion Telefonica and Pharol's agreement breached antitrust rules and which was later affirmed by the Court of Justice. Although the overall ethos of the EC decision was backed by the General Court, it had overturned the fines because it agreed with the operators that certain markets should have been excluded from the calculations. The EC appears to have not deviated significantly from its original assessment: "The newly-imposed fines use the same parameters as regards gravity, duration and aggravating and mitigating circumstances as in the 2013 Commission decision," it stated. Portugal Telecom became Pharol in 2015 following an acquisition of its domestic assets by Altice.

## Brunei's Fixed-Line Telecom Markets Blossom While Mobile Languishes

Brunei Darussalam seemed poised to start its economic recovery from the double blow it received to its GDP in 2020 from the Covid-19 crisis and a global slump in oil prices. However, expectations may have been dashed by the sudden emergence of the Covid-19 Delta variant in the country in August 2021, which followed months of zero cases. Brunei's mobile market had already experienced a sharp drop-off in subscriber numbers in 2020, which must have put a serious dent in the overall telecom sector's revenues. A further prolonged shutdown to try and regain control over the Covid-19 situation can only exacerbate the challenges for the sector, as it looks ahead to a new start in 2022 with more concerted efforts to build out the fixed-line infrastructure while also progressing towards introducing 5G mobile services. Brunei's fixed-line market is one of the few countries in the world to have displayed significant growth rather than a decline in teledensity in the last few years.

This upward trend is set to continue as the new Unified National Network (UNN) works diligently to expand and enhance the fixed-line infrastructure around the country. Strong growth was also seen in the fixed broadband space, on the back of those same infrastructure developments that are part of the Brunei Vision 2035 initiative. That being said, fixed broadband penetration is starting from a relatively low base by international standards and is still only at 18%, leaving lots of room for growth. Mobile and mobile broadband, on the other hand, are still suffering from the market contractions first felt in 2020. However, penetration rates for both segments were already extremely high so the decline may simply be a reflection of those users with services that were purely discretionary rather than being an indicator of any broader malaise in the sector. This report includes the regulator's market data to June 2021, Telecom Maturity Index charts and analyses, assessment of the global

impact of Covid-19 on the telecoms sector, and other recent market developments. Key developments:

- Bucking global trends, Brunei increases fixed-line teledensity and fixed broadband penetration while dropping back on mobile and mobile broadband.
- The first of five Proof of Concept 5G projects is unveiled, aiming to increase awareness about the benefits of 5G.
- Brunei's 2G GSM network is shut down, with the spectrum to be reallocated to 3G, 4G, and potentially 5G use.
- Imagine joins DSTCom and Progresif to become the third operator in Brunei's mobile market.
- The Unified National Network (UNN) launches a co-location service at its Tier 2 data center.
- DST launches two new e-commerce solutions: DSTPay and the Zakat Fitrah Online Payment Service.

## Establishing Standards for Digital Currency

As fully digital transactions increasingly become the norm, the vital groundwork to prepare international standards for digital currency is accelerating. Regulators, industry and academia are collaborating to ensure interoperability and security – key prerequisites for digital currencies to match and exceed the role of cash in our daily lives. Key lessons from digital currency pilots will be shared next week at the DC3 Conference: From Cryptocurrencies to CBDCs, taking place online from 25 to 27 January 2022. DC3 discussions will build on valuable 'pre-standardization' studies supported by the Digital Currency Global Initiative – a partnership of the International Telecommunication Union (ITU) and the Future of Digital Currency Initiative at Stanford University.



## Telkom Withdraws Urgent Application to Halt IMT Spectrum Auction

Telkom has requested the removal of its urgent application to interdict ICASA from proceeding with Invitations To Apply (ITAs) for IMT spectrum. The company said: 'Telkom has reached agreement with all the respondents on the need to expedite the hearing for part B of Telkom's two-part application', although it added that it 'reserves its rights to reinstate the matter on short notice should it become necessary'. While ICASA reportedly informed Telkom and the respondents to

the litigation that it intends to proceed with the previously announced timetable for the spectrum auction (8 March 2022), the High Court of Pretoria is yet to decide on the date for the hearing. As previously reported by TeleGeography's CommsUpdate, in early January 2022 Telkom filed High Court papers to block ICASA from proceeding with the IMT spectrum auction, claiming that the regulator 'has not corrected many of the issues from its previous attempt'. The move was widely criticized by industry

players, with Communications minister Khumbudzo Ntshavheni, Rain, MTN and Vodacom all subsequently challenging Telkom's urgent application. MTN South Africa CEO Charles Molapisi said: 'While the current ITA is not perfect, we believe the regulator has tried to strike a delicate balance for all players. We cannot have a repeat of 2021, where the entire process was delayed for another full year, and that on the back of 14 years of no additional spectrum being added to the industry.'

## Pakistan Up 14 Places in Internet Network Residency Index

Pakistan has jumped fourteen places to 97th position in the 2021 internet network residency ranking. Reports in local media said the Ministry of Information Technology submitted a written response in the upper house of parliament during the question hour and informed that the country's ranking has improved. Pakistan was ranked 111 in the 2020 ranking, the reports claimed while adding that the country now ranked 68 on adopting new

technologies. Last year, the IT Ministry approved the allocation of funds for the Universal Service Fund (USF) projects for high-speed internet services and contracts for next-generation broadband. The approval was given in the 77th meeting of the Board of Directors of Universal Service Fund (USF), the board approved the USF's budget worth approximately Rs18 billion for the fiscal year 2021-22. Four Universal Service Fund projects have been approved

by the board to provide high-speed internet services to approximately 2.2 million people in un-served and under-served areas of Punjab and Khyber Pakhtunkhwa (KP) provinces, per report. Meanwhile, the ruling party leader and Parliamentary Affairs minister Ali Muhammad Khan, speaking during the session, apprised the panel that the PTI government was taking steps to make the country's small airports functional.

## NTA Developing a Response Team 'CERT' Against Cyber-Attacks

NTA will soon develop CERT, a response team to nullify cyber-attacks in telecom and ICT companies of Nepal. The Computer Emergency Response Team (CERT) will protect Nepal's ICT and telecom systems from various malicious attacks and threats. This will in turn "help and build trust and confidence of users towards using ICT technology and services." Consulting firms shall submit their EoI online through the e-GP system [www.bolpatra.gov.np/egp](http://www.bolpatra.gov.np/egp) EGP only on or before 31-01-2022. NTA's CERT is in



compliance with its "Cyber Security Byelaw, 2020" that has gained its exercising power by Section 62 of the Telecommunication Act, 2053 (1997). As usual, NTA will select the consultant on Qualification 50.0 %, Experience 40.0 %, and Capacity 10.0 %. The minimum score to pass the initial EoI assessment is 60. The firm will be selected as per the "Quality and Cost Based Selection" (QCBS) method. The main objective of the firm will be to prepare a DPR for the "Establishment of Computer Emergency Response Team (CERT) for Telecom/ICT/ICT industry". Once chosen, the consultant will study the existing laws, bylaws, policies, and frameworks which are in place for telecom/ICT in Nepal. It shall report the status of cyber security, major cases of cyber-attacks to the regulator. Likewise, the consultant will also run three types of research to CERT/CIRT for each of developing and developed countries. NTA demands that this study include the countries' "vision, mission, objective & strategy" for the project. Besides, they should include human resources map, the primary scope of CERT, detailed overview of major hardware & software in use among others. The company shall also engage in meetings with officials from ministries and stakeholders in coordination with NTA. It should also study the CERT's impact on economic, and social areas and its contribution to the cyber security efficacy. NTA demands the company shall also identify risks associated with running NTA-CERT and seek proper mitigation measures.

## Mobile Virtual Network Operators

Russian state-owned nuclear power corporation ROSATOM plans to launch an MVNO next year, Kommersant reports. According to the business daily, the MVNO will operate on the Tele2 network. The report notes that Greenatom – a subsidiary of ROSATOM – received a five-year license to provide mobile communications services on 29 September 2021. The MVNO will commence operations in September 2023. Telenor and Amazon Web Services (AWS) have revealed plans to invest in joint go-to-market activities in select industries – including manufacturing, supply chain and logistics, and automotive – as they seek to enable more 5G and edge services for customers. Working with AWS, Telenor says it has already implemented an entire mobile core, running in the cloud, for Vimla – the group's Swedish MVNO sub-brand. Telenor notes: 'Running on AWS, Vimla's mobile core is scalable, programmable, and employs self-service APIs, enabling

Vimla to create simple, innovative and valuable services for its customers.'

Thai MVNO The White Space Co (Penguin SIM) has switched its business model, as it seeks to keep pace with the shifting market landscape. Rather than focus on pre-paid mobile users, the company seeks to become a smart solutions provider focusing on 5G private networks. Chaiyod Chirabowornkul, chairman of board at The White Space, told the Bangkok Post: 'We provided services mainly for pre-paid users in the beginning, but have gradually adjusted services to cater to IoT for enterprise customers ... The competition landscape has been changing and it is hard to stick to the old business model.' The executive told the newspaper that the MVNO's subscription base peaked at one million in 2018 (around 800,000 active users), but this figure has since plummeted to around 200,000. Bulgarian VoIP firm Zadarma has announced that it has

become an MVNO in France, and can now offer customers French mobile numbers. The company's press release notes: 'In 2022 Zadarma is coming with a disruptive approach that does not limit customers use of services and comes at a competitive price with no connection fees.' Finally, the National Commission for Markets and Competition (Comision Nacional de los Mercados y la Competencia, CNMC) has fined Lycamobile Spain EUR552,000 (USD626,000) for breaching its obligations to supply subscriber data through its Subscriber Data Management System (Sistema de Gestion de los Datos de los Abonados, SGDA). The watchdog explains that the SGDA is used by emergency services, among others, and needs to have up-to-date data for all customers. (Note: the fine has been reduced after Lycamobile recognized its responsibility and paid the penalty in advance.)

## KemKominfo to Take Role in Developing Telecoms Infrastructure in Indonesia's New Capital

Indonesia's Ministry of Communication and Information (MCI, KemKominfo) has pledged to take an active role in developing telecommunication services and infrastructure in the country's new National Capital (IKN) in Kalimantan. With

the government having recently adopted legislation to relocate the nation's capital from DKI Jakarta to Kalimantan – the so-called IKN Law – Ministry spokesman Dedy Permadi confirmed: 'KemKominfo is currently mapping the needs for backbone

network capacity and last mile access networks in the New IKN which includes supporting infrastructure for active and passive devices for the implementation of fixed broadband and mobile broadband services.'

## ANACOM Approves Sale of MEO Towers to Cellnex

Portugal's National Communications Authority (Autoridade Nacional de Comunicações, ANACOM) has approved the previously agreed takeover of passive tower infrastructure belonging to PT Portugal (MEO), by Cellnex-backed CLNX Portugal. The deal is understood to comprise 223 macro-sites and 464 micro-sites (small cells) and is valued at EUR209 million

(USD245.5 million). The transaction was approved by the Portuguese Competition Authority (Autoridade da Concorrência, AdC) on 3 August 2021. TeleGeography notes that the deal represents the latest in a series of Portuguese transactions for Cellnex. The company made its first move in January 2020, when it signed a EUR800 million agreement to acquire OMTEL from

Altice Europe and Belmont Infra Holding. OMTEL was said to operate 3,000 sites in Portugal – around 25% of the overall cell towers in the country at that date. Cellnex went on to acquire 2,000 cell sites from Nos later that year, in a deal worth an initial EUR375 million. Last year, meanwhile, Cellnex acquired 65 towers from Onitecom (ONI) via OMTEL.

## India Prepares 5G Auction

Indian operators looked set to get the spectrum they need to proceed with commercial 5G service launches after the nation's Minister of Finance and Corporate Affairs Nirmala Sitharaman unveiled plans for an auction later this year and set a target for the launch of services in the next 14 months. In India's annual budget statement, Sitharaman announced the provisional timeline for its next spectrum auction alongside an industrial scheme she said would deliver designed manufacturing and build a strong 5G ecosystem. Operators are expected to

launch 5G services commercially in the fiscal year ending March 2023. Indian operators have conducted limited trials of 5G in various cities in preparation, though all three major providers called for allocations in the next auction to be priced in a way which ensures they have enough cash to finance full deployment. The country previously tried to sell 5G-suitable spectrum in the 700MHz band alongside various other frequencies, but failed to attract bids due to high reserve prices as cash-strapped operators focused on 4G. A number of structural reforms



were introduced in 2021 to "catalyze further investment in next generation technologies" and relieve the pressure on financially struggling operators.

## Telecoms Minister Asks Operators to Phase Out 3G Networks

Indonesia's Ministry of Communication and Information (MCI, aka KemKominfo) has reportedly asked the country's incumbent mobile network operators (MNOs) to phase out 3G mobile technology in favor of bolstering 4G or 5G coverage for mobile data services. Minister of Communication and Information Johnny G

Plate said: 'This 4G signal is the backbone of our national communication. I've also asked the cellular operators to fade out 3G. Why is 3G being faded out instead of 2G? Because it's a different user. 2G is voice communication, while 3G is data communication.' However, local industry watchers note that the government will

need to address how it could achieve this given that currently, some 83,218 villages/kelurahan are still not covered by 4G networks, while out of 12,548 villages/kelurahan, 9,113 are located in the Frontier, Remotest and Disadvantaged (so-called '3T') areas.



## Communications Ministry Suggests Building Higher Platforms at 1,000 Telco Towers Hit by Floods

The Communications and Multimedia Ministry (KKMM) has suggested building higher platforms of around three meters at 1,000 telecommunication towers affected by the recent floods. Its Minister, Tan Sri Annuar Musa said the move was so that damage to the telecommunication towers was reduced and to ensure that communications would not be cut off, especially in the event of disasters. "I have also asked the Malaysian Communications and Multimedia Commission (MCMC) to take the initiative to ensure telecommunication towers at flood-prone areas would not have equipment at ground level in the future. "Communication systems should not be cut off even if water rises to 10 feet or even after floods recede. With this initiative, at least those trapped on rooftops of their houses can send SOS (for help)," he

said at a media conference after completing the Jelajah Prihatin KKMM program at Yayasan Kemiskinan Kelantan (YKK) Peringat, here today. Media outlets previously reported that repairs to almost 1,000 telecommunication towers that sustained damage and caused disruptions to telecommunication coverage after the recent floods hit were completed. Annuar added that he wanted related parties, including the Information Department and the Department of Broadcasting to draft a more effective information delivery system in flood-prone areas, including early warnings. "The current way are conventional methods, such as Info on Wheels (IOW) and such, but they are limited...but I want information that can reach every user exposed to disasters wherever they are. "Look at Japan, when an earthquake

is about to happen, even a minor one, the information will reach every mobile phone user, even tourists will receive the message. "Even though we currently have a system I want a better one, especially after what we went through with the recent floods," he said. In other developments, he said that 5,000 Keluarga Malaysia Community volunteers have been mobilized so far to assist in post-flood efforts, including cleaning houses. "Other countries would take around three months to recover from floods like this. Yet we can handle the problem within a matter of two weeks. "Citizens have received many government incentives under Prime Minister Datuk Seri Ismail Sabri Yaakob's leadership, in addition to cash aid, food provisions and electric equipment being channeled to flood victims so quickly," he added.

## Telecom Authority to Check Mobile Bills for Accuracy

The Nepal Telecommunications Authority is introducing a monitoring service to verify metered billing and charging accuracy of mobile services as the increasingly complex and fast-changing tariffs for telecommunication and internet services create challenges of consumer dissatisfaction over over-billing and potential penalties by the regulator. The system would have been introduced earlier as consumers have long been complaining about being charged unnecessarily and unknowingly while utilizing telecommunication services. "The authority would have launched the system earlier, but it is now being introduced as part of its annual program," said Surya Prasad Lamichhane, deputy director. "It might take the current fiscal year to complete the project." As per a notice published on Tuesday, the government has allocated funds for the procurement of a monitoring service for the verification of metered billing and charging accuracy of mobile services. According to Clause 17 of the Telecommunication Act 1997, the Nepal Telecommunications Authority

is empowered to inspect or investigate the activities carried out or the services provided by the licensee, at any time. Due to the limited resources for billing related complaints, the authority is dependent on the billing systems of telecom operators. The authority said that it now intends to perform monitoring of some services on a sampling basis independently without the knowledge of the mobile operators to verify whether their metered billing and charging system are reliable or not. The consultant company will implement a billing audit system without prior knowledge of the telecom service provider and also without integration with the mobile operators system. The consultant will perform tests and conduct measurements of voice, data, SMS and VAS services, simulating real customer behavior during peak and normal hours, the authority said. The designed measurements will check the accuracy of bills issued by mobile operators for voice, data, SMS, value added services (VAS) against the Nepal Telecommunications Authority- approved tariff rates and pulse durations for 2G, 3G and 4G services

independently without system integration with mobile operators. The consulting service will be called from international companies, as per the authority. The authority has invited expressions of interest to provide consulting services to design, perform tests and measurements. The authority recently expressed deep concern after internet service providers began setting service charges or tariffs on their own without its approval. There is stiff competition in the market to provide service packages of more than 100 Mbps at competitive rates. As per Article 42 of the Telecommunication Act 1997 and the condition of the license, a telecommunication service provider licensed by the authority needs to take approval of service charge or tariff rates for the service provided to customers. The concerned stakeholder said that competition is quite unhealthy in the market with service providers apparently focused on increasing the number of customers rather than the quality of service by providing high speed packages at lower prices. Currently, state-owned telecom giant Nepal Telecom has

been charging Rs1.50 per minute on voice call inside its network and Rs2 per minute while making calls to other networks in GSM prepaid tariff. It charges Rs1 on SMS inside the Nepal Telecom network and Rs1.25 while sending messages to other operators. These charges are exclusive of taxes. Ncell has been charging Rs1.99 while making voice calls within its network and other networks, and Rs1 on SMS within its network and Rs1.27 while sending messages to other telecom networks. According to the Connectivity in the Least Developed Countries Status

Report, 2021 published by the International Telecommunication Union, over 90 percent of households in Nepal have at least one family member with a mobile phone. Moreover, 96 percent of the households in Nepal have a mobile telephone among whom 97 percent are urban households and 94 percent are rural households. As of mid-November, there were 41.55 million voice telephone users in the country of which 40.73 million were mobile phone users, the management and information system report of the authority shows. There are a total 35.34 million broadband

users in the country, 7.45 million users of fixed broadband (wired and wireless) and 27.73 million mobile broadband users. According to the Connectivity in the Least Developed Countries Status Report 2021, a Nepali had to spend 2.6 percent of their gross annual income to buy internet service in 2020, which puts Nepal behind India, Sri Lanka and Pakistan in affordable digital access where the cost is less than 1 percent. Broadband services in developing countries should not cost more than 2 percent of the gross national income per capita, as per the report.

## BTRC Eases Submarine Guideline to Court Private Funds



State-owned Bangladesh Telecommunication Regulatory Commission (BTRC) further amends the submarine cable guideline to woo private as well as foreign investment. It eases the provision of 'previous experience' with a submarine cable-operating license. The amended 'Regulatory and Licensing Guidelines for Invitation of Offers/Proposals for Issuing License to Build, Operate and Maintain Submarine Cable Systems and Services in Bangladesh' was issued on Monday. The BTRC stipulates that any aspirant for a license need not have any previous experience in operating submarine cable. The amendment replaces "having considerable experience in submarine cable systems and services for granting license" with "having considerable experience in telecommunication services for granting license to establish, maintain and operate such system for use in Bangladesh". Post and telecommunications minister Mustafa Jabbar told the FE that the amendment was carried out to widen the area for prospective investments. "Setting up submarine cable company requires a lot of money, if we only keep focusing on experience, we may end up finding nobody for new license." Mr. Jabbar says investors are not required to have all the experience; they can hire expertise. Bangladesh is badly in need of private and foreign investment in the sectors, including submarine cable operation, he adds. "We have only one state-owned company in submarine cable systems and services, we need more in the 5G era," mentions

the minister. The new guideline also removes the barrier of 100-per cent foreign ownership to establish, maintain and operate submarine cable systems and services here. "In case of foreign investment," according to the amendments, "the entity shall invest foreign currency directly according to its percentage of ownership and shall not be allowed to take any loan from any Bangladeshi lending firms." "After fulfilment of rollout obligation, if loan is required for operational purpose/business expansion, the entity can take maximum 20 per cent of its total loan from any Bangladeshi banks." Earlier, the BTRC removed the clause that allowed only two companies in the market. The previous clause reads: "The Commission will issue maximum 02 (two) licenses for Submarine Cable Systems and Services in Bangladesh under International Long-distance Telecommunication Policy-2010 and as per the terms and conditions of the guideline..." BTRC officials say the government wants to attract more local and foreign investments in the sector in a bid to create an ecosystem for competitive and high-quality internet in the 5G era. The country might face bandwidth scarcity by 2024 when its demand would reach 6.0 terabyte per second (Tbps). Its appetite for bandwidth consumption has grown over the years and the outbreak of coronavirus has enhanced the rate further, prompting the government to go for alternative sources of bandwidth. According to BTRC data, the country's bandwidth usage jumped by 634 Gbps to 1,826 Gbps in November 2020. Its demand was 1,192 Gbps in December 2019. Of the bandwidth, the lone state-run Bangladesh Submarine Cable Company Limited (BSCCL) is supplying around 85 per cent of the demand to users due to its cost efficiency and reliability. According to the amendment, the number of licenses will be decided by the government in order to ensure diversity, fair competition, uninterrupted and efficient telecom services. Although there was a provision for two companies, the BSCCL is the core telecommunications service provider and international submarine cable operator of Bangladesh until now. It is also an IIG (International Internet Gateway). The BSCCL service represents the long-haul communication between Bangladesh and the rest of the world.

## US Aviation Industry Makes Last-Ditch C-Band 5G Plea

The US aviation industry painted a picture of chaos and warned of a catastrophic crisis if 5G services are deployed in C-Band spectrum, as it reportedly again moved to block launches which have already been twice delayed. Reuters reported chief executives of American Airlines, Delta Air Lines, United Airlines, Southwest Airlines and others had demanded swift action to avoid widespread disruption to services. Potential interference between C-Band 5G networks with radio altimeters could result in “the vast majority” of the “travelling

and shipping public” to be grounded, the news agency stated. The executives warned of disruption to supply chains and even deliveries of medical supplies, Reuters reported. Verizon and AT&T are set to activate 5G in C-Band spectrum. The dispute between the aviation industry and mobile operators has dragged on for months and resulted in the US Federal Aviation Administration (FAA) imposing a number of measures, including the establishment of buffers around certain airports and restrictions on the use of radio

altimeters in some locations. Altimeters and flight systems operate in the 4.2GHz to 4.4GHz band, while the operators are on the brink of initial launches in the 3.7GHz to 3.98GHz range, which is deemed too close for comfort by some. While the mobile industry cites France as an example of safe coexistence of C-Band services, FAA officials note the spectrum involved is further removed from the frequencies employed in aircraft and French 5G power levels are much lower.

## US Operators Agree C-Band Buffers for Airports



AT&T and Verizon agreed to allow buffer zones around certain US airports to reduce the risk of disruption from potential interference once they activate new 5G services in C-Band spectrum. The Federal Aviation Administration (FAA) released a list of 50 airports which will have buffer zones when services finally go live on 19

January. In a statement, the FAA noted AT&T and Verizon had agreed to turn off transmitters and make other adjustments near the airports for six months to minimize potential 5G interference with sensitive aircraft instruments used in low-visibility landings. The agency said it sought input from the aviation community on where the proposed buffer zones would help reduce the risk of disruption. Traffic volume, the number of low-visibility days and geographic location were factored into the selection, it explained. The FAA also noted it continues to work with aerospace manufacturers and operators “to make sure 5G is safely deployed and to limit the risk of flight disruptions at all airports”.

Verizon and AT&T recently agreed to a second delay of 5G in the C-Band spectrum following concerns about potential interference with radio altimeters. At the time, the operators promised to implement “extensive exclusion zones around the runways at certain airports”, predicting this would “reduce C-band signal levels by at least ten-times” during take-offs and final approaches. Despite the recent measures, the matter remains highly contentious: Reuters reported Kevin Burke, president and CEO of industry group Airports Council International – North America, as saying the FAA list “is largely irrelevant” due to the widespread impact of C-Band 5G “in and around airports”.

## US Operators Delay C-Band Launch Again

Verizon and AT&T agreed to a second delay of 5G in the C-Band spectrum, acquiescing to concerns raised by the airline industry about potential interference with radio altimeters on airplanes. The operators previously agreed to postpone the 5G launch from 5 December 2021 until 5 January 2022, and to reduce transmission power levels at airports through 5 July 2022. In late December 2021, US Secretary of Transportation Pete Buttigieg wrote to the operators requesting a further delay. He also asked them to let the Federal Aviation Administration (FAA) coordinate the rollout of 5G near airports. On 2 January, Verizon and AT&T responded to Buttigieg in a joint letter, denying his request. Late on 3 January, both companies pivoted and agreed to delay their 5G rollouts in the C-Band spectrum for an additional two weeks. In their letter to Buttigieg, the operators stated 5G and aviation can safely coexist

in the US, just as they do in France. The companies also pledged to adopt 5G mitigation strategies similar to those used in France. AT&T and Verizon promised to implement “extensive exclusion zones around the runways at certain airports”, predicting this additional mitigation will “reduce C-band signal levels by at least 10 times on the runway or during the last mile of final approach and the first mile after takeoff”. The companies plan to keep these mitigations in place for up to six months while aircraft operators upgrade their altimeters in order to avoid interference. In a separate letter dated 31 December 2021, Verizon and AT&T told the Federal Communications Commission (FCC) they believe the airline industry wants to “hold the C-Band hostage until the wireless industry agrees to cover the costs of upgrading any obsolete altimeters”.

## Turkey Wants Telecom Giant's Shareholder Banks to Finance Buyout

Turkey has approached banks holding a majority stake in the country's telecom giant to finance a planned buyout of the firm by the nation's sovereign wealth fund. The fund, known as TWF, is in preliminary talks with private lenders that jointly hold a 55% stake in Turk Telekomunikasyon AS, according to people with direct knowledge of the matter. TWF wants to secure a loan from the banks to be able to buy their shares in the telecom company, the people said, asking not to be identified as the talks are private. The stake could be worth around \$1.4 billion based on its current market price, data compiled by Bloomberg show. Negotiations with the banks are ongoing, the wealth fund said in a written statement to Bloomberg, without providing further details. LYY Telekomunikasyon AS,

which represents the banks, declined to comment. Months into the discussions, the latest development suggests the fund may be reluctant to rely on the bond market or use its own cash to finance the transaction. It would have to agree with LYY on Turk Telekom's value, the loan size and repayment conditions, the people said. Talks began last month and a deal is possible during the second half of 2022 at the earliest, one of the people said. Still, the possibility of a resolution to the years-long saga surrounding the ownership structure at Turkey's second-largest operator is likely a boon to investors. The shareholder banks, which mostly include local firms, seized the Turk Telekom stake around three years ago after its previous owner defaulted on a multi-billion dollar loan.

Akbank TAS, Turkiye Garanti Bankasi AS and Turkiye Is Bankasi AS have the largest exposure and are therefore the biggest shareholders in the special purpose vehicle company. Turkey's Treasury and Finance Ministry also owns 25% in Turk Telekom, including a so-called golden share that gives it management control. The wealth fund currently holds 6.7% of the shares and the remainder is publicly traded on Borsa Istanbul. A deal would mark the biggest step yet in the creeping re-nationalization of Turkey's telecommunications industry after the wealth fund took a majority stake in the country's biggest mobile phone operator, Turkcell Iletisim Hizmetleri AS, in 2020. 🇹🇷

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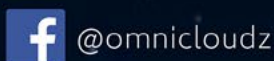
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## A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION



Algeria has a steadily developing telecom infrastructure with growth encouraged by sympathetic regulatory measures and by government policies aimed at delivering serviceable internet connections across the country. Fixed internet speeds remain slow, and the country ranks poorly in international tables. Some efforts are ongoing to address this, with the government having pressed Algérie Télécom in early 2021 to increase the minimum rate available from 4Mb/s to 10Mb/s. Mobile broadband is largely based on 3G and LTE, and the data rates are also low in global terms. Although LTE is available in all provinces, much investment is required from the MNOs to improve the quality of service. The government is encouraging the MNOs to undertake upgrades to LTE infrastructure before investing in commercial 5G services. Intensifying price competition between the three MNOs – Mobilis, Djezzy and Ooredoo Algeria – together with increases in taxes on voice and data services, have had a negative effect on operator revenue. The difficult operating climate encouraged VEON to sell its entire share in Djezzy in mid-2021, allowing it to focus on its more profitable markets. BuddeComm notes that the pandemic continues to have a significant impact on production and supply chains globally. During the coming year the telecoms sector to

various degrees is likely to experience a downturn in mobile device production, while it may also be difficult for network operators to manage workflows when maintaining and upgrading existing infrastructure. Overall progress towards 5G may be postponed or slowed down in some countries. On the consumer side, spending on telecoms services and devices is under pressure from the financial effect of large-scale job losses and the consequent restriction on disposable incomes. However, the crucial nature of telecom services, both for general communication as well as a tool for home-working, will offset such pressures. In many markets the net effect should be a steady though reduced increased in subscriber growth. Although it is challenging to predict and interpret the long-term impacts of the crisis as it develops, these have been acknowledged in the industry forecasts contained in this report. The report also covers the responses of the telecom operators as well as government agencies and regulators as they react to the crisis to ensure that citizens can continue to make optimum use of telecom services. This can be reflected in subsidy schemes and the promotion of tele-health and tele-education, among other solutions.

(January 18, 2022) [developingtelecoms.com](http://developingtelecoms.com)

### Algeria



A new four-year strategy to push ahead with digitalizing the economy, including the telecoms and information technology (IT) sectors, has been announced. The 2022-2026 Telecommunications, Information Technology and Digital Economy Strategy is in line with the objectives of the Economic Recovery Plan. Details were revealed yesterday during a Press conference held at the Isa Cultural Centre in Juffair. Present were Transportation and Telecommunications Minister Kamal Ahmed, Information and eGovernment Authority (iGA) chief executive Mohammed Al Qaed 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 Mr. Kamal. "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 had earlier approved list of 1,294 services and tasked a team to ensure their availability online on the government portal [www.bahrain.bh](http://www.bahrain.bh). Major services, including the issuance of visas, marriage certificates, identity documents for newborns and post-construction services would also be re-engineered. Mr. Kamal highlighted that enhancing the digital policies and legal framework was critical to developing the digital infrastructure whilst also ensuring comprehensive fiber-optics coverage across Bahrain's residential and commercial areas.

### Bahrain

He added that revamping the infrastructure included protecting networks while modernizing telecom towers in accordance with international standards, developing administrative regulations and monitoring the frequency spectrum in addition to developing the Sixth National Telecommunications Plan. Also among the speakers was Labor Fund (Tamkeen) chief executive Hussain Rajab and Industry, Commerce and Tourism Ministry's Assistant Under-Secretary for Commercial Registration and Companies Nibras Talib. "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," said Mr. Al Qaed. "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." New developments will include an option to allow the online authorization for individuals to conduct services on behalf of others. Plans are underway to further develop existing government applications while also creating new ones which bring together more comprehensive services that are easy to access, widespread and efficient. Mr. Rajab said that efforts are in full swing at Tamkeen for a comprehensive digital restructuring of all programmes, initiatives and strategies carried out by the Labor Fund. "We are sparing no efforts towards enhancing the role of IT in achieving e-trade and creating a sustainable digital economy and transitioning digitally," said Mr. Talib. "Awareness and trust in the system are critical for its success and we are working towards offering value-added

services in collaboration with the private sector to facilitate a digital transformation." In November, Bahrain launched a bold and ambitious Economic Recovery Plan to stimulate post-pandemic growth which will see more than \$30 billion invested in national infrastructure and strategic priority sectors. (January 16, 2022) [zawya.com](http://zawya.com)

Telecommunication Regulatory Authority is conducting a study on emerging and digital technologies in the telecommunications sector as part of its transition to a digital future. The move aims at spotting opportunities and risks associated with each technology. The study, according to TRA, is to address the regulatory, security, competition, data privacy, and ethical aspects of all the related emerging technologies that apply to the telecommunications sector. TRA plans to conduct the study by appointing an experienced and suitably qualified consultant company, for which it has also launched a tender. The successful bidder, TRA says, should develop a roadmap for adopting and implementing the way forward to achieve the key objectives identified by each emerging technology. Before the COVID-19 pandemic, TRA's IT Department had proactively invested in collaboration services such as Microsoft's Office 365 cloud services, VOIP technologies and virtual meetings. During the early days of Pandemic, the internal portal 'iTRA' was launched, paving the way for digital signatures, reducing paper-based workflows and increasing the overall productivity of both the remote' and in-office employees. TRA also launched Human Resources Management System mobile application to digitalize HR practices and create a platform for TRA employees. Make bids before the 23rd of February 2022, with a BD100 bond and BD15 tender fees.

(January 16, 2022) [newsfbahrain.com](http://newsfbahrain.com)



## Bangladesh

The Bangladesh Telecommunication Regulatory Commission has made obtaining its license a must for any satellite business entity for providing services in the country. So, overseas satellite operators or entities which were providing services, including satellite internet access service, to their clients in Bangladesh would not be allowed to continue operations in the country without getting a license from the BTRC, an official of the commission told New Age. The official said that the BTRC issued the Regulatory and Licensing Guidelines for Satellite Operation in Bangladesh on January 2 and the guidelines mention the rule. The telecom regulatory commission's guidelines have come at a time when a substantial portion of capacity of the country's lone state-owned satellite, Bangabandhu Satellite 1, remains unsold or unutilized. Section 5 of the guidelines said, 'Initially the licensee shall operate and lease its own transponder capacity.' 'To provide service through rented transponder, prior permission from the commission is required,' it said. 'If the licensee takes initiative to launch further satellites, it will have to take written prior approval from the commission for providing services through new satellite,'

it said. 'No person or business entity shall be allowed to establish, operate and maintain satellite systems and services without a valid license issued by the commission,' the guidelines said. The BTRC set the licensing fee for the private satellite operators at Tk 25 crore, annual licensing fee at Tk 5 crore, up to 2 per cent revenue sharing and a provision of 1 per cent revenue sharing with the regulatory body, among others. However, a clause in the guidelines has authorized the government to make decision on the fees and charges in the case of state-owned satellite companies. Section 9 of the guidelines has outlined the applicable fees and charges to any satellite company. Subsection 4 of Section 9 said, 'The government may take decision time to time in case of state-owned satellite company.' Asked whether the Bangladesh Satellite Company Limited, the operating entity of Bangabandhu-1, will have to take license, another official of the commission said that the BSCL is supposed to take license as the guidelines have made it a must. All the country's television channel is now using service of Bangabandhu Satellite-1. The satellite was launched in May 12, 2018 at the cost of Tk 2,702 crore. According to BSCL, the

company generated Tk 37.55 crore in revenue in the fiscal year 2019-2020 by providing services to 33 TV stations. Against the earnings, the company's operating expense was Tk 20.38 crore in the fiscal year under consideration. In the fiscal year 2018-2019, the BSCL incurred Tk 14.78 crore in operating losses and in FY 2019-20, it made Tk 17.17 crore in operating profits. Meanwhile, the government has initiated a move to launch another satellite by 2023. To this end, the BSCL on January 19, 2021 assigned multinational consultancy firm PricewaterhouseCoopers Advisory as a consultant for the launch of the country's second satellite. In

the regulatory and licensing guidelines on satellite operations, the commission mentioned that it would issue licenses for a period of 15 years. Under the guidelines, the local and foreign companies would be get license from the commission. The licenses would provide direct to home (DTH), cable TV, backhaul connectivity and emergency telecommunication, satellite internet for broadband services, digital services, VSAT or VSAT hub services and any other services approved by the commission.

(January 11, 2022) [newagebd.net](http://newagebd.net)



## Egypt

The National Telecom Regulatory Authority (NTRA) has issued the regulatory framework for providing Internet of Things (IoT) services in Egypt. IoT is deemed one of the most important mainstays of Industry 4.0, operating major systems as well as digital services of smart cities, including smart home, smart meter, and smart transportation. In fact, this step comes in line with the state's strategy to foster digital transformation across its different sectors and polarize as well as increase investments in this field. Moreover, it aims to support the state's future plans to establish further smart cities. To this end, the NTRA studied the optimum international modules and practices with respect to IoT services. Additionally, meetings and hearing sessions are currently being arranged by the NTRA with a number of local as well as global organizations operating in the field to figure out the best regulatory policies applicable in international markets as well as fitting Egypt's telecom market. Such a framework was actually prepared and approved to act as a regulatory tool facilitating IoT service procedures. Furthermore, Hossam Al-Gamal, the Executive President of the NTRA, has declared that the new regulatory framework aims to polarize investments to establish IoT networks and sophisticated app platforms. It

also helps with enforcing the state's policy of Industry 4.0 and foster digital information by establishing a large number of sophisticated systems operated via IoT technologies across different sectors. These technologies would also contribute to mechanizing business cycles and providing sophisticated e-services to citizens. Al-Gamal, has further pointed out that the regulatory framework to provide IoT services was adopted and approved by the NTRA in conjunction with Egypt's 2030 Vision, which entails the foundation of a number of cities similar to the New Administrative Capital. Such a framework seeks to allow the creation of a number of modern smart systems in smart cities and communities. It also helps with the transformation from traditional to modern smart systems to expedite and facilitate the process of e-service provision. IoT services is a term that refers to all equipment interconnected via telecom networks, where data is exchanged to fulfil the requirements and needs of citizens in all life aspects. IoT apps are also diversified according to different aspects of usage, including end-user, commercial, and industrial infrastructure, as well as government activities.

(January 13, 2022) [dailynewsegyp.com](http://dailynewsegyp.com)



## Iraq

The Ministry of Communications announced, that it has received offers from a French company to build the Iraqi satellite, while noting that the financial cost of its construction has not yet been determined. "The offers made by Iraqi, Arab and international companies specialized in the manufacturing and developing the Iraqi satellite are still continuing for the Informatics and Telecommunications public company," ministry spokesman Raad al-Mashhadani told The Iraqi News Agency (INA). "There are also Egyptian companies that have submitted their offers in accordance

with the tripartite agreement between Iraq, The Kingdom of Jordan and the Arab Republic of Egypt," he said, stressing that "the experience of Egyptians, French and all companies that contribute to the development of the telecommunications situation and the Iraqi satellite can be used." "The satellite will benefit the revenues of the Ministry of Communications by participating through space frequencies, communication network frequencies."

(January 12, 2022) [ina.iq](http://ina.iq)





## Jordan

Ali Al-Mestarihi, a specialist in data science and cybersecurity, said that Jordan ranks first in the number of social network users in relation to internet users. Mestarihi told Roya's Akbar Al Sabe'a that 65 percent of Jordanians use the internet. He pointed to the need to find ways to enhance and protect data in Jordan. He also advised internet users to be extra cautious while using the internet and preserve their online privacy.

(January 31, 2022) royanews.tv

The Ministry of Digital Economy and Entrepreneurship has launched an updated version of the e-government service Sanad application. In a statement the Ministry said that the application is available for download for smart phones and other gadgets running iOS, Android and Huawei platforms, adding that current users can update their old versions. The Ministry indicated that the new version supports several new features designed for an

optimal user journey, adding that the application serves as an all-in-one government service hub accessible anywhere, anytime. A key component of Sanad is the user's digital ID, which allows real-time access to personal documents and records, including personal ID, birth certificate, driver license, academic certificates as well as the coronavirus vaccination certificate. Users can also pay their bills and other service fees using the application. However, the activation of the digital ID requires a one-time visit to any Sanad station located in public and private institutions across the Kingdom. Non-Jordanians can also sign in to Sanad in a 'guest mode' to access some government services. The ministry said it will continue to collect feedback before introducing more than 400 services to Sanad throughout 2022, in addition to the e-signature feature. According to the Ministry, the application has been downloaded about 2.5 million times since its launch in August 2021. (January 24, 2022) menafn.com



## Kuwait

The telecom regulator CITRA is planning over the past year to increase the competitiveness of the Kuwaiti mobile market and make mobile services more affordable. As such, in March 2021, CITRA issued the first MVNO license in the country. The license was awarded to Virgin Media Kuwait, which is a joint venture between STC (which owns 10%) and Virgin Mobile Middle East and Africa. This new entrant will help CITRA in promoting competition and more affordable mobile plans. As of January 2022, Virgin Media Kuwait has yet to launch. GlobalData expects the launch in March 2022, with the MVNO offering mobile handset plans and data-only plans. The MVNO will enter a relatively developed market, where it will face stiff competition from the existing

three market players, with established market dynamics. The power struggle is expected to affect the 5G state of play as well, as coverage has already reached 97% of the population and the uptake has reached 5% of total mobile subscriptions in 2020. The three established MNOs offer mobile 5G plans on both postpaid data-only plans and handsets plans. The telcos are monetizing 5G through postpaid plans which have notably higher ARPUs than in prepaid plans. Another layer of pressure for new entrant will be high mobile penetration of the population in the country. It reached circa 151.4% of the population in 2021 with a high level of multi-SIM ownership in the country.

(January 31, 2022) verdict.co.uk



## Nepal

The Nepal Telecommunications Authority (NTA) is preparing to revoke the license of mobile network operator (MNO) Smart Telecom after the telco failed to clear arrears totaling around NPR5.5 billion (USD45.8 million) by the extended deadline of mid-January, reports Khabarhub. With the telco having shown no intention of making the payment, NTA Chairman Purushottam Khanal said he was left with no option but to execute the government's threat to cancel Smart's permit. The NTA previously announced plans to revoke Smart's license in August 2019, only for the government to overrule the decision and grant the telco permission to pay its renewal fees and other outstanding

liabilities in instalments over twelve months. This deadline was subsequently extended to July 2021 and, most recently, January 2022. Smart Telecom is Nepal's third largest MNO with 2.36 million subscriptions and a 5.9% share of the mobile market as of mid-September 2021. (January 17, 2022) commsupdate.com

The total fiber internet user base in Nepal has surpassed 1.6 million with major ISPs adding more customers. As per NTA's latest data, Nepal's fiber broadband now connects 16 lakh, 29 thousand, 7 hundred, and 68 subscribers. This total number of customers is shared among 51 service providers with three

included in the latest stats. Till Ashoj, the total fiber internet user base totaled 15 lakh, 79 thousand, 4 hundred and 38. That means the service providers added a total of 50 thousand, 3 hundred and 30 new customers on fixed wired broadband. With it, the total percentage of fixed broadband (wired) connections has improved to 28.96% from 28.28% the previous month. NTA's data show major ISPs WorldLink, Subisu, Classic Tech, uniformly sharing new customers in the ongoing internet speed war. State telco NTC has also continued its momentous growth in-between the two months. However, the excitement has not fared well for a few. The stats for Kartik will be a relief for WorldLink as it restores a positive number from the previous month. The latest figure shows the country's largest ISP's total customers at 5 lakh, 49 thousand, 2 hundred, and 83. The Kathmandu-based ISP added a good total of 7 thousand, 8 hundred, and 81 during the one-month period.

Another private ISP Subisu has taken its user base to 2 lakh, 15 thousand, 2 hundred, and 48. The ISP likewise added a solid 6 thousand, 4 hundred, and 31 new subscribers. NTC, riding on its Triple Play fiber-based broadband solution has continued its exceptional stride. What is more plausible is that the ISP's speed bump does not seem to affect the telecom operator. As of Kartik, NTC's total number of fiber subscriptions reached 1 lakh, 51 thousand, 6 hundred, and 76. The operator/ISP was able to steal another 6 thousand, and 21 new customers. Check out: Ntc Fiber Internet FTTH Price, Speed and Offers Classic Tech which added a massive over 21 thousand customers last month, had another encouraging month. Like, its competitors, the ISP also added 6 thousand, 9 hundred, and 74 new customers as of Kartik. The ISP now serves 1 lakh, 87 thousand, 5 hundred, and 63 subscribers.

(January 4, 2022) nepalitelecom.com



An agreement was signed between International Emerging Technologies Company (ETCO) and Virgin Orbit to prepare satellite launch platforms in the Sultanate of Oman. "With the support of the Ministry of Transport, Communications and Information Technology, International Emerging Technologies Company (ETCO) signs a strategic agreement with Virgin Orbit of America to prepare satellite launch platforms in the Sultanate of

Oman and enhance cooperation in space sector technologies and related projects," Oman News Agency (ONA), said in a statement. Under the agreement, the establishment and launch of satellites in low Earth orbit will be studied to conduct pioneering scientific research, capture high-resolution images of space, and digitally analyze data and images collected from orbit by employing the latest solutions. (January 26, 2022) timesofoman.com

## Oman



State-backed telcos the Pakistan Telecommunication Company Limited (PTCL) and the Special Communication Organization (SCO) have signed a Memorandum of Understanding (MoU) to cooperate on the development of telecommunications services in the Azad Jammu and Kashmir (AJK) and Gilgit Baltistan (GB) regions. The deal will facilitate passive network sharing and SCO's backhaul support for the PTCL's launch of fixed wireless access (FWA) services over its 3500MHz spectrum. In addition, the pair will offer their respective fiber assets for backup and redundancy on a reciprocal basis to ensure uninterrupted provision of services and will jointly build access networks in cantonments and other locations. Other measures covered by the MoU include collaboration on multi-operator RAN (MORAN) and various ICT services. SCO DG Major General Muhammad Shahid Siddeeq was quoted as saying of the tie-up: 'We are pleased to partner with PTCL for upscaling telecom services in AJK and GB, where SCO has played an instrumental in connecting the masses through high-quality internet and cellular services. Through our efforts, we hope to provide an inclusive and equitable environment that will ensure progress and growth.' (January 14, 2022) commsupdate.com

Senior officials from Huawei including Mr. Shunli Wang, Vice President of Huawei Middle East and Mr. Mark Meng, CEO Huawei Pakistan visited PTA Headquarters, Islamabad today. They met with Chairman PTA, Maj Gen Amir Azeem Bajwa (R) and discussed matters related to development of ICT sector in Pakistan. Various proposals for development of innovative digital solutions to accelerate progress towards Digital Pakistan came under discussion. (January 6, 2022) pta.gov.pk

Pakistan Telecommunication Authority (PTA) has started accepting applications for Long Distance and International (LDI) license for Pakistan. This license shall be valid for a term of 20 (twenty) years. Applicants for the license will have to provide letter of application, CNIC or passport along with other relevant details/documents. The complete list of information and requirements is available at: <https://pta.gov.pk/en/industry-support/home/wireline/long-distance-international> Applications can be submitted via postal service to PTA Headquarters, F-5/1, Islamabad or in person.

(January 5, 2022) pta.gov.pk



## Saudi Arabia

The Communications and Information Technology Commission (CITC) has launched the second phase of accreditation registrars for Saudi domain names. The launch will provide entities from the private sector to complete registration and obtain services by March 2022, contributing to diversifying options for beneficiaries, increasing competition, and improving the quality of services provided to users. The Commission seeks to enhance the industry of the Saudi domain market, increase the usage and find local companies specialized in Internet services and domain names. The Commission confirmed that accrediting agents includes a set of administrative and regulatory requirements, such as proof of eligibility. Applicants must be a local company registered on the "ManassaTech" dedicated to enterprises operating in the information technology sector and emerging technologies, provide evidence of expertise in activities related to hosting and providing electronic services, in addition to a detailed presentation with all aspects of the technical and marketing plan. Application requirements are available on [www.nic.sa](http://www.nic.sa) It is noteworthy that the launch of the second phase comes to enable Saudi companies operating in the IT sector to invest in the field of Saudi domain names by providing innovative services to users in the Kingdom.

(January 17, 2022) [citic.gov.sa](http://citic.gov.sa)

The Saudi Digital Government Authority (DGA) launched a framework agreement to provide cloud computing services for Saudi government agencies through the "Etimad" platform. The adoption of the platform provides many services to various government agencies and enhances the partnership with the private sector. It also helps achieve the development goals of the Kingdom, enables the digital transformation of those services, increases transparency and efficiency, and facilitates providing services. The framework agreement aims to contribute to the digital transformation in the Kingdom, unify product specifications and standards, increase the contribution of the private sector, and create a competitive environment. The agreement aims to develop

local content, rationalize consumption, raise the efficiency of digital purchases, speed up its procedures, and increase the quality and effectiveness of products. The agreement includes several cloud computing infrastructure services: random memory, virtual CPU and storage, and backup. DGA Governor Ahmed al-Suwayan said that the framework agreement supports government digital transformation programs and partnerships with the private sector. The Authority recently announced the regulatory framework of the digital government policy. At the ceremony, Suwayan stressed that the government platforms achieved digital excellence and concerted efforts through joint work and integration between various digital media. He indicated that this step supports the regulation and governance of digital services business and improves beneficiaries' experience through a system of digital government services. It also contributes to integration between government agencies and strengthens cooperation. The Governor announced that digital government policy enables and accelerates the sustainable digital transformation of the public sector in the medium and long term. The policy aims to create a comprehensive government system that focuses on the beneficiaries, including citizens, residents, and visitors, and facilitate the digital transformation of the public sector by enhancing its capabilities. The "Governance Digital Platform... Orientation and Impact" session was held during the ceremony to discuss the government's approach, perspectives, and platforms. The Governor handed over the platforms' registration certificates to the entities that responded to the Authority's circular, including Absher, Etimad, Ejar, Balady, Tawakkalna, Sakani, Sehaty, Qiwa, Madrasati, and Najiz. The Authority is the national reference and competent entity for digital governance in the Kingdom. It aims to direct national efforts to harmonize government procedures, achieve optimal investment for existing assets, improve operational efficiency, and enhance the experience of government beneficiaries and digital service providers. (January 10, 2022) [english.aawsat.com](http://english.aawsat.com)



## Syria

The Telecoms Regulator has started the process to license another operator in the country – officially Syria's third player. According to a statement posted on 10 January, the Communications and Postal Regulatory Authority has completed the draft single license for the third mobile operator. It said the introduction of a third player in the national market would "enhance the access of telecommunications services to subscribers with the best quality". Specifically, the regulator is looking for a 4G operator that can later launch 5G services. Translated from its original Arabic version, the Communications and Postal Regulatory Authority

wrote: "The authority added that one of the licensing conditions for the third operator is that it must launch according to the highest international standards, and that it provides modern services that match the latest global services in the field of mobile phone services." The incumbents must give the new player the "possibility to benefit from their networks for a period of two years in some areas, pending the completion and installation of devices and the completion of the infrastructure necessary for [the new player] to achieve geographical spread and secure service for the largest number of people possible". The regulator also said that

"...for its part, the authority will provide it with all the appropriate capabilities to enable it to reach a wide segment of subscribers, by allowing it to offer promotions in the first stage of launch" However, after more than a decade of war, the plans are unlikely to be straight forward. Syria is currently served by Syriatel and MTN Syria, however MTN Group confirmed in its June financial results that MTN Syria was "placed under judicial guardianship in February 2021". It confirmed its market exit in August with

immediate effect with CEO Ralph Mupita saying that operating there had become "intolerable". MTN Group has also exited other Middle East markets as part of a new strategy to focus on Africa. Ethiopia has made similar moves to open up its telecoms market, moving from monopoly to duopoly over the last year – although the introduction of a third operator was put on hold over recent weeks.

(January 11, 2022) capacitymedia.com



## Turkey

Turkey Wealth Fund (TWF) has approached banks holding a majority stake in Turk Telekom (TT) to finance a planned buyout of the telco, Bloomberg reports. The sovereign fund is in preliminary talks with the banking consortium – represented by a special purpose vehicle (SPV), LYY Telekomunikasyon – and wants to secure a loan from the banks to buy their collective 55% stake in TT, according to unnamed sources close to the matter. The stake could be worth around USD1.4 billion based on its current market price, data compiled by Bloomberg show. In a statement to Bloomberg, TWF confirmed negotiations with the banks are ongoing, without providing further details.

(January 28, 2022) commsupdate.com

Turkish operator Turkcell is actively seeking strategic foreign partnerships for its subsidiaries, its CEO Murat Erkan told media during the Consumer Electronics Show (CES) in Las Vegas. 'We have opened up our subsidiaries Paycell, Bip [OTT communications] and Superonline [fiber broadband operations] to investors. Funds from the United States, Asia and the Middle East have shown interest in our companies. We are not looking for financial investors, but partners to speed up expansion abroad,' he said, adding that individual stakes of up to 10% could be offered to foreign partners in the coming months. Turkcell has authorized JP Morgan to find investors for payment processing company Paycell, with talks ongoing with around ten potential partners. (January 11, 2022) Daily Hurriyet



## United Arab Emirates

With regards to the circulated news on the suspension of some flights to certain US airports due to 5G deployment, the Telecommunications and Digital Government Regulatory Authority (TDRA) clarifies that this issue is exclusively related to the US airports referred to, as new spectrum frequencies have been allocated to 5G that differ from the frequencies designated for use in our region, and there is no disruption or interference in the UAE between 5G networks and air navigation systems. Noting that the 5G stations in the UAE have been installed in multiple places for many years, and no negative impact on the safety of air navigation systems has occurred. TDRA bases its 5G plans on studies that take into account the safety of frequencies and potential impact on other sectors. TDRA also considers the decisions and procedures approved by the International Telecommunication Union (ITU) in this regard. TDRA confirms that it is coordinating in this matter with the General Civil Aviation Authority, which in turn coordinates and communicates with the International Civil Aviation Organization and European and American aviation safety regulatory agencies to ensure the highest levels of safety and security in this context.

(January 19, 2022) tdra.gov.ae

The Telecommunications and Digital Government Regulatory Authority (TDRA) has announced the launch of the "UAE Verify" platform, which allows government and private entities to verify the authenticity of digital documents issued by government authorities on an immediate basis and without the need for original hard copy or true copy. The "UAE Verify" platform uses blockchain technology, which is a shared immutable real-time ledger for recording the history of financial transactions, contracts, and different documents. Blockchain technology helps in regulating data and digital documents, verifying their authenticity, sharing information and documents, and protecting privacy. The platform allows users to convert their documents to authenticated digital documents with a high level of privacy and security. In his speech at the launch event, H.E. Eng. Majed Sultan Al Mesmar, Director General of the Telecommunications and Digital Government Regulatory Authority, said: "With the launch of the "UAE Verify" platform, we take a new important step on the path of comprehensive digital transformation using future technologies such as blockchain, which is the technical basis for the "UAE Verify" platform. We are happy about this platform, which was the result of intensive cooperation between TDRA and

many government entities, that worked together in a team spirit to serve the higher goals of the UAE government. On this occasion, I can only commend the partners of the first phase of the platform, namely the Ministry of Interior, the Ministry of Education, the Ministry of Health and Prevention, the Ministry of Justice, the Ministry of Community Development, the Ministry of Climate Change and Environment, the General Authority of Civil Aviation, the Federal Authority for Identity, Citizenship, Customs and Ports Security, and the Dubai Land Department. I extend thanks to the rest of the authorities that have expressed their willingness to participate in the development of the "UAE Verify" platform to serve all customers." He added: "The launch of the "UAE Verify" platform harmonizes with the electronic transactions federal decree-law announced by our wise leadership and approved by President His Highness Sheikh Khalifa bin Zayed Al Nahyan, may Allah protect him, as part of a larger plan to develop federal legislation. The platform also harmonizes with the UAE Government Charter for Future Services. It will play an important role in developing digital services and channels and enhancing the happiness of society. In TDRA, we will continue our efforts to develop digital transformation pillars and principles based on our responsibility for regulation and enablement in the telecommunications and digital government sectors. We aim to continue the major achievements of our country during the next fifty years. TDRA emphasized that the "UAE Verify" launch is a major stride to achieve the UAE Strategy for Government Services, which aims to provide human-centered services, establish trust between the government and the society, enhance the UAE competitiveness globally, and guarantee sustainability and efficiency. Al Mesmar stressed that the launch of the "UAE Verify" platform comes as a result of a digital trust project that began about four years ago, thanks to the directives of the wise leadership to shape a future that matches the UAE's position and lay scientific foundations for the future government. These directives were part of the UAE government annual meetings to prepare a development vision for the UAE's future in preparation for the next fifty. As part of the Digital Government Roadmap 2021-2025, the UAE Verify digital platform was launched to achieve 100 per cent digital government services in the country that are accessible to individuals, businesses and federal government employees. This initiative aims to attain six strategic and priority goals: provide a unified digital platform and common digital enablers; provide a world-class digital infrastructure; enable easy and quick integrated digital services tailored to meet the clients' needs; upgrade digital capabilities and skills; prepare legislation to ensure seamless and holistic digital transformation; and increase the efficiency of government work. The Digital Government Roadmap 2021-2025 targets to meet the digital needs of individuals, corporations and federal government employees. At the individual level, the roadmap seeks to provide easy access to accurate information, easy engagement with the government, reduced waiting time, and quick resolution

of requirements and challenges. At the corporate level, it aims to provide reliable and secure digital systems, a clear regulatory environment, guidance in laws, policies, and regulations, and transparency in government transactions. At the government level, it will strive to promote human capacity development through training apart from providing tools necessary to efficiently deliver services and empower all government employees.

(January 18, 2022) [tdra.gov.ae](https://tdra.gov.ae)

The Telecommunications and Digital Government Regulatory Authority (TDRA) announced that the feature of displaying the name of the calling entity from private sector companies in the UAE will be officially and gradually implemented during the coming period. TDRA had started the test implementation of this feature last May to the banking sector, to be the first in the region to apply this feature. Displaying the caller's ID initiative, known as "Kashif" initiative, informs customers about the caller's ID, even if the caller's contact info is not saved on the phone. This feature, which was launched by TDRA in cooperation with the service providers, aims to reduce anonymous calls received by customers and provides the caller's information to the recipient before answering the call. TDRA indicated that it has issued legislation related to this feature, as part of the development system aimed at enhancing customers' confidence in calls received from private sector companies, thus, reducing the inconvenience caused by anonymous calls. Commenting on the new feature, Eng. Saif Bin Ghelaita, Director of Technology Development Affairs at TDRA, said: "TDRA, based on the directives of the wise leadership, launches and implements initiatives aimed at enhancing customers' confidence in the telecommunications sector services. Accordingly, we launched this feature that enables customers to identify the names of the calling parties, which allows them to decide whether they would like to answer the call. Moreover, it gives them a kind of reassurance when receiving the call and talking to the caller." Eng. Bin Ghelaita added: "TDRA chose to implement this feature after reviewing a number of projects and best practices, and worked during the testing period in cooperation with the service providers to identify solutions to technical challenges, and to make modifications to the service provider networks to fully activate the new feature." TDRA initiated the implementation of this feature with the banking sector, to be applied to the rest of the sectors such as health, hospitality, education and other sectors on a later stage. This feature will be applied to all private sector companies during 2022, and it will include fixed and mobile numbers registered under private sector companies. TDRA emphasized that this feature is considered the first line of identifying the calling party, nevertheless, customers must abide by the directives of competent authorities regarding not revealing their personal information such as bank account number, PIN codes, passwords and others. 📍

(January 1, 2022) [tdra.gov.ae](https://tdra.gov.ae)

## REGULATORY ACTIVITIES BEYOND THE SAMENA REGION



### Albania

The Competition Authority (Autoriteti i Konkurrences, CAA) has authorized the sale of an 80.27% stake in full-service provider ALBtelecom from Cetel Telecom – part of Turkey's Calik Holding – to Hungarian ICT group 4iG. In December 2021 4iG signed an agreement to acquire a majority interest in the telco via a multi-step

transaction that will result in Calik Holding acquiring a 3.2% stake in 4iG as an institutional investor. The value of the deal was not disclosed. The deal was quickly followed later that month by another acquisition, with 4iG inking a pact to takeover mobile provider ONE Telecommunications. (January 20, 2022) [commsupdate.com](#)



### Angola

Angolan cellco Unitel has joined forces with Ericsson to successfully complete a 5G data call in Angola, utilizing spectrum in the 3.5GHz band. The test was powered by the vendor's 5G RAN and Ericsson 5G Core solutions for Non-Standalone (NSA) networks. The conclusion of the trial was announced on 31 December 2021. TeleGeography notes that Unitel was one of three Angolan operators to receive a 5G

license from the Angolan Institute of Communications (Instituto Angolano das Comunicacoes, INACOM) on 20 December. The watchdog confirmed that Unitel, Movitel and new market entrant Africell all received unspecified frequencies in the 3.3GHz-3.7GHz range as part of the licensing process.

(January 5, 2022) [commsupdate.com](#)



### Argentina

The National Communications Agency (Ente Nacional de Comunicaciones, ENACOM) has published a list of frequencies that it deems suitable for future 5G use. The list includes the following spectrum:

- 1427MHz-1518MHz (1500MHz band)
- 1770MHz-1780MHz/2170MHz-2200MHz (AWS-3 band)

- 2300MHz-2400MHz (2.3GHz band)
- 3300MHz-3600MHz (3.5GHz band)
- 24.25GHz-25.75GHz (26GHz band)
- 37GHz-43.5GHz (38GHz band)

A timeline for a 5G spectrum auction has not yet been disclosed, however.

(January 5, 2022) [commsupdate.com](#)



### Armenia

The Public Services Development Commission of Armenia (PSRC) approved the sale of Russian group Rostelecom's Armenian subsidiary Rostelecom Armenia (formerly GNC-Alfa) to Electric Networks of Armenia (ENA) – owned by the Tashir Group of Samvel Karapetyan – and the Russian Arman Hunanyan, via a new joint company registered in Cyprus (Molitro). The estimated value of the deal is USD25 million with further funding touted to upgrade and modernize networks and infrastructure. It is understood that

the new owners have earmarked CAPEX of between AMD1.5 billion and AMD1.8 billion (USD3.1 million and USD3.7 million) over the next five years with a specific aim of developing the telco's presence in the provinces. In November 2021 Rostelecom revealed via a filing to the PSRC that it was poised to offload its Armenian subsidiary to ENA through an offshore holdings company called Molitro. The Tashir Group already has a presence in the Armenian telecoms market, owning a 16% stake in Ucom. (January 20, 2022) [commsupdate.com](#)



### Azerbaijan

The government of Azerbaijan is aiming to ensure fixed broadband access throughout the entire country by 2024, extending services to more than 700 settlements that are not currently covered. Speaking at an event last week, Deputy Minister of Digital Development and Transport Rovshan Rustamov revealed some 40,000 new users had been connected in the last month, as part of a target to extend coverage to an additional 150,000 households during 2022. To help achieve its goal, the government plans to merge the state-owned operators

Baku Telephone Communication (Baktelecom) and Aztelekom 'in the near future', he added. The work, which will be carried out within the framework of a public-private partnership, will accelerate the country's digital transformation, enhance cybersecurity and reduce business and government costs, Rustamov noted, adding improved connectivity forms part of the 'Azerbaijan 2030: National Priorities for Socio-Economic Development' strategy.

(January 31, 2022) [commsupdate.com](#)



## Bahamas

The Utilities Regulation and Competition Authority (URCA) of the Bahamas has floated the possibility of introducing a third player to the market this year in its proposed Annual Plan for 2022. The advent of 5G is also firmly on the regulator's agenda for 2022, with URCA noting that "The National Public Consultation will be guided by... the specific demand for 5G services in the Bahamas and the different roles/types of 5G services in relation to the current 4G/LTE mobile services." Through the public consultation, the regulator is aiming to identify potential use cases for

5G across the government, enterprise and consumer sectors, as well which regions of the Bahamas show the most demand – and need – for 5G. Additionally, URCA is looking to establish how much investment in infrastructure will be required to facilitate 5G services. TeleGeography reports that URCA is in the process of conducting a review of the market to assess the viability of a third market player. Once it has concluded this, the regulator will provide its policy recommendations to the government on the matter.

(January 9, 2022) [developingtelecoms.com](https://developingtelecoms.com)



## Belgium

Belgium approved spectrum auction rules which could introduce a fourth MNO to a country with a population of less than 12 million people and ramp competition with the nation's current major operators. The Belgian Institute for Postal Services and Telecommunications (BIPT) issued a call for tender for the long-awaited auction, which will assign new frequencies for 5G networks, and existing 2G, 3G and 4G radio spectrum. Licenses in the 700MHz, 900MHz, 1400MHz, 1800MHz, 2.1GHz and 3.6GHz frequency bands will be up for grabs. The 700MHz, 1400MHz and 3.6GHz bands are designated for 5G. Notably, the auction includes a package of spectrum reserved for a possible new MNO, which would then compete with existing players

Proximus, Orange Belgium and Telenet/Base. BIPT explained frequencies in the 900MHz (5MHz duplex), 1800MHz (15MHz duplex), 2100MHz (5MHz duplex) and 700MHz (5MHz duplex) have been reserved for a new entrant. Candidates have until 16 February to submit their bids and the auction is due to take place in June. Proximus launched 5G services in April 2020, making use of existing spectrum assets along with a temporary license in the 3.6GHz to 3.8GHz band which was awarded to all three existing players. Last month, Telenet outlined plans to employ the temporary license and existing 4G frequencies to launch 5G in limited areas.

(January 17, 2022) [mobileworldlive.com](https://mobileworldlive.com)



## Brazil

The telecom regulator Anatel postponed its ruling on the sale of Oi SA OIBR3.SA mobile operations, as one of its board members asked for more time to analyze the matter. The regulator's next scheduled meeting would be on Feb. 10, but it decided to set a new extraordinary meeting for Monday, Jan. 31. Oi's mobile operations are expected to be sold to local rivals TIM SA TIMS3.SA, Telefonica Brasil's Vivo VIVT3.SA and Claro, a subsidiary of Mexico's America Movil AMXL.MX. They won the assets in a 2020 auction with a joint bid of 16.5 billion reais (\$3.06 billion). Prior to board member Vicente Aquino requesting an additional period of time to review the matter, rapporteur Emmanoel Campelo had recommended the deal be approved with a few reservations. Shares in Oi were stable at 1.01 real in afternoon trading, after falling as much as 7% earlier. TIM's shares were up about 0.5% and Telefonica Brasil about 0.8% each, while Brazil's Bovespa stock index. BVSP dropped 0.1%. (January 31, 2022) [nasdaq.com](https://nasdaq.com)

The government launched its 770km 'Infovia 00' fiber-optic cable on Friday 14 January, as it seeks to bring broadband connectivity to one million residents of the states of Amapa and Para, 'including riverside dwellers and artisanal fishermen'. The fiber-optic cables are being installed along riverbeds to reduce the environmental impact. The initiative is part of the Ministry of Communications-backed 'Norte Conectado' program, itself a part of the 'Programa Amazonia Integrada Sustentavel' (Sustainable Integrated Amazon Program). The deployment of the Infovia 00 network is expected to be completed by 31 January, with metropolitan networks due to be deployed by March 2022. Studies regarding the implementation of 'Infovia 01', which will connect Santarem (Para) to Manaus (Amapa), are underway, with that phase of the project expected to take place in the fourth quarter of 2022. A total of eight subfluvial cables will be deployed, spanning 12,000km and traversing the Amazonas, Negro, Solimoes, Madeira, Purus, Jurua and Rio Branco rivers. (January 18, 2022) [commsupdate.com](https://commsupdate.com)



## British Virgin Islands

The Telecommunications Regulatory Commission (TRC) of the British Virgin Islands (BVI) has confirmed that Digicel BVI has formally applied for a renewal of its operating license, ahead of the expiration of its existing concession. The original 15-year license was granted on 17 December 2007 and will expire on 16 December 2022. Digicel now seeks to renew the license for an additional 15 years. The TRC has confirmed that it will send the cellco an 'Evaluation Report' on 26 April 2022 and then stage a public hearing on 6 May, during which Digicel and 'any third party with a legitimate interest' may make comments or objections on the application. On 1 June 2021 the TRC invited the country's telecoms licensees to re-apply for their licenses ahead of the expiration of the respective concessions. The watchdog noted: 'The four unitary licenses issued to CCT, Flow, Digicel and BVI Cable TV by the TRC in

2007 are due to expire over an eight-month period in 2022 ... All operators seeking renewal must apply to the Commission no less than twelve months before their License expiration.' In a related development, the BVI Beacon reports that the TRC will hold a public consultation regarding revised licensing requirements on 1 March. The report quotes TRC CEO Guy Malone as saying: 'Overall, the proposed amendments to the unitary licenses have been guided by the changes in the circumstances of the telecommunications services industry in the British Virgin Islands.' Obsolete provisions such as a requirement to install and maintain public payphones and to produce a printed directory are expected to be removed, while network resilience, data protection and cybersecurity are all expected to feature in the new licensing regime.

(January 19, 2022) [commsupdate.com](https://commsupdate.com)



## Chad

The Finance Ministry has decreed that equipment related to telecom and internet services, including network equipment, devices, modems and routers, are exempt from import duties and taxes for the next five years. The tax break is aimed at stimulating uptake of digital services by reducing the cost barrier to the public and thereby fostering a more active digital economy. The high cost of mobile devices is frequently cited as a factor behind the low penetration rates of

digital services in Chad and much of Africa. High tariffs have also been an issue in Chad, to the extent that a delegation of senior government ministers – including the country's Head of State General Mahamat Idriss Deby Itno and the President of Chad's Regulatory Authority for Electronic Communications and Post (ARCEP) – earlier this month met with the CEOs of Airtel Chad and Moov Africa Chad to press them on the matter and call for lower rates. (January 26, 2022) [developingtelecoms.com](https://developingtelecoms.com)



## El Salvador

The Superintendency of Competition (Superintendencia de Competencia, SC) says it has reviewed an application seeking approval for the sale of Telefonica Moviles (Movistar) and Telefonica Multiservicios to General International Telecom Limited. The antitrust body has evaluated the possible effects on competition and has determined that the deal does not require antitrust authorization as the buyer does not have any existing operations in the country and four main mobile operators would remain in the market after the transaction. As previously reported by TeleGeography's CommsUpdate, in October 2021

Telefonica Centroamerica Inversiones reached an agreement for the sale of its entire 99.3% stake in Telefonica Moviles El Salvador to General International Telecom Limited for USD144 million. Telefonica Centroamerica Inversiones is 60% owned by Spanish telecoms group Telefonica and 40% by Corporacion Multi Inversiones. Telefonica says the deal is part of its asset portfolio management policy based on a strategy of value creation, improving return on capital. The closing of the transaction is subject to certain closing conditions, including the relevant regulatory approvals.

(January 4, 2022) [commsupdate.com](https://commsupdate.com)



## Ethiopia

The Ethiopian Communications Authority (ECA) has suspended the licensing process relating to the issuance of a second full-service nationwide Telecommunications Service License. The process was initiated on 28 September, while the regulator announced its decision to halt proceedings on 22 December 2021. The ECA notes that it had 'received concerns and requests from several prospective bidders to delay the process and issue the RFP at a convenient time in the future' and promises that the licensing process will be relaunched in the 'near

future'. The watchdog added: 'The Authority is grateful to all potential bidders for their engagement and consultations on the process.' TeleGeography notes that the ECA and the Ministry of Finance named Global Partnership for Ethiopia (GPE) – a private consortium comprising Safaricom, Vodafone Group, Vodacom Group, CDC Group and Sumitomo Corporation – as the winning bidder for one of two nationwide concessions in May 2021. The second license went unsold, but was subsequently retendered by the authorities.

(January 5, 2022) [commsupdate.com](https://commsupdate.com)





## France

The telecoms regulator Arcep has revealed the number of operational 5G sites in the country at the end of Q3 2021, with Free Mobile leading the pack with 12,000 base transceiver stations (BTS), followed by Bouygues Telecom (5,003), Altice France (3,160) and Orange (2,473). Free is the sole operator currently offering 5G commercial services in the 700MHz and 800MHz bands (12,000 sites), with 1,691 of these sites also equipped to offer services in the 3500MHz band. Bouygues meanwhile had 4,701 sites in the

1800MHz/2100MHz and 1,934 in the 3500MHz bands, while Altice boasted 1,475 sites (1800MHz/2100MHz) and 1,934 (3,500MHz). For its part, Orange had 475 sites in the 1800MHz/2100MHz and 2,177 BTS in the 3500MHz bands. Elsewhere, Orange France had a total of 19,857 LTE-A sites – using carrier aggregation (CA) in at least two bands and capable of offering minimum speeds of 240Mbps – at the end of Q3 2021, followed by Free Mobile (16,828), SFR (14,084) and Bouygues (12,963). (January 4, 2022) [commsupdate.com](#)



## Gambia

The Telecom Minister Ebrima Sillah has confirmed that the Ministry of Information and Communication Infrastructure (MOICI) has issued the country's fifth GSM mobile network operating license to a start-up company named Giraffe Telecom. Minister Sillah stated that 'there is a space for a fifth operator', adding that heightened competition would be 'good for the Gambian customers. Regarding availability of mobile frequencies, Sillah disclosed: 'PURA [Public Utility Regulatory Authority] some months ago did a consultancy on usage of spectrum and it's a fact that almost 75% or more of the entire spectrum of the country is in the hands of two operators and sometimes not being used. So, the spectrum alignment consultancy was meant to ensure that you keep what

you pay for and what you use and the rest should return back to the state and ensure its reused or for other purposes.' Regarding Giraffe's ownership, the minister noted that 'between 60% and 70%' of the new company is owned by 'ordinary Gambians who are doing business in this country.' The Gambians currently have a choice of mobile services from four operators, two of which – Africell and Gamcel – launched in 2001, before further competition arrived courtesy of Comium Mobile in 2007 and QCell in 2009. In October 2021 the MOICI ordered a one-month suspension of Comium's network operations because of overdue fees, although a court subsequently sided with the cellco, which meanwhile received assistance from UK-headquartered Monty Mobile to clear its debts. (January 13, 2022) [Daily The Voice newspaper](#)



## Germany

The Federal Network Agency (FNA, Bundesnetzagentur) has published for consultation its 'points of orientation' for the future award of mobile spectrum. The consultation is combined with an initial survey of the future demand for spectrum for mobile communications ahead of the expiry of frequency usage rights in the 800MHz, 1800MHz and 2600MHz bands at the end of 2025. The points of orientation describe the circumstances relevant to the future provision of the spectrum and also present aspects needing clarification and considerations on the duration of the spectrum usage rights, the competitive independence of the fourth mobile network operator (MNO), competition-related and coverage obligations, and the promotion of cooperation. The aim of the initial demand survey is to examine signs of possible spectrum scarcity, which is an important aspect for the future award proceedings. The responses anticipated from the market participants will form a base upon which to determine the next steps for an objective, transparent and non-discriminatory process for the provision of the spectrum. 'We need to set the pace for the spread of digital technology. Broadband rollout needs to pick up speed and dead spots need to be eliminated. At present, the spectrum below 1GHz is particularly key to delivering mobile broadband to rural

communities. We are now taking the next step,' said the FNA's President Jochen Homann. The deadline for the submission of comments on the points of orientation and companies' forecast spectrum requirements is 21 March 2022. (January 25, 2022) [commsupdate.com](#)

The competition authority warned Google parent Alphabet it was now able to take action against the company's practices across a range of areas after declaring it fell under an extended remit to control the actions of large digital players. In a statement, the Bundeskartellamt indicated following a probe into Alphabet and subsidiary Google, the two were subject to extended abuse controls added to Germany's competition laws in 2021. The regulator added as a result it had already extended an assessment of the company's use of personal data and showcase of news. To fall under the rules businesses must be determined to have "paramount significance across markets", with the authority pointing to Google's dominant position across search alongside significant strength in other areas through Android, YouTube and advertising services. "The company has an economic position of power which gives rise to a scope of action across markets that is insufficiently controlled by competition", indicating it could reap a competitive

advantage from data derived from across its services. Bundeskartellamt president Andreas Mundt said it was now able to “take action against specific anticompetitive practices by Google,” adding the authority had “already started to look into Google’s processing of personal data and to deal with the Google News Showcase issue in more detail. At the same time, we are vigorously

conducting other proceedings against Amazon, Apple and Meta, formerly Facebook”. The move is the latest by a regulator in Europe to place the activities of Google and its peers under the microscope, with the European Commission and the UK among those assessing US tech giants.

(January 5, 2022) [mobileworldlive.com](https://mobileworldlive.com)



## Ghana

The National Communications Authority (NCA) has granted local ISP Celltel Networks full nationwide authorization to implement its USD300 million Ghana Smart Cities Project. The approval, which makes Celltel an Internet and Public Data Service Provider and follows provisional authorization earlier in 2021, grants Celltel Networks – owned by Kludjeson International – a five-year permit to use the 2.4GHz and 5.8GHz bands and VSAT Network Class 3 (1-49 terminals) nationwide to provide Wi-Fi access to its customers. Under the terms of the authorization, the company is required to pay an annual fee and commence operations within two years of receiving written approval, failing which

its license will be revoked. Working in collaboration with various Metropolitan, Municipal and District Assemblies (MMDAs), Celltel plans to deploy an affordable nationwide Wi-Fi service which subscribers can access using Celltel-branded handheld, desktop and home devices. Having already installed some infrastructure in parts of the country, the company is currently piloting the service in selected areas in preparation for a full rollout. Celltel hopes to expand its footprint by means of co-location and infrastructure sharing agreements with existing industry players.

(January 5, 2022) [GhanaWeb](https://GhanaWeb)



## India

Following complaints from consumer groups regarding the prevalence of tariffs with validity for 28 days the Telecom Regulatory Authority of India (TRAI) has mandated that service providers also offer monthly plans or offers with 30-day validity. The decision, implemented through an amendment to the most recent Tariff Order, requires that service providers offer at least one Plan Voucher, Special Tariff Voucher and Combo Voucher with validity of 30 days and one Plan Voucher, Special Tariff Voucher and Combo Voucher that is renewable on the same date of each month. Consumer advocacy groups had lodged complaints with the regulator, stating that the 28-day billing period did not represent monthly billing as users were required to pay for at least 13 top-ups within a year. Further, users complained of the inconvenience of irregular top-ups caused by the 28-day billing period. The TRAI acknowledged that operators had been transparent in marketing their offers and had not attempted to represent 28-day plans as ‘monthly’. Nevertheless, the regulator noted that consumer perception must be taken into consideration and highlighted the ‘persistence of confusion in the minds of the consumers and the inconvenience caused to them in practical terms due to unavailability of monthly tariff offerings. Responding to initial consultations on the matter cellcos Reliance Jio Infocomm (Jio) and Bharat Sanchar Nigam Limited (BSNL) claimed that monthly billing would not be possible with their billing systems, whilst Vodafone Idea (Vi) said that the change would require ‘gigantic efforts in terms of consumer awareness, configurations

in billing systems, publications in own- and third-party channels and retail channel education.’

(January 28, 2022) [commsupdate.com](https://commsupdate.com)

Indian full-service provider Reliance Jio Infocomm (Jio) has paid INR307.9 billion (USD4.1 billion) towards deferred spectrum liabilities for airwaves purchased at tenders in 2014, 2015 and 2016 and acquired through trading in 2021, the Economic Times reports. The move follows the Department of Telecommunications’ (DoT’s) decision in December 2021 to allow providers flexibility to pay deferred spectrum dues at any date. The payment comprises the entirety of the deferred liabilities for spectrum secured at auctions in 2014 and 2015 as well as the frequencies it purchased from Bharti Airtel last year. Payments for the airwaves were due in annual instalments between the 2022/23 and 2034/35 financial years with interest rates of around 10% and with an average residual rate period of around seven years. According to Jio, early payment of the spectrum dues will result in interest cost savings of around INR12 billion annually.

(January 19, 2022) [commsupdate.com](https://commsupdate.com)

India’s three major mobile operators called on the regulator to cut the reserve price of 3.5GHz spectrum for a planned 5G auction. In submissions to Telecom Regulatory Authority of India (TRAI), the operators insisted a cut in spectrum prices was required to ensure they could finance 5G rollouts. Reliance Jio reportedly pushed for a 95 per cent reduction in the base price for

the mid-band spectrum, while Bharti Airtel called for it to be kept at no more than 10 per cent above the rate recommended in 2018. Jio also proposed the price of mmWave spectrum be kept at 0.01 per cent of the mid-band price, an option Vodafone Idea supports. Airtel indicated its investment in a nationwide 5G network could be as high as INR500 billion (\$6.8 billion) excluding spectrum costs, ET wrote. The operator stated it would require a 20 per cent increase in revenue

to break even, but noted operators in other nations typically struggled to add 10 per cent. The operator also suggested giving away 600MHz spectrum with stringent deployment obligations, to boost rural broadband coverage. All three operators are trialing 5G networks, with most urging the government to release the necessary spectrum, particularly in mmWave bands.

(January 13, 2022) The Economic Times



## Indonesia

The Ministry of Communication and Information (MCI, KemKominfo) has outlined the small print contained within its approval of the merger of Indosat Ooredoo and Hutchison 3 Indonesia (Tri), to create an enlarged entity named Indosat Ooredoo Hutchison (IOH). Qatar-based Ooredoo and CK Hutchison Holdings of Hong Kong announced the completion of the USD6 billion merger of their respective telecommunications businesses in Indonesia, creating the archipelago's second largest mobile network operator behind Telkomsel (Telekomunikasi Selular), with estimated annual revenue of approximately USD3 billion. Now though, Minister of Communication and Information Johnny G Plate has outlined a number of 'expectations and conditions' under which the combination was approved. Specifically, the MCI has tasked IOH to increase the number of on-air base stations by a minimum 11,400 by 2025, at which time it must have at least 52,885 sites across the country. Secondly, the minister said that the enlarged operator will be expected to expand service coverage to at least 7,660 new villages and sub-districts by 2025 – meaning that the total coverage area served by IOH's cellular services would need to be at least 59,538 villages and sub-districts by that date. In addition, Mr. Plate has called on the company to improve its quality of service (QoS) by 'at least 12.5% for download throughput and

8% for upload throughput'. IOH's senior vice president and head of corporate communications Steve Saerang said, however, that the company had yet to determine the new network coverage areas. 'The company will go on regional visits and discuss investment commitments in each region,' he told reporters.

(January 6, 2022) commsupdate.com

Indonesia's Ministry of Communication and Information (MCI KemKominfo) has reportedly asked the country's incumbent mobile network operators (MNOs) to phase out 3G mobile technology in favor of bolstering 4G or 5G coverage for mobile data services. Minister of Communication and Information Johnny G Plate said: 'This 4G signal is the backbone of our national communication. I've also asked the cellular operators to fade out 3G. Why is 3G being faded out instead of 2G? Because it's a different user. 2G is voice communication, while 3G is data communication.' However, local industry watchers note that the government will need to address how it could achieve this given that currently, some 83,218 villages/ kelurahan are still not covered by 4G networks, while out of 12,548 villages/kelurahan, 9,113 are located in the Frontier, Remotest and Disadvantaged (so-called '3T') areas.

(January 6, 2022) commsupdate.com



## Ireland

Ireland's Commission for Communications Regulation (ComReg) has issued an update regarding the European Electronic Communications Code, saying that it 'understands the Code transposition into national law will be delayed'. The regulator's statement comes after the Department of Environment, Climate and Communications (DECC) announced that primary and secondary legislation will give effect to the transposition of the EECC. Specifically, such legislation will comprise the forthcoming 'European Union (Electronic Communications Code) Regulations, 2022'

and the 'Communications Regulation (Enforcement) Bill, 2022'; a priority drafting of the latter Bill was approved by Ireland's Cabinet on 14 December. ComReg has, meanwhile, reiterated that electronic communications providers must continue to comply with their obligations, while saying it will continue to regulate the sector under its existing powers, adding that 'redress mechanisms for customers will continue unchanged until new legislation is introduced'.

(January 20, 2022) commsupdate.com



## Italy

The government made almost €3.7 billion available to help boost the deployment of 1Gb/s broadband services in underserved areas. Infratel Italia, the agency in charge of managing the project, stated the aim is to cover a further 7 million households with high-speed broadband networks offering download speeds of 1Gb/s and 200Mb/s uploads. Interested parties have until 16 March to submit bids for the funding. A total of 15 geographic lots are up for grabs and the work must be completed by 30 June 2026. The public funding will contribute up to 70 per cent of costs incurred. The call for tender is the first under the new Italia a 1 Giga plan, one of a number of initiatives within Italy's national

ultra-broadband strategy. The approach also includes plans to connect schools and healthcare facilities, and promote the development of 5G networks. Funds will come from Italy's Recovery and Resilience Plan, the nation's program under the European Union's Recovery and Resilience Facility, which aims to mitigate the economic and social impact of the Covid-19 (coronavirus) pandemic. The most recent data from the FTTH Council Europe showed Italy was expected to increase its FTTH footprint to 16 million households by the end of 2021, up 46 per cent over 2020. By 2026, the figure is expected to reach 26 million households.

(January 18, 2022) [mobileworldlive.com](https://www.mobileworldlive.com)



## Kazakhstan

Draft legislation is being finalized in Kazakhstan which will simplify procedures for issuing mobile spectrum licenses and enforce frequency compatibility standards, as the telecoms authorities prepare to launch a competitive license auction later this year. The auction strategy overseen by the Ministry of Digital Development, Innovation & Aerospace will be supported by the new rules currently contained in the draft order 'On the approval of the rules for the assignment of frequency bands, radio frequencies, the operation of radio electronic equipment and high-frequency devices,

and calculation of the electromagnetic compatibility of civil radio electronic equipment.' Winning bidders will be approved by the ministry on the recommendations of its subordinate agency, the State Radio Frequency Service. The Kazakh government set a 2022 target for 5G mobile launches in the country's largest cities. The process of refarming and releasing the required commercial 3.5GHz mobile frequency bands remains ongoing, whilst the nation's cellcos have launched pilot 5G network sections in selected city districts.

(January 28, 2022) [Profit.kz](https://www.profit.kz)



## Latvia

Latvian telecoms watchdog the Public Utilities Commission (SPRK) has finalized the results of its auction of spectrum rights in the 1.5GHz band. Concessions were awarded to Latvia's three mobile network operators (MNOs), Tele2 Latvia, Latvijas Mobilais Telefons (LMT) and Bite Latvia. Bite and LMT paid EUR280,000 (USD312,134) each for their licenses – for the 1432MHz-1452MHz and 1452MHz-1472MHz blocks, respectively – whilst Tele2 paid EUR220,000 for the 1492MHz-1512MHz block. SPRK head Alda Ozola said of the additional frequencies: 'Any new spectrum band increases the performance of electronic communications networks. The 1.5GHz spectrum band will strengthen the capacity of the mobile network, including by providing high download speeds and data coverage in the country, given the currently growing volume of downloaded data.'

The telecoms watchdog the Public Utilities Commission (SPRK) has confirmed the results of

the auction for the rights for technology neutral spectrum in the 700MHz band which was completed in December 2021 and raised a total of EUR13.27 million (USD15.03 million) for state coffers. The sale comprised the allocation of three 2x10MHz lots (20-year duration) and two 1x10MHz lots (17-year duration). The paired blocks were acquired by Latvia's three mobile network operators (MNOs), with Latvijas Mobilais Telefons (LMT) submitting the highest bid of EUR3.52 million for the 713MHz-723MHz/768MHz-778MHz block whilst the 723MHz-733MHz/778MHz-788MHz block was awarded to Bite Latvia for EUR2.86 million and Tele2 paid EUR2.42 million for the 703MHz-713MHz/758MHz-768MHz frequencies. The unpaired spectrum lots, meanwhile, were purchased by Tele2 and LMT following 179 rounds of bidding that saw the price rise from EUR150,000 per lot to EUR2.24 million. Tele2 was awarded the 738MHz-748MHz frequencies, whilst the 748MHz-758MHz block was won by LMT.

(January 4, 2022) [commsupdate.com](https://www.commsupdate.com)



## Liberia

President Weah has reportedly submitted a Bill to parliament requesting amendments to the legislative framework, specifically the Telecommunications Act of 2007, in order to 'ensure smooth operations and management' of the country's state-owned PTO

Liberia Telecommunications Corporation Mobile (LTC Mobile), recently rebranded from LIBTELCO. FPA cites the president as saying the changes: 'Will ensure a structural compliance allowing the Liberia Telecommunications Corporation to be repositioned

in a manner that will bring more services and benefits to the people, while reducing structural bureaucracies which hinder the functions and smooth running of the corporation.' The Bill has been forwarded to the

Committees on Telecommunications and Judiciary for review and recommendations, with a mandate to report back to Plenary 'within two weeks.

(January 25, 2022) [commsupdate.com](https://commsupdate.com)



## Mexico

Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) has reportedly voted to deny America Movil (AM) a pay-TV license. According to Reuters, which cites a source with knowledge of the matter, two IFT commissioners voted to deny the request outright, while the other three commissioners dismissed the proposal as containing 'procedural defects. The decision means that Carlos Slim's 15-

year quest for a pay-TV license remains unfulfilled for now. The source told the news agency: 'There's no certainty of a new proposal.' TeleGeography notes that AM-backed Telmex is Mexico's largest ISP and fixed voice provider in terms of subscriptions, while cellular unit Telcel serves more than 60% of the mobile market.

(January 27, 2022) [commsupdate.com](https://commsupdate.com)



## Montenegro

The telecoms watchdog the Agency for Electronic Communications and Postal Services (EKIP) has announced the auction of a total of 220MHz of spectrum in the 900MHz, 1800MHz, 2GHz and 2.6GHz frequency bands staged in late December 2021 raised a total of EUR7.086 million (USD8.027 million). Mtel will pay EUR5.911 million for frequencies in the 900MHz, 1800MHz, 2GHz and 2.6GHz bands, while Telenor and Crnogorski Telekom won 2.6GHz spectrum with bids of EUR825,011 and EUR350,000, respectively. User rights are valid from 21 April 2022 until 1 September

2031. EKIP revealed four blocks of 5MHz in the 2.6GHz band, valued at around EUR192,000, remained unsold. Meanwhile, the government of Montenegro adopted a roadmap for the deployment of 5G networks on 24 December. The document, prepared by EKIP and the Ministry of Economic Development, aims to encourage the implementation of all necessary steps to enable the introduction of 5G mobile networks by the end of 2022, by which time a national 5G strategy should be adopted.

(January 4, 2022) [commsupdate.com](https://commsupdate.com)



## Nigeria

The government has once again extended the deadline for the country's mobile phone users to register a valid National Identification Number (NIN) with their service provider, as the focus shifts to remote areas, schools and health centers. The date has now been postponed from 31 December 2021 to 31 March 2022, following 'a request by stakeholders, including citizens, legal residents and Nigerians in the diaspora'. The aim of the NIN and SIM registration exercise, which commenced in December 2020 and has been extended multiple times, is to improve the security in the West African nation. To facilitate the process, telecoms operators

and other enrolment agents have opened centers across the country to make it easier for eligible citizens and residents to obtain and link their NINs. Nigeria had just over 185 million users at the end of September 2021, notes TeleGeography's GlobalComms Database, down from around 200 million subscribers nine months previously, due to the ongoing registration program. According to the government the total of unique NIN enrolments reached 71 million at end-2021, with an average of three to four SIMs per NIN.

(January 4, 2022) [commsupdate.com](https://commsupdate.com)



## Papua New Guinea

The Independent Consumer & Competition Commission (ICCC) has proposed granting clearance to Australia's Telstra for the latter's proposed acquisition of Digicel PNG and its subsidiaries. In a press release issued via social media, the ICCC announced that it has decided to hold a 'pre-decision conference' related to the clearance application lodged by Telstra related to the acquisition, while it has also released a draft determination related to the application. Commenting, ICCC commissioner and CEO Paulus Ain said: 'After careful consideration of the information provided in Telstra's clearance

application, and as well as comments received from both industry participants and other relevant stakeholders, including available market information, the ICCC has concluded in its draft determination that the proposed acquisition will not have, or will not be likely to have, the effect of substantially lessening competition in any telecommunication services market ... The ICCC therefore proposes to give clearance to Telstra to proceed with the proposed acquisition.' Comments have now been invited on the watchdog's draft determination, with the ICCC having set a deadline

of 25 January 2022 for submissions. Meanwhile, with regards to the pre-decision conference, the competition authority said it plans to send formal invitation letters

to this event to 'certain stakeholders.

(January 10, 2022) [commsupdate.com](https://commsupdate.com)



## Peru

The National Telecommunications Program (Pronatel) has assumed temporary control of operation and maintenance of the National Fiber Optic Backbone (Red Dorsal Nacional de Fibra Optica or RDNFO) following the expiry of the government's contract with the network's previous operator, Azteca Communications. Pronatel notes that the assets of the RDNFO have not yet reverted to state control, as Azteca is still required to address a number of issues identified by Pronatel during a series of inspections conducted by the agency in November and December last year. Part of the Ministry of Transport and Communications (Ministerio de Transportes y Comunicaciones, MTC), Pronatel will operate the network for up to three years in order to guarantee continuity of service of the 13,000km fiber system which connects 22 regional capitals and 180 provincial capitals. The state-backed project has been beset by legal and commercial difficulties since construction was completed in 2016. Due in part to

the inflexible pricing structure for capacity on the network, the system was underutilized and required consistent funding from the government. In mid-2021 the government noted that it had spent USD290 million on the project – USD192 million more than initially estimated – with only 3.2% of the network's installed capacity being used at that date, generating revenues that covered just 7.7% of the network's costs. Efforts to address the network's issues were complicated by the fact that the rules regarding the RDNFO had been enshrined in law and would need to be amended. An amendment was eventually passed in January 2020, following which Azteca submitted a proposal to terminate its concession early by mutual agreement. Negotiations between Azteca and the MTC were unsuccessful and the in July 2021 the ministry unilaterally ordered the cancellation of the license, to take effect from early 2022.

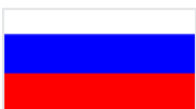
(January 19, 2022) [commsupdate.com](https://commsupdate.com)



## Romania

The National Authority for Management and Regulation in Communications (ANCOM) has revealed that almost 1.106 million telephone numbers were ported in 2021 – the highest annual figure since the service's introduction in 2008. Mobile number porting rose 20.3% year-on-year to 1.051 million, while 54,871 fixed voice numbers were transferred between providers (23.4% lower). RCS&RDS (DIGI) accepted the most mobile porting requests in 2021 (561,963), followed by Orange Romania (152,939), Vodafone Romania (148,017), Telekom Romania Mobile Communications (105,634)

and Telekom Romania Communications (82,333). Post-paid subscriptions accounted for 54% (569,784) of the mobile numbers ported. Fixed telephone numbers were ported between the main providers as follows: RCS&RDS 30,117, Vodafone 6,926, Orange 6,416, GTS Telecom 5,487, Voxbone 2,481 and others 3,444. Almost 8.4 million numbers have now been transferred between networks since the portability service was introduced in October 2008, comprising 7.4 million mobile numbers (87%) and almost one million fixed voice numbers. (January 27, 2022) [commsupdate.com](https://commsupdate.com)



## Russia

Russia's Rostelecom has applied to the State Commission for Radio Frequencies (SCRF) for permission to test 5G mobile services using 3.3GHz-4.1GHz frequency bands in the metro (subway) train networks of Moscow, St Petersburg and Kazan. Last year a similar application via Rostelecom's subsidiary FreshTel for testing 3.4GHz-3.8GHz in the Moscow and Kazan subways was not accepted by the SCRF. A

fixed wireless access (FWA) 3.5GHz spectrum license held by Rostelecom/FreshTel was extended in June 2021 to 1 July 2022, but the concession does not allow 5G; following 3.5GHz 5G pilots held in 2018, trial permits were not extended beyond that year, and state permission for refarming 3.5GHz FWA frequencies for 5G mobile was not forthcoming.

(January 19, 2022) [TDaily](https://TDaily.com)



## Somalia

The economic difficulties in recent years have made it difficult for telcos and the government to sustain investment in infrastructure. The government has also had to contend with militant groups which continue on occasion to force the closure of internet services in

many areas of the country. In recent years, though, the government has addressed the lack of guidance which had prevailed since 1991, when a dictatorial regime was overthrown. The National Communications Law was passed in October 2017, aimed at setting a legal

and regulatory framework for the telecoms sector, while provision was made in the following year to set up a regulatory authority to oversee the telecom sector. More recently, three types of licenses were mandated to provide clarity to operators, and to bring the market closer into line with international standards. All operators were given until August 2020 to secure one of the three license types. Despite the many inherent difficulties faced in the country, the telecom market has flourished. Tariffs are among the lowest in Africa, and new cable systems coming on stream in the next few years (providing additional connectivity to Asia and Europe) will lead to downward pressure on retail pricing. BuddeComm notes that the outbreak of the pandemic continues to have a significant impact on production and supply chains globally. During the coming year the telecoms sector to various degrees is likely to experience a downturn in mobile device production, while it may also be difficult for network operators to manage workflows when maintaining and upgrading existing infrastructure. Overall progress towards 5G

may be postponed or slowed down in some countries. On the consumer side, spending on telecoms services and devices is under pressure from the financial effect of large-scale job losses and the consequent restriction on disposable incomes. However, the crucial nature of telecom services, both for general communication as well as a tool for home-working, will offset such pressures. In many markets the net effect should be a steady though reduced increased in subscriber growth. Although it is challenging to predict and interpret the long-term impacts of the crisis as it develops, these have been acknowledged in the industry forecasts contained in this report. The report also covers the responses of the telecom operators as well as government agencies and regulators as they react to the crisis to ensure that citizens can continue to make optimum use of telecom services. This can be reflected in subsidy schemes and the promotion of tele-health and tele-education, among other solutions.

(January 18, 2022) [developingtelecoms.com](https://developingtelecoms.com)



## South Africa

A much-delayed auction of 4G and 5G spectrum in South Africa attracted broad support, with communications regulator ICASA revealing it received applications from six operators. ICASA stated the local units of MTN and Vodacom were among the bidders, along with Cell C, Telkom South Africa, Rain Network and Liquid Telecom. The regulator will announce which have qualified to participate on 21 February 2022. Spectrum in the 700MHz, 800MHz, 2.6GHz and 3.5GHz frequencies are up for grabs to boost 4G and 5G deployments in the nation. The auction was originally scheduled for March 2021 but was put on ice following legal challenges which appear to still be in

play despite the application process proceeding. ICASA chair Keabetswe Modimoeng urged operators to allow the latest process to be completed. "Ultimately, public interest should prevail, as this process will yield positive spinoffs for the industry and society at large." Telkom South Africa appears to have dropped plans for a court challenge to the auction process, but is said to remain keen on a legal review of its arguments, proposing this happen early in March. Last month the operator's group executive for regulatory and government relations Siyabonga Mahlangu stated Telkom was "pleased with the cooperation it has received from the parties".

(January 31, 2022) [mobileworldlive.com](https://mobileworldlive.com)



## South Korea

The Science and ICT Minister Lim Hye-sook has said she will meet with the nation's three mobile network operators (MNOs) – SK Telecom (SKT), KT Corp and LG Uplus – to discuss plans for the sale of additional 5G spectrum, Yonhap News Agency reports. Last month the Ministry of Science and ICT (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 (USD114 million). However, both SKT and KT have complained about the ministry's decision, arguing

that LG Uplus is at a relative advantage as the spectrum block to be sold is adjacent to frequencies already held by the smaller player – meaning it will cost LG Uplus less to utilize it. As a result, earlier this week SKT filed a request to the MSIT for an additional 40MHz of spectrum to be made available, citing the need for fair competition among the three cellcos. Commenting on the matter, Lin was cited as saying: 'It remains unclear whether the auction will open next month ... I will meet the CEOs of the three telecom operators next month to request their cooperation, as well as to convince them and listen to their opinions.' (January 27, 2022) [commsupdate.com](https://commsupdate.com)



## Spain

The Ministry of Economic Affairs and Digital Transformation (Ministerio de Asuntos Economicos y Transformacion Digital) published its new National Chart of Attribution of Frequencies (Cuadro Nacional de Atribucion de Frecuencias, CNAF) on 27 December 2021 – incorporating the 26GHz millimeter wave (mmWave) band for the first time. (Note: the CNAF is the regulatory framework that establishes what frequency bands are reserved for.) A proposed tender for the

26GHz band is one of the measures included in the government's Plan de Recuperacion, Transformacion y Resiliencia (Recovery, Transformation and Resilience Plan) 5G roadmap. In addition, the CNAF has reserved a 20MHz block in the 2300MHz-2400MHz band for industrial applications under the self-provision regime. 10MHz of this spectrum will be used by public service networks for the distribution of electricity, gas or water, the regulator added. (January 9, 2022) [commsupdate.com](https://commsupdate.com)



## United Kingdom

Applications have opened for the third round of small-scale DAB radio multiplex licenses for 25 areas across England, Northern Ireland, Wales and Scotland. Small-scale DAB is an innovative technology which provides a low-cost way for local commercial, community and specialist music services to take to the digital airwaves. The small-scale DAB program will enable the launch of around 200 multiplexes, covering all four

UK nations. We expect these to broadcast a range of radio services, ranging from grass-roots community services to specialist music stations, and services aimed at minority groups and other under-served audiences. Last month, listeners in areas in North-East England were the first to benefit from this revolution in local radio as a host of new services took to the airwaves. (January 24, 2022) [ofcom.org.uk](https://ofcom.org.uk)



## United States

The Federal Communications Commission announced that it is ready to authorize more than \$1.2 billion through the Rural Digital Opportunity Fund to fund new broadband deployments in 32 states. In the largest funding round to date, 23 broadband providers will bring broadband service to over 1 million locations. The Commission also has created the Rural Broadband Accountability Plan, a new effort to monitor and ensure compliance for universal service high-cost programs including the Rural Digital Opportunity Fund. "This announcement means more connectivity is coming to consumers, while we continue our commitment to make sure that funding goes to areas that truly need it," said Chairwoman Rosenworcel. "The new Rural Broadband Accountability Plan will speed up our audit and verification processes and for the first time make public the results of verifications, audits, and speed and latency testing. These new measures will help ensure that the providers we fund in this program will do the job." (January 29, 2022) [fcc.gov](https://fcc.gov)

executive Dean Brenner as the head of the TAC, with representatives from US operators, Microsoft and NTT among the other notable names on a list of 44. In a related statement, Rosenworcel explained "careful planning and execution" was required to maintain US "leadership in high-priority emerging technology". She emphasized the importance of the nation being at the forefront of "advancing ambitious 6G" R&D, and noted "the need for more spectrum" and supply chain frailties as areas requiring the FCC's attention. "We are starting that work here and now by re-establishing the TAC and charging it to conceptualize 6G".

(January 20, 2022) [mobileworldlive.com](https://mobileworldlive.com)

The Federal Communications Commission (FCC) reconvened a working group which will lead its research into technologies including AI and 6G, work the US regulator billed as important to boosting the nation's global competitiveness. A virtual meeting of the Technological Advisory Council (TAC) is scheduled for 28 February. The FCC explained the group provides it with technical expertise and guidance, and would consider advanced spectrum sharing and emerging wireless technologies along with methods to restore internet access in the event of disruption. FCC chair Jessica Rosenworcel appointed former Qualcomm

US Federal Communications Commission (FCC) chair Jessica Rosenworcel proposed rules which would require operators to be more proactive when reporting network hacks, a response to recent breaches. The FCC stated it aims to align its rules more closely with national and state laws covering security lapses. Rosenworcel explained data breaches are increasing in frequency, sophistication and scale, with long-lasting effects on consumers. A key proposal would require operators to report data breaches to the FCC in addition to the US Secret Service and FBI as currently stipulated. The FCC also proposed eliminating an existing seven-day wait between operators informing the government and the public. It is also seeking comment on whether the FCC should mandate customer breach notices include specific categories of information, which it noted could help ensure notifications contain actionable information useful to consumers.

(January 13, 2022) [mobileworldlive.com](https://mobileworldlive.com)





## Uruguay

The Ministry of Industry, Energy and Mining confirmed that the long-awaited launch of mobile number portability officially came into force on 12th January. Mobile users were previously unable to retain their mobile number if they chose to switch between networks. Under the new legislation, operators must transfer numbers within three days and are obliged to cover the cost themselves, rather than charging consumers for the service. However, consumers may only transfer their number between networks three times per year. The ministry stated that the introduction of MNP would help to safeguard consumer rights, as well as boosting competition between the country's mobile operators Antel, Claro and Movistar. As reported by TeleGeography, the introduction process began in

July 2020 with the approval of Law 19,889/2020, which stipulated that mobile users have the right to number portability. Following this, a committee to oversee the introduction of MNP was established. Its proposals on the system's general rules, regulatory conditions, and implementation timeframe were approved by the government in January 2021. Over the course of the year, tests were set to commence in July ahead of a commercial launch on 1st October. In May 2020, concerns around the security and transparency of the implementation led to the launch being pushed back. In August, the Clartech-Cietel consortium was appointed as the database administrator for the first five years following the launch of MNP.

(January 14, 2022) [developingtelecoms.com](https://www.developingtelecoms.com)



## Zimbabwe

The telecoms regulator says the COVID-19 outbreak has exposed serious shortcomings in operators' capacity to meet demand for key services like broadband coverage. In a commentary to the third quarter report on telecoms sector trends, the Postal and Telecommunications Regulatory Authority (Potraz) called for immediate action to ensure that broadband coverage expands to all regions of the country. Potraz emphasized that the COVID-19 outbreak had demonstrated that broadband coverage was increasingly becoming important. It said government should work with operators to ensure access to this service is enhanced. "The ICT (information communication technology) sector has transformed and evolved due to the COVID-19 pandemic; the outbreak resulted in increased demand and acquisition of ICT services by consumers," Potraz said. "The sector is expected to continue evolving rapidly with increased innovation and enhanced connectivity in the country. Going digital is now more important than ever with the COVID-19 pandemic continuing to transform how we live, work and interact with one another. As the pandemic continues to disrupt normality, the importance of a robust and inclusive digital economy, together with reliable broadband services is imperative. The pandemic has exposed access gaps in the country,

demonstrating an urgent need to bridge the digital divide. This can be achieved through government intervention and innovative public-private partnerships aimed at improving the digital landscape by ensuring access, equity and affordability of telecommunication services to all. Particular attention needs to be paid to rural areas as broadband coverage of technologies," said Potraz. However, Potraz said a deal inked between State-run mobile phone outfit, NetOne and Chinese technology giant, Huawei helped improve broadband provision on the market during the period. The US\$400 000 deal between NetOne and Huawei involves the provision of high-end telecoms technologies to Zimbabwe's second biggest mobile phone firm. Potraz said while the growth was significant, pockets of deficits were still being experienced in rural areas. It was also expected to unlock up to 1 500 job opportunities during implementation. "NetOne has partnered with Huawei on a broadband expansion project, hence the high number of deployments in the quarter under review," the telecoms regulator said. The data showed that Zimbabwe's three mobile telecoms firms - NetOne, Telecel and the Zimbabwe Stock Exchange-listed Econet Wireless, deployed five new 2G, 12 new 3G and 37 LTE eNode Bs technology to their networks during the period. 📍 (January 2, 2022) [bulawayo24.com](https://www.bulawayo24.com)

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