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Etisalat: The World's Fastest Mobile Network in 2020

Hatem Dowidar
Acting CEO, Etisalat Group & CEO, Etisalat International

THIS MONTH

THE DEMANDS OF THE DIGITAL ECONOMY

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The Demands of the Digital Economy

As a pre-requisite to building a sustainable Digital Economy, fulfilling the requirement for increased network capacity and future-proofing the communications networks with greater resilience is a daunting challenge within the SA-ME-NA region, and various other developing regions. While there now is an increased realization to expand Fiber and Cloud-based infrastructure, and IPv6 is gradually transitioning into the space so far occupied by IPv4, new digital ecosystems, including IoT, are emerging, and new socio-economic use-cases of the Internet are multiplying, digital development requirements, however, are becoming ever more complex. Key factors that offer potential solutions revolve around public-private collaboration and revamping policy and regulatory dynamics and frameworks, which should become well-adapted to the burgeoning digitization trends. These trends point to a future where data flows will be intense and where ensuring the sustainability of the nascent Digital Economy will be a major challenge and an opportunity.

SAMENA Council believes that public-private-people cooperation is essential for addressing the digital inclusion imperative, which has been highlighted repeatedly since the SAMENA Council Leaders' Summit and again, in the mostly recently held, SAMENA Accelerator roundtables, to bringing various industries closer to the Telecom Industry in order to create new cross-industry synergies for catalyzing a true digital renaissance in both socio-economic activity and in industrial productivity. Such productivity will be central to building the region's Digital Economy, and for which availability of required ICT infrastructure, especially Fiber, is foundational. Already, there is consensus and recognition by governments and the private sector alike that connectivity—at end-user, machine to machine, and industrial levels—lies at the core of these aspirations

Fostering meaningful connectivity in the age of the digital economy demands Telecom Operators to exercise a multi-dimensional, progressive role. This role through out the current year, since the pandemic, has been well-recognized. However, Operators themselves are facing tremendous revenue-generation challenges, continued regulatory restrictions, taxation regimes and industry fees, all of which have a direct impact on how far, how much, and for how long the Operators can continue with their voluntary offerings to help reduce financial hardships for the end-users while living up to expectations. This merits the consideration of policy-makers and regulators, who themselves face multiple challenges, to reduce financial pressures on Operators and to help improve affordable access to broadband services for the end-users, and to help expand the Fiber-based infrastructure by addressing some major underlying issues, which include but are not limited to Right of Way (ROW) issues in the deployment of Fiber. As emerged during the recently held SAMENA Accelerator, requirements for higher speeds, better bandwidth and improved security over long distances, which form the crux of newest socio-economic activities happening in the digital space have exceeded the capabilities of copper. Thus Fiber is essential and will become necessary as governments help accelerate 5G transformation in their respective markets and pressures mount on building cross-industry 5G collaboration efforts to create viable use-cases and business models.

Bocar A. BA
Chief Executive Officer & Board Member
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In such scenarios, it may just be the right time to experiment on all fronts with the involvement of all concerned stakeholders and capitalize on the true potential that lies before us.

For Operators, rebuilding market position in the Digital Economy and 5G is crucial for business sustainability and for fostering innovation, and thus all efforts should be exerted toward capturing the full digital potential, including for enhancing profit margins. At the same time, however, realization demands that we do keep in mind that in most of the SA-ME-NA region and in other parts of the developing world, many hard to reach areas where broadband connectivity has yet not arrived, do remain an untapped profit-margin area for the discerning investor. Such clear connectivity gaps do need to be filled, combined with affordability and guarantees of minimum broadband speeds. In order to fill these connectivity gap, most definitely, gaps in funding and financing communication infrastructure development first need to be filled. Globally speaking, connecting the next billion will be substantially more difficult than it was early on when the telecom/ICT landscape was comparatively simpler.

To recap, and as was highlighted during this month's SAMENA Accelerator on two different occasions, once on November 19th and then on November 25th, sustainability and inclusiveness are the key principles for building successful digital economies. It is truly through collaboration and by fostering inclusion and participation of everyone that we can ensure that we will take into account different needs and issues into consideration. As our societies and the global economy digitalize, there are ever more possibilities to advance standards of living through human-centric provision of digital services.

Opportunities brought forth by the latest digital developments and the digital economy require inclusive growth, innovation, and sustainable development. Achieving this milestone, in turn, demands that we advance the necessary ICT infrastructure, develop human capital for the digital age, create awareness and relevance to proliferate meaningful digital services, and ensure everyone and every business can afford broadband connectivity and quality-of-service. At the same time, it is important to recognize that digital economy is boosted through businesses and businesses require security and predictability in the market.

Drawing upon global recommendations, such as from the ITU and the UN Broadband Commission — to exert expeditious efforts in last-mile ICT infrastructure expansion with Fiber-based networks, achieve Universal Digital Access, foster productivity in the Enterprise Sector, improve Government Digitization processes, implement Smart City visions, accelerate 5G deployment with the right level of Fiber penetration and, as a whole, to build a sustainable Digital Economy —

could serve as a strong starting point for countries that are "ICT Novices" or "ICT Patrons" but which aim to transform into "Business Hubs", "Innovation Hubs", or "Innovation Hubs"; to borrow some terms from the latest digital-economy study conducted by two valued Members of SAMENA Council, Huawei and Arthur. D. Little.

As Policy-makers and Regulators work hard to create an enabling environment, comprising, for example, tax relief incentives, timely award of spectrum at reduced license fees, among other regulatory, legal, and pertinent financial incentives and supportive measures, the Private Sector needs to work in close collaboration with the Public Sector to support collective efforts in building a sustainable digital economy, which will rely not only on connectivity infrastructure, but also on capacity-building and ICT Talent development initiatives, to help realize digitization-driven socio-economic impact across the SA-ME-NA region.

Such are the demands of the Digital Economy.

Etisalat Speaks to SAMENA Council

Etisalat's Focus at GITEX Technology Week

GITEX Technology Week 2020 theme this year 'Empowering the Digital Future & Beyond' is all about the convergence of 5G, AI, big data and IoT bringing people, devices and systems even closer together. Intelligent connectivity is expected to drive huge growth in MENA economies by creating value across most industries.

We are looking forward to being part of this global conversation to share our experiences with peers and technology leaders as well as exchange experiences in innovation that is set to transform every industry that uses mobile technologies from transport, retail, healthcare, education to fashion, automotive, utilities and entertainment. Etisalat has become a key regional and international player in 5G especially with one of the biggest world expo powered by 5G to be held next year.

> *Etisalat is the most valuable consumer brand in MEA for the 3rd consecutive year and most innovative player globally with portfolio of brands at $11 billion.*

Q. UAE today has the fastest network in the world, how has Etisalat contributed to this global achievement?

A. With the UAE's ambitious ICT fueled vision aiming to transform the country to a digital economy, there have been great strides in revolutionising the network and services.

Etisalat on its part has continuously focused on innovation as part of its strategy 'Drive the digital future to empower societies' embedded within its DNA manifested across the business. Over four decades Etisalat's philosophy was about reshaping the telecom sector in the UAE, which has pushed us to explore new opportunities, focus on strengthening our core business while transitioning to the digital era and being well geared for the future.

Hatem Dowidar
Acting CEO, Etisalat Group
& CEO, Etisalat International

Today Etisalat's mobile network is recognised by Ookla as the fastest in the world showcasing high speeds all throughout this year. UAE network ranked with the fastest mobile download speed worldwide in January, March and July 2020. Etisalat is also the winner of Ookla's Speedtest Awards for fastest fixed broadband network in Q3-Q4 2019 and was recognised in the same year as the leading operator for fastest mobile and broadband network. With a download speed of 115.89 mbps and an overall ranking in the 'Speed Score' at 98.78, Etisalat is the only operator globally to rank higher than 90 as per Ookla Speedtest data. The achievement is significant in current times when the pandemic caused global crisis highlighting the importance of a robust and up-to-date network.

> ## Etisalat ranked as the fastest mobile network in the world

Q. How would you explain Etisalat's journey in 2020 so far especially that we are all living in very different times and facing unique situations at work and home?

A. Etisalat Group's long term projections have always set goals to transition from a traditional telecoms operator into an integrated ICT solutions provider. The pandemic pressed the fast forward button, however, accelerating a technology shift already taking place.

Therefore, the journey this year for Etisalat has been transformational, internally and externally. 'Living Digital' is the focus and way ahead, within Etisalat digital transformation was always on the agenda making the shift to operating to an 'only digital platform' easier. Today as we all face an unfortunate crisis, Etisalat has showed resilience and remained committed towards the communities it serves, minimising business impact on our operations, our customers and subscribers. This was done by speeding up on the implementation of all digital channels, delivering in the new environment and addressing challenges faced by consumers and businesses.

Despite the unprecedented market challenges facing the industry locally and globally we ensured business continuity and readiness. Thanks to the UAE vision and Etisalat's strategy, we are geared to support and serve the entire community making it possible for businesses to work remotely, millions of students to enjoy distance learning and all citizens have access to vital services. Our network joined one of the most robust and digitally equipped showcasing infrastructure preparedness and ability to adapt and implement during today's extraordinary times.

With overall data traffic on the telco network surging exponentially, Etisalat's resilient advanced network remained dependable and secure to proactively assess and manage anticipated increases

During the pandemic,
- *More than 10 million Etisalat mobile subscribers enjoyed free browsing to over 800 websites related to education, health and safety in addition to free mobile data being made available to over 12,000 students*
- *Overall growth in video conferencing and VoIP on both fixed and mobile network during the peak of the pandemic of more than 250 percent.*
- *Traffic increase in streaming services and video by more than 50 percent while in gaming it grew more than 200 percent*

in bandwidth demand. During the peak of the pandemic there was an overall growth in video conferencing and VoIP on both fixed and mobile network of more than 250 percent. The traffic increase in streaming services and video by more than 50 percent while in social media and gaming it grew more than 80 and 200 percent respectively. We offered all the connectivity tools and services people needed to continue to communicate and conduct business, including the fastest network in the world and 5G connectivity. Our teams worked on making sure support was provided to all our customers, including government departments, large enterprises, SMBs and our subscribers across the country.

Etisalat's advanced network and its ability to adapt and implement plays an instrumental role during the pandemic. In

this time of uncertainty, our primary goal is to keep our valuable customers, employees and society fully connected.

Q. What are the special initiatives Etisalat adopted and implemented to help organisations navigate during today's times?

A. In the 'New Normal' for the telecom industry it is about developing a dynamic workforce strategy that is critical to keep the global economy sustainable with emerging opportunities for companies and industries. It is also about rising to the challenge helping people and organisations to navigate these massive workforce shifts while underlining the need for leaders to accelerate the adoption of digital innovation to help outmaneuver uncertainty.

Businesses, governments and citizens require services to evolve with the global health and economic environment changes. With the world anxiously awaiting an effective vaccine until then the priority is to re-energise all our operations internally and externally for Etisalat. Special initiatives were introduced to support the entire community during the peak of the pandemic and to continue serving in the 'New Normal' making it easier to study, work, entertain and remain connected with family and friends from the comfort of their homes.

More than 10 million Etisalat mobile subscribers enjoyed free browsing to over 800 websites related to education, health and safety in addition to free mobile data being made available to over 12,000 students whose families do not have Internet at home to support and enable distance learning.

We have always catered to people with determination by offering specific services, during this period parents and teachers of these students were exempted from Internet Calling Plan fees. Etisalat also provided access to 9 apps and platforms for distance learning, allowing visual and audio communications: Google Hangouts, Microsoft Teams, Blackboard, Zoom, Skype for Business, Cisco Webex, Avaya Spaces, BlueJeans and Slack on its fixed and mobile network in collaboration with the TRA.

Our initiative 'We Pay the Difference' for consumers on elife plans gave an option to upgrade speeds at no extra charge more than enough to work from home and stream their favorite content accompanied with multiple options for entertainment. From doubling up of allowances to supporting subscribers both business and consumers by waiving or refunding some charges, Etisalat made sure that all support was provided in the current situation.

For companies, there were specific relief plans for small business owners,

new businesses and large enterprises specifically the most impacted during the pandemic mainly the hospitality and airlines industry. With video communication becoming key for virtual meetings and facilitating work from home for government departments and businesses, Etisalat offered this service free during the peak of the pandemic.

With employees coming back to work, it was important for all businesses to keep their establishments safe, Etisalat had specific solutions to help them manage these challenging times. Transforming business was also key for surviving and managing business efficiently, Etisalat's web solutions helped new and existing businesses to engage across digital platforms and also supporting them to build an online interface.

Q. What is Etisalat doing to accelerate digital transformation and innovation reducing the digital divide gap and increasing digital readiness?

A. The telecom network is the backbone of an economy and plays a significant role in bringing digital transformation and innovation in UAE. Etisalat's network was recognised as the fastest in the world, which is in line with UAE's goals of becoming a smart nation and ready to serve the 'New Normal'. This has also led the digital economy to contribute towards the local GDP in 2019 touching 4.3 percent with a dedicated Minister of State for Digital Economy, AI and remote working applications appointed to focus on this area and double these numbers. [3]

The global recognition of Etisalat's network is a testament to its leadership and readiness to address the future requirements of the network. The recognition is a result of the company's long-term vision and strategy with Etisalat continually investing in innovation, next-generation technologies and services to enhance the network.

With communication and connectivity gaining more significance and demand more than ever during the pandemic, telcos play a critical role in closing this gap of digital readiness by becoming the engines

of resilience and innovation. Moving ahead, network modernisation and digital transformation play a key role in bringing this change to society.

Digital capabilities should not be limited to customer experience but also extending automation and AI capabilities internally to strengthen all business functions. Moving from digital first to digital throughout by driving AI and automation, revitalise digital customer experience with increasing use of AI in customer interactions and evolve capabilities to support new value propositions.

We are already working on transforming all the elements integral in our ecosystem, the society, workforce, customers and for our shareholders. Today Etisalat is enabling society to digitally connect, work and learn from home and use digital services. Internally, we are building a workforce of highly skilled and motivated digital talents who work together efficiently and seamlessly. Our main focus will continue to provide customers with reliable connectivity, innovative products and experience while maintaining strong financial returns and identifying new pockets of growth.

Artificial Intelligence is a technology that is impacting every industry and every human being, Etisalat has invested in technologies that will propel the use bringing efficiency and engagement across the company. Customer care is one of the areas where technologies like speech, video analytics and robotics are used in back office automation to enhance the customer journey. Currently there are several use cases identified and underway to bring this digital experience to reality.

There are atleast 130 robots automating 70 back office processes conducting more than 800k transactions on a monthly basis. Robotic process automation has brought about 98 percent efficiency enabling employees to become creative, innovative and connect with customers to enhance their experience. Blockchain technologies is another area we see immense potential that helps in cutting down intermediaries, costs, increase speed and reach offering transparency and traceability of business

processes. By 2030, blockchain is expected to generate a business value of more than $3 trillion by 2030 with atleast 20 percent of global economic infrastructure running on blockchain-based systems. [2]

At Etisalat we are already actively working with industry players for example the financial sector who stand to benefit the most from the technology. Our partnership for 'UAE Trade Connect' has eight UAE banks on the blockchain platform helping them to focus on addressing risks of double financing and invoice fraud before turning to other areas of trade finance.

'Shahada' is another revolutionary effort on blockchain for the education sector that will securely issue credentials, avoiding forgery of paper-based certificates and creating an education passport.

Etisalat is also extending its efforts on blockchain in its loyalty programmes enhancing the experience for consumers to convert their loyalty or reward currencies. This technology is also coming in play to customise communication and messaging for subscribers centralising customer information and verifying it as well.

For enterprises, cloud computing services are the foundation for customer's digital transformation enabling services that will bring flexibility and availability for business critical applications. Etisalat

today has evolved to a Cloud Managed Services Provider, sustained by state of the art platforms and infrastructure, partnerships with global leaders, hyper-scale cloud service providers and with a strong multi-cloud consulting and operations. The collaboration with Amazon Web Services and Microsoft Azure to offer Etisalat's Cloud Express, a secured private connectivity between the customer's corporate network and their public clouds was a major step in this direction. Oracle announced recently the launch of its Generation 2 Cloud deployment in Dubai, following the Gen 1 setup they had in Abu Dhabi, and once again, Etisalat is the proud infrastructure partner.

> *Etisalat holds 50 percent of the local market DC capacity with ten certified facilities and the new larger energy efficient facilities in Dubai and Al Ain*

The expansion of our datacenter (DC) capacity with two new larger energy efficient facilities in Dubai and Al Ain has led to capture more than 50 percent of the local market DC capacity bringing the total to ten certified facilities. Cloud is also

the backbone of Etisalat's new 'Business Edge', a new business platform offering a wide range of cutting-edge services from the cloud and targeting the SMB segment remaining an important engine of growth in the UAE.

The application of cutting-edge robotics, AI and biometric technologies also played a key role in improving business operations. There was an emphasis on transforming the brick and mortar experience to digital retail providing a digital experience to the customer. Digitisation in retail and self-service touchpoints expanded the rollout of 'Smart Stores' by upgrading the current stores. There was an increased focus on driving the subscriber online with a revamp of our portal and application. Transactions today are also seamless with virtual technologies being implemented for consumer transactions. Etisalat's first new digital store is an illustration of our efforts. The main pillars of innovation here focused on providing customers a complete digital journey with full mobility, self-service with digital interfaces giving customers the flexibility to purchase packages and products including dispensing of SIM cards.

> *UAE continues to maintain its position as a global leader in FTTH deployment.*

Q. What are Etisalat's major achievements on the network that has added value to keep businesses running and support consumers to continue their lives in the new normal?

A. Etisalat has made global achievements by setting benchmarks in the industry making infrastructure accomplishments that supersede advanced global markets. Our subscribers were among the first globally to access and enjoy the speed of the 5G network in UAE. This was only possible due to the continuous investments in our network in terms of technologies and solutions making it the most advanced, resilient, dependable and secure.

> *In the UAE Etisalat continues to deploy 5G networks across the country while 4G LTE network coverage reached 99.70 percent and 3G covering 99.82 percent* [1]

From the beginning Etisalat was always the first in the region to take a lead and launch previous generations of the network mainly 3G, 4G and 5G. The network coverage today reaches across the country with 4G LTE network coverage touching 99.70 percent and 3G covering 99.82 percent. FTTH has reached 95.7 percent of homes across the UAE, maintaining the UAE's position as a global leader in FTTH for the third consecutive year. Network deployments in 5G reached over 35 percent covering the main cities in UAE.

As a previous winner of the Speedtest Award™ for fastest mobile network and fastest broadband network in the region for 2019 Etisalat amplified its efforts on improving the mobile network, supporting business continuity in a work-from-home environment, facilitating distance learning and providing entertainment to families at home.

During the pandemic, Etisalat was able to provide support to quarantined and other critical areas in the health care sector. With remote healthcare services becoming an essential area with telemedicine solutions launched for the sector, we supported them with access on an exceptional basis. Our teams also made sure that they covered other industry sectors in terms of seamless business continuity.

This was done with complete network and resource deployment made possible through multiple initiatives, introducing new applications and services to government entities and departments, monitoring the performance of basic applications and ensuring smooth access to data locally and internationally. Command centres were equipped with advanced tools to monitor

the performance of services provided to government departments, businesses and customers 24/7.

With the gradual opening of the economy and businesses while adhering to precautionary measures, telecom and ICT sectors will play an increasingly significant role. Globally 55 percent of employers anticipate that most workers will want to work from home after the pandemic and 72 percent office workers want to work from home atleast two days a week. This is a radical shift in the lives of people with digital coming first for sectors like education, healthcare and the workplace.

> *Over 35 percent 5G network coverage acro-ss main cities in UAE*

Q. What new services have made a major impact on the lives of the consumers and running of businesses?

A. Inspite of the challenges faced during the last few months due to the pandemic, our consumer and businesses have had an array of innovative digital services. In video, Etisalat launched Switch TV, the brand-new OTT streaming service for all UAE residents, offering a significant line up of free and premium live TV channels within the sports, entertainment and news genres. With financial services gaining momentum, eWallet has upgraded its features and capabilities by introducing seamless international money transfer services to 200 countries and expanding the merchant portfolio to exceed 400 brands and 4,000 outlets across the UAE.

Mobile and fixed core services is another area of major focus, where subscribers witnessed the launch of the new Freedom Plans for postpaid consumers, offering unlimited local and international calls for the first time in the UAE, clubbed with several benefits on Smiles and Switch TV. For businesses, postpaid plans such as 'Business First Plus' enabled to carry over unused minutes and 'Business Xtreme' was the country's first unlimited calling plan for executives. An exclusive 'Mobile Service Center' for businesses was

> *5G roaming service comprises of 30 networks in 18 countries, while growing its 4G roaming reach to more than 520 networks in 178 countries*

also launched for real-time monitoring, service requests management and usage control; it has an intelligent and interactive recommendation engine that provides real-time offers based on the customer preferences.

Devices are an integral part in enriching services; hence, with an expansion in the portfolio with the latest 5G devices and multiple other smart devices in other categories, e.g. smart living. All offered as standalone or bundled with digital services and made available to customers via flexible payment options.

Etisalat Digital, the digital business arm has made large strides in the areas of cybersecurity, IoT, and cloud connectivity. In the cybersecurity space, Etisalat has concluded integration of Help AG operations in UAE and KSA, hence, creating the region's strongest cyber security unit, which will be a key enabler of secure, seamless and effective digital transformation for customers.

On the wholesale services front, we have continued to attract more customers from various regions including the Middle East, Africa, Europe and Asia Pacific by offering a wide range of high quality, reliable wholesale services such as voice and SMS hubbing, capacity, mobility solutions, roaming and broadcasting services. This year there were two new services launched mainly Smart CloudTalk enabling wholesale customers to offer cloud based unified communication solution and Direct Inward Dialing (DID) service enabling global wholesale customers to serve the growing demand for local customer care numbers.

Etisalat continued to grow its roaming partners' network with the successful launch of the 5G roaming service with 30

networks in 18 countries, while growing its 4G roaming reach to more than 520 networks in 178 countries, hence, giving Etisalat customers the world's largest roaming footprint. As an ICT and data hub, a new tier 3 data center was added to the existing SmartHub facility in Fujairah facilitating customers from financial services, gaming, video streaming and cloud providers.

Q. 5G is expected to enable new experiences and use cases, how do you see 5G and emerging technologies making an impact on businesses and the societies at large?

A. 5G has the capability to enable new experiences and use cases that are critical for the new digital normal and were impossible prior to 5G, be it for consumers or businesses. It will enable remote everything in education, health, factories, ports, entertainment, and a lot more. It will bring large potential as the appetite for exploring new use cases is higher than ever.

The availability and access to the superfast speeds on 5G fixed networks from homes is a huge achievement and a result of the deliberate steps taken to innovate and execute during these challenging times. This achievement came after the global breakthrough in the 5G journey of 3.1Gbps download throughput over the 5G network and the first end-to-end 5G standalone call in the country and the first

in the world.

5G and disruptive technologies are at the forefront of transition bringing new opportunities to the industry and the country. UAE has also displayed a clear commitment towards embracing this change as it offers great economic potential by making processes faster, effective, providing insights and efficiencies while creating incredible new experiences. Etisalat's 5G network will amplify the use of these futuristic services, target new opportunities, and implement 5G use cases across verticals.

> *5G fixed networks are available and accessible with the first end-to-end 5G standalone call in the UAE achieving over 3.1 Gbps download throughput*

From making the first live 5G video call from the world's tallest and iconic tower 'Burj Khalifa' to becoming the first operator to enable an international airport and a metro station, transform a smart district to empowering an international racing track with 5G connectivity, every milestone was a result of the long term planning and investment in one of the most advanced networks in the region.

We aim to capture opportunities and deploy services based on emerging technologies such as IoT, cloud, big data, AI, robotics, autonomous, AR/VR, becoming a trusted partner that supports transformation in a digitally disrupted and fully connected world.

Our IoT platform connected over 1 million SIMs with renowned entities like Emirates Transport and Xtramix for fleet solutions and Ministry of Interior for Hassantuk Smart Fire Alarm solution, which have a massive impact on saving lives and enhancing the state of security for the country.

Q. Can you share insights into Etisalat efforts in supporting innovation and entrepreneurship?

A. Innovation is now embedded in our operations becoming an integral element of everything we do within and outside the company. Etisalat's early adoption of technologies, striking the right partnerships with technology leaders and entrepreneurs in close partnership with government and private sector were key factors to push us to innovate and lead in this space.

There is a serious effort internally in building an AI capability, Etisalat has partnered with Microsoft, Accenture and EBTIC to build a team to lead the AI stream for the company and the industry. The team currently consists of 20 young Emiratis working on internal use cases focused on increasing operational efficiencies mainly with planning infrastructure and optimising the network. The long term plan is to focus on building the capabilities of the next generation of Emirati youth and AI use cases for internal use and will continue to increase efficiency, boosting productivity and enhancing customer experience over the first 2 years. The team would continue to explore external use cases as well and from the second year would aim to build external use cases based on market requirement. The future plan is to expand the team from 20 to 50 to focus on AI use cases that includes the entire development journey from ideation to market release

> *Etisalat's IoT platform connected over 1 million SIMs with government entities like Emirates Transport and Ministry of Interior in UAE*

Etisalat Digital continued to foster open innovation with 'Future Now' an innovation programme that will accelerate the adoption of the latest technologies by collaborating with start-ups, IoT developers, government entities, enterprises and end-users to drive digital transformation.

The business has also been part of Dubai Future Accelerator's (DFA) nine-week programme since three years structured to

facilitate the collaboration between government entities and corporate partners from Dubai with international startups and scaleups. The programme is also one of the initiatives under Etisalat Digital's open innovation program 'FutureNow'

Under DFA, the global startup in-residence programme 'Cohort 7' paired seven international startups and scaleups from six countries out of a pool of 143 applicants with three priority areas (challenges) of strategic relevance; using AR to survey sites, digitising physical retail spaces and automating user acceptance testing for quicker release of solutions to the market.

As a member of Fintech Hive, the acceleration programme of financial centre DIFC, Etisalat collaborated with banks and insurance companies to identify innovative fintech solutions that can become part of Etisalat Digital portfolio. During this acceleration program, Etisalat Digital mentored and collaborated more than 20 scaleups.

Future Now launched its own challenges with a participation of 10 scale-ups focusing on the enhancement of the customer journey of B2B and SMB. There is also a dedicated area 'Open Innovation Center' created by Etisalat in Dubai and Abu Dhabi which will be a window to the future to witness and experience all this innovation and how Etisalat Digital is driving digital transformation journeys.

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Insights from SAMENA Accelerator

Advancement of Fiber Infrastructure, Digital Inclusion, Citizen-centric Services in Healthcare & Education, Sustainability & Security for Businesses Deemed Key to Building a Sustainable Digital Economy

SAMENA Telecommunications Council's SAMENA Accelerator series of policy-level roundtables, serving as an extension of the Council's overarching advocacy goals to help build the SA-ME-NA region's digital economies, and initialized in November 2020 with the collaboration of Huawei Technologies Middle East and strategic partnership of stc Group, and Zain Group, have addressed foundational issues and needs in a region-wide drive to accelerate development of the Digital Economy.

Drawing representation from the League of the Arab States as a 22-member country organization, Minister-level participation from several GCC and South Asia regions' transforming digital economies, as well as participation of renowned global ICT development and international cooperation development bodies, *SAMENA Accelerator on Fiber* (November 19) and *SAMENA Accelerator on Digital Economy* (November 25) have identified and pressed upon key policy initiatives and focus areas for the region's Policymakers, Regulators, ICT Private Sector, as well as Adjacent Sector stakeholders, to help harness digital technologies in improving the socio-economic profile of the region. It is critical that the SA-ME-NA region promptly foster and enable ICT infrastructure investments, especially in Fiber deployment, and that the region's digital transformation and policy-making endeavors, as a general principle, sustain progress on the implementation and fulfillment of the 2030 Agenda for Sustainable Development.

Recognizing the criticality of universal, secure, and affordable connectivity, for which expansion of ICT infrastructure is a pre-requisite and the fundamental enabler of development of the Digital

Economy, the observed policy-level consensus during the SAMENA Accelerator on building PPP, conducting ICT capacity-building, and improving enabling frameworks to realize benefits from citizen-value-driven implementation of digital technologies across the SA-ME-NA region, has underpinned the need for developing frameworks that can help harness the *"connect, compute, comprehend"* technological capabilities to provide "value" in both societal and business activities.

> *Drawing representation from the League of the Arab States as a 22-member country organiza-tion, Minister-level participation from several GCC and South Asia regions' transforming digital economies, as well as participation of renowned global ICT development and international cooperation dev-elopment bodies, SAMENA Accelerator on Fiber (November 19) and SAMENA Accelerator on Digital Economy (November 25) have identified and pressed upon key policy initiatives and focus areas for the region's Policymakers, Regulators, ICT Private Sector, as well as Adjacent Sector stakeholders*

The SAMENA Accelerator roundtables have delved into *enabling the sustainable Digital Economy* imperative from multiple key enabling environment perspectives, including the need to address Fiber deployment challenges and seeing the Private Sector's role in new lens, and to corroborate the urgency with which the right policies and governance frameworks should be expedited in the

SA-ME-NA region to transform countries according to their current state of digital development as well as their aspirations for the future.

Bocar BA, CEO and Board Member of SAMENA Council, expressing his observations on the level of steemed participation and thought-leadership from of Ministers, Regulators, CEOs, and other Private Sector Leaders, stated that: *"Following deliberations and exchange of insights during the SAMENA Accelerator, SAMENA Council views the need to accelerate ICT infrastructure expansion, particularly Fiber deployment, migration from legacy copper networks to Fiber, and to future-proof connectivity and resilience in communications networks as a top priority."*

He further stated that *"As we build the right infrastructure, we must bear in mind that sustainability and inclusion are the key principles for building successful digital economies. It is truly through collaboration and by fostering inclusion and participation of everyone that we can ensure that we will take into account different needs and issues into consideration. In many ways, we have succeeded in doing so during the SAMENA Accelerator. SAMENA Council is pleased to acknowledge the enabling support expressed by the Policymakers, which we have observed during the keynote messages from the Excellencies who participated in the SAMENA Accelerator roundtables. Such policy-level support is fundamental to catalyzing cooperation*

and multi-stakeholder engagement for the Digital Communications Industry as well as for other industries. Indeed, such approach and collaborative mindsets are what will help design and implement evidence-based digital policies, which can tackle the multitude of challenges and unearth new opportunities for the countries and the region."

> *The SAMENA Accelerator roundtables have delved into enabling the sustainable Digital Economy imperative from multiple key enabling environment perspectives, including the need to address Fiber deployment challenges and seeing the Private Sector's role in new lens, and to corroborate the urgency with which the right policies and governance frameworks should be expedited in the SA-ME-NA region to transform countries according to their current state of digital development as well as their aspirations for the future.*

The COVID-19 pandemic has shown how connectivity, more than ever before realized, is essential for inclusive digital transformation. However, while connectivity provides the key link between the emerging and new technologies, new digital services and applications of the Internet of Things (IoT) and Artificial Intelligence (AI), among others, the resulting hyper-connectedness generates a huge amount of data that needs to be transported via networks. This demands extension of more Fiber into

fixed networks; a challenge for emerging countries. It must also be kept in mind that bringing connectivity to people is not an end in itself and what actually is at stake here is the ability to be able to develop and provide efficient healthcare, education and other citizen-centric services that improve the quality of life of nations. Moreover, it has to be ensured that countries create and protect healthy large as well as small and medium business ecosystems, in order to materialize financial inclusion for every member of the society.

SAMENA Accelerator has drawn attention to three-pronged policies that should be in play to meet the national digital transformation and digital-based socio-economic goals: One, policies that boost connectivity and lead by example; second, policies that bridge connectivity divides; and, third, policies that create enabling environments for business sustainability, investments and innovation. Acting upon such policies can allow developing countries to leap forward in shorter time

frames in the post-Covid era than would have been possible otherwise. SAMENA Accelerator has also delineated that Digital Economy provides tremendous opportunities for rethinking socio-economics, for nation-building, and for overcoming developmental challenges. However, it is critical that the Digital Economy be managed well, as it demands societal and business continuity and it rests on creating and sustaining value.

Mr. Steven Yi
Member of the
Supervisory Board
President, Middle East
& Africa Region
Huawei, China

H.E. Dr. Ahmad Belhoul Al Falasi
Minister
Ministry of Entrepreneurship and SME, UAE

H.E. Mr. Ahmad Hanandeh
Minister
Ministry of Digital Economy &
Entrepreneurship, Jordan

H.E. Mr. Fawad Chaudhary
Federal Minister of Science and Technology
Ministry of Science and Technology, Pakistan

**H.E. Shaikh Nasser Bin
Mohamed Al Khalifa**
Acting General Director
TRA Bahrain, Bahrain

**H.E. Mr. Omar
Mansoor Ansari**
Chairman
(Rep. by Mr. Javed)
Afghanistan Telecom Regulatory Authority (ATRA), Afghanistan

H.E. Dr. Ali Naser Al-Khwildi
Head of Regulatory Authority
Communications and Media
Commission (CMC), Republic of Iraq

H.E. Mr. Khaled Wali
Minister Plenipotentiary,
Director of ICT Department
League of Arab States, Egypt

Key Insights from SAMENA Accelerator on Digital Economy

- The prevailing economic transformation is foremost driven by the ability to collect, use and analyze massive amounts of data, generated from the digital footprints of personal and social and business activities taking place on various digital platforms. This "digital economics" is driven by digital platforms that have emerged around the world, disrupting traditional economic, business, social and governance activities.

- And yet, almost half the world is still not connected to the Internet. This major systemic weakness has been, and may continue to be, exacerbated due to lack of adequate policies, governance and regulatory frameworks that are needed to ensure that the Digital Economy grows and is made sustainable.

- The amount of very large-scale rapid adaptation that has already taken place over the last 10 months has been significant, with people and businesses focusing on rapid digital transformation. This has accelerated the process that was already underway in our societies and economies and it is clear to everyone now that the future of nations will be mediated through digital means. Thus the impact of not having access to broadband connectivity must be addressed as that would have significant impact on social cohesion and social order.

- One of the main responsibilities of the Policymakers is to create enabling environments and build necessary infrastructure that can encourage PPP, effectively implement collaboration and ensure ready access to digital technologies for all.

- For countries with high young population, there is a need to create jobs and the question remains how the Private Sector and the Public Sector will create opportunities for them over the next few years. The way forward is to focus on diversity, build ICT talent, and mandate adoption of digital technologies of the future.

- The process of transforming countries to flexible and inclusive digital economies requires setting long-term developmental priorities. This includes ensuring affordable access to high-speed internet services, achieving wide-spread adaption of electronic payments, providing digital governance services, improving access to data, and developing skills of the population. This also includes the creation of digital opportunities for persons with disabilities.

- Multi-stakeholder collaborative efforts are required to help align needs and ways forward on the complex aspirations and challenges associated with the Digital Economy, and to position regulatory and policy mindsets in incentivizing Connectivity, overcoming Digital Gaps, and fostering Meaningful Innovation. There is already policy-level consensus within the region that the Digital Economy needs to be set on an accelerated path; it should be made sustainable; and it should be measureable.

Mr. Adel Darwish
Regional Director
ITU, Egypt

H.E. Mr. Bassam Al-Bassam
Deputy Minister for Telecom & Infrastructure
MCIT, Saudi Arabia

H.E. Mr. Waleed Saleh Al Qallaf
Board Member
CITRA, Kuwait

H.E. Maj. Gen. (R) Amir Azeem Bajwa
Chairman
PTA, Pakistan

H.E. Eng. Majed Sultan Al Mesmar
Deputy Director General
TRA, UAE

Mr. Amir Algibreen
Regulatory Affairs VP
stc Group, Saudi Arabia

Mr. Lu Libo
President, Network Marketing & Solutions, Sales Division
Huawei Technologies Co., Ltd, China

Dr. Karim Taga
Managing Partner, Global Practice Leader TIME
Arthur D. Little, Austria

Key Insights from SAMENA Accelerator on Fiber

- Fiber-optic networks will continue to prove their usefulness and reliability for increasingly sophisticated technologies in the communications space. Data integrity, reliable long-distance transmission, and higher bandwidths are the hallmarks of fiber networks.
- We have no option but to invest in Fiber; if we don't have Fiber, we cannot really be digital. Fiber is a lifeline to digitization.
- While investing in Fiber, the ultimate goal should be to strategize first as to the viable use of the Fiber; countries with lack of Fiber strategy will not be able to drive intended benefits from Fiber availability.
- The Industry requires expedient Fiber deployment policies solutions to issues that impede deployment, ranging ROW difficulties, deciding on best deployment scenarios, overcoming cost, time, and ROI issues, and policy/regulatory incentives. Many issues, such as economic, execution, and technical problems in the deployment of Fiber, can be tackled by building trust between the government entities and the Operators.
- In hard-to-cover areas or complex geographies, infrastructure-sharing should be facilitated and promoted by policy within the Telecom Industry. Also, policymakers and regulators from other sectors/industries should collaborate on make existing infrastructure such as electricity poles, waterways, and waste water systems, gas and district heating lines, roads and railways, etc., available to Fiber investors for mutual use in the long run.
- It is imperative that clear government directives are issues by governments to enable the deployment of Fiber, which should be supported fully by alignment of rhetoric with actions, and the Private Sector should be provided with security of investments.
- Possible incentivization measures could include reduced taxation or tax-free operations for certain durations, reduced licensing fees for hard to reach areas, no taxes for rural areas, guarantees from governments in infrastructure security in certain areas, among others.
- To reduce fiberization costs, or to reduce splicing difficulties, new technologies such as Huawei AirPon are available, which should be considered by both government and private-sector decision-makers in their plans to accelerate deployment of Fiber.

Views and Recommendations by SAMENA Council
Excerpts from the Outcome Statements made by CEO of SAMENA Council

The deliberations and insights exchanged during the SAMENA Accelerator have categorically established that collaboration and reaching consensus on Fiber-conducive best practices and policy initiatives in the region is absolutely necessary. In particular, some fundamental issues demand attention:

Right-of-Way issues, which exist in varying degrees and scale from country to country within the SA-ME-NA region, need to be addressed. Such issues range from permit grants to approval processes; implementing public-private partnerships in the deployment of dark Fiber and/or third-party infrastructure providers for duct-sharing; sharing of infrastructure elements; and executing heavy civil works and utilizing existing Utility infrastructure, for example.

Fiber deployment methodology selection is the second area to look into, and this can include direct-buried Fiber, Air-blown Fiber systems, Aerial deployment or in-building deployment of Fiber, among others. Fortunately, there are technologies available to make some of these processes easier than other.

The third issue concerns collaboration among Fiber players, materialized through sharing of Fiber infrastructure, or by forming a JV or hiring a third-party Fiber infrastructure entity. Telecoms planners and installers know very well that new Fiber network build costs are dominated by civil works. The proportions of the build costs vary enormously, depending on market, circumstances such as the population density, projected uptake, urban or rural environment, and other local factors, which may be unique to each market within the SA-ME-NA region.

Fiber is a great "real estate" asset and by adopting a "build it once" approach, significant value can be drawn from it. This is especially as Fiber density to support the bandwidth advancements necessary to improve the pace of innovation and economic growth becomes a major requirement.

As we know, increased speed and capacity from 5G, for instance, will rely on higher radio frequencies and greater network densification. Operators will deploy many more small cells, with a coverage radius measured in meters rather than kilometers. Without extensive Fiber presence, supporting the data influxes and hyper-connectedness simply won't be possible. Over the past several months, we have seen how data influxes can rise almost overnight, and crisis situations further catalyze such influxes.
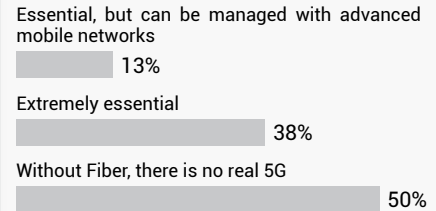
Enabling support by the region's Policymakers is fundamental to catalyzing cooperation and multi-stakeholder engagement for the Digital Communications Industry as well as for other industries, and to help design and implement evidence-based digital policies...which can tackle the multitude of challenges and opportunities ahead of us.

The seemingly siloed calls for policy and regulatory change and digital transformation, such as those corroborated by the SDGs, the Global
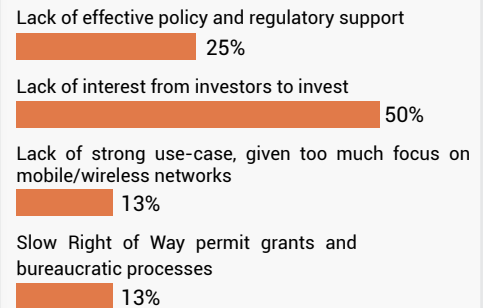
> *"The digital economy is a great "leveler" for international competitiveness. When it comes to the digital space, it is about what you can innovate and the value you can deliver. It's an enormous opportunity for countries to leap forward in a way that would have taken multiple generations in the traditional economy. Governments need to grasp this opportunity by leveraging technology".*
>
> *Mr. Safdar Nazir*
> *Regional Vice President – Digital Industries Strategy, Huawei, UAE*

SAMENA Accelerator Findings from Audience Polls

Poll 1: Fiber Deployment Situation in the Region

How essential do you consider Fiber networks to be for meeting future connectivity demands?

Essential, but can be managed with advanced mobile networks
13%

Extremely essential
38%

Without Fiber, there is no real 5G
50%

What do you view to be the most challenging issue in Fiber deployment?

Lack of effective policy and regulatory support
25%

Lack of interest from investors to invest
50%

Lack of strong use-case, given too much focus on mobile/wireless networks
13%

Slow Right of Way permit grants and bureaucratic processes
13%

How can Fiber deployment be best accelerated in the region?

Address ROW issues immediately
38%

Adopt aerial deployment and Utility FTTx approaches
13%

Adopt infrastructure-sharing
13%

Create Government and Private sector partnerships
38%
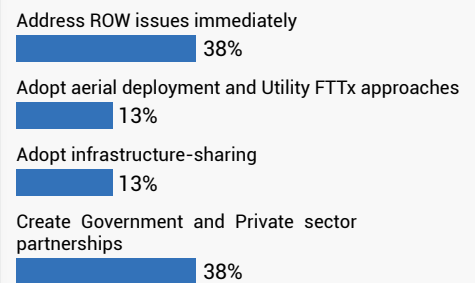
The government may consider granting subsidies or tax incentives to the construction of broadband networks in suburban and suburban areas. The subsidized projects shall be supervised by the public authority, which will effectively accelerate the development of broadband networks in urban and sub-urban areas.

Agree, but there are other considerations
50%

Strongly agree
50%

Connect 2030 Agenda and the notions of "Meaningful Connectivity" and "Universal Digital Access" are, in fact, cornerstones of the new digitalized modern economy; they all are part of the same puzzle.

SAMENA Council highly values and cherishes that key concerned stakeholders, Honorable Ministers and Regulators, Representative of the League of the Arab States, Private-sector decision-makers and digital space players, and esteemed represe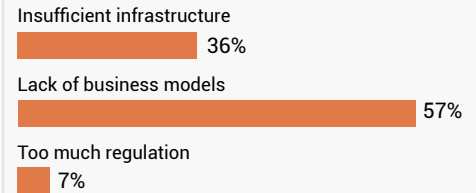ntatives from global bodies of renown and impact joined together to take part in the SAMENA Accelerator. Such deliberations, and the many that may be catalyzed as a result of the SAMENA Accelerator, have underpinned the realization that Digital Economy must be made sustainable and must include everyone; no one must be left behind.

Some of SAMENA Council's recommendations to address various infrastructure-level and sustainability-level issues with respect to accelerating the region's Digital Economy these issues are as follows:
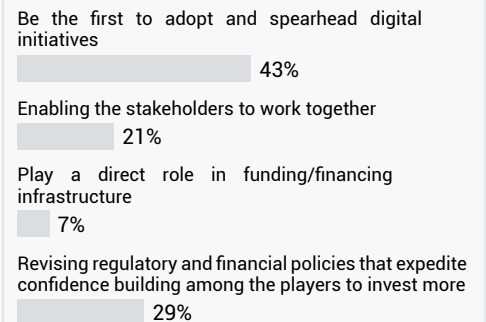
1. Optimize approval/permit processes in terms of how documentation is submitted; define and strictly comply with the timeline in which the approval process is completed; and frame a policy that should automatically grant in-building Right-of-Way to concerned stakeholders. These measures will allow predictability and investor confidence.
2. Infrastructure-sharing models, depending on the dynamics of the regional markets, can benefit consumers by increasing competition, lowering prices, and raising service quality. The private sector has already embraced this model; further expansion, however, requires targeted policies that promote competition and facilitate sharing, especially in hard-to-cover areas, which are non-economical or constitute complex geographies.
3. By reducing redundancy, infrastructure-sharing spreads the cost of network expansion across multiple market participants and can generate significant CAPEX savings for Telecom Operators. To this effect, Policymakers and regulators from other sectors/industries should collaborate on make existing infrastructure such as electricity poles, waterways, and waste water systems, gas and district heating lines, roads and railways, etc., available to Fiber investors for mutual use in the long run.
4. Because it is critical to see the Private Sector through a new lens as a key enabler of national transformation and not just as a revenue source, it is pertinent that an enabling environment be created, comprising, for example, tax relief incentives, reduced license fees, among other regulatory, legal, and financial incentives and supportive measures. Of course, such an enabling environment will not only cater to the Fiber deployment but to infrastructure investment and digital development, in general.
5. For cutting-edge technology applications, especially fixed network technologies, the governments must show determination to simulate private sector investment via public funding and subsidies, if and when possible, so as to effectively facilitate large-scale network deployment. SAMENA Council is dedicatedly collaborating within the UN Broadband Commission to help develop 21 Century Funding Models, which could address ICT infrastructure gaps, including of Fiber, and which may play an important complementary role in the initiatives taken by the Governments.
6. Lastly, it is important for the Private Sector to work in close collaboration with the Public Sector, to drive common understanding on the flexibility, scalability, and asset potential of Fiber networks. This alignment will support our efforts in building a sustainable digital economy, which will rely not only on connectivity infrastructure, but also on capacity-building and ICT Talent development initiatives, to help realize digitization-driven socio-economic impact from urban areas to the last mile throughout the SA-ME-NA region.

Poll 2: Region-wide Understanding of the Digital Economy

What is your understanding of the greatest challenge to the Digital Economy?

Insufficient infrastructure
36%

Lack of business models
57%

Too much regulation
7%

What is the foremost role do you wish the governments to play in accelerating the Digital Economy?

Be the first to adopt and spearhead digital initiatives
43%

Enabling the stakeholders to work together
21%

Play a direct role in funding/financing infrastructure
7%

Revising regulatory and financial policies that expedite confidence building among the players to invest more
29%

What responsibility of the Private Sector do you view to be of topmost importance in developing the Digital Economy?

Build cross-industry collaborations to build new use-cases of digital technologies
50%

Incubate ICT talent
14%

Proactively support government ICT visions; help define implementable action plans
36%
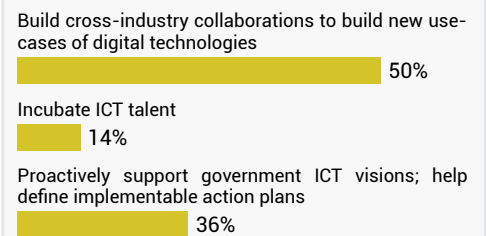
Do you view the following definition of the term "Digital Economy" to be complete: "The digital economy incorporates all economic activities reliant on, or significantly enhanced by the use of digital inputs, including digital technologies, digital infrastructure, digital services, and data; it refers to all producers and consumers, including government, that are utilizing these digital inputs in their economic activities".

I don't know
7%

Adopt infrastructure-sharing
14%

No, incomplete
21%

Yes, complete
57%
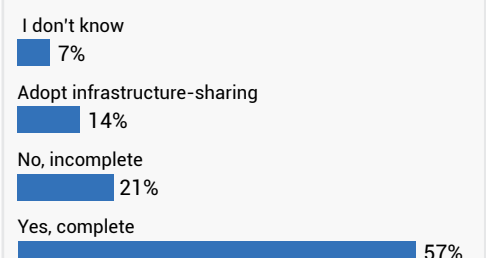
Huawei and Arthur D. Little Report Defines Best Digital Policies for Middle East Countries

The report details the gaps in the digital economy holding back achievement of their respective digital visions, and the recommendations to lead to value-creating outcomes.

A new report from Arthur D. Little focuses on recommended policy actions for Middle East countries to realise their digital visions for a sustained economic recovery from the pandemic and enhanced resilience. The new study focuses specifically on the Middle East and builds on an earlier collaborative report by Huawei and Arthur D. Little this summer titled Think Digital. Think Archetype. Your Digital Economy Model.

Accelerating digitalisation will boost industrial growth and productivity, improve societal well-being, and benefit consumers via cost and time savings. The report details the gaps in the digital economy holding back achievement of their respective digital visions, and the recommendations to lead to value-creating outcomes.

Middle East Digital Economy Outlook

Special Report: Digital Growth Opportunities in UAE, Pakistan and Oman

Arthur D Little

MEMBERS NEWS

stc Expanded Its 5G Network by 130% at G20 Summit

stc Group successfully collaborated with the G20 Saudi Secretariat as a digital enabler for the Saudi G20 presidency. The Saudi-based company provided critical telecommunications and digital services for all meetings of the G20 summit, expanding its 5G network by 130% to accommodate the increase in digital services during the G20 summit. It also provided its infrastructure for the largest optic fiber network in the region, its facilities for big data centers around the Kingdom, and its international gateways by expanding them by more than 50% to exceed 8 terabit/s through three stations for global continental submarine cables, connected to more than four submarine cables using the GeoMesh technology – which is the latest protection and distribution system in the world. This system is used for the first time in the region to secure stc's services system in general, as well as data and audio solutions during the G20 virtual summit in particular. Additionally, stc mobilized engineering and technical manpower around the clock in the correspondence control centers in Riyadh and in the field to work on stc's facilities and together with the company's public and private partners. stc also designed, implemented, expanded, and protected data circuits and related

systems in the G20 digital solutions, and enhanced them with extensions exceeding 100% and with protection systems that include over 90 security standards as part of stc's precautionary measures to protect the telecommunications infrastructure from any hacking or disruption attempts, thus enabling the network to transfer the required traffic with a smoothness that suits such a historic event. On a related note, many stc leaders took part in G20 committees and the preparation of the G20 agenda. They also contributed to the preparation of the recommendations that were submitted to the G20 by the B20 group. For instance, Nasser Sulaiman Al Nasser, stc Group CEO, was the B20 Digitalization Taskforce Chair; while

Mathad Faisal Alajmi, VP and General Counsel of Legal Affairs, was the B20 Integrity and Compliance Taskforce Chair; and Nasser Al-Jareed, Director of the Workers' Committees Support Program in stc and Chairman of the Saudi National Committee of Workers Committees (SNCWC), acted as the Head of the L20 Workers' Communication Group. The G20 International Media Center also provided the "This is Saudi Arabia" platform, which was mainly focused on rediscovering Saudi Arabia through a new perspective, highlighting tourist sites and national heritage in an innovative technical manner, and enabling media professionals covering the summit to learn more about key Saudi tourist sites.

stc Upgrades Location-Based Services with Comtech

Saudi Telecom Company has selected Comtech's Location Technologies group to upgrade its location-based services. The five-year agreement will provide both active and passive location services supporting 2G, 3G and 4G networks. The multi-million-dollar upgrade contract will begin in the first quarter of fiscal 2021 "Location technologies are vital components in public safety efforts

worldwide," said Fred Kornberg, Chairman of the Board and Chief Executive Officer of Comtech Telecommunications Corp. "We are proud to advance the safety of our customer's citizens on a global scope and this agreement demonstrates our strong commitment to public safety through our advanced location technologies." The Location Technologies group of Comtech Telecommunications Corp. is a provider

of precise device location, mapping and messaging solutions for public safety, mobile network operators, and enterprise solutions. Its platforms are designed to locate, map, track and message, and the firm counts mobile network operators, government agencies and enterprises among its customers.

Etisalat Celebrates Entrepreneurship and Innovation at a Live Awards Ceremony

The Small and Medium Business (SMB) sector plays a key role in the UAE economy in driving innovation, job creation and disruptive business models. Given the importance of this segment, Etisalat has been working closely with businesses across all sectors to cater to their requirements, ensure a successful a digital journey and facilitate business continuity during these unprecedented times. Etisalat's 'Hello Business Pitch' is one of Etisalat's strategic initiatives that aims at supporting entrepreneurs and start-up businesses by providing them with an opportunity to pitch their business ideas in front of an expert panel of judges who will be assessing their business model through the strength of their pitch for a chance to win grand prizes that help in growing their business. This platform, in its second year, has received an overwhelming response and is gaining popularity among aspiring entrepreneurs. Hundreds of passionate start-up businesses applied since its launch in December 2019. After an intensive and comprehensive assessment of the applications based on the creativity of the business models, demonstrative scalability, and the ability to effectively portray their potential business growth in a clear and concise way, Etisalat shortlisted 52 candidates who progressed to the latter stages of the competition. The shortlisted businesses were then invited to pitch their business model online. Twenty-five businesses were selected, who then got into a dedicated training session by Dr. Petar Stojanov, Partner, Innovation & Future Strategy at Black, on how to perfect

their pitch. Two more pitching sessions were conducted and the jury selected the top three winners, who were announced by Etisalat at a live awards ceremony viewed by the business industry around the globe. Salvador Anglada, Group Chief Business Officer, Etisalat, commented: "Small and medium businesses are a backbone of the UAE economy, accounting for 86 percent of the total private sector workforce and more than 60 percent of the country's current GDP. This year's 'Hello Business Pitch' has indeed succeeded in attracting high-potential start-ups and harnessing the potential of aspiring entrepreneurs who are bringing innovative ideas to the market. I have witnessed first-hand the thoroughness and the quality of the content of their pitches, and look forward to hearing about their entrepreneurial

journey." YallaGive won first place for a brilliant pitch and will receive AED150,000. The second-place winner Key2enable Assistive Technology will be awarded AED120,000, while App4Legal placed third in the competition and will walk away with AED80,000 for their respective creative pitches. Esam Mahmoud, Senior Vice President, SMB, Etisalat, said: "It is my pleasure to congratulate the entrants, shortlisted candidates and winners of this year's 'Hello Business Pitch'. This competition showed the strength of the UAE's future business leaders and their passion for innovation and entrepreneurship. Our initiative is in line with Etisalat's continuous efforts to support SMBs and start-ups in the UAE and position Etisalat as the preferred business partner of choice for SMBs."

Etisalat Selects Ericsson For UAE 5G Network Rollout

United Arab Emirates (UAE) telco Etisalat has awarded Ericsson a contract for the rollout of 5G radio and core network equipment. The deployment will focus on use cases such as enhanced mobile broadband, fixed-wireless access (FWA), enabling industrial 5G applications, and the

Internet of Things (IoT). 5G will also power new experiences for wireless customers, from gaming and entertainment services, to IoT and business applications. Haitham Abdulrazzak, Chief Technology Officer for Etisalat, said: 'We are rapidly upgrading our network to deliver the quality, capacity,

and overall network performance that our enterprise and consumers demand. With a new 5G radio and 5G core network, we will further ensure high quality, increased capacity, and greater reliability for our customers.'

Technology and Telecom Play a Major Role in Accelerating Towards a Digital Economy Powered by 5G, IoT & Cloud, Says Etisalat Chief

Technology and telecom play a major role in accelerating towards a digital economy powered by 5G, IoT and cloud positively impacting every aspect of the society by building an advanced infrastructure fostering an innovative ecosystem and encouraging collaboration, highlighted Hatem Bamatraf, Chief Technology Officer, Etisalat International. Bamatraf participated in a panel discussion organized by SAMENA Telecom Council titled 'Accelerating a Sustainable Digital Economy'. His session focused on achieving consensus on modeling the digital economy for the next decade. The other key panelists in the discussion included other senior leaders from GSMA, World Economic Forum, Saudi Arabia and Africa. "In the current pandemic all companies have accelerated their efforts to digital transformation by identifying gaps that need to be addressed touching all aspects of the business, network and technology infrastructure. As an industry, policy makers and regulators need to support this transition to the digital economy by implementing favorable ICT policies, fast-tracking infrastructure development and fostering digital inclusion. This will improve the socio-economics of the region by sustainably closing the

digital divide, and Etisalat was among the first telcos to adopt digital transformation embodied in our strategy 'driving the digital future to enable societies," said Bamatraf. The discussion also highlighted the importance of building the necessary ICT infrastructure, which requires updating existing systems and making policies, such as 'Cloud First', defining steps to achieve strategic coordination of multiple stakeholders, making digital economy measurable, integrating the region and create economies of scale for infrastructure

investments. Bocar A. BA, CEO and Board Member SAMENA Telecommunications Council, UAE said: "Today's event was a success with virtual discussions and keynotes focusing on the acceleration of the digital economy gathering leaders and regulators from the telecom industry encouraging them to work collaboratively during today's pandemic. I want to thank Etisalat for its support and participation in the panel discussion adding valuable insights and perspectives on such a relevant topic."

Mobily Expects COVID-19 Measures to Impact Telecom Sector By 2020-End

Etihad Etisalat Co. (Mobily) said in a bourse statement that the impact of COVID-19 precautionary measures so far on the telecom

sector was limited, however, it is expected to be affected by end of this year. In a Q3 2020 financial results earnings conference call on Oct. 27, the company said the revenues of the business sector witnessed a growth during the first nine months of 2020, in addition to the development of the subscriber mix, and a rise in wholesale sales. The telecom provider added that it has expanded the coverage of 5G communications network to reach 48 cities in the Kingdom.

AT&T

William E. Kennard Named Chairman of AT&T's Board of Directors

The board of directors of AT&T Inc has selected William E. Kennard to serve as its chairman, effective January 2021, upon the retirement of Randall Stephenson, currently AT&T's executive chairman of the board. AT&T announced earlier this year its plan to elect an independent chairman when Mr. Stephenson retired from the board in January, after serving as chairman since 2007. This change continues AT&T's commitment to strong corporate governance. Mr. Kennard served as general counsel to the U.S. Federal Communications Commission from 1993 to 1997. In 1997, he was appointed FCC Chairman, a position he held until 2001. From 2009 to 2013, he served as the U.S. Ambassador to the European Union. Kennard also has held positions with The Carlyle Group, a global asset management firm, at which he led investments in the telecommunications and media sectors, and the law firm of Verner, Liipfert, Bernhard, McPherson and Hand (now DLA Piper), where he was a partner and member of the board of directors. "Bill's deep knowledge

of communications, media and technology, proven leadership and broad experience across capital markets and government uniquely positions him to serve as AT&T's new chairman," Stephenson said. "He is an outstanding choice to lead our board of talented directors who possess diverse expertise and experience." "It's an honor to be selected to serve as chairman of AT&T's board of directors," Kennard said. "On behalf of the board, I want to thank Randall for his outstanding leadership and countless contributions as chairman. We wish him all the best. I look forward to working with our CEO and fellow board member John Stankey and the entire board to continue creating long-term value for all stakeholders – investors, customers, employees and the communities we serve." Mr. Kennard joined AT&T's board of directors in 2014. He currently serves on the corporate governance and nominating committee and the public policy and corporate reputation committee. Kennard serves on the boards of Duke Energy Corporation, Ford Motor Company and

MetLife, Inc. He is also co-founder of Astra Capital Management, a private equity firm. Kennard received his B.A. in Communications from Stanford University and earned his law degree from Yale Law School. He currently serves on the board of trustees of Yale University.

AT&T Closes Sale of Puerto Rico and U.S. Virgin Islands Operations

AT&T Inc. announced that it has completed the sale of its wireless and wireline operations in Puerto Rico and the U.S. Virgin Islands to Liberty Latin America. The transaction includes employees; network assets and spectrum; real estate and leases; customers, including more than 1 million wireless subscribers; and

contracts. AT&T will retain DIRECTV and certain global business customer relationships and FirstNet responsibilities and relationships. Eligible first responders subscribing to FirstNet in Puerto Rico and the U.S. Virgin Islands will still have access to the benefits and capabilities – including always-on priority and preemption – of

the FirstNet platform. AT&T is receiving $1.95 billion in cash and plans to use the proceeds to redeem all of the preferred interests in a subsidiary (PR Holdings). The company continues to pursue additional non-core asset monetization opportunities.

AT&T Cisco Disaggregated Routing Deal Targets Peering at Network Edge

AT&T said that it has deployed disaggregated IP routing at the network edge. The news is the latest in a string of developments AT&T has announced as part of the carrier's broad plans to move toward a network based on generic hardware controlled by software separated from the hardware. Cisco will provide that software. The first use case for AT&T's disaggregated edge routing platform is

traffic exchange with other internet service providers (ISPs) – functionality known as peering. Eventually the platform is expected to support broadband, IP content, Ethernet, mobility and virtual private network (VPN) services. The generic hardware that will support the AT&T disaggregated IP routing platform will come from UfiSpace – a company that AT&T previously selected to support the AT&T IP/MPLS core. As AT&T

notes in a press release, this demonstrates "the true openness of the hardware." Advantages of using the same hardware in the network core and network edge include consistent maintenance processes and sparing. The UfiSpace hardware uses a building block approach that enables service providers to combine 40x100G or 10x400G line card systems and a 48x400G fabric system to create routers with

capacity from 4 Tbps to 192 Tbps. A third vendor supporting the AT&T disaggregated edge routing initiative is Broadcom, which will provide silicon underlying the platform based on Broadcom Jericho2 technology. The Cisco software that will underlie the deployment is the IOS-XR network operating system, which will provide management and control functions. In a press release, AT&T Chief Technology Officer for Network Services Andre Fuetsch said the AT&T Cisco disaggregated routing news is "a really big development in the networking ecosystem." He added that "This model gives us options and flexibility in our supply chain and enables us to use best-in-breed products whether they come from established or disruptive suppliers. And this is well past lab experiments; the technologies and

ecosystem have matured, and we are now into the production deployment phase." The press release doesn't detail how close to the edge the IP peering functionality will be placed and AT&T did not immediately respond to an inquiry from Telecompetitor about that. We will publish an update whenever we hear from them. The network

edge has been getting a lot of attention lately, particularly for 5G networks. AT&T and other service providers are beginning to move cloud resources closer to the network edge to maximize the low latency of 5G by minimizing latency in the transport network.

BT Launches Software-Defined Network Services with Vmware's SD-WAN the First Offering

BT announced it has launched a new generation of cloud-optimized managed services with the first offering based on VMware's SD-WAN technology. VMware's VeloCloud SD-WAN technology gives customers a single view of their networks as well as a choice of management controls. Traditional wide area networking (WAN) required dedicated, proprietary vendor hardware to be installed at each customer site. BT's new managed service is based on generic hardware that's capable of supporting a choice of software-based networking solutions from different vendors. The VMware SD-WAN service can be managed or co-managed remotely by BT on its new digital service platform. BT is also offering its customers consultations with its experts to find the best solution to fit their needs. They can also provide advice on security to meet each customer's security requirements. Over the past year or so, organizations have been migrating their SD-WAN services from the initial "do-it-yourself" (DIY) model to managed SD-WAN services. Other service providers, such as

Orange Business Services, and Windstream, are also offering their customers white-glove managed SD-WAN services that deliver a variety of high-level service benefits, including a single pane of glass, technical consulting resources and advanced service delivery. "Our new managed service further expands customers' choice of software-defined networking solutions. Presently available with industry-leading VMware SD-WAN, it is delivered over our new, digital service platform," said BT's Andrew Small, director of global portfolio, in a statement. "The solution is fully supported by our consultancy services to help customers maximize the benefits of performance, agility and flexibility for their businesses." BT didn't say what vendor, or vendors, it used to build its cloud-first, scalable network for the software-defined networking services. Dating back several years ago, BT previously deployed SD-WAN solutions from Nuage Networks and Cisco, including Cisco IWAN and Cisco Meraki SD-WAN. Earlier this year, BT added Dell Technologies' universal customer premises equipment (uCPE) to its Dynamic Network Services roster in order to offer business customers more choices. BT will offer its multinational customers Dell's Virtual Edge Platform (VEP) platform of networking-specific uCPE as a converged networking, IoT and IT application platform.BT started offering its Dynamic Network Services portfolio several years ago to give business customers greater choice, security, resilience, service, and agility. The managed services include on-premises network functions virtualization (NFV) as well as IoT and IT applications to help customers with their digital transformations. In addition to Dell, BT has also worked with Cisco to enable its Dynamic Network Services.

BT Group Hits 100% Renewable Electricity Milestone Worldwide and Helps 5.7 Million People in the UK with Top Tips on Tech Campaign

Speaking at a Digital Impact & Sustainability Business Briefing for analysts and investors, BT Group announced that its network, offices and shops worldwide are now powered with 100% renewable electricity. The company also announced that its ground breaking Top Tips on Tech campaign has helped 5.7 million people across the UK to learn and stay connected during the Covid-19 global pandemic.

Switching to renewables

BT, the joint-largest private purchaser of electricity in the UK will run its global operations on renewable electricity where markets allow and will purchase the remainder from neighboring markets until local solutions can be found. While challenges remain in sourcing renewable electricity in some countries, collaboration with members of the RE100 initiative is helping to make improvements in supplies. BT's transition to renewable electricity has been delivered through supporting the development of local renewable energy markets, with 16% of its electricity supplied through corporate Power Purchase Agreements (PPAs) and the remainder from high quality green tariffs or in a small number of markets, renewable certificates. Making the switch to 100% renewable electricity will help BT reduce its carbon emissions in the year to March 2021 by an estimated 54,000 tonnes compared to last financial year. This is the equivalent of taking around 21,000 combustion engine vehicles off the road for a year. Cyril Pourrat, Chief Procurement Officer at BT, said: "As an organization that consumes nearly 1% of the UK's electricity, it is important for BT to demonstrate its commitment to a green recovery. Our team has worked hard to secure renewable electricity contracts for our sites globally, a crucial step towards the Paris agreement's 1.5°c target." Welcoming the news, Sam Kimmins, Head of RE100, the

Climate Group, said: "We congratulate BT on their tremendous work to switch entirely to renewable electricity. BT was an early pioneer in setting a 100% goal, and has made impressive progress. Now, by transparently sharing not only their successes but also the challenges they face in a few remaining markets, BT is helping to accelerate local solutions and unlock clean energy use around the world."

Top Tips on Tech

Back in April, BT teamed up with some of the nation's best-loved talent to teach the nation a range of vital digital skills including; getting to grips with the popular messaging service WhatsApp, help with home schooling, tips for getting your business online and how to use online services to help with physical and mental wellbeing. The three-week campaign, in partnership with ITV saw Clare Balding, Rylan Clark-Neal, Peter Jones, Marcus Rashford and David Walliams, amongst others feature in 12 bitesize lessons delivered twice a day during ITV ad break takeovers. The campaign also advised viewers on how they could access further free resources from a range of organizations – including advice and support – from BT's Skills for Tomorrow program*. Independent research by Ipsos MORI* found that 64% of UK adults saw at least one advert, with 68% of people who saw the ads recall seeing an average of four ads each. 5.7 million people learnt or did something new as a result of the campaign and 2.1 million people who saw the advert continued to put the knowledge they learnt into practice.

Andy Wales, Chief Digital Impact and Sustainability Officer at BT commented: "Connectivity is playing a role like never before; whether that's allowing you to work from home, keeping your kids entertained or staying in touch with friends and loved ones. It's amazing that millions of people have been inspired by our campaign and are embracing technology to get through this really challenging time."

Transitioning to a low carbon fleet

In a bid to drive emissions down, Openreach which has the second largest commercial fleet in the UK is aiming to switch out a third of its 27,000 combustion engine vehicles to electric by 2025. With 33,000 vehicles, the entire BT Group fleet accounts for two thirds of its operational emissions. In June 2020, BT Group including Openreach joined forces with the Climate Group to launch the UK Electric Fleets Coalition. The coalition of 27 companies has taken a leading role in communicating the benefits of switching from combustion engine vehicles to electric vehicles (EVs) and has called for supportive policy measures which target 100% electric car and van sales by 2030; extend grants for electric vehicles and charging points through to at least 2023 and speed up the rollout of public charge-points across the country.

Commitment to climate action

BT has led on climate action for over 28 years and was one of the first companies in the world to adopt science-based targets, directly linking its own goals to the overall level of reductions in emissions needed to limit the most harmful impacts of the climate crisis. As part of the transition to a low carbon business

model, BT has pledged to become a net zero carbon emissions business by 2045 and has set targets in line with the most ambitious aim of the COP21 Paris Agreement - linking its targets to limit global warming to 1.5°C. Since 2016/17, BT has reduced the carbon emissions intensity of its operations by 42% and has reduced carbon emissions by 8% in its supply chain over the same timeframe. Last year, BT helped its customers save 13m tones of carbon – three times as much carbon as its own end-to-end carbon emissions – achieving its 3:1 carbon abatement target one year early. For every tone of CO2 emitted by BT – three tones of customer emissions were saved. BT's commitment to reducing its carbon intensity will help the UK Government meet its target of net zero emissions by 2050 and is calling on other companies to take similar measures and make similar commitments.

BT Teams Up with UK Quantum Tech Start-Ups to Trial World's Most Secure Fixed-Mobile Network Infrastructure for 5G And Connected Cars

BT has joined forces with high-tech Cambridge spin-out Nu-Quantum, other UK start-ups, Research and Technology Organizations (RTOs) and university partners, as part of a world-first trial of end-to-end quantum-secured communications for 5G and connected cars. The AIRQKD trial combines BT's globally leading expertise in building quantum-secure networks using QKD (Quantum Key Distribution – an essentially un-hackable, cutting edge technique for sharing encryption 'keys' between locations using a stream of single photons) with other new techniques for applying quantum security to mobile devices, developed by UK start-ups Nu Quantum, Angoka and Duality. The trial, which will run for 36 months, is funded with £7.7M by the Quantum Technologies Challenge, led by UK Research and Innovation. It will for the first time combine Quantum Key Distribution over fixed fiber and free-space networks (point-to-point laser connections between cell sites), with quantum-enhanced security chips in mobile devices. In combination, these technologies will be used to deliver an ultra-secure link between connected 5G towers and mobile devices, as well as to connected cars, in conjunction with the Warwick Manufacturing Group at Warwick University. The new trial builds upon BT's current fiber-based testbed for QKD, which runs between Cambridge and the BT Labs at Adastral Park, Suffolk. It will pave the way for the development of a wide range of quantum-secured use-cases, for applications where ultra-security of data transfer is especially important. Cambridge-based Nu Quantum, one of the UK's newest quantum technology start-ups, will be the provider of quantum components: small modules capable of manipulating the faintest light signals (single photons of light) to generate and communicate absolutely secure quantum encryption keys. Other partners include Belfast-based Angoka, Bristol's Duality Quantum Photonics and London-based Arqit; all cutting-edge start-ups specializing in the new field of Quantum tech, in which the UK is increasingly seen as taking an early lead. Professor Andrew Lord, BT's head of optical network research, said: "The UK has firmly established itself as a global leader in quantum-based network security. With the AIRQKD trial, we're delighted to be taking this to the next level and combining multiple quantum technologies from innovative UK start-ups to build the world's most secure fixed-mobile communications link. Connected cars are only one of the possible range of applications that will benefit from such ultra-secure connectivity in the future." Dr. Carmen Palacios Berraquero, co-founder and CEO of Nu Quantum said: "In this project, we are basically creating the architecture for a whole new quantum-telecommunication industry, with a supply chain running from component manufacture through to end user. At Nu Quantum we have the unique ability to use the smallest packets of light, making the most of quantum mechanics and the security advantage it can give us. This 3-year partnership with BT and others across the UK is an important step taking quantum out of the lab and into our networks." Roger McKinlay, Challenge Director for the UK Quantum Technologies Challenge, said: "This investment is part of a wider package delivered by The National Quantum Technologies Program, which is set to make a £1 billion investment over its life-time. This is ground-breaking technology but also commercially important, the close collaboration between the parties accelerating the establishment of a UK supply chain." AIRQKD is an Innovate UK funded project involving the following partners: BT, Lexden Technologies, OLC, Duality, Bristol University, Fraunhofer Centre for Applied Photonics, Strathclyde University, Warwick University Manufacturing Group, Bay Photonics, Heriot Watt University, Angoka, ArQit, Nu Quantum, National Physical Laboratory, CSA Catapult, Edinburgh University.

China Mobile Inks Pact with State Construction Firm; 5G Base Stations Hit 385,000

China Mobile has signed a strategic cooperation agreement with the China State Construction Engineering Corporation (CSCEC) to 'enhance the complementarity of resources, technologies and markets', Xinhua News Agency reports. Under the agreement the two will continue to integrate 5G technology into the construction sector, with a view to accelerating innovation and development in both the telecommunications and construction sectors. The CSCEC has previously partnered with other cellcos, and in May 2020 it established a construction 'smart site' in partnership with China Unicom, using a 5G network to connect people, equipment and processes on the project. Meanwhile, the development follows on the heels of China Mobile's announcement this week that it has built more than

385,000 5G base stations nationwide, covering all prefecture-level cities. The operator also claimed to have more than

130 million 5G package subscribers, whilst the number of connected 5G terminals was over 90 million.

The Michigan Moonshot Partners with Toyota and Cisco to Expand Wi-Fi Access in Detroit, Inkster, Flint and Washtenaw County, Michigan

Residents of Detroit, Inkster, Flint and Washtenaw County will soon benefit from expanded free Wi-Fi access at more than 50 community locations across S.E. Michigan. The effort, part of Merit Network's Michigan Moonshot initiative, was supported by contributions from the Toyota USA Foundation and Cisco. Washtenaw Intermediate School District and Merit Network provided in-kind contributions for the project. According to the U.S. Census Bureau, Detroit Public Schools has the highest number of households in the state without internet access at 82,894. The Flint School District has the second highest number with 14,221 households without internet access. In addition, 57% of K-12 students in Washtenaw County do not have high speed Wi-Fi access at home. "For thousands of students across the state of Michigan, the pandemic has introduced new challenges or highlighted existing ones. We expect this to help both rural and urban communities access the

internet for basic informational needs tied to living, learning and working," said Charlotte Bewersdorff, Merit Network's vice president for Community Engagement. The grants address the digital divide by providing community organizations with the technological ability to extend their existing internet connectivity through Wi-Fi networks which are accessible outside the buildings. Detroit Public Library will extend their Wi-Fi network beyond the walls of nine select sites, during normal business hours. Washtenaw Intermediate School District is coordinating 30 different access points at area schools and community partners across the county. "As COVID-19 continues to spread throughout our nation, Toyota is proud to partner with Michigan Moonshot and Cisco to expand free Wi-Fi to Southeast Michigan area schools, libraries and community gathering locations to provide an immediate solution to this urgent issue of access," said Chris Reynolds, chief administrative officer,

Toyota Motor North America. Beyond Washtenaw County where Toyota has its North American research and development headquarters, the Toyota USA Foundation provided grants to help address the digital
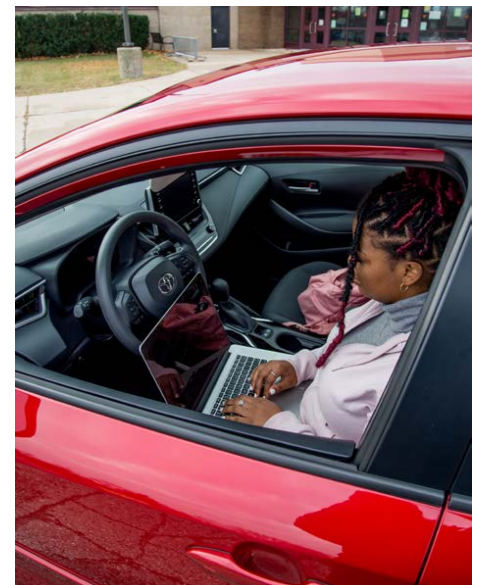
divide in 13 states across the nation. Internet access at community sites is powered and secured by Cisco's next-generation Wi-Fi and cloud security technology. The overall effort is supported through Cisco's Country Digital Acceleration (CDA) program, which has over 900 active or completed mass-scale digitization projects in 37 countries around the world. "It is our responsibility as business leaders to step up and mobilize the tools and innovations at our disposal to help curtail the growing disparities in our communities caused by the digital divide," said Nick Michaelides, senior vice president, U.S. Public Sector at Cisco. "We are proud to launch this initiative alongside Merit and Toyota to help ensure equity of access, and to power an inclusive future for all Michiganders." Moving into the future, the Michigan Moonshot will continue to identify and lessen the impacts of inequitable access to broadband internet with the help from our communities. If your community, private or philanthropic organization is interested in supporting local Community Access Network sites, please contact moonshot@merit.edu.

Cisco Delivers New Platform Solutions to Drive Workload Agility across Public and Private Clouds

Cisco announced new software-delivered solutions designed to simplify IT operations across on-premise data centers and multicloud environments. With this milestone, Cisco is enabling greater business agility for its customers and empowering developers to deliver and scale innovative application experiences faster. Today's business environment is changing faster than ever. Applications have become more distributed, workforces are more mobile, and the demands on our systems are greater than ever. In order to face these challenges, IT teams need greater insights and automation to deliver true technology agility. Cisco is unveiling agile IT platforms to help technology groups respond to these market transitions. "Complexity can paralyze our teams. Our systems can no longer be powerful, but brittle. For IT to be as agile as their businesses require, they need solutions obsessed with simplicity," said Todd Nightingale, SVP and GM, Cisco Enterprise Networking and Cloud. "This year, technology groups around the globe were tested by unprecedented change. This fundamental shift in how businesses, schools and governments operate requires IT teams to transform how they function. Today, Cisco is announcing IT platforms for multicloud operations that provide advanced insights and automation to help organizations transform faster." Cisco is bringing a never-before-experienced level of efficiency to cloud, application, SecOps, NetOps and DevOps teams. As a cloud-neutral vendor, only Cisco allows customers to maintain choice and control across their full IT stack with simplified and consistent operations. Cisco provides unrivaled visibility from the application to the infrastructure, allowing customers to deliver the best application experiences. New solutions include:

- Cisco Intersight: Building on its foundation as a leading systems management platform, Cisco Intersight's mission is to become the world's simplest hybrid cloud platform that connects private data centers to private clouds. With the new Intersight Kubernetes Service, infrastructure teams can now automate the lifecycle management of Kubernetes and containerized applications across any environment. This represents a major leap forward in the container ecosystem by driving rapid and consistent application innovation. Intersight Workload Optimizer significantly simplifies application resources management. With a single tool that provides real-time, full-stack visibility and insights, customers can balance application performance and cost. Intersight integration with AppDynamics provides IT teams with visibility to improve management across infrastructure and applications and stay ahead of problems that can impact user experience.

- Cisco Nexus Dashboard: The Cisco Nexus Dashboard is a single insights and automation platform to operate multicloud data center networks spanning on-premise, virtual edge and cloud sites. Bringing together Cisco's orchestration, insights and assurance services together with critical 3rd party services, Nexus Dashboard is a simple to use interface to transform operations. The Nexus Dashboard drives the adoption of cloud-native application practices leading to a faster path to return on infrastructure investment.

- Cisco Identity Services Engine (ISE): Cisco ISE now simplifies secure network access across all domains, extending the zero-trust workplace to anywhere and on anything. With the latest innovations, customers can use ISE to intelligently identify a variety of IoT endpoints to enforce consistent policies from the cloud to give teams the agility and flexibility they need to secure their organizations.

"Cisco's new solutions are part of an overall effort to transform how customers connect people, secure their organization, and automate their processes," said analyst Will Townsend, Networking Practice Head, Moor Insights & Strategy. "It is designed to bring together platforms and portfolios to help customers respond and adapt to business disruptions, accelerate cloud adoption and transform IT operating models." The new Cisco Intersight innovations and the Cisco Nexus Dashboard will be available by the end of the calendar year. Cisco Intersight Kubernetes Service will be made available in the first half of 2021. Cisco ISE innovations are available now.

Devoteam Achieved Revenue Of €174.8 Million in the 3rd Quarter Of 2020 Decreasing 4.5% Organically

Devoteam reported revenue of €174.8 million for the third quarter of 2020, decreasing 4% of which 4.5% organically compared to the third quarter of 2019. The currency impact was unfavorable for 0.8 point of growth in the quarter. The working day impact over the quarter was favorable representing around 0.3 point of growth. At constant scope and exchange rates, consolidated revenues for the first nine months of the year increased by 1%. The working day impact was favorable for 0.8

point partly balancing the negative currency effect of 0.5 point (mainly Norwegian krone). The changes in perimeter had a marginal impact of 0.7 point on the growth of the Group revenue. 1 Analysis of Q3 2020 revenue by region France was down 7% over the third quarter with a utilization rate decreasing by 5 points compared to last year and an increase in the vacation rate impacting the revenue negatively. The Northern Europe region posted an organic decline of 1.5%, reflecting a sharp drop

in activities in the Netherlands and the United Kingdom partially balanced by good performances in Belgium and Sweden. The Central Europe region decreased by 20.9%, impacted by the significant reduction of the utilization rate in Germany, principally in the automotive sector. The Iberia & Latam region increased by 7.3% organically, driven by the Portuguese and Spanish businesses. The Rest of the World region grew 10.5% organically, primarily in Morocco.

Eutelsat Announces the Appointment of Pascal Homsy as Chief Technical Officer

Eutelsat Communications (Euronext Paris: ETL) announces the appointment of Pascal Homsy as Chief Technical Officer. Pascal joins Eutelsat from Thales Alenia Space where he was head of the Space Telecommunications Business Line. He brings with him some 30 years' experience of senior management positions within major international groups, notably the telecoms conglomerate, Alcatel/Lucent/Nokia and the IT Services leader, Atos. A seasoned Chief Technical Officer, Pascal has headed teams specialized in IP Platforms, Voice and Services, Fixed

Networks, Broadband Wireless and Mobile Networks. In addition, he brings end-to-end knowledge of our value chain, having served in several Global Account Management and Sales Support roles at Alcatel, where he was notably in charge of the relationship with Orange. Pascal also has considerable international experience, having spent the early part of his career in charge of Alcatel's activities in numerous APAC markets, and subsequently holding responsibility for EMEA in various technology and commercial roles. A French national, Pascal holds a Master of Sciences

from Telecom Paris Tech. Commenting on the appointment, Rodolphe Belmer said: "I am confident that Pascal's extensive skill-set will be a great asset to Eutelsat as we pursue the transformation of our group to capture the Connectivity opportunity". Pascal will join Eutelsat in January and will sit on the Executive Committee. He replaces Yohann Leroy who has decided to continue his professional career outside the Group. I take this opportunity to warmly thank Yohann for his key contribution to Eutelsat's development and to wish him well in his future endeavors.

First-Quarter 2020-21 Revenues - Eutelsat

Eutelsat Communications reports revenues for the First Quarter ended 30 September 2020. Rodolphe Belmer, Chief Executive Officer of Eutelsat Communications, said: "Eutelsat has made a solid start to the year, with Operating Verticals revenues in line

with expectations and a backlog of €4.4bn, up 3% year-on-year. Highlights of the First Quarter include the renewal of the Sky Italia contract at HOTBIRD, confirming the ongoing relevance of satellite in Western Europe, and significant steps in our Fixed Broadband strategy with the acquisition of Bigblu Broadband Europe ahead of the imminent entry into service of EUTELSAT KONNECT. This performance demonstrates the general resilience of our business to the current environment. Although the rate of new business in certain verticals, in particular in Broadcast, is slower than usual against the general operating backdrop, we have nevertheless produced a solid commercial outturn securing several new contracts and renewals on favorable terms. Based on this performance we confirm our financial objectives for the current year and subsequent year."

Eutelsat KONNECT Satellite Enters into Service

Eutelsat Communications revealed that its KONNECT High Throughput Satellite (HTS) entered into service at the 7 degrees East orbital position. This is the first Eutelsat satellite that will provide fixed broadband. Arianespace launched Eutelsat's KONNECT from French Guiana in January earlier this year. The availability of KONNECT was delayed due to COVID-19 pandemic-related interruptions in the ground segment rollout. The satellite is now operational and will gradually ramp up with 80% of the capacity in service by the end of the year, and 100% by March 2021. The KONNECT satellite was built by Thales Alenia Space and the first to use Thales Alenia Space's new Spacebus Neo platform. The satellite is all-electric, and has 75 Gbps of capacity across a network of 65 spot-beams. Coverage will initially be split between Europe with approximately 55% of the capacity focused on high-demand areas such as France, Italy, Germany, Spain, the U.K., and Africa. The satellite will supplement, then gradually replace, the capacity leased from a third-party operator. The availability of KONNECT marks a major step in Eutelsat's fixed broadband connectivity strategy. Orange purchased all available French capacity of the satellite in July, and its subsidiary Nordnet will begin broadcasting fixed broadband services in January 2021. Additionally, Eutelsat's recent acquisition of BigBlu Broadband adds a retail pillar to its distribution network.

HUAWEI

Maximizing Wireless Network Value for a Golden Decade of 5G

At the 2020 Global Mobile Broadband Forum (MBBF), Huawei's Executive Director and President of the Carrier Business Group Ryan Ding gave his keynote speech "Maximizing Wireless Network Value for a Golden Decade of 5G". Ding said that the coming decade will be a golden age for 5G's progress around the world, and that the whole industry must have faith in 5G, build the best 5G networks, and make the most of them for shared value. 5G is developing much faster than previous generations. Currently, there are more than 100 commercial 5G networks worldwide, and budget 5G mobile phones have dropped to CNY1,000. This is driving up the number of 5G users around the world, and leading carriers are already benefitting from 5G data plans. They are seeing an increase in the ARPU of 5G users through multi-metric service packages and upgraded services like 5G messaging and enriched calling. To further develop 5G and encourage more people to embrace 5G, carriers need to build the best 5G networks possible. They need to provide coverage across all scenarios such as for dense urban areas, suburbs, and indoors so that users always have access to 5G services. Carriers also need to improve 5G connectivity to deliver a consistently superior experience to users. In addition to the consumer market, the industrial market will become a new revenue stream for carriers. 5G is being applied in more and more sectors over the year since it was first deployed. Many industry applications have become increasingly commoditized and can be replicated on a larger scale. Carriers are also exploring how to use 5G to enable vertical industries. Unlike consumers who care most about data speeds, industry customers have a variety of needs, and so it is crucial that carriers maximize network value by nurturing new capabilities. To meet these diverse needs, the telecom sector needs to provide fundamental network capabilities, highly reliable network services, and flexible networking solutions necessary for industrial 5G applications. The telecom sector will also need to make improvements from end to end, ranging from network planning, construction, maintenance, and optimization to operations. This will help reduce the costs of deploying industry applications. Ding emphasized that developing industrial 5G applications is an industry-wide effort, rather than just carriers' responsibility. Accelerating this development is only possible when telecommunications integrates with other industries. In the recently frozen Release 16, 3GPP added an improved standard for broadcasting services and 5G functions like location and ultra-low air interface latency. Upcoming releases, including Release 17, will address additional industry needs. At the end of his speech, Ding stated that the next decade will be a golden age for 5G. The whole industry needs to have faith, build the best networks possible for consumers, and nurture new capabilities for industry customers to maximize the value of wireless networks for a golden decade of 5G. At the 2020 Global Mobile Broadband Forum, Huawei will share insights into global industry trends and hot topics with carriers, regulators, partners, and media analysts from around the world. They will explore how innovation in ICT technologies such as 5G and AI can be mutually beneficial to industries and society at large.

Huawei Launches 5G Microwave Long-Reach E-Band Solution to Scale Up 5G Deployment

As 5G deployment scales up, its networks will be deployed in an increasing number of areas. At the 2020 Global Mobile Broadband Forum (MBBF 2020), Huawei unveiled an innovative 5G microwave long-Reach E-band solution that combines intelligent beam tracking (IBT) antenna with high-power E-band. This combination increases the distance of E-band transmission from 3 km to 5 km while providing a 20 Gb/s capacity and loosening the requirements of site deployment, which further accelerates the deployment of 5G. E-band is a major solution of 5G's microwave transmission. The band is in the range of 80 GHz radio frequencies and provides a high bandwidth as high as 20 Gb/s. High-frequency spectrum requires small beam angles, which require a higher tower stability to deploy larger-diameter antennas. Due to this requirement, antennas with a 0.3 m diameter are mainly used to deploy the

E-band in the industry. However, the transmission distance is too short to support scaled deployment of 5G. The innovative IBT intelligent beam tracking antenna is the industry's first ever active microwave antenna. It leverages intelligent algorithms to maintain the stability of beams, thereby significantly reducing the requirements of E-band deployment on tower stability. This further breaks through the limits of setting up E-band antennas with a larger diameter, enabling deployment of both 0.6- and 0.9-meter E-band antennas. In addition, this innovation allows the transmit power to increase by 6 dB for E-band signals. With these two improvements, the E-band transmission distance is increased by more than 50%, reaching 5 km, while providing a 20 Gb/s capacity. This level of performance can fully meet the deployment requirements in urban areas. At aggregation sites, the number of directions continuously increases, requiring network carriers to provide an increasing amount of spectrum resources. The SuperHUB solution improves the spectral efficiency by 2 to 3 times in multi-direction use cases. The number of directions within a 360° range for multiplexing a single frequency is increased from 4 to 12 on the 6−42 GHz bands and 12 to 24 on E-band. Alongside improving spectral efficiency, this enables carriers to increase the density of deployment at reduced costs. Huawei 5G microwave will continue to make breakthroughs in increasing transmission distance, spectral efficiency, and site deployment to facilitate the deployment of 5G. We will also continue to provide ultra-broadband, simplified, and easy-to-deploy 5G microwave transport solutions to accelerate the construction of 5G networks worldwide.

Nexign Introduces Instant BSS Solution to Speed Up the Launch of New Mobile Businesses

Nexign a leading Business Support System (BSS) and Internet of Things (IoT) solutions provider, announced that it has expanded its product portfolio with a new solution-driven business model - Nexign Instant BSS. It is a well-defined pre-integrated package incorporating a BSS stack covering mobile prepaid services and the best practices of project delivery and support. This solution enables CSPs to speed up decision-making process and start new business in four months. Nexign Instant BSS solution is designed to respond to the rapidly changing market requirements with a light-weight, easily extendable billing solution enabling a

quick start of mobile telecoms business and providing CSPs with an opportunity to grow with strong foundation for further expansion. "Nexign Instant BSS allows mid-sized CSPs and MVNO to rapidly launch mobile services without escalating complexity of BSS systems, enabling operators to add extra functionality for the evolving business. The solution is build on the basis of Nexign's 28 year-experience in transformation projects of different size and complexity. While CSPs often have to choose between full-scale transformation and quick start, we are ready to share our best practices with the customers to help them simplify project implementation

and accelerate business growth," said Andrey Gulidin, Chief Commercial Officer of Nexign. Nexign Instant BSS significantly reduces the decision-making process by providing CSPs with a clear understanding of the project scope and calendar. Apart from technological capabilities, Nexign customers get access to a comprehensive knowledge base, including the methodology for transparent project management and the options for solution extension. This enables fast and efficient project execution, helping CSPs to achieve true ownership of the product, avoid vendor lock-in and enrich the solution according to their needs. "Nexign's Instant

BSS can help CSPs accelerate their deployment and go-to market which is key to improving competitiveness especially in emerging markets. The Nexign Instant BSS's open architecture and transparent implementation offer CSPs the flexibility to manage and maintain the solution in-house or externally. This adaptability, alongside the ability to adjust the solution in step with rapidly changing business environment will be an important consideration for CSPs and MVNOs," says John Abraham, Principal Analyst of Analysys Mason."

PCCW Global

PCCW Global's Console Connect Wins AfricaCom Innovation Award

PCCW Global, a leading international telecommunications service provider, has won AfricaCom Awards' Most Innovative Product or Service Award for its Console Connect, the world's first platform for Software-Defined Interconnection®. Console Connect is a game-changer for business as it makes the process of connecting to cloud-based, business-critical applications and geographically distributed offices, partners and clients simple, predictable and secure. Decided by an industry vote, the Award recognizes a product or service that has delivered significantly on new opportunities for revenue growth or customer satisfaction. As businesses in Africa push ahead with their digital transformation initiatives, the automated Console Connect platform is playing an important role in facilitating fast and secure access to the cloud and data centers located both inside and outside the continent. While businesses want to be innovative and agile by taking advantage of new and disruptive technologies that the public cloud has to offer, the public Internet has too many shortcomings for large-scale implementation of business-to-business applications, including security challenges, inconsistent quality, delays and excessive technical complexity. Console Connect incorporates network automation software that manages access to PCCW Global's dependable, high-speed global private MPLS network, allowing users with minimal technical capability to quickly spin up virtual private connections, bypassing the insecure and unpredictable public Internet and directly connecting to cloud application providers, partners and business locations. Console Connect offers a new level of speed and agility, which can be achieved in a few clicks with a simple, easy-to-use web portal, or integrated directly into enterprise applications via an API. The platform provides robust and secure enterprise-wide access to partner infrastructure and the world's leading cloud service providers including Amazon Web Services, Microsoft Azure, Google, Tencent, Alibaba, IBM and Oracle cloud services. In addition, Console Connect is the only Network-as-a-Service (NaaS) platform that offers extensive reach across Africa, enabling interconnections between data centers in a growing number of African countries, including South Africa, Kenya, Nigeria, Mozambique, Uganda, Ghana, Ivory Coast and Djibouti, with many more on the way. Mr. Mike van den Bergh, Chief Marketing and Strategy Officer, PCCW Global, said, "We are thrilled that Console Connect has been voted Most Innovative Product or Service at this year's AfricaCom Awards. Our platform is providing local and international businesses in Africa with new levels of speed, agility and security as they connect to more clouds and data centers. Our Software-Defined Interconnection® technology has the potential to completely transform local interconnection in Africa and support the region's rapidly growing cloud and data center ecosystem." Mr. Tom Cuthell, Event Director and Portfolio Director, Connecting Africa, Informa Tech, said, "Huge congratulations go to PCCW Global for winning Most Innovative Product or Service Award for Console Connect. Winning this year is an extra-special achievement as the people and projects showcased continue to deploy technology to battle the COVID-19 pandemic, fuel Africa's economic recovery and help build a better and more inclusive digital world. We are all very privileged to have such brilliant people and organizations in our community." The AfricaCom Awards caps a year of significant growth for Console Connect, which has seen the number of data centers enabled on the platform more than double to over 350 worldwide, with automated connections running over PCCW Global's industry-leading carrier IP backbone and MPLS network, which now reaches more than 3,000 cities and 160-plus countries globally. PCCW Global is the founding sponsor of the AfricaCom Awards and is especially proud to be part of this year's event, given the trying circumstances both businesses and individuals have endured in 2020.

AfricaCom Awards
– Most Innovative Product or Service Award

stc Bahrain Wins Bahrain's "Best Integrated Payment Solutions Provider" at The Global Economic Awards 2020

stc Bahrain, a world-class digital enabler, has won the distinguished "Best Digital Transformation" at Cosmopolitan The Daily Business Awards 2020, recognizing its role as a digitally innovative, creative driven enabler in the Kingdom. stc Bahrain, with its investments in future-focused technologies and innovative solutions, has continues to contribute to Bahrain's readiness towards becoming a digitally enabled society. Eng. Nezar Banabeela, CEO of stc Bahrain, commented: "We are honored to be awarded the Best Digital Transformation from Cosmopolitan The Daily Business Awards 2020. We are continuously working to digitize

technological services that are specifically designed to meet the needs of customers and businesses, especially in various digital sectors and products. We also aim to offer a broad spectrum of renewable technologies, customizable variations and the utmost flexibility in a world of evolving digital needs" stc Bahrain has successfully transformed from being a telecom service provider to becoming a regional digital champion. The company has significantly invested in new infrastructure to pave the way for future connectivity services and cutting-edge technologies. This includes the 5G, cybersecurity, cloud computing, mobile payment solutions,

stc pay the digital mobile wallet and various stc protect insurance services. Cosmopolitan, The Daily Business Awards, aims to recognize and reward excellence in business to companies worldwide, both in the public and private sectors. Their goal is to make sure that innovation, creativity, and the drive to create value gets its due recognition. This award adds to the many local, regional and international awards, which stc Bahrain has won including "Best integrated payment solutions provider" at The Global Economic Awards 2020 as well as "Most Innovative Digital Solutions Brand" at Global Brands Magazine Awards.

Tech Mahindra and Subex Partner to Drive Scale Adoption of Blockchain-Based Solutions for Telecom Operators Globally

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions, and Subex, an industry leader in providing services based on Digital Trust, have announced strategic partnership to drive scale adoption of blockchain-based solutions for telecom operators globally. These solutions will enable fraud mitigation and drive operational

efficiencies for communication service providers (CSP) by reducing compliance complexities and faster time-to-market. The partnership will enable real-time reconciliation reports with summarized data to minimize discrepancies, leading to reduction of multiple validations and quick dispute resolution through tamper-proof verifiable transactions. Further this collaboration will expedite settlement for

communication service providers (CSPs) and drive enhanced visibility in the end-of-the-month billing cycle. The CSPs will benefit from enhanced operational efficiencies by leveraging blockchain based smart contracts and forge more impactful alliances to drive trust amongst diverse stakeholders.

Tech Mahindra Inks INR 400 Crore 'Project Parivartan' Contract with Hindustan Aeronautics Limited

Tech Mahindra, a leading provider of digital transformation, consulting and business reengineering services and solutions, announced that it has inked a contract of INR 400 crore for ERP (Enterprise Resource Planning) implementation 'Project Parivartan' by Hindustan Aeronautics Limited (HAL), a premier, Navaratna aerospace company under the Ministry of Defence, Government of India, with proven capabilities in R&D, Manufacturing and Maintenance of fighters, trainers, transport

aircraft, helicopters, their engines and associated systems. Tech Mahindra will be responsible for the transformation and modernization of the ERP system as an implementation and support partner enabling HAL to streamline and standardize its business processes across the organization. 'Project Parivartan' is a comprehensive business integration exercise driven to achieve a centralized ERP for HAL. This exercise will enable HAL to adopt some best practices being followed

in the similar industries globally. Selected as a system integrator, Tech Mahindra will implement Project Parivartan over a period of nine years by ensuring smooth transition to a centralized version of ERP. Tech Mahindra will transform the distributed application to a centralized application, for all the HAL's 22 divisions based on a business transformation engineering process, which includes implementation of SRM (supplier relationship management), CRM (customer relationship management)

Sujit Baksi, President Corporate Affairs and Business Head Emerging Markets, Tech Mahindra, said, "Tech Mahindra's selection by Hindustan Aeronautics Ltd extends our vision of supporting government's 'Atmanirbhar' (self-reliant) initiative to enhance our indigenous capabilities. This project will transform HAL's ERP system, serving the Armed Forces in an efficient and effective manner. This is in line with our TechMNxt charter that focuses on leveraging new generation technologies with original equipment manufacturers and aims to deliver an enhanced experience to our customers." Tech Mahindra is committed towards enabling the Defence PSU

(public sector undertaking) in rendering their unique services and enhancing the capabilities of Defence Forces. The key objective of Project Parivartan is to achieve standardization, rationalization and integration of business processes and systems across HAL to deliver business value, through consolidation of data and rationalization of processes to achieve operational excellence. Shri R Madhavan, CMD, Hindustan Aeronautics Limited, said, "In order to meet the challenges of evolving business scenarios and to ensure sustaining competitiveness and customer focus, HAL has initiated 'Project Parivatan'. As a leading digital transformation company, Tech Mahindra will implement

the ERP systems and help HAL to meet the dynamic needs of this hyper-digitalized world. This will further enhance features supporting MRO in Aerospace and Defence systems will facilitate HAL in improving & bringing in centralized functioning." In line with the Motto of "Mahindra Rise", Tech Mahindra Ltd has embarked on the journey of digital transformation of the Defence PSU HAL using one of best global MRO ERP solutions. The contract is in line with Tech Mahindra's TechMNxt charter, focussed on leveraging cutting-edge technologies deliver enhanced experience to our customers.

Yahsat Announces PMO for Thuraya 4-NGS Satellite Program

The UAE-based global satellite operator, Al Yah Satellite Communications Company (Yahsat) has established a Program Management Office (PMO) for Thuraya 4-NGS, its new L-band satellite being built by Airbus. Thuraya 4-NGS, announced in August this year, is part of a US$ 500 million program that will transform Thuraya's space and ground systems and enable its next generation products and solutions portfolio. Yahsat has picked six male and female Emirati engineers from its Technology Department to form the PMO, which will oversee the design, assembly, integration and testing phases of the satellite subsystems, while focusing on the timely delivery of the spacecraft for launch in late 2023. Rashed Al Hammadi, a seasoned member of Yahsat's Space Segment Engineering team, will be the Program Manager, supported by Ali Hasan Banimalek, as Deputy Program Manager and Platform Lead. They are joined by Abdulla Zakaria Alabri - Payload Lead, Nada Ali Mubarak Obaid - Payload Engineer, Ahmed Ali Mohammed Almenhali - Platform Engineer and Launch Vehicle (LV) Integration Lead and Ibrahim Ali Abdullah Al Hammadi - Product Assurance

Lead. All of them have played key roles in delivering Yahsat's previous satellite programmes and bring solid, hands-on experience to the Thuraya 4-NGS PMO team. Thuraya's Chief Executive Officer and General Manager of Yahsat Government Solutions, Ali Al Hashemi said: "Today, there is a strong sense of fulfillment; our faith in our people and their capabilities stands fully justified. The young engineers leading this ambitious program have shown great promise in their roles and were chosen after a thorough analysis of their work history, knowledge and aptitudes. Yahsat's satellite programmes have afforded Emiratis opportunities to train with the very best in the industry, helping them build technical acumen and consummate know-how of spacecraft design and system architecture. Moreover, we have always ensured that the acquired knowledge is properly invested at home in order to drive the UAE's own space and satellite-related R&D and industry." Yahsat's Deputy Chief Technical Officer, Adnan Al Muhairi said: "The Thuraya 4-NGS next generation program is not only about deploying new technology and expanding our satellite fleet. It is also

about developing Emiratis and positioning them for further growth. The selection process for the Thuraya 4-NGS PMO has helped us identify the right people and entrust them with bigger responsibilities. A majority of our technical experts have grown with Yahsat and Thuraya, and have honed their skills through assignments on top-tier projects for the UAE." Besides managing different aspects of spacecraft development, the newly formed PMO will serve as the primary liaison between the satellite manufacturer, Airbus, and Yahsat's headquarters to ensure a smooth on-time delivery. In addition, there will be a separate team of engineers under the supervision of the PMO that will gain unprecedented insights into the workings of the state-of-the-art all-electric Airbus Eurostar Neo Platform through on-the-job training and knowledge transfer. Thuraya 4-NGS is scheduled to be operational by 2024, and until the completion of the program, the PMO team will be based out of Airbus's manufacturing bases at Toulouse in France and Portsmouth in the United Kingdom as well as at the eventual launch site.

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Dynamic Deception Technology Cyberwar Game Changer

Fahad Al Ali
Chief Technology Officer
stc Kuwait

As a seamless and non-disruptive addition to existing security infrastructures, Cyber Deception-based threat detection closes the gap on security vulnerabilities. It provides a critical line of defense for detecting attackers before they have time to complete their attack and cause a data breach or harmful doings to the critical infrastructure.

The massive increase in cyber attacks worldwide has widely increased over the past decade. Hundreds of cybersecurity incidents have made headline news with attackers turning to novel techniques to craft sophisticated malware, tools, techniques, and procedures to surpass the existing security controls. This type of attack is referred to today as Advanced Persistent Threat (APT). The main challenge with APTs besides their complexity is the Dwell time, which is the amount of time spent by adversaries inside the target network without being detected. According to the M-Trends 2020 report , the average dwell time in the EMEA region is 54 days.

The inherent complexity of APTs comes as a result of the fact that the adversaries, besides using zero-day malware and exploits to penetrate the network, are using legitimate tools inside the network to maintain their presence and perform lateral moving activities. The usage of legitimate tools leads to increased detection complexity, as the tools utilized by adversaries are legitimate and cannot be blocked due to business needs.

Dynamic deception is an emerging category of cybersecurity defense mechanisms used to detect sophisticated APT attacks. In dynamic deception, the system works on building a honey-component inside the production network by deploying fake assets (e.g., honeypots, honeytokens, honey documents, etc.). These honey-components should have a certain level of authenticity that makes them indistinguishable by adversaries from other legitimate resources. The honey-component's goal is to misdirect the adversaries, luring them into these systems. Dynamic deception usually works as a complement to other cybersecurity controls in place to augment the existing security infrastructure. The technology

is mainly designed to act as a post-breach detection tool that is designed to detect adversaries while they are attempting their activities inside the network. There is no need to know the malware before being able to detect it because dynamic deception is not a pattern-based solution. It operates sophisticatedly by deploying honey-components like honeypots, honey-credentials, honey-tokens, honey-cookies, honey-shares, honey-drives, honey-folders, honey-URLs, and honey-documents inside the network, making them possible targets for the adversary.

The deployment model of the dynamic

> *Adversaries are effectively engaged by dynamic deception technology-based solutions anywhere across the enterprise network–clients, servers, and services. As attackers look for high-value assets (Crown jewels), they scan the Cyber Deception and Response Platform as part of the network.*

deception systems as a passive element in the network, this introduces zero impact on the. On the other hand, it is not installed inline, which means they cause zero delays on the network. The honey components installed are designed and customized in a way that makes them look identical to

production network components making the system authentic and unidentifiable. In this case, these honey components will act as possible targets for the adversaries.

Adversaries are effectively engaged by dynamic deception technology-based solutions anywhere across the enterprise network–clients, servers, and services. As attackers look for high-value assets (Crown jewels), they scan the Cyber Deception and Response Platform as part of the network. Once a scan, probe, or ping occurs, the Cyber Deception and Response Platform will immediately alert of suspicious activity.

Dynamic Deception technology-based solutions bring a much needed addition to traditional prevention security solutions. These are based on known attack signatures, and therefore, cannot by design, reliably detect zero-day signature-less attacks, address the use of stolen employee credentials, or effectively protect against ransomware and spear-phishing campaigns.

As a seamless and non-disruptive addition to existing security infrastructures, Cyber Deception-based threat detection closes the gap on security vulnerabilities. It provides a critical line of defense for detecting attackers before they have time to complete their attack and cause a data breach or harmful doings to the critical infrastructure.

The Cyber Deception and Response Platforms have created a new class of deception-based threat detection that elevates the game against attackers. The

Cyber Deception and Response Platforms are recognized for their comprehensive network and endpoint-based deception. They turn user networks, data centers, cloud, remote offices, and even specialty environments such as IoT, ICS-SCADA, point-of-sale, telecom, and network infrastructure systems into traps and a "hall of mirrors" environment that will confuse, misdirect, and reveal the presence of attackers.

As a result, Dynamic Deception technology based solutions can be the missing piece in security controls to bridge the detection gap inside the network and provide the required visibility and forensics information needed to take proper action while the fight against cyber-attacks continues. 🍃

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REGIONAL NEWS

UAE Government Charts Path for Infrastructure, Digital Transformation and Environmental Sustainability for Next 50 Years

Over 600 ministers, senior federal and local government officials, secretaries-general of Executive Councils and a group of experts and specialists held in-depth consultations for four days to discuss the path for infrastructure, digital transformation and environmental sustainability. The meetings were in implementation of directives given by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President, Prime Minister and Ruler of Dubai, to strengthen government integration to chart the future of the UAE and lay down axes and components of the comprehensive development plan for the next 50 years. They were also held within the efforts of the 50-year Development Plan Committee, under the chairmanship of H.H. Sheikh Mansour bin Zayed Al Nahyan, Deputy Prime Minister and Minister of Presidential Affairs, to develop plans in five vital sectors – infrastructure, housing, environment, water and food security, and digital infrastructure and artificial intelligence, AI. Participants discussed the main proposals and recommendations for developmental initiatives that improve government work, develop the community and leverage the economy during the next development journey. The meetings came out with 45 detailed ideas which will be put to public discussions to engage members of the community in the designing process of the next 50-year plan. Participants stressed the importance of designing a new vision for cities, transportation and urban expansion, and the transformation to smart cities capable of accommodating the large increase in population numbers, in addition to developing new technologies in building and construction by finding innovative solutions to various challenges, identifying opportunities, and developing comprehensive new policies that achieve integration in the work of government
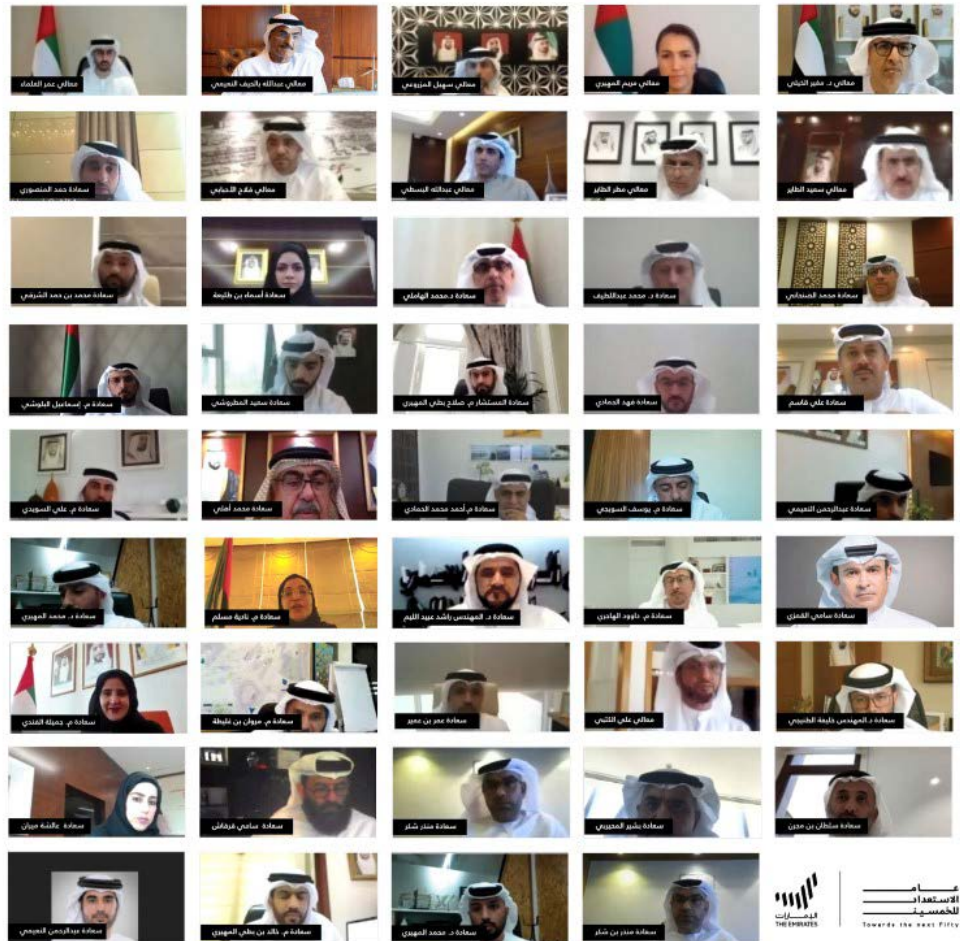
entities, and providing accurate data with high speed and quality. The meeting touched on the challenges facing the housing sector, and the need to develop innovative designs that contribute to providing land and meet future aspirations, relying on best international practices in implementing housing projects and strengthening partnership and integration with leading institutions in the private sector in securing various needs. In the food security track, the participants discussed ways to unify public policies at the level of government agencies, to support national products and entrench

their position at the global level. They also explored mechanisms and solutions for investment in modern agricultural projects and support for the agricultural scientific research system in partnership with the private sector. Participants in the digital infrastructure and AI track touched on the importance of developing and adopting future technology, actively participating in the fourth industrial revolution, raising the quality of Internet services in a way that contributes to reducing their costs, and attracting investments and innovations.

Digital Transformation in Saudi Arabia Played Key Role in Tackling COVID-19 Crisis

Digital transformation in Saudi Arabia has played an effective role in providing the public with distinguished services during the coronavirus pandemic, said Saudi Commerce Minister Majid Al-Qasabi. He also said that thanks to the advanced infrastructure of the country, the Saudi authorities have

set an unprecedented example of dealing with crises and problems facing the economy in the wake of the pandemic through concerted governmental and private sector efforts. Al-Qasabi made the remarks during the opening session of the International Standards Summit, the first of its

kind event on the sidelines of the Group of 20 meetings. Highlighting the significance of the event, Al-Qasabi said: "We have succeeded to launch the summit to discuss the role of national and international standardization in enhancing the industrial, economic, and social abilities to draw a better future." He said that Saudi Arabia during its presidency of G20 has sought to take serious steps in collaboration and partnership with its international partners to put all issues and challenges on the table, aiming to reach effective solutions to the challenges and crises facing the international economy and find effective ways to enhance international trade and industry. For his part, Dr. Saad bin Othman Al-Gasabi, governor of the Saudi Standards, Metrology and Quality Organization (SASO), said that the summit was set to discuss the importance of standards in facing the challenges and crises facing the international economy in a way that helps cross-country trade to grow and the economy to flourish. The summit, which was organized by SASO in partnership with local and international bodies, focused on the role of standards in strengthening institutional capacities to face crises and limit their negative impacts, as well as ways to enhance standards for digital transformation.

Saudi Arabia to Support Egypt in Digital Transformation

The Kingdom of Saudi Arabia has expressed confidence in the digital future of Egypt by providing one of its largest banks a $6.4 million grant. According to the reports, this grant has been given to finance the digital transformation and encourage local crafts programs in Egypt. Egypt's Minister of International Cooperation, Rania Al-Mashat said that this monetary assistance will strengthen financing mechanisms to support small, medium, and micro-enterprises, and

create employment opportunities. The Saudi Arabia Grant Committee has funded 2,180 projects so far in 27 governorates, creating about 12,000 jobs. Earlier in July this year, the government of Egypt has secured a total of US $12.37 million from the Saudi Arabia Grant Committee to finance projects in the agriculture health and SME sectors of the economy. Rania al-Mashat said in a statement that three in the agricultural sector and two projects in the field of health care, and value chain

support were approved for funding. The projects include; a project to develop rural villages, a project for a value chain financing program, and a program for financing dairy products and dairy laboratories. Rania al-Mashat clarified that the three projects aim to provide financing for all small and micro-projects in rural villages, targeting projects carried out by rural women and all handicrafts and activities aimed at achieving rural development.

TRA UAE Warns of Security Vulnerability in Whatsapp

The Telecommunications Regulatory Authority, TRA, has warned of a security loophole in WhatsApp for iOS that could allow the execution of malicious code, memory corruption and crashes. In security update for WhatsApp, TRA another vulnerability could permit Siri app to interact with WhatsApp even after the phone was locked. TRA advises users to update the affected app to version 2.22.111 or newer through the App Store.

Saudi Arabia Makes Giant Leaps Toward Digital Transformation, Covering Key Sectors

Saudi Arabia ranked second globally in the field of corporate cybersecurity and jumped nine places to become No. 12 among the G20 countries in the e-government development index, according to the World Competitiveness Yearbook (WCY). The high-ranking reflects the remarkable achievements the Kingdom has made ever since it embarked on ambitious Vision 2030 launched by Crown Prince Muhammad Bin Salman. The unprecedented progress and achievements in many other vital sectors too have put the Kingdom in a prominent position on the world map. The Kingdom ranked 7th globally in financing technical development in WCY, which is a yearly report published by the International Institute for Management Development (IMD). According to WCY, the Kingdom ranked 8th among the G20 countries and 27 globally in the digital infrastructure index within the e-government development index, climbing more than 40 places, and 10th globally in average mobile Internet speeds that exceeded 66.54 Mbps. Moreover, the Saudi government has won the Government Leadership Award 2020 instituted by the International Telecommunications Union. It is noteworthy that Saudi Arabia's National Committee for Digital Transformation has recently issued the half-yearly report for the year 2020 that

reviewed the goals and achievements of the digital transformation, as the committee worked under the directives and support of the Crown Prince. The report sheds light on the most important digital service achievements in all government and service sectors in the Kingdom. The report focused on highlighting the efforts of government agencies in the process of digital transformation in various fields, which contributed to creating a digital infrastructure that keeps pace with changing times and meets the requirements of becoming an ambitious nation with a thriving digital society within the framework and objectives of the Vision 2030. The report includes a large number of achievements and initiatives in digital transformation in all vital sectors and areas. These include the smart government sector, where the number of documentation processes carried out through the "Unified National Platform GOV. SA" reached more than 185 million, and the number of "Tawakkalna" application users exceeded seven million, while the Saudi "Tabaud" application ranked third in the world in employing modern technologies to contain coronavirus pandemic. The value of contributions to the Joodeskan initiative reached more than SR300 million. All these have had a tremendous positive

impact on Saudi society. The Saudi Customs launched the TIR (Transports Internationaux Routiers) system, which seeks to facilitate trade through borders, as the system reduced the time spent for trucks through the ports by 40 percent, while the number of beneficiaries of the national platform for donations launched by the Ministry of Human Resources and Social Development reached more than 250,000. The transactions through the Etimad platform, launched by the Ministry of Finance, reached more than two million, and payments made through the application of Zakat from the General Authority of Zakat and Tax reached more than 200,000. The Baladi platform provides full municipal services under the smart cities sector while in the tourism and digital culture sector, the Tourist Visa Portal provides visas to the beneficiaries within 3-5 minutes. In the field of financial technology, the Wathaq platform was launched, which automates all procedures of issuing bank guarantees. In the digital health sector, the report noted, around 53 million appointments were booked through the Mawid application and more than 1.8 million medical consultations were provided to citizens by the Sihha application. n the education sector, there were 34 million sessions held by the unified education system for more than one million beneficiaries. In the justice sector, nearly 1.4 million people benefited from the Najiz justice services platform, while more than 39,000 operations were carried out through the mobile notary service, and through which over 119,000 judicial sessions were documented. The Public Prosecution adopted a strategy of "Paperless Prosecution" to convert all procedures related to it to digital services. In the sector of digital infrastructure and capabilities, a total of 8,377 5G towers have been established in all regions of the Kingdom, and more than 8.5 million citizens have benefited from the Digital Giving initiative to spread digital knowledge and develop digital capabilities, the report pointed out.

10 Million UAE Users from the Beginning of the Year Until October 2020

The General Authority for Regulating the Telecommunications Sector (TRA) announced that U.A.E has hit a new record in its number of users, reaching nearly the 10 million mark during the period from January to October of this year, an 50.73% increase over 2019, where the number of users in the same period was 6.54 million. During January-October 2020, U.A.E saw an increase in its number of users from abroad by about 3 million users, compared to 2 million during the same period of 2019, a 22.37% increase in the current year over the previous one. India came first in number of users from abroad, followed by Saudi Arabia, Egypt, United States, and finally the United Kingdom. Such results reflect, in part, the tremendous efforts by the portal team in content and service development. They also reflect the change in user choices as a result of the status quo where online activities witness a significant increase such as working remotely, distance learning, browsing, searching for information on websites and accessing government services remotely through the official portal, which provides many prompt government services accessible around the clock. U.A.E serves citizens, residents, visitors and investors by providing all information on government developments, laws, policies, services and trends. It is characterized by being the world's only portal with a domain name consisting of one letter "U", which refers to self "You" and carries meanings of union and uniqueness that characterize the UAE. Commenting on this remarkable progress in portal visits, H.E. Salem Al Housani, Acting Deputy Director General of the Information and mGovernment Sector, said: "U.A.E serves as primary reference for people seeking information and government services in general." The remarkable increase in visitor numbers demonstrates the relevance of U.A.E and efficiency of its team in providing information of interest to all segments of the UAE community. U.AE has contributed to the continuity of business amid the current circumstance, by providing a significant number of e-services, and providing a broad range of information needed by UAE residents or visitors. Through its four sections, U.A.E covers key topics about the UAE, including information, services, e-participation and media. Section one covers UAE's history, economy, political system, government, plans, strategies and initiatives. The 'Information and Services' section incorporates topics of employment, investment, tourism, infrastructure and visa systems, as well as a full list of all government services in the country. The E-participation section includes channels of communication with the UAE government, advisory platforms, live chat, etc. Given the current exceptional circumstances the world is going through, a number of new topics were added to enrich the portal with

information dealing with the pandemic, such as travel procedures, return of residents from abroad, visas provisions and entry permits in light of COVID-19, in addition to topics of supporting the labor market in the private sector during the COVID-19 outbreak. Plus, government services are accessible around the clock, with UAE PASS replacing SmartPass. The official portal of the UAE Government (U.AE) was launched on 24 May 2011 by H.H. Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to act as a single window for online information and services provided by federal and local UAE entities to individuals, visitors and business owners.
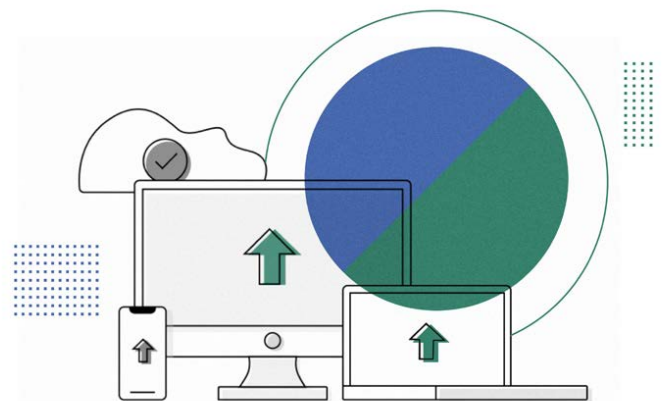
Number of users of the official portal of the UAE government

January - October: 2019 and 2020

JANUARY		FEBRUARY		MARCH	
2019	2020 ▲	2019	2020 ▲	2019	2020 ▲
640,638	1,118,829	647,334	970,176	740,094	905,400

APRIL		MAY		JUNE	
2019	2020 ▲	2019	2020 ▲	2019	2020 ▲
774,153	1,155,299	781,744	908,465	740,635	1,051,688

JULY		AUGUST		SEPTEMBER	
2019	2020 ▲	2019	2020 ▲	2019	2020 ▲
856,781	1,188,237	802,239	1,381,294	903,583	1,291,067

OCTOBER	
2019	2020 ▲
972,977	1,383,106

TRA

Internet Gateway to be Deployed in Iraq

Nokia said that its IP routing technology has been selected for Informatics and Telecommunications Public Company (ITPC), a company of Iraq's Ministry of Communication (MoC), to serve as the main backbone of the country's internet infrastructure. The deployment aims to set up a smooth and secure mechanism for internet flow from tier-1 internet providers to Iraq via the country's Internet Service Providers (ISPs). AlAwsat Telecommunication Services Co. will be partnering with Nokia to deploy the technology. Nokia's leading Service Router (SR) portfolio delivers the network performance and service richness necessary for operators to provide the best possible internet services. Nokia will supply and install several of its IP routers, including 7750 SR-s, 7750 SR-e and 7250 IXR for the ITPC network to deliver high-performance, scale and flexibility required to support a full array of IP services and functions. Nokia's commissioning, network design, and integration professional services will help deploy the network, which serves millions of subscribers, smoothly and efficiently. Al-Awsat will support with installation, civil works and required power supply through generators for the deployment. Iraqi Telecommunication Ministry said: "Internet gateway is a fundamental pillar in ensuring a country's data security. Nokia and Al-Awsat are the right partners helping us achieve this in Iraq. Nokia's solution meets the security requirements of public sector and mission-critical applications, thereby enabling us to secure the network with high-capacity and high-performance protection." Rima Manna, Head of the Middle East Market Unit, Nokia, said: "We are grateful to ITPC for placing its trust in our abilities to deliver critical communication services. We are committed to enabling the best-in-class services by building a robust mechanism for managing internet gateways. Our advanced IP routers will be instrumental in supporting ITPC's connectivity and traffic management requirements."

USF Extends Telecom Services to Un-Served Areas of Pakistan

The Universal Service Fund (USF) Pakistan awarded contracts worth approximately Rs 112 million to Zong 4G for providing 4G network coverage in rural and remote areas of Sindh and Balochistan. Federal Minister of IT & Telecommunication, Syed Aminul Haque inaugurated the projects at a ceremony held at Zong 4G Headquarters. The contracts were signed by Haaris Mahmood Chaudhary, CEO, USF with Wang Hua, Chairman and CEO, Zong 4G. Federal Secretary for IT & Telecommunication Shoaib Ahmed Siddiqui and Chairman PTA, Major General (R) Amir Azeem Bajwa were also present at the ceremony. Syed Aminul Haque said on the occasion that in order to achieve the Digital Pakistan vision, it is imperative that all areas and citizens of Pakistan have access to mobile phones and Broadband services. This will ensure that not only is the citizenry connected to the digital world but they will be in a position to benefit and use Information Communication Technology (ICT) facilities". He informed that the government is working arduously on mobile phone applications, web portals, e-commerce, e-government, online jobs, digital payments, establishment of IT parks and all other avenues which are related to the Digital Pakistan vision. The federal minister congratulated Zong 4G and USF on the signing of the contracts and expressed the hope that this will ensure that residents living in remote areas of Baluchistan and rural pockets of Karachi will have better connectivity through Zong 4G's superior technical expertise. He stated that USF was working on projects worth billions of rupees which include laying optical fiber, deploying telecommunication infrastructure and expanding networks. Furthermore, he announced that Ministry of IT and Telecommunication with USF's support will be launching new development projects pertaining to network and Broadband expansion monthly. While sharing his views at the ceremony, Zong 4G's Chairman and CEO Wang Hua said: "Since its inception, Zong 4G has been at the forefront of digital transformation in Pakistan, striving to bring the unserved and underserved areas and masses under the folds of connectivity and digital inclusion. We thank USF for awarding us these projects and the government of Pakistan for supporting us in pursuing our passion for an empowered and Digital Pakistan. We stay committed to our mission of serving the Pakistani people in all possible ways and a project like this simply fuels that passion of ours." , sharing his thoughts at the ceremony, CEO USF, Haaris Mahmood Chaudhary said: "These projects will benefit an unserved population of 0.5 million in 263 unserved Mauzas, thereby covering an unserved area of 4,121 sq.km.

Mobile Payment and Financial Inclusion in Morocco

For the last 30 years, Morocco has used financial inclusion, among other levers, to foster the economic and social development of women, young people, low income families, the rural population and micro-enterprises. This started in the mid-nineties with the launch of microcredit programs, giving those without bank accounts access to credit. This proved to be a great success with 13 players currently offering microfinance services to around a million active customers involving outstanding credit of around €600m on hundreds of thousands of new loans each year. A National Strategy for Financial Inclusion was launched in 2019, aimed at further improving access to financial services and raising the financial account penetration rate from 34 percent to 47 percent of the adult population within five years. This strategy will capitalize on the success of microfinance services and further develop them as well as accelerate the development of mobile financial services, particularly mobile payment services. The design of the mobile payment ecosystem was launched in 2016 with the aim of increasing financial inclusion as well as decreasing cash circulation, by relying on alternative service networks adapted

to the unbanked population. By relying on mobile phones, which have a very high penetration in Morocco, mobile financial services are accessible to the unbanked population and have the potential to accelerate financial inclusion. Moreover, paying by mobile phone helps reduce cash circulation dematerializing money deposits and collection. The Moroccan mobile payment ecosystem now boasts more than 20 market players (payment institutions) that have implemented payment solutions enabling cash in and cash out, point of sale payment, money transfer and bill payments. These technical solutions are interoperable and provide real time processing with a switch enabling transactions between different players' platforms. Meanwhile the Moroccan authorities have implemented a series of measures to promote mobile payment usage. These include digital opening procedures for accounts capped at €500 to improve and facilitate user access and Government social and welfare benefits delivered using the mobile payment system. Subsidies to around 1.2 million households that encourage the school attendance of children from underprivileged areas, for example, should

gradually be granted on mobile financial accounts. ax exemptions for mobile payment transactions over a five-year period for small shops have also been introduced. Fast-moving consumer goods distribution companies have also been prompted to accept mobile payments from retail shops; while payment institutions have also been asked to develop their network of access points with the ambition of delivering 35,000 service points within five years. A marketing campaign was also launched in early 2021 to promote the use of mobile payment services by the Economic Interest Group comprising all mobile payment ecosystem players There are currently 1.5 million mobile payment services customers, that is people who have opened a mobile payment account. Within five years, the number of active mobile financial accounts is projected to reach 5 million, the deposits on these accounts should reach €6bn and financial flows are expected to be approximately €40bn. Among the services currently offered are utility bill payments that adds to money transfer and point of sale transactions, all delivered through customers' mobile phones. These services are accessible through all sorts of mobile phones, even basic and feature phones and not limited to Smartphones. Over the next months and years additional financial services are expected to be offered through mobile phones by payment institutions. In conclusion, the deployment of Mobile Financial Services with a heavy use of digital channels is expected to account for a large part of the financial inclusion increase and cash usage reduction in Morocco, and will help pave the way for a full-fledged social inclusion shifting a large chunk of the informal economy to the formal one. ◪

![China Mobile | International logo]

iCONNECT IoT

The Internet of Things (IoT) is growing and transforming our lives and businesses. iConnect offers managed IoT connectivity with our comprehensive SIM portfolio, a cost-effective connectivity management platform, IoT roaming, and a suite of dedicated IoT solutions to serve industry-specific business needs.

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The iConnect IoT China SIM makes seamless connectivity possible for IoT deployment within mainland China.

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Managed IoT connectivity targeted for global IoT deployment. The iConnect IoT Global SIM makes seamless connectivity possible for global IoT deployment.

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iConnect's cost-effective Connectivity Management Platform (CMP) enables network operators to easily adapt to domestic and global IoT business needs.

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iConnect IoT Roaming offers seamless connectivity for roaming to the China Mobile network.

IoT Solutions

Full suite of dedicated IoT products and solutions to serve industry-specific business needs.

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iCONNECT

China Mobile International's Go mCloud Carnival Accelerates Enterprise Cloud Adoption with Various Incentives

One-stop access to free trials and multiple discounts

Alex LEE
Managing Director
CM International Middle East

> *CMI's cloud-network integration platform mCloud provides customers with visible, accessible and manageable cloud-network solutions.*

Celebrating its tenth year of operations in 2020, China Mobile International Limited (CMI) will launch its first Go mCloud Carnival, to help enterprise customers stay ahead of digital trends and embark on cloud transformation. The online campaign will showcase a variety of cost-effective cloud network solutions from CMI and its global partners, offering customers one-stop shopping experiences.

The uncertainties brought by the COVID-19 pandemic have seen a surge in digital transformation as enterprises adopt cloud technologies to help them respond to market changes with agility. CMI's cloud-network integration platform mCloud provides customers with visible, accessible and manageable cloud-network solutions. Since its launch in May 2019, mCloud has helped more than 7,000 enterprise customers efficiently deploy and manage innovative cloud and network products.

During the Go mCloud Carnival, customers can register on the mCloud website to trial the service and receive multiple gifts and discounts and access to free trials of other cloud services.

"Acceleration to Cloud Program" Introduces mCloud Services
Building on CMI's extensive global network and resources, CMI iSolutions delivers one-stop customized services across connectivity, cloud, ICT, data centers and IoT to cross-border enterprises, enabling companies in a wide range of industry sectors to expand globally, seamlessly and securely.

To encourage more enterprises to experience the convenience of mCloud cloud-network solutions and begin cloud deployment, CMI will launch an "Acceleration to Cloud Program" during the Go mCloud Carnival. Enterprise customers who sign new iSolutions orders over HKD 50,000 will receive mCloud coupons for cloud services worth up to USD 10,000 based on the contract volume, allowing them to access diverse cloud services and speed up digital transformation.

Special Offers and Free Trials Provide Access to Cloud Solutions

CMI mCloud incorporates world-leading cloud service providers including AWS, Alibaba Cloud, Huawei Cloud, Google Cloud and Azure, and enables wider cloud connections and application acceleration via more than 80 cloud connect PoPs worldwide. With automated, intelligent cloudified products, mCloud can reduce cloud deployment time from one or two months to 30 seconds.

> *CMI mCloud incorporates world-leading cloud service providers including AWS, Alibaba Cloud, Huawei Cloud, Google Cloud and Azure, and enables wider cloud connections and application acceleration via more than 80 cloud connect PoPs worldwide. With automated, intelligent cloudified products, mCloud can reduce cloud deployment time from one or two months to 30 seconds.*

To help enterprises with different needs choose suitable products and services and provide them with tailor-made solutions, enterprise customers that sign up for designated public cloud accounts on the CMI mCloud platform during the mCloud Carnival will receive cloud service vouchers worth up to USD 500, as well as discounts upon purchase.

CMI has also upgraded its "Trial Before Purchase Program" for the Go mCloud Carnival, providing customers with a 30-day free trial of its Cloud Connect service and 5G SD-WAN solutions. Enterprise customers can apply for a Free Cloud SMS package, supporting up to 10,000 messages for more effective digitalized customer relations. Five region-specific versions of the pack are available. In addition, customers can access free trials of 13 products and services, including Cloud Connect and various video conferencing, remote office, network security, backup and digital marketing solutions.

Go mCloud Carnival will unveil more privileged promotions with up to 60-day free trial of cloud network products and USD 800 cloud service vouchers. Please kindly visit the event website for more details.

Innovation Partners Empowered to Cultivate mCloud's Global Ecosystem

China has been cooperating with

> *Riding the globalization trend, CMI will further strengthen mCloud's global ecosystem by inviting high-quality technology partners to join mCloud, expanding the portfolio of products and services on the platform to offer a more comprehensive and efficient one-stop service.*

countries around the world more closely than ever before. With more Chinese enterprises starting to "Go Global" and foreign-invested enterprises wanting to "Go China", the demand for multi-cloud services and cross-border communication network services is growing rapidly. Riding the globalization trend, CMI will further strengthen mCloud's global ecosystem by inviting high-quality technology partners to join mCloud, expanding the portfolio of products and services on the platform to offer a more comprehensive and efficient one-stop service. CMI has simultaneously launched a program to provide consulting partners with flexible and efficient iSolutions products and services. Through strategic expansion and cooperation in different fields, CMI will empower more partners to add value to their businesses.

Please visit the official website for details of the event and special offers. More exciting offers will be announced following the official opening of the Go mCloud Carnival . Stay tuned: https://event.cmi-isolutions.com/en/go-mcloud-carnival/

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SATELLITE NEWS

Japan Launches JDRS-1 Optical Data Relay Satellite for Military, Civilian Use

Japan has a new data relay satellite headed for geostationary orbit following successful launch of JDRS-1 on a Mitsubishi Heavy Industries' H-IIA rocket. Mitsubishi Heavy Industries confirmed separation of JDRS-1 and launch success two and a half hours later. The JDRS-1 will relay optical and radar data from Japan's Information Gathering Satellites (IGS) and other data from science satellites to Earth. Few details of the satellite have been revealed due to the largely military nature of its mission. The new satellite carries Laser Utilizing Communication System (LUCAS) developed by JAXA. LUCAS uses infrared light to facilitate inter-satellite links at rates of up to 1.8 gigabits per second. The JDRS

satellite was jointly developed by JAXA and the Government of Japan. The Cabinet Satellite Intelligence Center owns and operates the satellite, with JAXA responsible for the optical data relay function. The satellite will operate in a geostationary orbit at 35,400 kilometers above the Earth, relaying data between Japanese satellites passing below and ground stations. This allows speedier passing of data, facilitating its transfer when a satellite would otherwise not have a clear view of the ground station. Japan's follow-on Advanced Land Observation Satellites for Earth science and observation, ALOS-3 and ALOS-4, will be capable of utilizing the full relay capabilities of JDRS-1. ALOS-3 could launch

as soon as 2021. The JDRS-1 replaces the "Kodama" Data Relay Test Satellite (DRTS) launched in 2002 and operational through August 2017. The LUCAS payload allows data transfer at around seven times faster than the S-band and Ka-band DRTS . JDRS-1 launch was the 43rd of the four variants of the H-IIA rocket, which boasts a 100 percent success rate. The H-IIA and H-IIB are to be retired by the end of 2023 and replaced by the new H3 rocket. The latter was expected to have an inaugural launch by the end of 2020, but this has now slipped to Japanese Financial Year 2021, beginning April 2021, following discovery of issues with components of the new LE-9 rocket engine.

Axelspace Prepares to Expand Earth-Observation Constellation

With four satellites scheduled to launch in 2021, Tokyo-based Axelspace Corp. is moving toward its goal of capturing daily, global Earth imagery. "The additional satellites will help us jump the curve by elevating the revisit rate to up to 1.4 days," Yasunori Yamazaki, Axelspace chief business officer, told SpaceNews by email. Alexspace began commercial operations in 2019 with imagery from its first 100-kilogram satellite launched in 2018. Alexspace announced plans Nov. 11 to send four satellites into sun-synchronous orbit in March on a Soyuz-2 rocket from Baikonur Cosmodrome, Kazakhstan. When the company has five satellites, its constellation will revisit mid-latitude regions including Japan an average of 1.4 times per day and low-latitude areas once every three days. While awaiting the launch, Axelspace is continuing to build satellites to expand its Earth-observation constellation. "The simultaneous development of four satellites was the first step towards full-scale mass production," Axelspace said in a Nov. 11 news release. Alexspace satellites, called GRUS, are equipped with cameras to gather imagery

with a resolution of 2.5 meters in red, blue and green, near-infrared and red-edge wavelengths. The imagery is designed for customers seeking to detect changes in agricultural fields and forests in addition to tracking economic trends and conducting environment monitoring. In October, Axelspace began offering a business continuity planning (BCP) service. "We offer satellite images to solve the pressing needs to monitor disaster-prone areas to

mitigate the damage, starting only from a monthly fee of $500," Yamazaki said. Prior to accidents or disasters, Axelspace captures imagery of facilities and the surrounding area for BCP customers. After an event, Axelspace provides customers with information on the state of their assets and the surrounding environment. Axelspace offers customers access to imagery through AxelGlobe, a web-based Earth observation platform.

Telecom Italia Purchases Capacity on Eutelsat's KONNECT Satellite

Telecom Italia (TIM) purchased all of the capacity dedicated to Italy on Eutelsat's KONNECT satellite in order to provide fixed broadband services to Italian households starting in January 2021. Additionally, TIM purchased the vast majority of the capacity covering Italy on the follow-on satellite, KONNECT VHTS, once it enters service. This contract is expected to be valued at approximately $178 million (150 million euros). KONNECT entered into service this month. TIM will have exclusive rights for the distribution of satellite broadband in Italy on both the KONNECT and KONNECT VHTS satellites during the entire lifetime of the contract. This contract follows a similar contract with Orange in France signed earlier this year for capacity on both satellites. Commenting on the agreement Rodolphe Belmer, CEO of Eutelsat said: "We are delighted to announce this major agreement with TIM which will deliver high speed broadband to all Italian households. Following the agreement with Orange for France and the acquisition of BBB Europe for retail, this agreement represents another important step in our distribution strategy, enabling us to further secure the ramp-up of our latest capacity and ensuring 2021 is a turning point in fixed broadband."

Spacex Starlink Internet from Space: New 60-Satellite Launch Brings Expanded Beta Closer

After delaying the 16th Starlink mission, SpaceX has now launched its Falcon 9 rocket to bring its Starlink satellite count to 955. Deploying its payload of 60 satellites into orbit is the seventh mission for the Falcon 9's first-stage rocket booster, which landed successfully back on the 'Of Course I Still Love You' droneship in the Atlantic. The rocket launched from the Space Launch Complex 40, or SLC-40, at Cape Canaveral Air Force Station. Per Space.com, this launch puts SpaceX within about eight more Starlink missions before it completes the first phase of its constellation of 1,440 satellites. These satellites orbit Earth at an altitude of 550km (340 miles). SpaceX is targeting "near global coverage" by next year. The second phase of satellites will orbit at over 1,000km (621 miles). SpaceX last month rolled out its 'Better Than Nothing Beta' to users in rural and remote parts of northern US and, as of last week, also to southern parts of Canada. Recent Starlink beta tests show that Starlink is delivering data speeds from 50Mbps to 150Mbps and latency from 20ms to 40ms. That blows away speeds that many residents in rural and remote areas of the US and elsewhere can access. However, SpaceX says as more satellites go up and more ground stations are installed, along with improvements in its networking software, it will be able to reduce latency even further. Kate Tice, a SpaceX senior certification engineer, said Starlink expects to achieve 16ms to 19ms latency by summer 2021. All the availability cells currently in the US and Canada lie within the 43 degree and 53-degree latitudes, but some areas within that band can't get a Starlink service. However, as more satellites go into orbit, more cells become available. Tice said SpaceX expects to significantly expand its beta program in late January or early February 2021. Users who are accepted on the beta program need to buy a dish and modem/router for $499 and then pay a subscription of $99 a month. SpaceX engineers explained in a Reddit Ask Me Anything this week that when users first turn on a Starlink terminal, it knows nothing about where the satellites are. Instead, the dish "automatically scans the sky in a matter of milliseconds and locks into the satellite overhead, even though it's traveling 17,500mph". Starlink currently does not have data caps in the beta service, but its engineers said the company "might have to do something in the future to prevent abuse and just ensure that everyone else gets quality service".

Canada Developing Lunar Rover and Science Payloads

The Canadian Space Agency (CSA) is moving ahead on efforts to develop lunar science payloads and a small rover that could fly to the moon on a NASA-sponsored lander mission. The CSA announced Nov. 27 it awarded six contracts with a total value of $2.9 million Canadian ($2.2 million) to five companies and universities for initial "Phase 0" studies of lunar science instruments. The instruments range from spectrometers and particle telescopes to an "agriculture feasibility" payload. The contracts, with individual values ranging between $300,000 and $600,000, are intended to study the feasibility of the proposed instruments and how they will support lunar science. The contracts are expected to last for up to nine months. The contracts are part of CSA's Lunar Exploration Accelerator Program (LEAP), an initiative that the Canadian government unveiled in February 2019 at the same time as it announced it would provide a robotic arm for the NASA-led lunar Gateway. The program, with a planned budget of $150 million over five years, is intended to support a wide range of science and technology initiatives associated with lunar exploration. In addition to the science awards, CSA issued contracts worth $3.3 million Oct. 29 to two companies, Canadensys Aerospace Corporation and NGC Aerospace Ltd., for development of lunar technology payloads. Canadensys will develop a 360-degree camera to provide panoramic images of the lunar surface while NGC Aerospace will demonstrate a navigation system. CSA is also in the initial phases of a "microrover" that it plans to develop and fly in cooperation with NASA. The agency published a letter of interest Oct. 23 announcing it would formally issue a request for proposals for the rover by early 2021, awarding two contracts for Phase A feasibility studies in the summer. CSA will then select one for full-scale development. The rover will have a mass of 30 kilograms and carry two payloads, one provided by CSA and the other by NASA. "The idea is that we want this mission to demonstrate Canadian lunar mobility technology on the moon and to gather science data," said Erick Dupuis, director of space exploration development at CSA, during a session of the Canadian Space Summit online conference Nov. 27. Dupuis said CSA has negotiated a ride to the moon on a NASA Commercial Lunar Payload Services (CLPS) lander mission. "In exchange for launching us, we are providing accommodations for a U.S. instrument on our rover," he said. He said that the agreement with NASA also includes flying additional Canadian lunar science payloads on CLPS missions, fixed to landers. He did not disclose the estimated cost of the rover mission, but said it would launch no sooner than late 2024, and more likely in 2025. The goal is for the rover to operate for at least one lunar day, and possibly a second if it can survive the two-week lunar night. Canada is not alone in looking to other countries to fly lunar rovers. The United Arab Emirates announced in September it planned to build a small rover, weighing only about 10 kilograms, carrying three science instruments. Officials said they will seek either to partner with another space agency, or purchase space on a commercial lunar lander, to transport their rover to the moon. While the CSA rover project is tied to NASA's CLPS program, Dupuis said the agency was open to other partnerships for flying its payloads to the moon. "We have a pre-negotiated agreement with CLPS to get the launch of our payloads to the moon, so that is under our belt, but other opportunities could be out there," he said, such as partnerships with the European Space Agency. "We are open to all mechanisms."

Viasat Phased Array Antenna Performs Final Testing for SES O3b mPOWER System

Viasat revealed that its phased array flat panel antenna, which was selected by SES for the O3b mPower satcom system in 2018, has entered the Test Readiness Review (TRR) stage. TRR is the final stage of testing to verify compliance with the antenna's performance requirements. Viasat expects the first phased array prototype to be delivered to SES early in 2021. Viasat's phased array antenna will be offered in multiple sizes, for use in both fixed and mobile broadband applications. For SES's O3b mPOWER Medium-Earth Orbit (MEO) system, the phased array antenna will operate on Ka-band, but a different version of the antenna can be made to operate on Ku-band. "Back in 2018 Viasat became a partner in our O3b mPOWER innovation ecosystem. Now with Viasat entering the final testing phase of its phased array terminal technology, we are another step closer to providing advanced levels of connectivity on a global scale," said Stewart Sanders, Executive Vice President (EVP), O3b mPOWER Program Lead at SES. "The flexibility designed into the Viasat phased array antenna will enable our current O3b constellation of 20 MEO satellites and next-generation O3b mPOWER system to bring reliable, high-speed broadband communications for our government, enterprise and mobility customers."

Spacex Wants to Test its Starlink Satellite Internet Network Inflight with Gulfstream Jet

SpaceX would like to further expand testing of its Starlink satellite internet by connecting the network to aircraft, the company revealed in a recent request to the Federal Communications Commission. Elon Musk's space company on Nov. 6 asked the FCC if SpaceX could add Starlink user terminals "on a Gulfstream jet for a period of up to two years." "SpaceX seeks experimental authority for operation of one user terminal aboard each of up to five private jets while they are (1) on the ground at an airport, and (2) in flight over the United States (including its territories and territorial waters)," the company wrote in the FCC filing. User terminals are the small devices on the ground that connect to the company's satellite internet network. SpaceX has begun sending user terminals

to early beta testers of the service. While the FCC request describes the aircraft-mounted terminals as "electrically identical," the Starlink user terminal for jets would assumedly have a different physical design than the consumer terminals in use on the ground – which Musk has described as built like a "UFO on a stick." Two months ago SpaceX made a similar request to the FCC to test Starlink with the ships the company uses to land its rocket boosters. SpaceX, which operates several ships, requested to add 10 Starlink user terminals to its vessels. That request is still marked as pending. Starlink is SpaceX's plan to build an interconnected internet network with thousands of satellites, designed to deliver high-speed internet to anywhere on the planet. In October the company began

a public beta test of Starlink, with service priced at $99 a month. To date, SpaceX has launched nearly 900 Starlink satellites – a fraction of the total needed for global coverage but enough to begin providing service in some areas, including in the northwest United States. The company has begun to work with a handful of organizations in rural regions that Starlink satellites in orbit currently cover, such as Washington state. The network is an ambitious endeavor, which SpaceX has said will cost about $10 billion or more to build. But the company's leadership estimates that Starlink could bring in as much as $30 billion a year, or more than 10 times the annual revenue of its rocket business.

FCC Votes to Streamline Satellite Licensing Regulations

The FCC voted to establish a unified licensing framework for Earth stations and space stations that the commission said will increase flexibility for satellite operators. The new, optional licensing framework is available to systems operating above 10 GHz and allows blanket-licensed space stations and blanket-licensed earth stations in a satellite system — both Geostationary Orbit (GEO) or Non-Geostationary Orbit (NGSO) — to be authorized under a single license. In the past, separate licenses were issued based on different application requirements to ensure interference-free operation of the ground and space components of a satellite system. The order also aligns the build out requirements for Earth stations with the buildup periods for their space stations to reduce some filing requirements for satellite operators. "These changes will end the need to make unnecessary or duplicative filings with the commission and will reduce burdens placed on applicants, which will expedite our processing of applications and get rid of some of the regulatory red tape standing in the way of deployments of satellite based services," Chairman Ajit Pai said in a statement during the FCC meeting. In addition, the FCC also adopted a notice of proposed rulemaking called Facilitating Next Generation Fixed-Satellite Services in the 17 GHz Band. This process is working to permit space stations in GEO in the Fixed Satellite Service (FSS) to use the 17.3–17.7 GHz band on a co-primary basis for downlink communications, as well as the neighboring 17.7–17.8 GHz band for FSS downlink communications on a non-protected basis. "Consumers stand to benefit from expanded use of the 17.3–17.8

GHz band and the routine processing of applications for licenses. The satellite industry is expected to continue growing at a record-setting pace, and the commission's proposed changes would help operators to hit the ground running with greater spectrum flexibility and a streamlined licensing process that is focused on getting Americans connected at greater speeds and lower costs," Pai said in a statement about the notice.

Spacecom and Paratus to Provide Broadband Connectivity Services in Africa Via the AMOS-17 Satellite

Spacecom has announced the signing of a contract with Paratus, a pan-African telecommunications service provider that offers a wide range of connectivity solutions to more than 22 African countries through an extensive independently owned network, via the fully digital AMOS-17satellite. "AMOS-17's unique performance and capabilities, highly flexible service architecture, combined with its central position over Africa provide an excellent solution to the growing digital needs in Africa. We are happy to contract services on the AMOS-17 satellite, which will provide a wide variety of users with cost effective, ubiquitous coverage and reliable connectivity spanning from remote regions to maritime and aeronautical markets", said Paratus South Africa Managing Director Kallie Carlsen. "Spacecom welcomes Paratus on board our advanced AMOS-17 satellite and we are delighted to provide Paratus with capacity for their expanding communication needs in Africa." Said today Spacecom's VP Sales for SADC, Lior Melnik, and added "I believe our partnership will continue to grow further in the near future, and satellite services via AMOS-17 will enhance Paratus' growth in Africa". AMOS-17 is a fully digital HTS satellite, designed specifically to meet Africa's fast-growing communication demands. The satellite's C-Band HTS, Ka-Band and Ku-Band coverage, enable the combination of broad regional beams and high throughput spot beams that maximize throughput and spectral efficiency. AMOS-17 supports connectivity between Africa, the Middle East, Europe, India and China. Paratus South Africa is committed to be an end-to-end, single-point service provider to customers whose businesses extend to geographically remote areas and those who need a versatile communication solution that can be easily implemented. Through leveraging business technologies such as the AMOS-17 satellite, businesses can enjoy the instant integration of satellite into their value proposition which can be tailored to meet their needs.

Inmarsat, Addvalue Debut Inter-Satellite Data Relay System Linking LEO and GEO

Inmarsat and Addvalue have established a real-time link between satellites in high and Low-Earth Orbit (LEO), the companies announced Monday. This new system consists of an Addvalue on-board terminal and the Inmarsat data relay service. The companies have been working to offer this communications service since 2017. The new Inter-satellite Data Relay System (IDRS) service was commissioned on Capella Space's Sequoia satellite at 10:14 a.m. PST on Nov. 12. The Capella satellite in LEO communicated with Inmarsat's I-4 satellite network, which operates at the L-band spectrum and sits in Geostationary Orbit (GEO). "This is huge. Capella becomes the first and only commercial SAR [Synthetic Aperture Radar] company in the world to use a GEO satellite for real time tasking. This means faster delivery times and more actionable information from space," Capella Space CEO Payam Banazadeh tweeted. Inmarsat said this service will cut waiting times for data transfer from LEO from several hours to minutes. Traditionally, LEO satellites must be in range of a ground station to transmit data, but the new data link allows LEO satellites to stay in continuous communication with the ground, and transmit data in realtime. Todd McDonell, president of Inmarsat Global Government, commented, "In-orbit connectivity represents an exciting new growth market for both Inmarsat and Addvalue. This LEO smallsat market is growing at an exponential rate. What is critical to LEO operators such as Capella Space is the ability to offer timely services their customers now expect in a connected world. Inmarsat's L-band satellite network is uniquely placed to facilitate seamless real-time communications that are designed for mobility and can be administered globally."
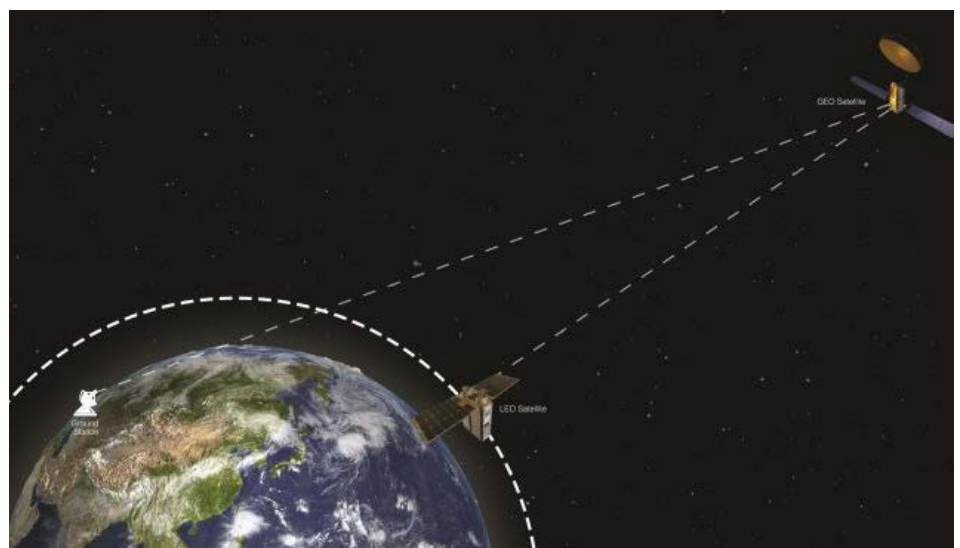
Spacex Sets New Falcon 9 Reuse Milestone on Starlink Launch

SpaceX set a new milestone in Falcon 9 reuse with the latest Starlink satellite launch Nov. 24 as the company seeks permission to deploy Starlink satellites into a new orbit. The Falcon 9 rocket lifted off from Space Launch Complex 40 at Cape Canaveral Air Force Station in Florida at 9:13 p.m. Eastern. The rocket's upper stage released its payload of 60 Starlink satellites into low Earth orbit about 15 minutes later. The rocket's first stage landed on a droneship in the Atlantic, completing its record-setting seventh launch. The stage first flew in September 2018 launching the Telstar 18 Vantage satellite, followed by the final Iridium mission in January 2019. The rocket then launched four Starlink missions starting in May 2019, most recently Aug. 18. The launch was also the 100th overall for the Falcon 9, a total that includes a June 2015 launch failure but not the destruction of another on the pad during preparations for a static-fire test in September 2016. SpaceX has now launched 955 Starlink satellites, of which 895 are in orbit. The company has started a beta test of the broadband internet service provided by those satellites in the northern U.S. and southern Canada. During the webcast of this launch, the company said it would expand that beta test "in a notable way" in late January or early February. To date SpaceX has launched Starlink satellites into orbits at an inclination of 53 degrees, maximizing coverage over mid-latitude regions but excluding higher latitudes, including Alaska, northern Canada and northern Europe. The company's original authorization from the Federal Communications

Commission called for other satellites at higher orbits and inclinations, but the company filed a proposed modification in April that would lower all the satellites into orbits between 540 and 570 kilometers, including those in high-inclination orbits. In a Nov. 17 filing with the FCC, SpaceX sought permission to start launching satellites into sun-synchronous orbit. It requested permission to launch 58 satellites into one of six orbital planes at an inclination of 97.6 degrees as soon as December, arguing that doing so would allow the company to begin to provide broadband service in rural Alaska. "SpaceX submits this request now because it has an opportunity for a polar launch in December that could be used to initiate its service to some of the most remote regions of the country," the company stated in the filing, arguing that "launching to polar orbits will enable SpaceX to bring the same high-quality broadband service to the most remote areas of Alaska that other Americans have come to depend upon, especially as the pandemic limits opportunities for in-person contact." The company didn't elaborate on the details of this launch opportunity, but claimed that its request was justified because it had resolved a concern with Amazon about a potential conflict with that company's proposed Project Kuiper constellation. SpaceX agreed to tighten the orbital tolerances on the Starlink satellites at 570 kilometers such that they would not fly higher than 580 kilometers, avoiding Kuiper satellites at 590 kilometers. Another satellite operator, though, objected to SpaceX's

proposal. "But commercial expediency is hardly a valid reason for the Commission to bypass the requirements of the Communications Act and grant an application prematurely, in the face of significant doubts as to whether SpaceX has met the public interest standard," countered Viasat in a Nov. 19 FCC filing. Viasat, which has criticized the reliability of Starlink satellites in earlier filings, again raised concerns about premature failures of Starlink satellites. It noted there was no evidence the December launch opportunity was the only one for those satellites, particularly since SpaceX controls the launches. "The Commission should balk at SpaceX's request to provide it with additional authority that it does not yet need when doing so could endanger orbital safety," it stated. The FCC has yet to act on SpaceX's request for the polar launch.

Spacex Successfully Places GPS III Satellite into Orbit

SpaceX has been forced to scrub some of its launches recently due to weather and other issues with equipment. Recently SpaceX successfully launched its Falcon 9 rocket placing the GPS III Space Vehicle 04 into orbit. The launch occurred at the Space Launch Complex 40 at Cape Canaveral Air

Force Station in Florida. The Falcon 9 first stage successfully landed for recovery on the drone ship "Of Course I Still Love You" in the Atlantic Ocean. SpaceX says that the satellite deployed approximately one hour and 29 minutes after liftoff. The launch marks the second SpaceX conducted for

the Space Force. The first launch for Space Force happened in June, and SpaceX has a contract to launch additional GPS satellites over the next five years aboard rockets using previously flown first-stage boosters. Reusing first-stage boosters is key to saving money on rocket launches

and making spaceflight cheaper for taxpayers. The GPS III satellite that SpaceX placed into orbit is more accurate than previous models and features improved anti-jamming capability. Improved anti-jamming capability is highly important for GPS satellites as both civilian and military hardware depends on a precise location. SpaceX is on a roll, having celebrated its 100th successful flight in October. The company has been launching rockets frequently in an attempt to catch up after being delayed due to the coronavirus pandemic. In between launching satellites for the Space Force, SpaceX has made multiple launches to place new Starlink satellites into orbit for its satellite-based broadband Internet service. The Starlink service is currently being trialed in several parts of the United States and apparently works well. SpaceX fills in the blanks with commercial missions for other companies in addition to sending supplies and astronauts to the ISS for NASA.

Satellite Communications System Under Development

London-based Inmarsat, a world leader in global mobile satellite communications, has been awarded a three-year contract with the European Space Agency (ESA), which will co-fund the development of a new capability for governments to plan, procure, manage and monitor their satellite communications (satcoms) services from Inmarsat and other operators and service providers. The new Inmarsat capability, called the International Virtual Satellite Operators Network (INVISON), is a secure, user centric platform. It is being supported by ESA as part of its Space Systems for Safety and Security (4S) Strategic Line, which is a new component of ESA's program of Advanced Research in Telecommunication Systems (ARTES), aimed at transforming R&D investment into successful commercial products and services. The INVISON program will also see the development of new and innovative government services and applications that will be accessible in a uniform and user-friendly way over the INVISON platform. Examples include a ground-breaking new security hardened Internet of Things (IoT) solution that will be deployed

with government users to monitor critical infrastructure and geo-hazard events in Norway and the UK. Software applications will be developed to enable highly effective bandwidth optimization for mission critical imagery and video delivery over satellite and the integration of new government services from Inmarsat's future Highly Elliptical Orbit satellites over the Arctic region (GX10A and 10B) – a world's first. Nick Shave, Inmarsat's vice-president of strategic programmes, global government, said: "In the face of ongoing challenges, governments around the world require more control, flexibility, immediacy and transparency over the satellite services they procure. The Inmarsat INVISON platform puts the government user in control of the services they rely on by enabling a wide range of satcoms services, brokered from multiple operators and providers, to be more accessible and secure. "This advanced new system and service will drive innovation and efficiency throughout the entire satcoms value chain, delivering flexibility and value for money for our government customers. "Inmarsat is proud to lead a consortium of Norwegian and UK based companies such as AnsuR, Avanti Communications, Geonor, Global RadioData Communications, MConnected, the Satellite Applications Catapult and SINTEF. We anticipate a number of other industrial partners will join the consortium in due course." Elodie Viau, ESA director of telecommunications and integrated applications, said "ESA is extremely pleased to enable continuous investment in the development of highly innovative solutions and services by European and Canadian manufacturers and operators. "ESA is committed to develop initiatives in support of the European commercial satellite telecommunications industry and triggers new innovations in this domain for the benefit of Europe's world-wide competitiveness. "This INVISON contract with Inmarsat represents the next step of a long standing effort in that endeavor." The contract is valued at 22.4 million euros over three years.

NASA Sentinel-6 Satellite in Good Health After Launch

Sentinel-6 Michael Freilich, a joint U.S.-European satellite built to monitor global oceans is in good health after its Nov. 21 launch, NASA said in a post-launch news release. The satellite was launched by SpaceX on a Falcon 9 rocket from Space Launch Complex 4E at Vandenberg Air Force Base in California on Saturday, Nov. 21 at 12:17 p.m. ET. Ground controllers have acquired the satellite's signal, and initial telemetry reports showed the spacecraft in good health. The satellite will now undergo a series of checks and calibrations before it starts collecting science data in a few months. According to NASA, Sentinel-6 Michael Freilich will extend a nearly 30-year dataset on sea level collected by an ongoing collaboration of U.S. and European satellites while enhancing weather forecasts and providing detailed information on large-scale ocean currents to support ship navigation near coastlines. Sentinel-6 Michael Freilich and the upcoming Sentinel-6B compose the Sentinel-6/Jason-CS (Continuity of Service) mission developed in partnership with the European Space Agency (ESA). ESA is developing the new Sentinel family of missions to support the operational needs of the Copernicus program, managed by the European Commission. "The Earth is changing, and this satellite will help deepen our understanding of how," commented Karen St. Germain, director of NASA's Earth Science Division. "The changing Earth processes are affecting sea level globally, but the impact on local communities varies widely. International collaboration is critical to both understanding these changes and informing coastal communities around the world."

Kacific Plans Second Satellite: Kacific2

Kacific Broadband Satellites Group has started directing resources towards the planning and design of its next satellite, Kacific2. Kacific2 will add capacity to its largest, high-demand markets of Indonesia, the Philippines and Papua New Guinea, as well as expand its reach wider into South East Asia and further into Central and Western Asia, and potentially Eastern Africa. Like Kacific1, Kacific2 will use a spot beam system with dynamic bandwidth reallocation to respond to changes in market demand pre and post launch. This advanced technology allows Kacific to respond rapidly to new growth opportunities and provide a broader range of services for each market, by changing bandwidth configuration even when the satellite is already in orbit. Kacific2 will also take advantage of the latest beam forming technologies. Christian Patouraux, Kacific CEO, says that Kacific1 has established a market presence and distribution channels for its high-speed broadband internet business in a number of key markets. "The successful launch and deployment of Kacific1 last year and current strong demand for its services allowed us to prove both our capabilities and our business case despite the pandemic. We've shown how rapidly we can meet pent-up demand for internet access in Asia and the Pacific with satellite technology, not only as trunk and mobile backhaul links to telcos but also as direct broadband internet to governments and to ISPs serving enterprises and consumers." "It's exciting to move forward with the active planning towards our next satellite Kacific2, which is an important part of our growth strategy" he adds.

China Launches New Mobile Telecommunication Satellite

China successfully launched a new mobile telecommunication satellite from the Xichang Satellite Launch Center in southwest China's Sichuan Province on Thursday. The Tiantong 1-02 satellite was launched at 23:59 (Beijing Time) by a Long March-3B carrier rocket. Tiantong-1 is a satellite mobile communication system independently developed and built by China. It consists of a space segment, ground segment, and user terminal. Developed by the China Academy of Space Technology, the Tiantong 1-02 satellite will establish a mobile network with ground facilities to provide all-weather, all-time, stable and reliable mobile communication services such as voice, short message and data for users in China and its surrounding areas, the Middle East, Africa and other related regions, as well as most sea areas in the Pacific Ocean and Indian Ocean. This launch was the 352nd by the Long March rocket series.

# Satcoms Agreement Boosts Rural Internet in Senegal

Senegal's postal authority has signed an agreement with satellite communication service provider Spacecom. The deal will help the public company in charge of postal services in Senegal to provide internet services to the country's rural population. This is a multi-year contract with La Poste, the Senegalese Post Authority, as part of which Spacecom will migrate La Poste from its current satellite provider to the AMOS-17 satellite but will utilize La Poste's existing VSAT equipment. The network communication will be via the AMOS-17's Ku band beam and will connect La Poste's VSAT sites to its hub in Dakar. Spacecom says it will be providing La Poste with over double its current capacity, which will not only serve its 200 remote post offices but will also give the country's rural population access to internet services and allow La Poste to provide additional services and applications to its rural customers throughout the country. Spacecom's AMOS-17 fully digital and advanced high throughput satellite (HTS) supports a variety of broadcast, broadband and data services from its 17˚E orbital slot. The satellite's capabilities allow maximal service architecture flexibility and higher throughput at reduced operational costs, says Spacecom. La Poste has deployed its own satellite network all over Senegal, with 200 remote sites operating with Eutelsat in Ku-Band from 2007. La Poste now plans to increase the number of its remote sites and will provide additional applications and content to the rural population in Senegal directly from post offices. A number of other satellite projects relating to internet connectivity are said to be under consideration by La Poste.

Ovzon Introduces Ovzon Go Satellite Internet at Up To 10 Mbps

Swedish company Ovzon has announced the introduction of Ovzon Go, a satellite service providing flexible and fast internet using the smallest terminals. Its packaged service plans offer on-the-move and on-the-pause terminals, including the new Ovzon T6. Ovzon Go supplies up to 10 Mbps for transmission and reception, based on Ovzon's regional satellite capacity. Ovzon said that Ovzon Go complements the Ovzon Hero, which it described as an advanced, tailored, high-performance service aimed at the most demanding customers on critical missions. Ovzon Her provides service exceeding 50 Mbps for transmission and reception using laptop-sized portable terminals. The Hero service is based on Ovzon's global satellite capacity including steerable high-power beams.
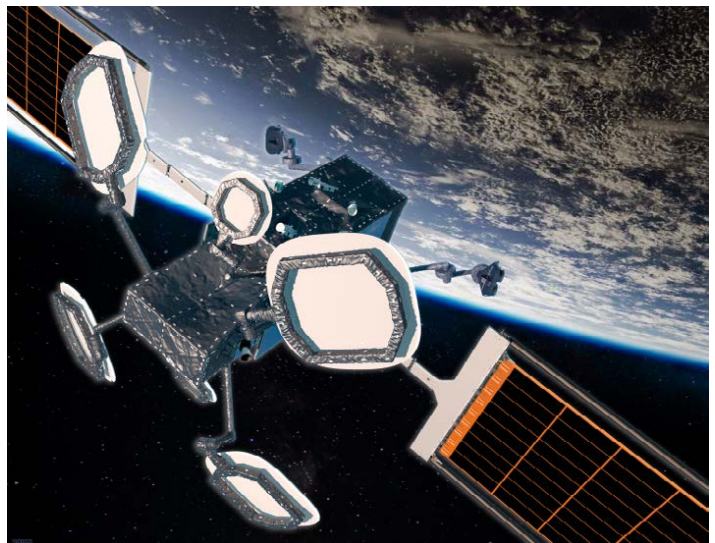
Spacex's Starlink Satellite-Internet Service Provides Rapid Speeds of 175 Mbps

SpaceX's Starlink satellite-internet service gives users rapid speeds reaching 175 Mbps even in high-speed winds, deep snow, and freezing temperatures. Users of SpaceX's "Better Than Nothing Beta" test have posted pictures and videos on the Reddit Starlink community proving that the Starlink terminal still works in extreme weather conditions – and in some cases, it's even faster. The terminal – or "UFO on a stick" – comes as part of the Starlink kit, which also includes a tripod and a WiFi router costing $499, plus $99 for the monthly subscription. In an email on October 26, SpaceX said users of the public beta test – a network of nearly 900 satellites beaming the internet service down to Earth – should expect between 50 and 150 Mbps download speeds. From what users have reported online in the past week, it seems the Starlink internet service isn't significantly impacted by the wet and windy weather. Users cannot reveal their identity due to a non-disclosure agreement they signed with SpaceX upon receiving the kit. One user, who lives in northern US, told Business Insider on Monday that their Starlink internet speed averages 20 Mbps faster in the colder air at 12 degrees fahrenheit. "I've been getting about 175 Mbps download average this morning, whereas it has been around 150-160 before," they said. Almost all users who reported November speeds on a list compiled by Reddit's Starlink community said they were getting download speeds faster than 150 Mbps. The fastest download speed so far is 208.63 Mbps, recorded in Seattle. The user also posted six thermal imaging pictures which showed the terminal's surface ranging from 32 to 40 degrees, meaning the terminal melts the snow that lands on it. Another Reddit user posted a video of them measuring the temperature outside with a Starlink terminal positioned on their roof. The thermometer read between 24.5 and 39.3 degrees fahrenheit outside, but the terminal was "warming up enough to keep the four inches of snow off," the user said in the video. The user told Business Insider on Tuesday that

they had dozens of devices on their home network, including six laptops, six smart phones, three Xboxes, two tablets and one PC. They said they haven't noticed any speed variations since the snow started. But there are reports of the internet service slowing down when heavy snow begins to fall on top of the terminal. One user, also in northern US, weighted down their Starlink tripod on their outside table before a 50 mph snow storm set in. The snow reached to three inches in around an hour, and the Starlink app showed "poor connection," they reported. The user told Business Insider that download speeds ini tally dropped to around 20 to 30 Mbps and upload speeds fell to 3 to 4 Mbps. "Definitely had some higher latency and slower speeds when [snow] was coming down hard, building up on the dish, and winds were blowing, but quickly picked back up as it slowed down." "I've still been averaging around 100 [Mbps] download and 15 [Mbps] upload," they said. "It's going to be a dream for those folks in the middle of nowhere that don't currently have any options," they added. The user posted on Reddit that he'd prefer to mount the terminal on the roof, but said he didn't know if he would trust it with the winds in Montana. Despite concerns about the Starlink terminal surviving strong winds, one user put the Starlink terminal to the ultimate test and blasted it with a 175 mph leaf-blower. Download speeds remained between 110 and 120 Mbps, according to speed tests that the user carried out before and after their experiment. The user found that if winds are blowing at the terminal, it automatically adjusts to stay aligned with the satellite. All four reports come from northern US, where Musk's company has begun testing the service, as well as in southern Canada. In October, SpaceX agreed to provide internet in a Texas school district via its Starlink network of satellites – the first time that SpaceX's Starlink is being offered in southern US. Starting early 2021, the space company will initially supply its satellite internet to 45 families who do not have broadband access, and an additional 90 families later on.

China Successfully Sends World's First 6G Satellite into Orbit

The rollout of 5G networks is nowhere near complete, but China is already looking ahead to what comes next. The Asian power this week successfully launched the world's first 6G satellite into space to test the technology. The experimental satellite containing sixth-generation telecommunications technology was launched into Earth's orbit from the Taiyuan Satellite Launch Center in China's northern Shanxi Province on Friday. The satellite was ferried to space along with 12 other satellites on board a Long March 6 carrier rocket. The cutting-edge satellite is named after the University of Electronic Science and Technology of China. It will be used to verify the performance of the 6G frequency band in space. While 6G technology is believed to still be in its infancy, it is expected to be over 100 times faster than 5G. The satellite also carries an optical remote sensing system that can monitor for crop disasters, and prevent flooding and forest fires.

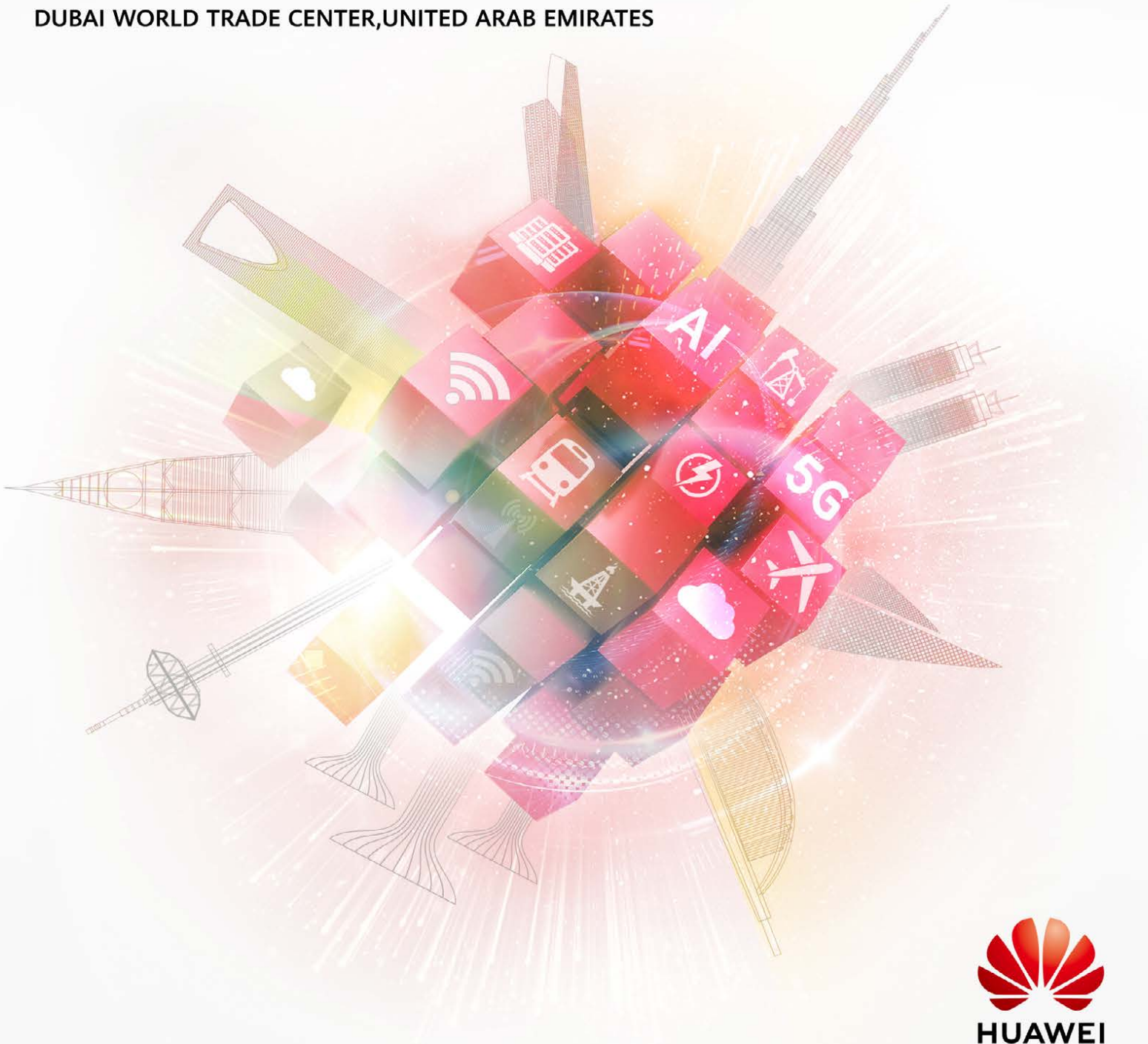Building a Fully Connected, Intelligent World

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ARTICLE

ICT Talent is Key to Building a New Era in Science and Technology

Today, the Middle East is in the midst of a new era; from smart cities to space exploration, the region is on a clear path towards harnessing the full value of technology to benefit communities, industries, and economies alike.

The Arab world is responsible for some of the greatest breakthroughs in science and technology that have shaped our world as we know it. Arab scientists advanced the fields of algebra, calculus, geometry, chemistry, biology, medicine and astronomy, forming the basis of modern medicine and computing, amongst many other disciplines. This new era of discovery was one in which people were open-minded to collaboration and exploration in ways that would allow innovation to flourish. Today, the Middle East is in the midst of a new era; from smart cities to space exploration, the region is on a clear path towards harnessing the full value of technology to benefit communities, industries, and economies alike.

This second era is being driven by governments' futuristic plans and visions that adopt technology, such as 5G, artificial intelligence (AI), and cloud computing, as the basis for sustainable socio-economic development. By leveraging the power of these advanced technologies, Middle Eastern cities can well and truly enter into a more connected, digitally-enabled future.

Developing the digital economy is a key component of this transition, as it will be a key contributor to socio-economic development, something that governments across the Middle East are becoming increasingly aware of. Adequate information and communications technology (ICT) talent is required to realize these digitalization ambitions. Talent is, therefore, the enabling factor in digital transformation.

Li Xiangyu (Spacelee)
VP of Public Affairs and Communications
Huawei Middle East

The COVID-19 pandemic has prompted governments to accelerate their plans for digitalization. 5G is a priority, as it will introduce a new digital frontier that will enable technology to transform all aspects of society, across every industry. With this comes the creation of new jobs.

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According to the Arab Youth Survey 2020, 87% of young Arabs are concerned about unemployment, and the World Bank estimates that the Middle East and North Africa will need to create 300 million jobs by 2050 to meet the employment needs of the region's youth. Investing in training local talent in the skills that will enable them to not only find gainful employment,

but to contribute to the digital future of the region, is therefore a necessity – not only to increase employment opportunities, but to bridge the Middle East's ICT talent gap. Promoting the development of ICT talent is a shared responsibility of the public and private sectors. It will ultimately lead to benefits for society as a whole as we enter a new, intelligent digital era. Government authorities, telecommunications companies and ICT vendors should contribute to building the talent ecosystem through open collaboration, targeted initiatives, programs, and more. Universities should adapt their curricula to meet the requirements of ICT talent cultivation.

Huawei is committed to encouraging and fostering ICT talent in the Middle East through initiatives such as the Huawei ICT Competition, our Seeds for the

Promoting the development of ICT talent is a shared responsibility of the public and private sectors. It will ultimately lead to benefits for society as a whole as we enter a new, intelligent digital era.

Future program, Huawei Academies, and internship programs. This is preparing young talent for the career landscape of the not-so-distant future, in which the demand for skilled IT and ICT professionals will be critical in order to meet the needs of expanding economies and major national projects.

Huawei is committed to encouraging and fostering ICT talent in the Middle East through initiatives such as the Huawei ICT Competition, our Seeds for the Future program, Huawei Academies, and internship programs.

We can see great work being done across the region, led by the public sector, but there is still a considerable way to go in order to empower a new generation of ICT experts. The private sector has as much of stake in the development of the ICT sector as governments do, and therefore providing local talent with the necessary tools and training to become future leaders in this field is as much in their best interests as it in everyone else's.

When the world stops
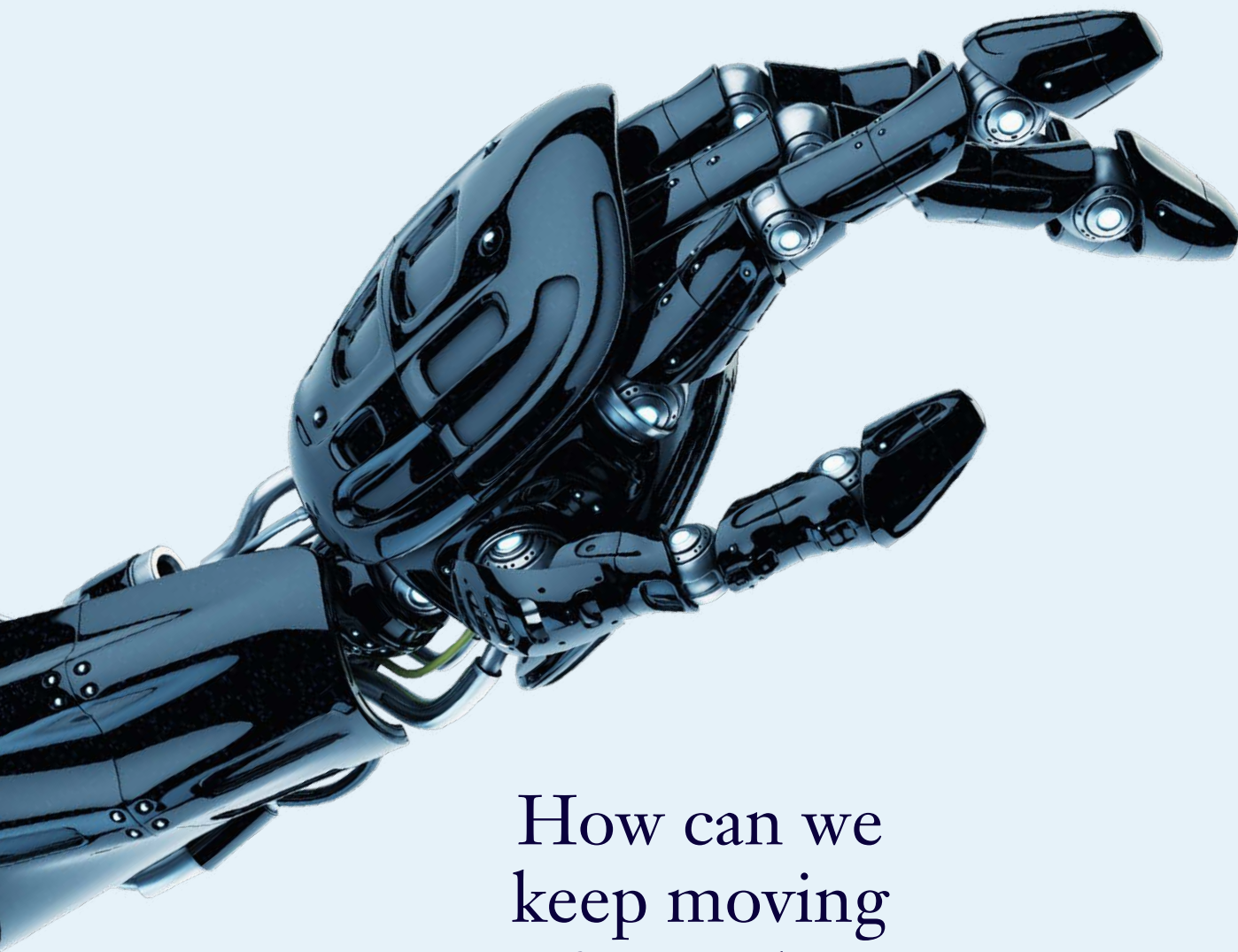
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TECHNOLOGY NEWS

Towards 6G Wireless Communication Networks: Vision, Enabling Technologies, and New Paradigm Shifts

Fifth generation (5G) wireless communication networks are being deployed worldwide from 2020 and more capabilities are in the process of being standardized, such as mass connectivity, ultra-reliability, and guaranteed low latency. However, 5G will not meet all requirements of the future in 2030 and beyond, and sixth generation (6G) wireless communication networks are expected to provide global coverage, enhanced spectral/energy/cost efficiency, better intelligence level and security, etc. To meet these requirements, 6G networks will rely on new enabling technologies, i.e., air interface and transmission technologies and novel network architecture, such as waveform design, multiple access, channel coding schemes, multi-antenna technologies, network slicing, cell-free architecture, and cloud/fog/edge computing. A long-form review, titled "Towards 6G wireless communication networks: vision, enabling technologies, and new paradigm shifts," was published in SCIENCE CHINA Information Sciences. It is co-authored by Prof. Xiaohu You (first and corresponding author) and Prof. Chengxiang Wang (corresponding author) from Southeast University, China, along with other 48 experts and scholars from scientific research institutes, colleges, and companies both at home and abroad. In this article, the vision on 6G is that it will have four new paradigm shifts. First, to

satisfy the requirement of global coverage, 6G will not be limited to terrestrial communication networks, which will need to be complemented with non-terrestrial networks such as satellite and unmanned aerial vehicle (UAV) communication networks, thus achieving a space-air-ground-sea integrated communication network. Second, all spectra will be fully explored to further increase data rates and connection density, including the sub-6 GHz, millimeter wave (mmWave), terahertz

(THz), and optical frequency bands. Third, facing the big datasets generated by the use of extremely heterogeneous networks, diverse communication scenarios, large numbers of antennas, wide bandwidths, and new service requirements, 6G networks will enable a new range of smart applications with the aid of artificial intelligence (AI) and big data technologies. Fourth, network security will have to be strengthened when developing 6G networks.
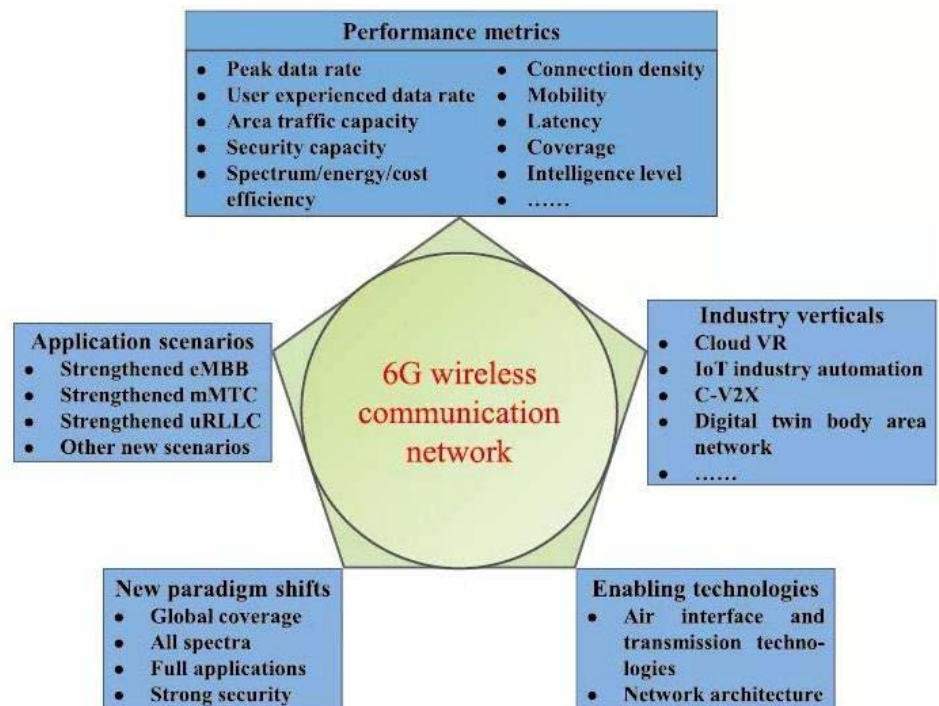
Telenor Denmark Launches 3.5GHz 5G Network in Copenhagen, Aalborg

Telenor Denmark has confirmed that it has activated its 5G network, which it says can now be used by around 600,000 potential customers in Copenhagen and Aalborg. The network utilizes 3.5GHz spectrum, as previously awarded by the by the Danish Energy Agency (DEA) on a trial basis. The initial launch leverages former 5G test

sites in the two aforementioned cities, while Aarhus and Odense are next in line for rollouts. A wider rollout is contingent on next year's 5G spectrum auction, the cellco notes. Would-be 5G users require 5G SIM cards, 5G-compatible handsets and a subscription to a dedicated 5G plan. 5G packages are priced at DKK200 (USD31.9)

per month (40GB data allowance) and DKK250 per month ('unlimited' data allowance, capped at 1,000GB). While it has yet to issue a press release confirming its own launch, Telia Denmark – which jointly operates the TT-Netvaerket network sharing venture with Telenor – has also started marketing 5G plans via its website.

Orange Luxembourg Launches 5G Network

Orange Luxembourg has announced the official launch of its 5G network. The operator confirmed the network was activated on 23 November and will initially cover Luxembourg City and surrounding areas, such as Bertrange, Strassen, Kirchberg and the airport. Orange subscribers can access 5G services at no extra charge as part of their existing mobile plans. The company noted it plans to 'support customers in this digital change' by launching a major program of events and demonstrations in stores from 10 December. Corinne Loze, CEO of Orange Luxembourg, commented: 'We aim more than ever to differentiate ourselves through the quality of our networks. We are also taking advantage of the 5G deployment to renew all our 4G equipment with the latest generation of energy-efficient antennas.'
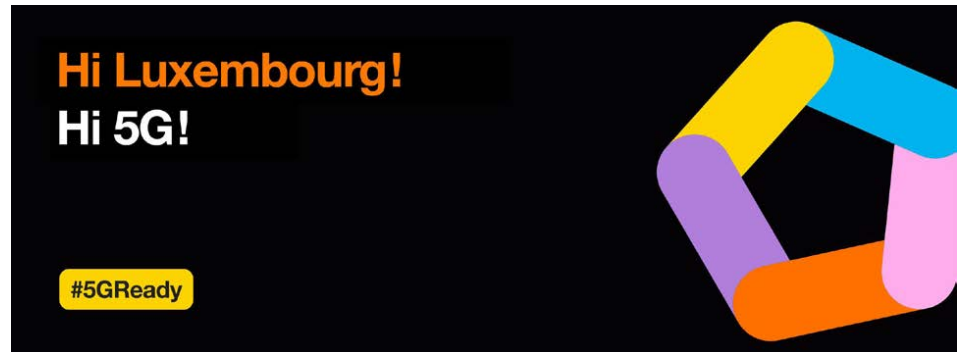
First Digital Single-Chip Millimeter-Wave Beamformer will Exploit 5G Capabilities

The first fully integrated single-chip digital millimeter-wave (MMW) beamformer, created by electrical and computer engineers at the University of Michigan, opens up new possibilities in high-frequency 5G communications. The technology could be used to improve vehicle-to-vehicle communication, autonomous driving, satellite internet, and national defense, to name a few. Beamforming allows a device that is transmitting signals to point them in a particular direction, as opposed to having the signals radiate out in all directions—which can lead to significant interference and loss of efficiency. It is an essential technique for MMW communication, which occurs at a relatively high frequency (typically between 24GHz and 100GHz). This high frequency communication allows for high-speed data transfer, one of the key advantages of 5G. Analog beamforming has been a standard approach for researchers, but Prof. Michael Flynn has been investigating a digital approach to exploit advantages such as large-scale beamforming, highly accurate beam-patterns, flexibility, and the ability to generate multiple beams simultaneously. "With analog beamforming, you can only listen to one thing at a time," said Flynn. "But there are a number of new applications where you want to listen to multiple things at the same time, and switch quickly between them." For example, Flynn can imagine using digital beamforming on drones sent into disaster areas to provide emergency internet to people in trouble. Similarly, there are plans to launch satellites in space in order to provide internet to people who live outside cities, where access to the internet can be spotty or non-existent. Having phones with digital wireless beamforming capability would provide individuals with more reliable access to the Internet. Test setup built by the students includes a mini anechoic chamber, and a mechanical device to move the beamformer in order to test its accuracy. Credit: University of Michigan Flynn and his group built a 28GHz MMW digital beamformer, with a custom-designed antenna array consisting of 16 antennas in single integrated circuit. It is the first known single-chip system to do MMW digital beamforming. In part because it's a single chip, the power and size are better than current digital systems by an order of magnitude. And because it's digital, the signal can both be pointed in any direction, and can "listen" in from four different directions at once. That means, for example, the device could track four airplanes or communicate with four satellites at the same time.
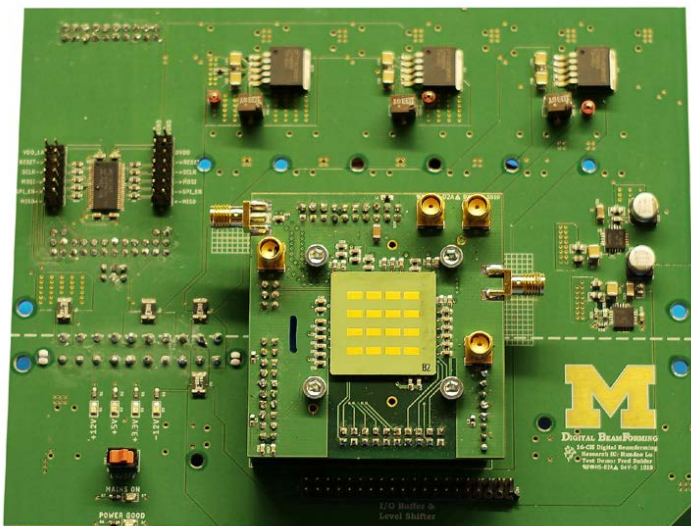
Nokia, Elisa And Qualcomm Claim New 5G Speed Record in Finland

Finnish vendor Nokia, working in partnership with local mobile network operator (MNO) Elisa and US-based Qualcomm Technologies, claims to have achieved the world's fastest 5G speeds on a commercial network. Announcing the development in a press release the vendor said that it had delivered a downlink speed of 8Gbps in Finland, for the first time serving two 5G mmWave devices connected simultaneously. With the speed having been showcased at Elisa's flagship store in Helsinki, Nokia said the milestone had been achieved by utilizing its 5G mmWave technology and Qualcomm Technologies' 5G smartphone form factor

test devices over its live network. The base station involved in the development utilized two Nokia AirScale radios, each using 800MHz of commercial millimeter wave 5G spectrum at 26GHz. These provided connectivity to two 5G smartphone form factor test devices powered by a Qualcomm Snapdragon X55 5G Modem-RF System featuring second-generation Qualcomm QTM525 mmWave antenna modules, with each device reaching 4Gbps peak speeds from the base station. According to Nokia, the ability to deliver this higher speed will support a range of new low-latency, high-bandwidth services, such as high-speed video downloads, mission-critical or virtual

reality (VR) and augmented reality (AR) applications and a commercial introduction is expected in 2021. Commenting on the matter, Sami Komulainen, Executive Vice President, Production at Elisa, said: 'This is an important development and another step in our efforts to bring the fastest speeds and best 5G experiences to our customers. Elisa was the first in Finland and amongst the first in the world to deploy 5G. Reaching 8Gbps is a natural step in our 5G development and we want to explore the possibilities 5G offers and push the technology further to benefit our customers.'

Vodafone 5G Coverage Reaches 10M Germans Ahead of Schedule

Vodafone Germany has announced that its 5G network now covers ten million people thanks to the rollout of around 3,000 antennas at more than 1,000 locations across the country. Around 300 towns, cities and municipalities have recently gained access to Vodafone's 5G services ahead of the year-end target date, including Saarbrucken, Meppen and Mosbach, while coverage has also been improved in locations such as Hamburg, Munich, Dusseldorf and Leipzig. By the end of the year, coverage is set to increase to 15 million Germans, before reaching 30 million by the end of 2021 – ten million more than previously planned. Vodafone is using the 1800MHz band to provide 5G in densely populated cities, while the 700MHz range is already being deployed in rural areas and the 3500MHz band is being rolled out in high traffic areas such as stadiums and train stations.

France's OVH Partners with Google for European Cloud Computing Push

French technology firm OVH said it is partnering with Google to build up its capacities in cloud computing, leaning on the U.S. giant's technology to speed up a push towards developing a European contender in the

area. Amazon, Microsoft and Alphabet's Google dominate the field of data storage worldwide, which has fueled calls from politicians in Europe for homegrown alternatives to rise to the challenge of becoming credible rivals. Some have positioned the storage of sensitive corporate and state data as a matter of sovereignty and national security. OVH and Dassault Systemes are two of the companies in France that have been racing to develop their businesses amid warnings from ministers that Europe was already well behind. OVH said in a statement that its partnership with Google Cloud would allow it to bring some of the U.S. firm's technology into services which its teams would operate and run in Europe. "Listening to our customers, partners and policymakers in Europe, we understand their need for even greater control and autonomy," Google Cloud's Chief Executive Thomas Kurian said in the same statement. The two firms did not disclose any financial details.

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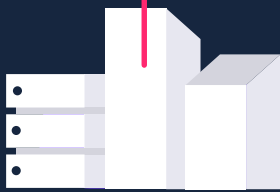
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REGULATORY NEWS

Effective Spectrum Management Key to an All-Inclusive Digital Economy in Asia-Pacific Countries

The ITU Regional Radiocommunication Seminar 2020 for the Asia-Pacific Region (RRS-20-Asia-Pacific) was held virtually from 19-30 October. The seminar provided participants with an opportunity to learn the basic concepts of spectrum management at national and international levels and their connection to the provisions of the ITU Radio Regulations. Also discussed were future radio-frequency spectrum requirements for radiocommunication systems in the context of outcomes of the ITU World Radiocommunication Conference (WRC-19) held in Sharm el-Sheikh, Egypt, in 2019. "Radiocommunication services are profoundly transforming many aspects of our lives," said ITU Secretary-General Houlin Zhao. "The Regional Radiocommunication Seminars provide an excellent opportunity for our members to learn the practical applications of the updated ITU Radio Regulations to leverage the economic opportunities brought by technology." The Seminar covered the regulatory framework for both terrestrial and space services and the procedures for recording frequency assignments in the Master International Frequency Register (MIFR). It also included basic training on software tools developed by ITU for frequency notices for those services and for technical examinations. Various tutorials also enabled participants to familiarize themselves with ITU notification procedures, as well as with the software and electronic

publications made available by the ITU Radiocommunication Bureau to the Administrations of Member States and the ITU Radiocommunication Sector (ITU-R) Members. "The Radio Regulations updated at WRC-19 are a vital tool to promote the development of new technologies and innovative applications and assist nations to better respond and recover from global crisis brought about by the COVID-19 pandemic," said Mario Maniewicz, Director of the ITU Radiocommunication Bureau. "Asia-Pacific is one of the most diverse regions with highly advanced digital economies, but also several Least Developed and Small Island Developing States that are facing specific social, economic, and environmental vulnerabilities. ITU is committed to working with all member states in the region to promote an all-inclusive digital economy."

Exploring challenges and opportunities for the Region

RRS-20-Asia-Pacific concluded with a Forum entitled "WRC-19 outcomes: challenges and opportunities for the Region." The Forum featured panel sessions about diverse radiocommunication services and systems, including among others: digital TV, broadband satellites (GSO and non-GSO), IMT and other wireless broadband technologies, high-altitude platform stations (HAPS), Radio Local Area Networks (RLAN)/ Wi-Fi, maritime and aeronautical systems, intelligent transport systems (ITS), emergency communications, 5G spectrum pricing, and the WRC-23 agenda. The main objective of the ITU Regional Radiocommunication Seminars is to assist Member States in spectrum management activities and the application of the ITU Radio Regulations (RR), with special attention to developing countries. These seminars are organized to complement the larger, biennial World Radiocommunication Seminars (WRS) so that all ITU countries and regions have ample opportunity to prepare for WRC-23, which will update the RR, the international treaty governing the use of radio-frequency spectrum and satellite orbital resources. The seminar drew more than 300 participants from over 30 countries, as well as 10 international organizations, and representatives of the telecommunication industry, operators, international organizations, associations, and academia from the Asia-Pacific Region.

ACM Decides KPN No Longer has SMP in Leased Lines Segment

The Netherlands' Authority for Consumers & Markets (ACM) has issued a draft decision concluding that incumbent national PSTN operator KPN no longer has significant market power (SMP) on the market for Wholesale High-Quality Access in the B2B telecoms segment (which includes leased lines based on Ethernet and technologies). ACM no longer sees any reason to impose regulatory obligations on KPN in this market due to increased competition from various fiber infrastructure operators. ACM has submitted a draft version of its Market Analysis for Wholesale High-Quality Access for consultation to parties involved in the business telecom services market, accepting comments until 14 January 2021.

ITU 2020 Global Innovation Forum Highlights the Importance of Entrepreneurship-Driven Innovation in the Context of a Global Pandemic

The 2020 edition of the International Telecommunication Union's (ITU) Global Innovation Forum, held from 26 to 30 October, highlighted the critical role of entrepreneurship-driven innovation in the context of a global pandemic and it honored the winners of the 2020 ITU Innovation Challenges. "Supporting entrepreneurship-driven innovation has never been more important," noted ITU Secretary-General Houlin Zhao. "Simply put, innovation pushes the boundaries of what is possible. It creates jobs, economic growth, and new ways to tackle the world's most pressing challenges, including the COVID-19 pandemic. ICT innovators need access to the resources to take their ideas to market and access to a well-developed broadband infrastructure." While digital technologies have the potential to change lives and significantly accelerate sustainable development, many communities lack access to an enabling environment as key stakeholders

often fail to understand, develop and renew the competitive practices that fuel digital transformation. Furthermore, the COVID-19 pandemic has created additional challenges for countries' transition to a digital economy by negatively affecting socio-economic conditions worldwide. "Entrepreneurship-driven innovation has been a rising priority for ITU stakeholders since the 2014 World Telecommunication Development Conference in Dubai," said Doreen Bogdan-Martin, Director of the ITU Telecommunication Development Bureau. "This forum enabled participants to share insights and discover new practices. By bringing diverse stakeholders to connect with change-makers for more action-oriented outcomes, we hope that symbiotic relationships will develop to ensure sustainable and competitive digital ecosystems that unlock communities' potential." During the five-day event, 175 experts in innovation, entrepreneurship and technology discussed how to accelerate

digital transformation in their communities, mainstream entrepreneurship and find resources required for digital innovation, and bring resource, problem and solution owners together to achieve digital inclusion.

Winners of the 2020 ITU Innovation Challenges

The forum concluded with an awards ceremony honouring the 20 winners of the 2020 ITU Innovation Challenges and a virtual pitch session of seven winning projects to a global audience of experts.

Twelve women and eight men received awards across three challenge categories: The digital change-maker, ecosystem best practice, and women in tech.

Tafadzwa Ronald Chikwereti (Zimbabwe), Carlos Eduardo Mosquera Reyes (United States), Mojca Karin Rehar (France), Ikechukwu Umezurumba (Nigeria), James Gachara Kiruri (Kenya), and Thomas Müller (South Africa) won the digital change-maker challenge category.

In the category of the ecosystem best practice challenge, the following contenders won: Dominic Chidiebere Nwaogu (Nigeria), Diana Artiom (Moldova), Nahel Muhammad Amirah (Egypt), Ivana Kostic (Serbia), Galina Dremova (Russia), Wilda Romadona (Indonesia), Laila Abdullah Khasib Al Hadhrami (Oman), Zainab Khan (Pakistan), and Franca Vinci (Italy).

Finally, the winners of the women in tech challenge category were: Nindya Miesye Agita Pasaribu (Indonesia), Calister Apollonary Simba (Tanzania), Achia Khaleda Nila (Bangladesh), Rani Mutiarawati (Indonesia), and Nabuyuni Ann Sankan (Kenya).

CTM Permitted to Stop LTE-TDD Service in Macau

Companhia de Telecomunicacoes de Macau (CTM) is to stop offering LTE-TDD services, with the local regulator, the Post and Telecommunications Bureau (CTT), amending its license to allow for

the cessation of TDD 4G services and continuation of LTE-FDD. In a statement, the CTT said that utilization rates on the TDD infrastructure were extremely low. CTM claims around 40% of mobile

subscribers in Macau, competing against Hutchison 3, SmarTone and China Telecom Macau.

ITU Approves Global 5G Radio Standards

The International Telecommunication Union (ITU) ratified three new 5G radio interfaces, explaining the approval follows several years of work to establish the validity of the technologies as a means of delivering globally-interoperable services and equipment. In a statement, the ITU said the technologies are 3GPP 5G-SRIT and 3GPP 5G-RIT submitted by 3GPP, and 5Gi submitted by Telecommunications Standards Development Society India (TSDSI). The technologies are deemed to be "sufficiently detailed to enable worldwide compatibility of operation and equipment, including roaming" and have been incorporated into a global standard in ITU Radiocommunication Sector's (ITU-R) International Mobile Telecommunications 2020 (IMT-2020) recommendation. ITU Secretary-General Houlin Zhao stated the specifications will be "the backbone of tomorrow's digital economy", transforming lives and ushering industry and society "into the automated and intelligent world". Mario Maniewicz, director of the ITU Radiocommunication Bureau, noted the release of the global standards was "a significant milestone" for the industry and users: "5G technologies will further enrich the worldwide communications ecosystem, expand the range of innovative applications and support the burgeoning IoT, including machine-to-machine communication". The ITU-R completed the standardization by coordinating and bringing input from member states, equipment manufacturers and network operators: the process involved other organizations and academia.
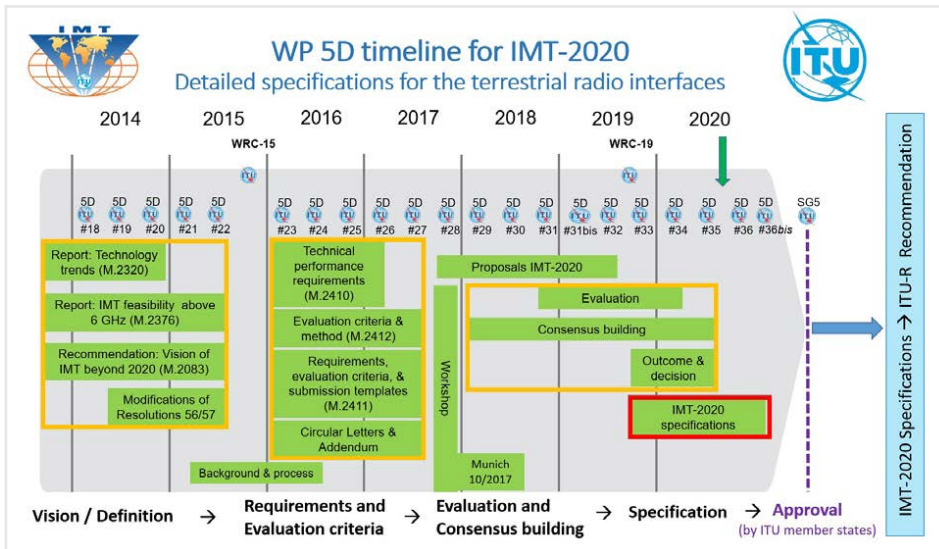
EC Accepts CMA's Request to Review Proposed O2-Virgin Merger

With the British competition regulator, the Competition and Markets Authority (CMA) having made a formal request to the EC to review the proposed merger of mobile network operator (MNO) O2 UK and multi-play provider Virgin Media last month, it has now been confirmed that this request has been accepted. Confirming the development in a press release, the British government said the case will be transferred to allow CMA's investigation to begin immediately. Meanwhile, it was noted that O2 UK and Virgin Media have requested that the CMA move quickly to the in-depth 'Phase 2' stage of its review through a 'fast-track' process. In most merger cases, a full 'Phase 1' investigation is needed to determine whether a deal can be cleared or whether further scrutiny is required, but merging companies can ask for the CMA's investigation to be moved more quickly to the second phase, where it is clear from an early stage that the deal requires an in-depth examination.

The agency has said it expects to accept this request unless it receives any valid objections to the use of the fast-track process. In terms of the initial steps, the CMA is now inviting views by 26 November on how the merger could affect competition, and on the companies' request for a fast track process. Commenting, Andrea Coscelli, chief executive at the CMA, said: 'We welcome the EC's decision to transfer the proposed deal between Virgin and O2 to the CMA for investigation. These are incredibly important UK markets, that continue to evolve, and the deal needs to be carefully reviewed to make sure that consumers are protected. We have worked closely with the EC so far and we will build on the work that has already been carried out to make sure that the case can be investigated as quickly and efficiently as possible.'

UK Prepares Tougher Telecoms Security Measures

The UK government proposed a new bill to increase its powers over telecoms networks, which could result in operators being hit with large fines if they do not adhere to security requirements. In a statement, the government explained the Telecommunications Security Bill would give it "unprecedented new powers" to boost security standards of UK networks and remove the threat of high-risk vendors. It will strengthen the security framework for technology used in 5G and fiber networks, including equipment and software on masts, along with phone and internet traffic exchanges. The aim is to protect the UK from hostile cyber activity, after an increase in attacks from Russia, China, North Korea and Iran over the past two years, the government explained. In addition, the bill will give the government the power to compel operators to manage the risk of vendors deemed a security risk.

Companies which fall short "on the new duties or do not follow directions" could face fines of up to 10 per cent of turnover, or up to £100,000 a day. The bill comes four months after the government banned the use of Huawei equipment in 5G networks and ordered operators to strip the vendor's kit from their networks by 2027. UK digital secretary Oliver Dowden said the country was investing billions to roll out 5G and gigabit broadband, but the benefits could only be realized if it had the full confidence in the security and resilience of networks. "This ground-breaking bill will give the UK one of the toughest telecoms security regimes in the world and allow us to take the action necessary to protect our networks," he said. Regulator OFCOM will be tasked with policing the new rules, and it will therefore also be given stronger powers to monitor and assess operators' security efforts.

AWS Plans Multi-Billion-Dollar Cloud Investment in India

Underlining the growing interest on the part of US technology companies in India, Amazon, through Amazon Web Services (AWS), reportedly has plans to invest an estimated $2.8 billion in the city of Hyderabad, Telangana State, India, to set up a new cloud region – or AWS Region, as it is known. The new AWS Region will consist of three so-called Availability Zones joining the company's existing nine AWS Regions and 26 Availability Zones across Asia.

The AWS concept of a Region refers to a physical location around the world where the company clusters data centers. AWS calls each group of logical data centers an Availability Zone. Globally, AWS has 77 Availability Zones across 24 infrastructure regions, with plans to launch 15 Availability Zones and five more AWS Regions in India, Indonesia, Japan, Spain and Switzerland. The new cloud region in Hyderabad will be launched by mid-2022. According to Indian press reports, Amazon has been investing in the country for some time. This year, the company announced it was spending $1.6 billion on two data centers in India. One will occupy 66,000 square meters; the other is to measure 82,000 square meters. Both will be in the Ranga Reddy district in the state of Telangana. Amazon's Jeff Bezos has already visited India as part of a marketing campaign, announcing plans to invest $1 billion to digitize small and medium businesses across India. But this isn't just about Amazon. Earlier this year, Google and Alphabet's CEO Sundar Pichai announced the Google for India Digitization Fund, worth $10 billion. Google already has two data center regions in India. Microsoft, meanwhile, has three data center regions in India, and last year announced plans to partner Reliance Jio to build Azure data centers across the country.

Korea Operators Push for Lower Spectrum Price

South Korean operators threatened legal action after hitting an impasse with the government over what they say is an unrealistic price for 2G, 3G and 4G spectrum to be reallocated in 2021, Yonhap News Agency reported. The Ministry of Science and ICT wants SK Telecom, KT and LG Uplus to pay at least KRW3.2 trillion ($2.9 billion) compared with the KRW1.65 trillion the operators proposed, the news agency wrote. Yonhap News Agency explained the government price is conditional upon the operators each deploying 150,000 5G base stations by 2022. The

operators argue the fee should be lower, since they are likely to each have 100,000 sites, up from 40,000 to 50,000 at end-August. The government plans to set the final price by the end the month and open applications for redistribution in December. Earlier this month, the three operators called on the government to hold auctions to reallocate the spectrum, which expires in June 2021. The operators paid KRW3.6 trillion in June 2018 for 5G spectrum in the 3.5GHz and 28GHz bands and have invested heavily in new networks over the past two years.

Government Signs Contract with French Company to Restore SOCATEL Network

The Central African Republic's Ministry of Post and Telecommunications (MPT) has signed a contract with French company Global Technologies to resurrect the country's monopoly fixed line operator Societe Africaine de Telecommunications (SOCATEL) and ultimately enable it to provide internet and telephone services to 40% of the population, reports Agence Ecofin. The state-owned operator's fixed line network has been inoperable since May 2019, when its outdated infrastructure finally fell into disrepair. The government now needs to raise EUR20 million (USD23.7 million) for the work to begin. According to Global Technologies CEO Jean-Paul Steinitz, the contract aims to restore an old microwave network built over 40 years ago, as well as deploy additional pylons to re-establish the loop, although the infrastructure will serve as a back-up to the fiber-optic network. The CEO of SOCATEL, Saturnin Cyrique Sem, has high hopes for the contract, noting the company has already hit rock bottom and requires investment to get back on its feet. 'With the help of Global Technologies we believe the resources will be available to us and that SOCATEL can only recover,' he said.

German Gigabit Network Scheme Receives EC Approval

The European Commission (EC) has approved a scheme to support the deployment of gigabit broadband networks in Germany, particularly in rural and unserved areas. The scheme aims to develop a new, publicly financed very high capacity connectivity infrastructure that will deliver faster internet for households, companies and public institutions in the country. It will have an estimated national budget of EUR6 billion (USD7.1 billion), which will be complemented by contributions to the individual projects from regional and local budgets, for an overall estimated budget of up to EUR12 billion. In order to prioritize households which are most in need, Germany will firstly focus on connecting households that have access to speeds of less than 100Mbps. Secondly, from 2023 support will also be available for the deployment of gigabit infrastructure for households that already have access to speeds of 100Mbps, but not to a network which already provides speeds of 1Gbps. With the implementation of this second step, Germany aims to make gigabit networks available for all citizens by the end of 2025. The scheme ensures that the supported networks will

be open to other operators competing on the new infrastructure by requiring the provision of wholesale access, including through physical unbundling. The aid will be awarded based on open, transparent and non-discriminatory tenders, with all technologies being able to compete for provision of the service.

ARCEP Raps Cellcos' Knuckles Over Anticompetition Breaches

Togo's Regulatory Authority for Electronic Communications and Posts (Autorite de Regulation des Communications Electroniques et des Postes, ARCEP) has reportedly cited the country's mobile network operators (MNOs) Togo Cellulaire (Togocel) and Atlantique Telecom Togo (Moov) for obstructing competition in the local market. Togo First writes that the watchdog has called on the pair to stop 'price differentiation practices' for on-net (intra-network) and off-net (inter-network) communications which are 'harmful to competition', and given them until 20 November 2020 to do so. In its citation, ARCEP accused the MNOs of 'making calls between numbers of their respective networks, cheaper than those between numbers belonging to two different [Togolese] networks'. It argues that the maneuver could 'potentially discourage calls to the competing network' (which are mechanically more expensive) and is 'in violation of the clauses of their [licenses]', and threatens to seriously undermine 'fair and healthy competition in the sector'. Failure to comply, it says, could result in 'a formal sanctioning procedure … against them'. In its financial report for the first half of 2020, Moov's parent company reported a significant cut in its interconnection tariff for terminating national mobile calls, down from AED0.33 (USD0.08986) per minute to AED0.16 per minute, as of January 2020.

Australia Operators Face Increased Price Competition

Australia's mobile market declined for the first time in a decade as the number of connections dipped and international roaming plummeted, with analyst company Telsyte expecting the sector to remain under pressure over the next two years. In the year to end-June, mobile service revenue fell 4 per cent to AUD13 billion ($9.5 billion) due to the impact of Covid-19 (coronavirus) lockdown measures. Telsyte said Optus and TPG Telecom (which recently merged with Vodafone Hutchison Australia) were impacted the most, while market leader Telstra maintained its market share due to its strong performance in the mobile IoT category. Connections stood at 36.2 million at end-June, 62,000 lower than end-December 2019. Telsyte attributed the drop to a 5 per cent decline in prepaid subscriptions. The MVNO segment bucked the downward trend as consumers looked for deals to manage their spending, accounting for 16 per cent of all services in operation at end-June, 2 percentage points higher on an annual basis. Weak outlook Telsyte forecast the number of mobile services in operation to remain at similar levels over the next 12 months to 18 months, with further consolidation of services leading to increased competition. It expects more market consolidation as operators look to mergers for growth. Senior analyst Alvin Lee said consumers will be the big winners in the next 12 months, as service providers battle it out with attractive offers. Telsyte anticipates demand for 5G smartphones will take off in 2021 as coverage increases and more affordable mid-range models become available. Less than 15 per cent of smartphones sold in the recent six month period were compatible, with fewer than 500,000 5G mobile subscribers.

Applications for Next Round of Mobile Black Spot Program Opened

With a view to 'continuing to expand and improve mobile coverage across regional and remote Australia', the Australian government has announced that Round 5A of its 'Mobile Black Spot Program' is now open for applications. In confirming the development, the Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) noted that Round 5A will be used to test a range of different program designs. Further, it noted that Round 5A includes a focus on three priority funding areas, specifically: high priority natural disaster prone areas, including those affected or prone to bushfire; new technology solutions in areas where low population densities have discouraged applications under earlier rounds of the program; and major regional and remote transport corridors. Funding of up to AUD34.5 million (USD25 million) for this latest round will be drawn from unused funding from Round 5, while it has been noted that Round 5A will help to inform the design of Round 6, funding for which was committed in the government's 2019/20 Budget. Mobile network operators and infrastructure providers have until 16 December to register their interest in taking part in this latest phase of the program. To date, more than 1,200 new mobile base stations have been funded under the first five rounds of the Mobile Black Spot Program, of which more than 880 are now live.

Australia Opens Latest Round of Rural Coverage Push

The government opened the next round of a mobile black spot coverage program for applications, and released guidelines for the initiative aimed at improving coverage across regional and remote areas. Mark Coulton, minister for Regional Health, Regional Communications and Local Government, said during a Regional Australia Institute webinar round 5A of the program aims to support new ways of delivering mobile services to locations which have traditionally been less economic for mobile operators, and giving consumers more choice to increase competition. He said there will be a specific focus on improving mobile coverage along major transport corridors and in disaster-prone regions. Findings from round 5A will help to design the sixth round, funding for which was committed in the fiscal 2019 to 2020 budget. Minister for Communications, Cyber Safety and the Arts Paul Fletcher said the government continues to work with industry, state and local governments to improve connectivity. "Improving mobile coverage in natural disaster-prone areas is critical for keeping people connected during times of emergency." The government will contribute up to AUD34.5 million ($25.3 million) for round 5A, drawn from unused funding from the previous round. In April, the government awarded funding for 182 base stations to operators as part of the fifth round. Since 2013, the government committed AUD380 million to the program, funding the rollout of 1,200 base stations.

A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION

Bahrain

More than 14,000 government emails have been migrated to cloud infrastructure provided by Microsoft, Information and eGovernment Authority (iGA) chief executive Mohammed Ali Al Qaed yesterday said. The move is in line with the government's cloud-first policy and represents a milestone in the migration of information and data belonging to all government entities to the cloud. The Microsoft 365 service package was also activated in the process. Under an umbrella agreement with Microsoft, 45 government entities will benefit from comprehensive digital solutions, which will enhance the quality and security of government services and help to improve the efficiency of the country's IT sector. (November 7, 2020) zawya.com

Bangladesh

The number of mobile phone subscribers rose 2.4 percent year-on-year to 16.81 crore in October, data from the Bangladesh Telecommunication Regulatory Commission showed. It came at a time when the country's telecom operators are trying to stave off the Covid-19 fallout. As a result of their efforts, the number of users has grown steadily since July. During the March-June period, the industry lost around 30 lakh customers as the country went into a full lockdown to prevent the spread of the Covid-19. But with October's uptick, 9 lakh new users were added in one month, boosting the number well past its pre-pandemic high of 16.61 crore registered in February. Similarly, the number of internet users rose 10.25 per cent year-on-year to 11.07 crore in October. It was 9.95 crore in the same month last year. However, the number of internet users dropped slightly compared to September, when it touched an all-time high of 11.11 crore. Currently, 10.21 crore subscribers use the internet through handheld devices, while the rest rely on services provided by internet service providers and public-switched telephone network operators. The total number of internet users stood at 9.99 crore in February. But following the outbreak, this number has steadily soared as people are increasingly using internet to work and communicate and get entertained as they spend most of their time indoors to avoid catching the virus. Market leader Grameenphone's total number of mobile phone customers jumped 2.70 per cent to 7.81 crore in October from 7.60 crore last year. Robi Axiata, which crossed the 5-crore subscriber landmark in September, grew 4.27 per cent in October to reach 5.04 crore. During the same month last year, Robi had 4.83 crore in total. Robi attributed this rise in its customer base to its 4G network. "To prepare for the digital era, Robi has always focused on bolstering its 4G network. Our razor-sharp focus on this has helped create the largest 4G network in the country," Shahed Alam, chief corporate and regulatory officer of Robi Axiata, told The Daily Star yesterday. "Coupled with network infrastructure development, we have been pursuing innovation in every aspect of our business," he said. Perhaps the most telling sign of Robi's growing appeal can be found in the fact that 70 per cent of all mobile number portability users switched to the network. "So, the background to the surge in our subscriber base is very compelling," Alam added. Third-placed Banglalink had 3.49 crore subscribers in October, down from 3.5 crore a year ago. The number of users of state-run Teletalk was 46.18 lakh in October compared to 47.06 lakh in the same month in 2019. (November 21, 2020) thedailystar.net

The total number of Bangladesh's Internet subscribers topped 108 million at the end of August, including more than 8 million new users in the first eight months of this year, showed the recently released data by the country's telecom regulator. The Bangladesh Telecommunication Regulatory Commission (BTRC) data showed that of the Internet subscribers, some 99.62 million are mobile Internet users and 8.57 million broadband Internet users. Mobile phone subscribers totaled some 166 million in the country at the end of August. Bangladesh has currently four mobile companies in operation, three of them being foreign-backed cellphone operators. The number of subscribers of the mobile operators, Grameenphone, Robi Axiata, Banglalink and Teletalk stood at 77.01 million, 49.78 million, 34.58 million and 4.66 million, respectively, at the end of August, showed the BTRC data. (November 1, 2020) xinhuanet.com

Egypt

Egyptian mobile operator Etisalat Misr has agreed to acquire a 2600MHz TDD mobile broadband spectrum license with 20MHz bandwidth at a cost of USD325 million, it was confirmed by the National Telecommunications Regulatory Authority (NTRA). Last week, two others Egyptian cellcos, Vodafone and Telecom Egypt, issued statements confirming their new allocations of 2600MHz TDD frequencies under ten-year licenses, with Vodafone agreeing to pay USD540 million for a 40MHz spectrum block and Telecom stumping up USD305 million for its 20MHz concession, following a first-stage bidding process completed in October. A fourth operator, Orange Egypt, was outbid for the remaining 20MHz license by Etisalat in the second stage of the NTRA's process.

(November 9, 2020) commsupdate.com

Telecom Egypt has announced that National Telecommunications Regulatory Authority (NTRA) has accepted and approved the financial and technical offer for additional spectrum that the operator submitted in September 2020. As a result, the operator has confirmed it now expects to receive a 20MHz block of spectrum in the 2600MHz band, utilizing TDD technology, with the new frequencies to be valid for a ten-year period. It will pay a total of USD305 million for its new spectrum, with half of that to be paid in US dollars upon signing the contracts for it. Meanwhile, two further instalments – each for 25% of the total cost and to be

paid either in US dollars or the equivalent in Egyptian pounds – are due within one year and two after the signing of the contracts. Commenting on the matter, Adel Hamed, Managing Director and Chief Executive Officer at Telecom Egypt, said: 'We are very pleased with the approval of Telecom Egypt's offer for additional spectrum, which will have an immediate and future positive impact on the company's ability to reach the highest levels of service quality. This step will also lead to financial savings coming from cost reductions related to the services provided.'

(November 6, 2020) commsupdate.com

Vodafone Group has announced that its Egyptian unit has been awarded a 40MHz block of 2.6GHz TTD spectrum by the National Telecommunications Regulatory Authority (NTRA). In a press release regarding the matter, the British company confirmed that Vodafone Egypt has been awarded the new frequencies under a ten-year license, valid through to 2030, for an initial payment of USD270 million to be paid upon receipt of spectrum. Two further payments – each of USD135 million – are due in 2021 and 2022, respectively. According to Vodafone Group, the new frequencies will enable Vodafone Egypt to 'significantly expand network capacity to meet growing demand for reliable, high quality voice and data services.

(November 5, 2020) commsupdate.com

Iraq

A Baghdad court has revoked a government decision to renew the licenses of three of the nation's cellcos for eight years following a legal challenge from politician Mohammed Shia Al Sudani. The concessions held by Zain Iraq, Korek and Asiacell are all due to expire in 2022, but in July this year the Cabinet approved a recommendation from the sector regulator to grant a five-year extension to the licenses, plus a further three years to compensate the telcos for losses incurred in 2014-2017, when the self-styled Islamic State (IS) militant group controlled swathes of the country's territory. Mr. Al Sudani alleged that the license renewal was the result of corruption, arguing that the companies are not competitive and receive undue favor from

the government and authorities. In an interview with a local TV channel the lawmaker was quoted as describing the operators as 'monopolistic', adding that the court ruling could open the door to competition in the sector from international companies or – preferred option – the nationalization of the sector. Mr Al Sudani went on to claim that the providers offered 'the worst services ever' but faced no repercussions from the authorities, adding that the amount of paid and outstanding dues to the government were vague and inconsistent: 'Whenever we ask, we get no clear answer. I challenge anyone who can offer a number for the taxes they paid.'

(November 16, 2020) The National

Jordan

According to the standards of the International Telecommunication Union Jordan is the first in the Arab world among the regulators of

the telecommunications sector in the world. The Regulator said that they are proud of these results, which came as a result of

the authority's efforts and the many vital organizational initiatives and projects that we have adopted during the past year The results of the global regulatory survey issued by the International Telecommunication Union for the year 2019, which was published at the end of September 2020, showed the progress of the Telecommunications Regulatory Authority's classification to an advanced level referred to in the countries classified within the fourth generation of regulation, at a rate of 91% to be the first in the Arab world alongside the Kingdom Saudi Arabia is followed by Morocco, Bahrain and Oman. The International Telecommunication Union relies in its classification of the ranking of regulatory bodies globally on the scientific and analytical methodology followed through the Regulatory Tracking Tool or what is known as the ICT Regulatory Tracker, which collects and analyzes information related to the regulatory bodies annually and in cooperation with the member states of the Union as it works to analyze and

locate it internationally certified On four basic axes for evaluation represented in the powers and tasks assigned to the regulator, the nature of the services that are organized, in addition to managing the resources of the communications and information technology sector and finally the framework used to regulate the competition, where the tracking tool sets different weights / marks for each of those axes, all of which constitute 100%. The Chairman of the Board of Commissioners of the Telecommunications Regulatory Authority, Dr. Eng. Ghazi Jabour, said that this progress is due to many vital organizational initiatives and projects that the Authority has adopted during the past year, which contributed to its progress in this classification than it was during the year 2018, and also enabled it to move from the third generation to the fourth generation after achieving the points of the optimal organizational environment.

(November 11, 2020) trc.gov.jo

Lebanon

Kuwait-based Zain Group handed over the management of Lebanese mobile operator Touch to a new management and board, appointed by Lebanon's telecoms Ministry, on 30 October 2020. A company statement to Boursa Kuwait, reported by Zawya, confirmed the move, while adding that Zain would reapply, if permitted, to manage one of Lebanon's two state-owned mobile

operators – Touch (MIC 2) or Alfa (MIC 1). The statement said a strategy to re-enter the Lebanese mobile sector would be on the condition that a clear business plan was developed within an agreement with the ministry. Zain also confirmed that there was no material or financial impact for the group due to the management exit. (November 2, 2020) commsupdate.com

Nepal

Around 22.8 million of the population across the country now have internet access. Among the total users, 56 percent of internet users are using mobile data, according to Nepal Telecommunications Authority (NTA). As per the Management Information System (MIS) report of NTA, there are a large number of 4G and fixed broadband users in the country. Around 5.7 million users are using fixed broadband for internet. Of them, 918,000 are using ADSL, while the remaining 4.8 million users are using private sector's cable or fiber-to-thehome internet services. According to the MIS report, fixed broadband has 19 per cent share in Nepali internet market, while wireless broadband has 76 per cent market share. Meanwhile, mobile broadband has the highest market share in the country. A total of 56 per cent users are using mobile data in the country. Among mobile networking service providers, around 1.6 million users are of Nepal Telecom, while 3.7 million users are using Ncell. Meanwhile, Smartcell has

182,585 4G users. According to NTA, there are over 11 million 3G users in the country. The MIS report has also mentioned that Nepal Telecom has a total of 11.4 million subscribers, while Ncell has 6.5 million users. The report has further revealed that even after four years of launch of 4G service in the country, the growth of 4G users has not been as expected. The mobile networking service providers are still not being able to give their services in most of the remote areas in the country. Recently, internet consumption has also increased due to COVID-19 pandemic. In the meantime, Min Prasad Aryal, spokesperson for NTA, said that the aforementioned internet penetration rate may not be very accurate as a single person may be using more than one SIM. Similarly, towards the fixed and wireless broadband users, single fixed internet connection allows numerous users to connect to the internet at the same time.

(November 22, 2020) thehimalayantimes.com

Oman

Minister of Transport, Communications and Information Technology Said bin Hamoud Al Mawali said plans for Oman to join the world's spacefaring countries had begun in 2006. Oman is expected to launch the country's first space satellite in 2024, Times of Oman has reported. The country's Minister of Transport, Communications and Information Technology Said bin Hamoud Al Mawali announced the date while speaking ahead of the country's 50th National Day on '50 Golden Years' radio show

run by Shabiba FM. Al Mawali said plans for Oman to join the world's spacefaring countries had begun in 2006. He also said a key indicator for his ministry was the Sultanate's space program, which is to be announced in 2021. We have to address the role of the private sector to this effect, and establish a company to launch the first satellite in 2024," he said. "There are practical advantages here for our national space program, advanced technology, and artificial intelligence." (November 17, 2020) broadcastprome.com

Pakistan

Federal Minister for IT Syed Amin Ul Haque launches Rolling Spectrum Strategy 2020-2023 Federal Minister for IT and Telecommunication Syed Amin Ul Haque launched Rolling Spectrum Strategy 2020-2023. A ceremony in this regard was held at the committee room of the Ministry of IT on Monday. Federal Secretary Ministry of IT and Telecommunication Shoaib Ahmad Siddiqui, Chairman Pakistan Telecommunication Authority (PTA) Major Gen (R) Amir Azeem Bajwa and Executive Director Frequency Allocation Board (FAB) were also present on the occasion. Addressing the ceremony, Federal Minister for IT Syed Amin Ul Haque said it is the major achievement of the Ministry of IT and Telecommunication that it has finalized Rolling Spectrum Strategy in consultation with all the stakeholders. Efforts of the Ministry of IT, Pakistan Telecommunication Authority (PTA) and Frequency Allocation Board (FAB) are laudable, he added. He said the present government, in line with its vision of Digital Pakistan, gave highest priority to the Telecommunications Sector issues, particularly Spectrum. The Federal Minister for IT said that Rolling Spectrum Strategy will be helpful to telecom companies for formulating their business plan. Rolling Spectrum Strategy will be also become basis for the 5 G technology in the country, he said. He said that steps are being taken for the promotion of IT and telecom sector in the country. He said that transparency is vital in the auction of spectrum. Syed Amin Ul Haque said that provision of the broadband services in the country is the topmost priority of the Ministry of IT. It may be noted that the Rolling Spectrum Strategy provides a future roadmap for spectrum allocation as well as spectrum-related policy reviews that are anticipated to take place between 2020 and 2023. The publication of the spectrum roadmap will help commercial operators with their network planning investments. The strategy report discusses global trends around wireless communications, the challenges faced by spectrum managers and spectrum management needs to cope with these trends. It stresses the requirement for Spectrum Sharing and Trading and adoption of Spectrum Pricing – Administrative Incentive Pricing (AIP) to promote efficient utilization of frequency spectrum. The strategy

discusses current utilization and future frequency spectrum outlook for mobile broadband services, broadcast services, fixed services, aeronautical and maritime services, public safety and land communication systems, satellite services and unlicensed bands for short range devices. (November 24, 2020) telecoalert.com

Pakistan Telecommunication Authority (PTA) has published "Rolling Spectrum Strategy 2020-2023", observing that C-band (3.6 – 4.2 GHz) is a core spectrum band for 5G deployment and recommended for a cost-benefit analysis to assess the optimum approach for its release for 5G. The strategy stated that many national regulators globally have either assigned this spectrum for mobile or have started preparations to do so. PTA/FAB/MoIT&T, in consultation with SUPARCO, should carry out a cost-benefit analysis to assess the optimum approach for the release of C-band for 5G. The following passage highlights the PTA's new strategy. Since there are four mobile operators in Pakistan, it is recommended that the PTA/FAB consider 35 percent or 40 percent, a reference point. The PTA/FAB should in conjunction with the Competition Commission of Pakistan (CCP) ascertain if an operator acquiring spectrum (whether through merger or through an upcoming auction) will have unfair advantage over small competitors. The evaluation will take into account the operator's share of subscriber as well as the opportunity for other operators to acquire spectrum through an upcoming auction. The MoIT&T/PTA/FAB may take a stance that the operator with a higher than 35 percent/40 percent of all mobile spectrum to be barred from an impending auction. The Spectrum Master Plan provides a future roadmap for spectrum allocation as well as spectrum-related policy reviews that are anticipated to take place between 2020 and 2023. The strategy revealed that there is a high chance that devices will hit critical mass before 2020 and recommended that the Ministry of Information Technology and Telecommunication/PTA/FAB aim to allocate the band for auction. This band is also crucial for Pakistan operators to extend the coverage to rural areas since it has better propagation characteristics. The report revealed that the PTA/FAB was considering implementing an AIP-

base spectrum pricing framework to replace the current ASAF. As part of the spectrum pricing review, the PTA/FAB has already submitted the revised ACR fee levels for principle approval by the government of Pakistan for implementation. It will be applied to services where auctions and the AIP are not implemented. The strategy has recommended that the current charging regime based on ASAF may continue till the time a market-based pricing formula for back-haul spectrum is in place. The ASAF is the administrative cost for managing access and back haul spectrums used by mobile operators pursuant to cellular policy 2004. It may be decoupled i.e. separate regimes to be introduced for Access Spectrum Annual Administration Fees and Microwave Backhaul Spectrum (Administrative Incentive Pricing) regime. The AIP and revised ASAF regimes to be implemented once finalized. The PTA/FAB need to work for rationalization of spectrum, so that mobile operators can be provided with standard spectrum blocks. Some operators have started to shut down 2G systems in some countries, while 2G will continue to be in use in many places including Pakistan, it will also start to phase out in a few years as mobile operators try to promote smart phones to earn revenue from data services. It is therefore useful to consider the long-term use of this band and as far as possible divide the band into separate lots of 2x 5MHz. Globally, the 1800 MHz is one of the most popular spectrum bands for mobile communications. The band is now used to deploy LTE by several operators around the world. The PTA/FAB has also received requests for additional spectrum assignments in this band. With widespread global

adoption, equipment is readily available and this band is deemed valuable to mobile operators, particularly for the deployment of the LTE. The PTA/FAB should plan transparent and effective methodology for assignment of vacant portion of this band. The 2500MHz offers 190MHz of bandwidth (2500−2690 MHz) and it is allocated in many countries for mobile services. This band should be a high priority after the 1800MHz has been fully assigned. This band is now being used in many countries for LTE systems, and often being aggregated with other bands to deliver faster LTE speeds. This is crucial for mobile operators in Pakistan. Mobile operators have also applied with the PTA/FAB to conduct 5G trials in this band. The C-band (3.6 − 4.2 GHz) is a core spectrum band for 5G deployment.

(November 6, 2020) techjuice.pk

The Federal Minister for Information Technology, Aminul Haq, says the government is making rapid efforts to introduce 5G technology and planning has been done to ensure the provision of 5G services by December 2021. The Minister told Urdu News that a trial 5G network will be launched at a hospital in Islamabad under a partnership with local cellco Zong, which is owned by China Mobile. Officials are currently seeking a consultant company to help prepare the terms for a 5G spectrum auction, though a detailed timetable for the licensing has yet to be laid out. In the meantime, work is ongoing to improve fiber backbone connectivity in Islamabad, Karachi and Gwadar.

(November 1, 2020) commsupdate.com

Saudi Arabia

The Communications and Information Technology Commission (CITC) will host a webinar, titled "Radio Spectrum for International Mobile Telecommunications (IMT)-2020 and beyond: Fostering Commercial and Innovative Use", in coordination with the International Telecommunication Union (ITU). The webinar will discuss the potential for radio spectrum and 5G to transform the world into a digital society, through enabling different industries and proactively anticipating future needs. The growing opportunities for wideband spectrum access, coupled with ongoing technological advancement, mean that 5G promises to serve as a unified platform for a new era in digital transformation. The ITU encourages national spectrum policy makers to take a holistic view, if emerging wireless technologies are to be adopted across many different sectors. As a fourth-generation digital regulator, CITC is in charge of managing Saudi Arabia's national spectrum. The Commission has set out its National Spectrum Strategy (NSS), which aims to improve the commercial and innovative use of the nation's radio spectrum by 2025. Saudi Arabia is the first country in the MENA region to implement a national spectrum strategy. The Kingdom also ranked second among G20 countries for spectrum allocation in 2019, and it is this drive that places Saudi Arabia among the most significant countries worldwide for emerging radio technologies. Speakers at

the webinar are wireless experts from different industries including satellite, mobile, IoT, WiFi and other wireless technologies, as well as speakers from governmental and regulatory bodies across the world. The sessions will cover issues such as "Spectrum usage and property rights: privatization and trading of the resource" and "Developing a sustainable national spectrum strategy: Meeting the demand of all sectors and radio services" and much more.

(November 25, 2020) citc.gov.sa

In collaboration with Saudi telecom providers, the Communications and Information Technology Commission (CITC) launched an initiative to provide 60,000 free Wi-Fi hotspots in some public locations across the Kingdom. These locations include hospitals, malls, public parks and the Two Holy Mosques. CITC worked with telecom providers to implement this initiative through several phases, and will continue to oversight the execution phase of this initiative, which is carried out by service providers. This phase includes fulfilling CITC's requirements, including unifying the network name for these free points "KSA Free WiFi- XXX" , facilitating user entry, and providing coverage maps that show all free Wi-Fi points across the country. Dr. Mohammad Al-Tamimi, Governor of CITC stated, "This initiative comes within the commission's keenness to spread communication and

information technology services across the kingdom, which reflects the development of the ICT infrastructure in the Kingdom and contributes to achieving CITC's strategic mission to enable the Kingdom's transformation into a digital society." Pointing to the expected impact of activating the initiative, which is to provide free access to the public Wi-Fi network for each service

provider for a period of up to two hours per day to a large number of beneficiaries and visitors of public places, in a number of Saudi cities. This initiative comes in line with the Vision 2030 ambitions and the ICT Sector Strategy 2023 to enable KSA's digital transformation.

(November 15, 2020) spa.gov.sa

Tunisia

5G services are now expected to be launched in Tunisia in 2022, according to Telecom Minister Mohamed Fadhel Kraiem. The official was quoted as saying the launch of 5G services would only be possible from 2022, as technical specifications for the service would not be finalized until late 2021, following which providers would need to conduct pilots before offering a commercial service. The minister noted that the timeline was based on the results of a study prepared for the National Telecommunications Authority (Instance Nationale des Telecommunications, INT) by an international research firm. According to TeleGeography's

GlobalComms Database, the National Frequencies Agency (Agence Nationale Frequences, ANF) had previously estimated that 5G services would likely be commercialized in 2023, based on its consultation on the allocation of spectrum in the 24.25GHz-27.5GHz, 37GHz-43.5GHz, 45.5GHz-47GHz, 47.2GHz-48.2GHz and 66GHz-71GHz ranges. According to the ANF, mobile providers were most interested in the 26GHz spectrum for 5G services, but it noted that that compatible handsets were not expected to be available in Tunisia until 2023.

(November 2, 2020) Agence Ecofin

Turkey

Speaking about the importance of technological transformation and development, Deputy Minister Sayan said that technological sovereignty will be possible by reducing the dependency on other countries. Therefore, as the Ministry, our primary goal is to develop the domestic and national ecosystem in the sector. As the Ministry of science, technology and innovation have become competent in producing, in a Turkey towards the goal of increasing value added by their brain power is always based on human understanding, we continue our work. In our Eleventh Development Plan; We have identified the development of fields such as artificial intelligence, internet of things, augmented reality, big data, robotics, quantum, cyber security and sensor technologies as priority critical technology areas. "Our aim is to strengthen our country's position in the new world order and to make our citizens benefit from the blessings of technology at the highest level." Deputy Minister said that Quantum Technologies Will Make a Mark on the Coming Years. Drawing attention to the fact that big data will gain more importance with the quantum technologies to be used. "Quantum technologies seem to mark the coming years. Quantum technologies have begun to make their footsteps in the field of communication. In 2016, a quantum connection was established with the world's first quantum satellite from a distance of 1200 kilometers, a first in this field. Despite these rapid developments, it should be emphasized that this technology has not yet reached its maturity stage. Undoubtedly, the expected benefit from this technology will emerge when the technology reaches sufficient maturity. The fact

that very large amounts of and complex data can be processed in a very short time by quantum computing indicates that the future is in this technology. Many countries have included the quantum issue in their national plans and programs. We have included our goals for the development of quantum technologies in our 11th Development Plan. We have identified the development of these technologies as critical areas," he said. Drawing the attention to the importance of working in cooperation with the public, private sector, universities and all relevant stakeholders in this field, Sayan said, " There are many areas to work on quantum technologies. First of all, it is necessary to develop hybrid systems and determine country standards for algorithms and protocols. In addition, the issues of making the key sharing and management in encryption devices resilient and increasing the key sizes to reach the quantum security level need to be addressed". Stating that quantum technologies will also be needed in 5G, Sayan said, "We are discussing new technologies at the 5GTR Forum, which we have established in cooperation with the public, universities, manufacturers, operators and related non-governmental organizations in our country to reach a pioneering position in 5G and beyond technologies. With the 5GTR Forum, we prepared and published a White Book and vertical sectors report, which includes priorities and road maps in 5G and Beyond. We produce R&D projects in this field for our priority issues. We organized many national and international events under the 5GTR Forum organizational structure. "We have made cooperation agreements with the 5G Forums of countries like Japan and Korea." Deputy

Minister Sayan said that it is Very Important for Our Youth to Develop New Technologies. He emphasizing that it is essential for the parties with technological knowledge to come together and produce products with high added value for the development and prosperity of our country, Sayan said, "In order to develop new technologies such as quantum technologies, we have to invest in our youth for our future. We are very confident in the abilities of our children and young people as the guarantee of our future. We have no doubts that when the necessary training is given and the opportunity is provided, they will add strength to our power". Referring to the issue of Digital Literacy, Sayan said: "About 1 year ago, contributing to the adoption of open source philosophy and approach, producing rich content for the effective use of

technology, contributing to the dissemination and dissemination of the studies, increasing the quality and quality of the content and contributing to the literature. We started the 'Open Source Digital Content Creation Project' in order to provide This book, which was prepared to increase the awareness of digital literacy and digital productivity in our country, was presented to users through acikkaynak.gim.org.tr, which is owned by our Secure Internet Center, with open source access and all information open to sharing. We work more determinedly as our work, which progresses systematically with the National Technology Move, yields its fruits. " Sayan ended his speech by stating that while evaluating the opportunities of technology, it is necessary to calculate the risks. (November 25, 2020) btk.gov.tr

United Arab Emirates

The Telecommunications Regulatory Authority (TRA) concluded the activities of the virtual brainstorming workshop "With your ideas, we design the UAE future for the next 50", by discussing 39 innovative ideas presented by the participants. The ideas varied to serve the sectors of education, health, economy, food security, youth, sports, culture, tourism and entrepreneurship. The workshop is in line with "Designing the Next 50" project, which aims to involve community members in shaping the UAE future, and to develop the pillars and components of the UAE Centennial 2071 Plan, the comprehensive development plan for the UAE for the next 50 years, announced by His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, and His Highness Sheikh Mohammed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, at the beginning of 2020. A group of competitors in the previous editions of the UAE Hackathon "Data for Happiness and Wellbeing", participated in the workshop as well as creative and innovative community members. On its second day, the workshop discussed the projects and ideas presented by the participants, their strengths and weaknesses, and how to develop them in line with the UAE Future Foresight Strategy, which aims to anticipate early opportunities and challenges in all vital sectors in the country, analyze them, and develop long-term proactive plans at all levels to achieve qualitative accomplishments to serve the UAE's interests, to be included in the digital platform for shaping the future of the UAE. The education sector had the largest share of the ideas presented, as the participants presented 11 inspiring ideas aimed at developing the educational process in the country, which reflects the great awareness of the UAE community about the importance of education and its development in order to create an educated generation capable of dealing with and leveraging latest technologies to achieve the UAE goals and visions. Speakers in the workshop exchanged views with the

participants on key points that can be developed to make these innovative ideas applicable and become successful projects that contribute to achieving the UAE visions for the next fifty years, by taking leveraging progress of the ICT sector and the innovative projects provided by the government, such as UAE Pass, Bashr and the UAE space projects, and adopting solutions based on artificial intelligence and big data. Commenting on this event, H.E. Salem Al Housani, Acting Deputy Director General for Information & E-Government Sector, said: "The workshop, which was held over two days, demonstrated the great creative energies of the Emirati community, and the keenness of all community members to participate in shaping the bright future of our country. Through the ideas presented by the participants, we discovered their great capabilities in envisioning the future and how to take advantage of modern technologies to develop projects and ideas that contribute to achieving sustainable development and more civilizational gains for our beloved country." Al Housani stressed that the UAE believes that all people, regardless of their job, are capable of creativity and innovation if the appropriate conditions are available for them. He said: "In the UAE, we have learned from our wise leadership to listen to all members of society. Every individual in the UAE has a duty to contribute to strengthening the position of the country, and the right to present ideas and opinions. Accordingly, TRA has been keen to attract all ideas and opinions, and study and develop them. Whether through e-participation initiatives such as the Sharik portal, or through creative initiatives such as this workshop, the UAE Hackathon and others." "Designing the next 50" project, is supervised by the Supreme Committee of "2020: towards the next 50", headed by His Highness Sheikh Mansour bin Zayed Al Nahyan, the Deputy Prime Minister of the UAE and Minister of Presidential Affairs. It aims to involve all community members in designing the UAE comprehensive development plan that defines the features of the UAE's next 50 years, from 2021 to 2071. (November 11, 2020) tra.gov.ae

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

Australia

Companies offering fixed broadband services will be required to publish their customer service commitments and details of their associated performance under new industry rules that have been proposed by the Australian Communications and Media Authority (ACMA). Currently there are no requirements for telcos to publish their customer service commitments and the remedies they will provide if commitments are not met, such as rebates or backup modems to maintain connectivity. With regards to the authority's plan to change this, ACMA chair Nerida O'Loughlin suggested the proposals would help drive improvements in customer service, saying: 'These new rules will require telcos offering fixed broadband services to be transparent about their service commitments and remedies they are providing their customers, and report on their performance against these.' Meanwhile, it has been noted that as per the proposals operators will be required to put in place arrangements so that their customers benefit from the new rebate scheme put in place by NBN Co on wholesale service performance. Under new arrangements, NBN Co will provide rebates to retail telcos for missed wholesale service levels, such as missed appointments, and the ACMA's new rules will require that those rebates be passed on to affected customers, 'in monetary form or in kind'. With a consultation on the ACMA's plans open for feedback until 9 December 2020, the regulator has said it expects the new rules to be in place 'in early 2021'.

(November 14, 2020) commsupdate.com

The Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) has announced that the government has begun the process of allocating 'essential spectrum in the 850MHz and 900MHz bands to support carriers to deploy more efficient 4G [and later 5G] mobile services across Australia'. In a press release regarding the matter, the DITRDC claimed that the bands in question are not currently well optimized, and suggested that a reallocation of frequencies will allow the Australian Communications and Media Authority (ACMA) to reconfigure the bands for 4G and 5G mobile services. As such, communications minister Paul Fletcher has issued a spectrum reallocation declaration – 'The Radiocommunications (Spectrum Reallocation—850/900 MHz Band) Declaration 2020' – which will allow for the reallocation of 20MHz of new spectrum for mobile broadband services in the 850MHz expansion band, as well as 50MHz in the 900MHz band, a band that carriers currently use for 3G and 4G. These new frequencies are expected to be made available via auction in the second half of 2021. With the Australian authorities also planning to allocate high band (26GHz) 5G spectrum in April next year, Mr. Fletcher said the government expects 2021 to be the 'Year of 5G', with the minister noting: 'Low band spectrum can carry the 5G mobile signal longer distances, and is best for wide coverage indoors and outside. The mid band spectrum provides broad coverage and fast speeds and the high band spectrum will allow blazing fast speeds over shorter distances … We are making the low, mid and high bands available so that the telcos can provide better, faster and stronger 5G in Australia.'

(November 4, 2020) commsupdate.com

Belgium

A 5G spectrum auction will not take place in Belgium until the end of 2021 at the earliest, the Belgian federal telecoms minister Petra De Sutter has told newspaper De Tijd. Although the political stumbling blocks have largely been resolved, the legal and legislative preparations for an auction are expected to take another twelve months, the minister confirmed. The sale of 5G spectrum in the 700MHz and 3.5GHz bands has been delayed by the lengthy process of forming a new federal government coalition, as well as a disagreement between regional governments on how to share the proceeds of the auction, which is expected to raise a minimum of EUR800 million (USD948 million). Although it has been provisionally decided to place the funds in escrow until an agreement is reached, parliament will need to approve an amendment to the Telecom Law setting the minimum price for the auction and a series of Royal Decrees specifying the coverage requirements and other conditions imposed on mobile network operators before an auction can be staged. The minister has promised to press ahead with the process, despite public concerns surrounding the potential health effects from 5G radiation, particularly among voters of her own Groen ecologist party. 'I take the concerns seriously, but I see no evidence at this time that the prevailing radiation standards are damaging health,' she said, while stressing the government will continue to research the issue. 'But I will certainly not be

the minister stopping 5G. The importance for industry, mobility and medicine is enormous,' she added. The telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) granted temporary user rights to spectrum in the 3.6GHz-3.8GHz in July, enabling operators and businesses to launch services and experiment with the technology. (November 20, 2020) commsupdate.com

The new Belgian government has no plans to reduce its 53.5% stake in full-service telecoms operator Proximus, according to Petra De Sutter, the minister responsible for the state's shareholdings. In a policy note, De Sutter said the importance of 'continued public participation' in Proximus and the national postal service Bpost (51%) has become 'all the clearer' during the COVID-19 pandemic, reports Belga news agency. 'As a government, we can ensure the quality of service in these key sectors throughout the country, without impeding efficient operational management,' she said. The government opened the door to a possible

reduction of its shareholding in 2015 by removing the legal obligation for the state to hold a majority stake in Proximus and Bpost. Petra De Sutter's predecessor, the Flemish liberal Philippe De Backer, advocated such a policy last year, arguing that 'a government runs a country, not companies. (November 11, 2020) commsupdate.com

Telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has awarded Citymesh a new spectrum license in the 3.4GHz-3.6GHz band for its offshore operations in the North Sea. The company which is mainly active in the B2B sector, some industrial areas in Flanders and North Sea windfarms, has been granted temporary users rights to a 100MHz block of frequencies (3410MHz-3510MHz) to meet increased demand. The new license replaces its previous holdings (3430MHz-3450MHz/3530MHz-3550MHz) assigned in November 2019 and will be valid until the government organizes a public auction for the 3.4GHz-3.8GHz band. (November 6, 2020) commsupdate.com

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Brazil

The National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, ANATEL) has confirmed that it has approved a resolution reviewing the usage of 1427MHz-1518MHz (1500MHz) spectrum in the so-called 'L-band'. The watchdog notes: 'Thus, the objective is to standardize and allocate multi-services for the band, according to the model that

has been adopted by ANATEL in several regulations, such as in the recent regulations [relating to] the 2.3GHz and 3.5GHz bands. Thus, in order to ensure greater efficiency and compliance … the new resolution now allows the use of any arrangements, without population or geographical limitations, for mobile and fixed multipoint services.' (November 3, 2020) commsupdate.com

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Cambodia

The Ministry of Posts and Telecommunications Cambodia (MPTC) has reportedly stripped ISP Chuan Wei Cambodia, which trades as Wizion, of three licenses for breaching the terms of its concessions. According to the Phnom Penh Post, the licenses in question cover VoIP, 4G and submarine cable activities. The newspaper notes that the operator will be permitted to retain its ISP permit if it settles its outstanding debts to the government. Explaining its decision, the MPTC said: '[This can be due to prolonged] inactivity, incorrect self-reported income data, insufficient financial or technical documentation, unsettled debts, or unpaid levies owed to the government.' TeleGeography notes

that the license revocation comes just over a month after the MPTC stripped 17 local telcos of various operating concessions. Companies affected on that occasion included the likes of CadComms and Emaxx Telecom (mobile licenses); CN Xinyuan Interconnect, XNET, Saturn Holdings, ATA Telecom, PPIN Internet, HT Networks, DG Communications, DTV Star and Cambodia Broadband Technologies (ISP licenses); Aerospace Information Cambodia, Lim Heng Group and TPLC Holdings (VoIP licenses). Kingtel Communications, BDKtel and Asia Star Resources Investment Holding were also subject to regulatory intervention. (November 27, 2020) commsupdate.com

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Canada

Tue federal government has increased the funding available through the Universal Broadband Fund to CAD1.75 billion (USD1.35 billion), an increase of CAD750 million from the original CAD1 billion allocated to the Fund in its 2019 budget, stating that the COVID-19 pandemic has reinforced the importance of access to high speed internet. Via the Fund and

several other initiatives, the government now aims to ensure 98% of Canadians can access high speed (50Mbps/10Mbps down/upload) connectivity by 2026, an increase from the previous commitment of 95% for that year in Canada's Connectivity Strategy set in June 2019. To help accelerate the timeline for new connections, the government is including a Rapid

Response Stream for the Universal Broadband Fund, making up to CAD150 million available for projects that will be completed by 15 November 2021. The Fund also includes CAD50 million dedicated to improving mobile internet availability in areas of benefit to Indigenous communities. Selected projects under the new funding will be confirmed starting in early 2021. The government also reiterated that it has entered into an agreement with Telesat to secure high-speed internet capacity through the company's low Earth orbit (LEO) satellite constellation, to significantly improve connectivity in rural and remote areas including the Far North. The government said it has committed up to CAD600 million to secure the LEO capacity which will be made available to ISPs at a reduced rate (note: at the time of agreeing the Telesat partnership in July 2019 the government earmarked 'up to CAD685 million' for the project, including CAD85 million through the Strategic Innovation Fund).

(November 10, 2020) www.canada.ca

Chile

The Ministry of Transport and Telecommunications (MTT), through the Department of Telecommunications (SUBTEL) has received offers from five companies as part of its public tender for the development of 5G networks. The tender comprises four separate contests for spectrum in the 700MHz, 1700MHz (AWS), 3.5GHz and 26GHz bands, with the 3.5GHz competition seeing the most interest despite legal challenges hanging over the process. All four of the nation's mobile network operators (MNOs) have submitted offers for at least one of the bands, whilst new competitor Borealnet entered submissions for all but the 26GHz contest. The surprise newcomer is a consortium comprising US-based communications firm Rivada Networks, which describes itself as a 'designer, integrator and operator of wireless and interoperable communications networks', and Business Finland – a public organization that finances innovation and research – La Tercera writes. The company is reportedly aiming to establish a presence in the country as a wholesale provider.

Boreal and WOM were the only companies to submit offers for the 700MHz contest, consisting of a single 2×10MHz tranche of spectrum. For the 1700MHz band, meanwhile, Borealnet and WOM are also competing with Claro, whilst the 26GHz band tender is contested by three established MNOs: Claro, Entel and WOM. Finally, all four of the previously mentioned companies have submitted offers for a portion of the 150MHz of 3.5GHz frequencies that have been made available. In another unexpected development, however, Movistar has also filed an offer for the spectrum, despite its ongoing efforts to halt the tender. The cellco has argued that the design of the 5G auction process grants anti-competitive advantages to some operators in certain tenders and excludes competitors in others. The case was rejected by the Antitrust Tribunal (Tribunal de Defensa de la Libre Competencia, TDLC) earlier this month but Movistar is reportedly planning to take the matter to the Supreme Court.

(November 20, 2020) commsupdate.com

China

The market regulator sought input from the country's tech giants on proposed rules designed to curb anti-monopolistic practices and better-protect consumer interest, The Wall Street Journal (WSJ) reported. The State Administration for Market Regulation said the draft rules aimed to crack down on practices including pricing items below cost, using data and algorithms to offer different prices to different consumers, and taking advantage of market power to restrict sales on rival platforms, the newspaper wrote. Along with internet regulators and the State Taxation Administration, the watchdog recently held meetings with tech companies including Alibaba, Tencent and e-commerce platform JD.com. The regulator proposed establishing a review system to monitor internet companies to prevent abuse of market power. It could force companies to sell assets, technologies or intellectual property if breaches occur, WSJ stated. Authorities recently suspended an IPO by Alipay parent Ant Group less than 48 hours before trading was set to begin over regulatory concerns. Ant Group cited changes in fintech regulations as among several factors which may have caused it to not meet listing requirements.

(November 11, 2020) mobileworldlive.com

Cyprus

The 5G auction is expected to take place next month, with a view to the granting of licenses in January 2021. The sale process, which is being overseen by the Deputy Ministry of Research, Innovation and Digital Policy, will involve six 2×5MHz lots in the 700MHz band and eight 50MHz lots in the 3.6GHz band. Operators must not exceed the 2×10MHz/700MHz and 100MHz/3.6GHz spectrum caps. Winning bidders will have an obligation to cover 70% of the population, as well as all highways by 31 December 2025, delivering download speeds of up to 100Mbps.

(November 20, 2020) commsupdate.com

Czech Republic

In a press release, the Czech Telecommunication Office (CTU) said it has successfully completed the auction phase of bidding on particular auction blocks offered in the frequency bands for future 5G networks, with five groups winning spectrum allocations. However, the government's long-held desire to see a major new fourth mobile network operator (MNO) enter the market appears to have been dashed, with the bulk of frequencies on offer going to the incumbents – O2 Czech Republic, T-Mobile and Vodafone. The telecoms regulator confirmed that in total, the five firms agreed to pay a total of CZK5.596 billion (USD250.7 million), with the existing MNOs each securing blocks in the 700MHz band suitable for building out national networks. In the 700MHz band, O2 gained the 2×10MHz block connected with the commitment to provide national roaming and PPDR services for public emergency and security bodies. Other blocks in the 700MHz band were acquired by T-Mobile and Vodafone. In the 3400MHz-

3600MHz band, blocks of 20MHz 'connected with the commitment to lease frequencies to support Industry 4.0' were won by O2 and CentroNet. Other successful applicants in this band were T-Mobile, Vodafone and Nordic Telecom 5G, with the CTU noting that upon completion 'all the offered blocks were successfully allocated in the auction'. Two other groups – PODA and Sev.en Innovations – participated in bidding but were not successful. With the government keen to see new competition to drive down mobile prices that are among the highest in Europe, Nordic Telecom has said it will look to offer mobile services to customers around the country. Commenting on the auction results, the country's industry minister Karel Havlicek said on Twitter that 'new players would increase competitive pressure on existing operators and industry would have better access to 5G after the auction'.

(November 16, 2020) commsupdate.com

Ethiopia

Ethiopia began a long-anticipated tender process for two new mobile licenses in the country, inviting international operator groups to submit their final pitches by a 5 March 2021 deadline. In a statement, the Ethiopian Communications Authority said the nationwide licenses would be awarded through a competitive bidding process, with terms and conditions provided to companies on request until 10 December. The authority hopes to tempt "world class telecommunications operators" to enter the market to compete with incumbent, and currently sole provider, Ethio Telecom. During the first application phase, a total of 12 players submitted expressions of interest including Orange; MTN Group; STC; Etisalat; and Global Partnership for Ethiopia, a consortium comprised of Vodafone Group, Vodacom and Safaricom. Privatization of the sector has been in the works since 2018, when authorities raised the prospect of welcoming overseas investment into Ethio Telecom, a process which is running concurrently to the allocation of new licenses. Full terms for new entrants were not disclosed by the authority, but various media reports over the last two years have speculated these could include commitments related to using domestic companies for specific infrastructure, and restrictions or bans on launch of mobile money services.

(November 27, 2020) mobileworldlive.com

The Prime Minister Abiy Ahmed has directed his macroeconomic reform team and members of the Privatization Advisory Council to press ahead with both the liberalization of the telecoms market via the

issuance of two new service provider concessions, and the sale of a 40% stake in incumbent Ethio Telecom. According to local news source The Reporter, the direction was made at a meeting held last week (26 October), at which reports were presented by the Ethiopian Telecommunications Authority (ECA), the Ministry of Finance (MoF) and Ethio Telecom. Of particular note, the ECA was said to have detailed in its presentation the plans for what spectrum is to be allocated to new licensees, with it confirming its intention to assign frequencies across five bands to both new players. It is understood that the two new players will each be awarded 10MHz blocks in the 800MHz and 900MHz bands, as well as 20MHz in the 1800MHz band. By comparison, Ethio Telecom will reportedly hold a 10MHz block in the 800MHz band, while the incumbent will retain 15MHz and 35MHz in the 900MHz and 1800MHz bands, respectively. Meanwhile, all three operators – Ethio Telecom and the two new licensees – will reportedly be allocated 20MHz apiece in the 2100MHz band and further 20MHz block in the 2600MHz band. Meanwhile, information was also forthcoming regarding coverage requirements, with it reported that the two new operators will be tasked with reaching 25% population coverage within a year of entering the country's telecoms sector. Looking further ahead, the duo will be expected to cover 40% of Ethiopians within two years, 55% in three years, 70% in four years and 80% in five years, with an ultimate coverage target of 97% set for 15 years after their respective launches.

(November 4, 2020) commsupdate.com

Finland

The government has proposed that financial aid for the construction of high-speed broadband will 'begin anew' in 2021. In a press release, the Ministry of Transport and Communications (Liikenne-ja viestintaministerio, MoTC) said that EUR5 million (USD5.9 million) has been allocated for the construction of broadband networks next year. Under a proposed aid scheme, the ministry expects around 10,000 new households could gain access to high speed broadband by targeting areas where no commercial infrastructure is expected to be deployed before 2025. According to the MoTC, a minimum connection speed to qualify for aid is to be set out in a government decree, while it is understood that both fixed and fixed-wireless broadband technologies will be permitted under the scheme. Aid for network construction will reportedly be granted for up to 66% of the eligible costs, with both the central government and local municipalities contributing towards the funding. In terms of next steps, the MoTC noted that a referral debate on the proposals has been submitted to parliament and will be conducted in an upcoming plenary session. Subsequently, the proposal will then be sent to the Transport and Communications Committee, and once that body's report is ready, the matter will be discussed in a plenary session again. With the plan being for the legislation underpinning the state aid scheme to enter into force on 1 January 2021, the ministry has said it expects the Finnish Transport and Communications Agency (Liikenne-ja viestintavirasto, Traficom) to begin accepting applications for aid from the start of 2021. Meanwhile, in related news, the MoTC has revealed that, working in conjunction with the Finnish Confederation of Telecommunications and Information Technology (FiCom) and local communications providers DNA, Elisa and Telia Finland, a joint commitment has been struck to improve broadband connectivity in the country. According to the ministry, the aim of the commitment is to guarantee the availability of high quality broadband to all, and to that end the operators involved have undertaken to develop infrastructure so as to ensure that all households in Finland's cities and sparsely populated areas have access to downlink speeds of 100Mbps by 2025. The MoTC has said that all parties involved will conduct annual reviews to see whether the commitment goals are being met.

(November 13, 2020) commsupdate.com

France

French telecoms watchdog ARCEP has revealed the results of its positioning auction held on 20 October, which aimed to determine the position of the secured blocks in the 3.4GHz-3.8GHz band. In the 5G auction held at the beginning of October, Orange secured 90MHz in the band for EUR854 million (USD998.7 million), followed by Altice (80MHz, EUR728 million), Bouygues Telecom (70MHz, EUR602 million) and Free Mobile (70MHz, EUR602 million). Following the positioning auction, the allocated spectrum is as follows:
 • Altice France (SFR): 3490MHz-3570MHz
 • Bouygues: 3570MHz-3640MHz
 • Free Mobile: 3640MHz-3710MHz (EUR3.096 million)
 • Orange: 3710MHz-3800MHz
All four operators have been awarded one 50MHz block (at a price of EUR350 million payable in equal instalments over 15 years) in exchange for optional commitments, which include the deployment of 3,000 5G sites by the end of 2022, 8,000 (2024) and 10,500 (2025). ARCEP also provides for a mechanism to ensure that non-urban areas will also benefit from these deployments. Thus, 25% of the 3.4GHz-3.8GHz band sites in 2024 and 2025 will have to be deployed in areas outside the main agglomerations. By 2022, at least 75% of the sites must have a bit rate of at least 240Mbps, which will be gradually extended to all sites by 2030. Operators will also be required to activate network slicing by 2023 at the latest.

(November 5, 2020) commsupdate.com

Ghana

The Ministry of Communications (MoC) through the Ghana Investment Fund for Electronic Communications (GIFEC), in partnership with the Export-Import Bank of China and Huawei Technologies Ghana officially launched the Rural Telephony Project at Atwereboana in the Ashanti Region on 4 November. The initiative aims to provide voice and data services to more than 3.4 million people in underserved and unserved communities by commissioning 2,016 Rural Star sites developed by Huawei, thereby extending national mobile coverage from 83% to 95% and greatly accelerating local economic development. The solution is expected to save the government up to 70% of the cost of traditional cell sites. Speaking at the event, Ghana's Minister of Communications, Ursula Owusu-Ekuful, said: 'No one, irrespective of their financial, economic, social status or location should be deprived of access to quality telephony services hence the government's keen interest in making sure that the project is delivered successfully and they intend to roll out 1,000 sites by December. I must congratulate GIFEC, Huawei and the mobile network operators for working together to deliver this project. As policymakers, we will continue to provide leadership in implementing solutions and programmes to facilitate rural connectivity.'

(November 16, 2020) commsupdate.com

Greece

The communications regulator approved a plan to combine passive infrastructure owned by rival operators Vodafone Greece and Wind Hellas, with the assets set to be moved into a standalone company and leased back. In a statement, the Hellenic Telecommunications and Post Commission (EETT) noted having assessed the proposal for competition and potential issues around third-party access, it concluded the deal was unlikely to cause significant issues. The authority did, however, note there would be a "high degree of concentration" in the market as a result, though any impacts were apparently not enough to reject the deal. Under an agreement struck in July between Vodafone Group and Wind Hellas' controlling shareholder Crystal Almond, a combined 5,200 towers from the two operators will be moved into the newly formed Vantage Towers Greece.nThe infrastructure company will be majority owned by Vodafone Group through European tower subsidiary Vantage Towers. Crystal Almond will receive €25 million in cash and a 38 per cent stake in the Greek tower business. It is the latest attempt by Vodafone to beef-up the assets held by its Vantage Towers spin-off, which the company plans to list on the Frankfurt stock exchange in early 2021. (November 13, 2020) commsupdate.com

The National Telecommunications & Post Commission (EETT) has confirmed that the country's three incumbent mobile network operators (MNOs), Cosmote, Vodafone and Wind Hellas, all submitted applications to bid in the 5G auction planned for late this year, by the deadline of 30 October. Each cellco applied for all available frequency ranges: 700MHz, 2GHz, 3.4GHz-3.8GHz and 26GHz. (November 3, 2020) commsupdate.com

Hungary

The National Media & Infocommunications Authority (NMHH) confirmed on its website that the Metropolitan Court has dismissed a legal action from fixed and mobile operator DIGI, which had opposed the NMHH's decision to exclude it from the country's 5G frequency license auction earlier this year. The court found that the regulator's decision was based on a correct interpretation of the law. However, DIGI is permitted to launch an appeal. The NMHH disallowed DIGI from entering a bid in the 5G spectrum license auction, which went ahead in March 2020 with all three of DIGI's main mobile rivals receiving 15-year 700MHz/3500MHz licenses. DIGI appealed the regulator's ruling, originally issued in September 2019 for failing to meet bidding eligibility criteria, but the NMHH's second-instance decision two months later upheld its initial declaration. Currently, DIGI is also protesting publicly about conditions imposed by the NMHH on Hungary's next mobile frequency auction, which it fears will lead to its exclusion from the process once again. DIGI has so far gathered over 80,000 signatures for its petition on the matter. (November 13, 2020) commsupdate.com

India

India's Department of Telecommunications (DoT) has sought a legal opinion from Solicitor General Tushar Mehta to clarify the Supreme Court's order on the timeline for payment of Adjusted Gross Revenue (AGR) related dues, the Economic Times writes. Earlier this year the apex court granted operators permission to pay off their AGR-related dues via a series of annual payments up to 31 March 2031, starting with at least 10% by 31 March 2021. It was not clear from the decision whether the requirement to pay 10% of the total by the end of the fiscal year was intended to take into account the amount already paid by the operators. Vodafone Idea (now operating under the 'Vi' banner) and Bharti Airtel have both claimed that as they had paid more than 10% of the demanded total by the time of the ruling, they had satisfied the requirement for that year and therefore had until March 2022 to pay the next instalment. The DoT, on the other hand, has interpreted the order as taking the sums already paid into account and requiring that the affected providers pay a further 10%.

(November 12, 2020) commsupdate.com

Indonesia

The Ministry of Communication and Information (MCI), known locally as Kementerian Komunikasi dan Informatika (KemKominfo), has reportedly begun the formal selection process to award 30MHz of radio frequencies in the 2.3GHz band (2360MHz-2390MHz) for use by mobile network operators (MNOs). IndoTelko cites KemKominfo Head of Public Relations Ferdinandus Setu as saying: 'The selection is part of the [MCI's] efforts to support digital transformation in the economic, social and governmental sectors, because there are still radio frequency blocks which currently have not been assigned radio frequency band users.' In short, the allocation is expected to increase MNOs' network capacity, improve service quality and help accelerate the move towards the implementation of 5G in the country. Acting under provisions set out in Article 11 of the 'Regulation of the Minister of Communication and Information Technology Number 9 of 2018

concerning Operational Provisions and Licensing Procedures for Radio Frequency Spectrum Usage', the government intends to award three 10MHz blocks of spectrum. It confirmed that only MNOs already holding a Cellular Mobile Network Operation License will be able to participate in the process. The paper notes that

in 2017 Telkom subsidiary Telkomsel invested IDR1 trillion (USD70.6 million) for an additional 30MHz block of spectrum at 2.3GHz. It estimates that if it seeks a further 30MHz block, it might have to 'pay twice the upfront fee and frequency BHP' from the price it paid in 2017. (November 24 2020) commsupdate.com

Italy

The Italian government has reportedly agreed to the acquisition of a minority stake in Telecom Italia's (TIM's) last-mile networks unit FiberCop by US investment firm KKR. The deal between TIM and KKR was agreed in August, and sources suggested at the time that authorities in Rome would be favorable to the tie-up. Reuters now cites three unnamed sources as

saying that the government will approve the transaction on the condition that KKR agrees to a plan to create a single national broadband network by merging the assets of TIM and wholesale operator Open Fiber. KKR has offered EUR1.8 billion (USD2.1 billion) for a 37.5% interest in FiberCop.

(November 16, 2020) commsupdate.com

Jamaica

The Jamaican government is considering a proposal from US firm Rivada Networks, which would see the vendor deploy a 5G network free of charge, in exchange for a share of the eventual revenues. According to the Jamaica Observer, which quotes remarks by Donald Tapia, the US Ambassador to Jamaica, the proposal has been on the table for some time, but the authorities remain undecided. According to its website 'Rivada has been in the business of providing tactical communications solutions to the federal government

since before our involvement with Hurricane Katrina in 2005'. It says that its network solutions have been deployed 225 times in the last five years, often in response to natural disasters. While the company's international vendor experience remains unclear, TeleGeography notes that Rivada was previously disqualified from Mexico's Red Compartida open access 4G network tender in 2016, for failing to meet the necessary financial obligations to compete.

(November 6, 2020) commsupdate.com

Liberia

The Liberia Telecommunications Authority (LTA), working with the National Identification Registry agency (NIR) and the country's mobile network operators (MNOs) – Lonestar Cell-MTN and Orange Liberia – have signed a memorandum of understanding (MoU) on new SIM/RUIM registration regulations. The local Daily Observer newspaper reports that under the plan, the NIR will join the LTA and the MNOs to implement the new regulations which they hope will: improve national security; establish a platform for e-communications services such as mobile money transfer and other such services; make it easier for subscribers to replace their SIM cards in the event of loss; minimize the opportunity for communication frauds (e.g. grey routing of calls) as operators are mandated to activate only registered SIM/RUIM cards on their networks; and ensure the

creation of a reliable database of subscribers by operators. The new regulations will now enter a three-month testing phase (November 2020 to January 2021), and after the results are evaluated (February 2021) full implementation is expected to begin in March 2021. Edwina C Zackpah, Acting Chairperson, LTA, said: 'We all know that there are a lot of crimes that are committed using the telephone, and one of the first places that the police will go when investigating a crime is the cellphone; what were the last sets of numbers you called and who is associated with those numbers? You may never know who committed such a crime if the SIM card they are investigating is not properly registered. So this is a significant milestone for the country.'

(November 4, 2020) commsupdate.com

Lithuania

The Communications Regulatory Authority (Rysiu Reguliavimo Tarnyba, RRT) has issued a statement on its preliminary plans for auctioning 5G frequencies, tentatively scheduling a sale of spectrum including the 700MHz band for the first quarter of 2021. The RRT highlighted that its schedule must take into account the

ongoing sale process of MEZON, the retail broadband and IPTV business of state-owned Lithuanian Radio & Television Centre (LRTC, also known as Telecentras), having received requests from operators to postpone spectrum auctions until the transaction is completed. In August, Lithuania's Competition Council received

an application from mobile operator Bite seeking approval for the acquisition of MEZON. The RRT also noted that in the meantime it has allocated 3.5GHz band 5G spectrum on a temporary, non-commercial basis to cellco Telia Lietuva for testing (see separate CommsUpdate article today, 11 November 2020), whilst stressing that spectrum allocated via the eventual 5G license auction(s) will be technology-neutral, allowing joint 4G/5G development as appropriate. Regarding 26GHz mmWave 5G spectrum, the RRT said that an auction for this band will be announced 'when it is clear whether there is market demand.' RRT Deputy Director Mindaugas Zilinskas noted additionally: 'Lithuania,

as a border country, due to its special geographical position, faces the biggest additional challenges in preparing for the arrival of 5G – we must coordinate our spectrum resources with neighboring countries, pay great attention to the protection of our state's interests. To our knowledge, all operators are actively preparing for the smoothest and fastest possible emergence of new technology in Lithuania. Tests of 5G technology, measurements of radio signals from base stations will provide additional arguments in negotiations with the administrations of neighboring countries.'

(November 11, 2020) commsupdate.com

Madagascar

The government of Madagascar has reduced the excise duty levied on telecommunications from 10% to 8% in the 2021 Finance Law. According to Ranesa Firiana Rakotonjanahary, the Secretary General of the Ministry of Posts, Telecommunications and Digital Development (MPTDN), the decision followed a study

conducted by the ministry which showed that a decline in the excise duty will benefit consumers at all levels. The government will closely monitor telcos to ensure the measure, which reverses the rate hike to 10% introduced in the 2020 Finance Law, results in lower prices for customers. (November 20, 2020) Agence Ecofin

Mozambique

The National Communications Institute of Mozambique (INCM Communications Regulatory Authority, ARECOM) issued a statement urging users of unregistered or 'irregularly registered' mobile SIM cards to correctly register their SIMs by 6 November 2020 'under penalty of blocking the number and interruption of access to all services.' SIM registration has been compulsory in Mozambique since 2015, but authorities have repeatedly voiced concerns that mobile operators have not adhered to the regulations. The INCM highlights Article 17 (Service Interruption) of the Regulation for the Registration and Activation of the Mobile Telephone Service Subscriber Identification Modules (approved by Decree No. 18 of 28 August 2015) which stipulates: 'The Regulatory Authority shall determine

that the operator or provider of telecommunications services interrupts or blocks the service provided to certain subscribers, when it finds that there are subscribers on the system not registered under the terms of this regulation.' In relation to the links between unregistered SIM usage and illegal activity such as SIM box fraud (where international calls are routed via a VoIP gateway to disguise them as local traffic), the INCM's latest statement added that it 'is currently developing platforms for receiving, processing and forwarding reports of fraud, defamation, among other crimes perpetrated via mobile phone. These have caused enormous financial and moral damage to citizens, institutions and other entities.'

(November 3, 2020) commsupdate.com

Nigeria

The Nigerian Communications Commission (NCC) has published a consultation document on plans for the deployment of 5G technology in the West African country and has invited feedback from industry stakeholders. The paper sets out the watchdog's views regarding potential changes to the nation's regulatory framework to address the unique challenges of 5G technology, the spectrum that will be made available for 5G, and a schedule for the rollout of the platform. Under the current plan, 5G spectrum auctions would take place in Q2 2021 and Q4 2021, with the airwaves assigned in Q1 2022 and commercialized by Q4 2022. The document suggests that the deployment of Standalone (SA) 5G should begin in late 2021, whilst the rollout of the Non-Standalone (NSA) variant

would follow in early 2022. On spectrum, the NCC identified the following ranges for the first phase of 5G deployment, alongside details of their current usage and plans for their release, recovery, refarming and/or replanning: 2100MHz band; 2300MHz-2400MHz; 2600MHz-2690MHz; 3300MHz-3400MHz; 3500MHz-3600MHz; 3600MHz-3700MHz; 4800MHz-4900MHz; 24.25GHz-27.5GHz; and 37.0GHz-43.5GHz. For the second phase of the rollout, meanwhile, the NCC noted that it would consider the release of some or all of the following bands, based on New Radio support, maturity and device availability: 1427MHz-1518MHz; 45.5GHz-47GHz; 47.2GHz-48.2GHz; and 66GHz-71GHz.

(November 12, 2020) commsupdate.com

Norway

The National Communications Authority (Nasjonal kommunikasjonsmyndighet, NKOM) has announced that it is accepting applications for spectrum in the 700MHz and 900MHz bands for offshore use. In a press release, the regulator noted that the inviting of interested parties to apply for frequencies comes after it received an application for 900MHz spectrum from an unnamed company. In terms of the frequencies to be offered, NKOM notes that it will allocate a 2×5MHz in the 700MHz band (713MHz-718MHz/768MHz-773MHz) for offshore use, while a further 2×5MHz in the 900MHz band (900MHz-905MHz/945MHz-950MHz) is also being made available. For those companies that are successful in their applications for the spectrum, the allocations will be valid until 31 December 2033. Interested parties have been given until 30 November 2020 to apply.

(November 10, 2020) commsupdate.com

Peru

Peruvian telecom sector watchdog the Supervisory Agency for Private Investment in Telecommunications (Organismo Supervisor de Inversion Privada en Telecommuniciones, OSIPTEL) has launched an application to assist customers with various services. According to the regulator, the app unifies into a single platform the various tools developed by OSIPTEL to empower customers. These include its 'Comparatel' tool, which enables users to compare the tariffs of different companies, as well as its IMEI checker, which lets customers verify the IMEI code of their device to ensure that it is not registered as lost or stolen. The application also features the regulator's 'Signal OSIPTEL' service, which allows users to check the coverage of mobile networks in towns across the country. OSIPTEL notes that the application is available for Android and iOS platforms.

(November 24, 2020) commsupdate.com

Poland

The Polish government has set a new deadline for the completion of the delayed auction of 3.7GHz spectrum for 5G mobile services. Having missed its original target of 30 June 2020 due to a combination of factors including changes to legislation and the COVID-19 pandemic, the government now wants the auction to be completed by 27 August 2021. The country's telecoms regulator, the Office of Electronic Communications (Urzad Komunikacji Elektronicznej, UKE), is hopeful that a sale will take place in the first half of next year.

(November 20, 2020) commsupdate.com

Polish cellco Plus (registered as Polkomtel) is to pay PLN21.6 million (USD5.7 million) to renew its license in the 420MHz band for a further 15 years. The concession, which includes 2×2.5MHz of frequencies (412.5MHz-415.0MHz paired with 422.5MHz-425.0MHz), was previously held by Plus subsidiary Nordisk Polska, which paid PLN16.1 million for a 14-year license in 2006. Nordisk was acquired by Plus in 2009 and was merged into its parent last year. The spectrum is used for CDMA-based mobile dispatch and telemetry services, plus wireless internet access in rural areas with poor cellular coverage. (November 17, 2020) commsupdate.com
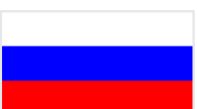
Russia

Russian president Vladimir Putin has signed a decree 'On improving public administration in the field of digital development, communications and mass media' abolishing the Federal Communications Agency (Rossvyaz) and the Federal Agency for Press & Mass Communications (Rospechat), which are both subordinate agencies to the Ministry of Digital Development, Communications & Mass Media. An announcement from the Ministry said that the integration of its subordinates will allow more efficient use of resources. All functionalities will be gradually transferred to the Ministry, in line with administrative reforms to centralize state management announced by the prime minister, Mikhail Mishustin. Rossvyaz, established in 2004, is responsible for overseeing universal telecoms service obligations, telecoms numbering resources, the development of satellite communications networks and the execution of the federal budget. Rospechat, formed in the same year, provides government services and manages state property in the field of press and mass media/communications, including public computer networks/electronic media as well as printing/publishing. TeleGeography notes that the Federal Service for Supervision of Communications, IT & Mass Media (Roskomnadzor) continues as a subordinate Ministry agency. Roskomnadzor, established via decree in December 2008, holds responsibilities in control and supervision of electronic communications, IT and mass media/communications, as well as the coordination of radio frequencies. Licensing of telecommunication services is overseen by Roskomnadzor. Additionally, the State Commission for Radio Frequencies (SCRF) is an inter-agency coordinating body under the Ministry, which has full authority in the regulation of wireless spectrum. (November24, 2020) commsupdate.com

The State Commission for Radio Frequencies (SCRF) has no intention of approving 5G frequency licenses in the 3.4GHz-3.6GHz band for WiMAX fixed-wireless broadband operators FreshTel and Neosprint – subsidiaries of Rostelecom and MegaFon, respectively – despite their ownership of spectrum suitable for conversion to 5G, Vedomosti reported. The current WiMAX spectrum licenses expire in March 2021, the report added. The Rostelecom/MegaFon 5G shared infrastructure joint venture New Digital Solutions, established in January 2019, was aimed at utilizing the two groups' WiMAX spectrum for 5G. TeleGeography's GlobalComms Database notes that frequencies in the 3500MHz band in 75 regions were acquired by Rostelecom via its takeover of struggling WIMAX

operator FreshTel in April 2015. Rostelecom aimed to convert this spectrum to technology-neutral/5G mobile usage, whilst MegaFon acquired 3500MHz licenses in Moscow/St Petersburg in 2018/2019 via its Neosprint takeover, but permission was not given to convert frequencies from fixed-wireless to commercial 5G. The telecoms ministry has proposed that existing 3.5GHz fixed-wireless licenses will be returned ahead of refarming for initial 5G licenses, potentially in 2021 in a limited range before the eventual freeing up of the wider 3.4GHz-3.8GHz band involving the defence ministry and security forces at an as-yet unknown date. The bulk of the 3.4GHz-3.8GHz range is occupied by satellite communications for government agencies. (November 18, 2020) commsupdate.com

Slovakia

Slovakia has completed its auction of 5G-capable 700MHz spectrum as well as spare frequencies in the 900MHz and 1800MHz bands. The sale raised a total of EUR100.23 million (USD119 million), with each of the three available 700MHz licenses selling for EUR32 million or above. Orange paid EUR33.63 million for 2×10MHz in the 700MHz range, while O2 bid a total of EUR33.39 million for 2×10MHz at 700MHz, 2×4.2MHz at 900MHz and 2×3MHz in the 1800MHz

range. Slovak Telekom spent EUR32.66 million for a 2×10MHz license in the 700MHz band and 2×3MHz of frequencies at 1800MHz. 4ka (SWAN Mobile) did not participate in the bidding for 700MHz spectrum, saying it was too expensive for a smaller operator, and instead paid EUR550,000 for 2×3MHz in the 1800MHz range. 700MHz concessions are valid until the end of 2040, while the lower band spectrum can be used until end-2025. (November 24, 2020) commsupdate.com

South Korea

The three mobile network operators (MNOs) – SK Telecom, KT Corp and LG Uplus – have asked the government to disclose information related to the pricing of forthcoming frequency reallocations. The development comes as the MNOs and the government have seemingly reached an impasse over the matter of the costs for reallocating spectrum currently used for 3G and 4G services which is scheduled to expire in June 2021. In a joint press release issued, the trio asked the Ministry of Science and ICT (MSIT) to disclose the methodology it used to calculate the frequency allocation price over the past ten years. The operators have reportedly asked that the MSIT clearly explain the reason why its calculation method for the frequency reallocation price is different from the principle stipulated under the Radio Waves Act and the standards it previously used. Under the current enforcement ordinance of the Radio Waves Act, the cost of frequency reallocation should be calculated

based on a combination of actual and estimated sales for allocated frequencies. South Korea's cellcos have insisted that the charges for the spectrum reallocation should be made in accordance with the legally-defined calculation method, and on this basis they have presented a joint proposal suggesting that reasonable fees for the spectrum reallocation would be around KRW1.6 trillion (USD1.44 billion) over five years. Earlier this month, local press reports suggested that the government could seek as much as KRW5.5 trillion for the frequencies, prompting the MNOs to suggest that an auction be held to redistribute the frequencies – arguing that the government's price offer did not accurately reflect the spectrum's current economic value. 'An auction is the most definite way to accurately determine the market value of the spectrum,' they were cited as saying in a joint statement.

(November 13, 2020) The Korea Bizwire

Sweden

Sweden's Post and Telecom Agency (Post & Telestyrelsen, PTS) says it plans to go ahead with its 5G spectrum auction as planned despite a last-minute appeal from Huawei Technologies Sweden. The Chinese vendor is unhappy with a government decision

to ban its equipment from Swedish 5G networks, but the regulator says the appeal is a matter for the Administrative Court and will not derail its sale of 2.3GHz and 2.5GHz frequencies, which is due to begin 10 November. (November 9, 2020) commsupdate.com

The Swedish regulator PTS said it intends to extend permits for use of the 2.6 GHz band, in order to align allocation of those frequencies with allocation of 2.1 GHz spectrum. It said consultations earlier this year with affected parties had found them to support the alignment. PTS said extending the 2.6 GHz permits is the most favorable way to achieve effective use of frequencies, among other things. The extension can only take effect once a new telecommunications law enters force. The 2.6 GHz permits will be extended until 31 December 2025 from the end of 2023.

(November 1, 2020) telecompaper.com

Switzerland

The Federal Council has passed revised implementation provisions for the Telecommunications Act based on the partial revision of the legislation which was passed by parliament in March 2019. The amendments are intended to modernize and update the legislation and whilst sector watchdog the Federal Office of Communications (Ofcom, or Bundesamt fur Kommunikation, Bakom) notes that many of the adjustments are 'of a technical nature', they also result in further improvements in consumer protection. Areas touched on by the amendments include the registration of service providers, billing modalities for international roaming, cybercrime and management of personal data. Spectrum management, meanwhile, has received a more substantial overhaul, with the Ofcom noting that the current legislation on frequency management and radio licenses will be completely replaced by a new ordinance on radio frequency spectrum. The provisions relate to the following seven ordinances and take effect from 1 January 2021: Ordinance on Telecommunications Services (FDV); Ordinance on Addressing Elements in the Telecommunications Sector (AEFV); Ordinance on Internet Domains (VID); Ordinance on the Use of the Radio Frequency Spectrum (VNF); Ordinance on Telecommunications Systems (FAV); Ordinance on Electromagnetic Compatibility (VEMV); and Ordinance on Fees in the Telecommunications Sector (GebV-FMG).

(November 19, 2020) telecompaper.com

Timor-Leste

The National Communications Authority (ANC) has invited mobile operators to submit applications for the allocation of spectrum in the 1800MHz, 2300MHz and 2600MHz bands. The move follows a consultation meeting held last month between the regulator and operators in response to new policy guidelines issued by the Ministry of Transport and Communications on maximizing the use of radio frequency spectrum in Timor-Leste (No. 04/2020 of 23 September 2020). In releasing spectrum in the 1800MHz, 2300MHz and 2600MHz bands, the ANC said it is aiming to: support the implementation of government policies; meet the need of mobile service providers, especially to provide better data services for customers in urban areas; promote the efficient use of radio frequency spectrum; and promote competition in the sector.

(November 24, 2020) commsupdate.com

Togo

Togo Cellulaire (Togocel) has been granted a licence to trial 5G services in real world conditions in the country. The move comes two years after Togocel, the mobile arm of holding company TogoCom, switched on its 4G network, with the long term objective being to offer the Togolese population speeds four times faster than those offered by 4G by 2025 – part of the owner's seven-year development program for the company. Togocel leads the way in the mobile market with around 3.4 million subscribers at end-September 2020, a market share of 52%, ahead of the country's second player Moov Togo, with 48%. (November 23, 2020) Republique

Uganda

The President Museveni has inaugurated the country's fourth national fiber-optic network rollout project. The deployment of the new infrastructure covering the West Nile and Karamoja regions was begun in May 2019 and construction was completed in March this year. 1,590km of fiber network has been installed by Huawei under the supervision of the Uganda National Information Technology Authority (NITA-U), with funding from the World Bank. Districts covered by the rollout include Pakwach, Nebbi, Arua, Yumbe, Koboko, Adjumani, Katakwi, Oraba, Vurra and Mpondwe. NITA-U had previously connected 39 districts under the first three phases of its backbone rollout, offering access to government offices and public buildings such as schools and hospitals.

(November 24, 2020) commsupdate.com

Ukraine

Ukraine's Cabinet of Ministers has approved an action plan for the deployment of 5G mobile networks, setting a target of December 2021 for 5G consumer services to become available, reports Liga.net quoting an announcement by Minister of Digital Transformation Mikhail Fedorov on his Telegram channel. Under the plan, a working group of specialized organizations and departments will be created this month to determine the scope of any research and development work required for 5G introduction as well as approve the state budget for the project, with all research work expected to be completed by June 2021. In August 2021 the working group will prepare a draft resolution for approval by the Cabinet of Ministers on the allocation of 5G frequencies. Meanwhile, a competitive process for the distribution of 5G licenses is scheduled to begin in February 2021, and the winners of the tender should be given access to new frequencies in October.

(November 12, 2020) commsupdate.com

The regulator National Council has extended the DTT multiplex licenses held by Zeonbud for an additional 10 years. However, Zeonbud, which is responsible for MX-1, MX-2, MX-3 and MX-5, will have to fulfil a number of obligations or risk having its licenses revoked. Zeonbud has committed to putting an additional 47 transmitters in place for MX-1. Seven are already working full time, and Zeonbud has signed a contract with Rohde & Schwarz for equipment for 14 others. Frequencies for 26 transmitters will be released following complete analogue shutdown and Zeonbud has guaranteed they will then be put into service within four months. Zeonbud has also guaranteed that it will submit applications to change the modulation of the signal from 256 QAM and 64 QAM in January 2021.

(November 1, 2020) broadbandtvnews.com

United Kingdom

UK regulator OFCOM has confirmed application deadlines for companies planning to take part in the upcoming 5G mobile spectrum auction. Bidding for spectrum in the 700 MHz and 3.6-3.6 GHz bands will start in January 2021.

(November 18, 2020) telecompaper.com

The competition regulator the Competition and Markets Authority (CMA) is poised to take over the review of the proposed merger between O2 UK and multi-play service provider Virgin Media, Reuters reports, citing a person familiar with the matter. With the EC having until 19 November deadline to conclude its initial investigation in to the tie-up, however, it has declined to comment on the transfer of the case to the CMA. Meanwhile, a joint statement issued by the companies involved was cited simply as saying: 'We remain in constructive dialogue with all relevant stakeholders at the EU and CMA and continue to work to the timeline of completing the deal mid-next year.' As previously reported by CommsUpdate, last month the CMA made a formal request to the EC requesting that the latter transfer the review of the merger to it. At that time, the CMA noted that, while the planned tie-up fell under the remit of the EC to review, it can be transferred to the UK authority – subject to the agreement of the European body. In requesting the transfer, the CMA had argued for this on the basis that of case's 'potential impact on competition in several retail and wholesale telecommunication markets in the UK'. Further, the

British watchdog claimed that the legal requirements for the case to be transferred to it had already been met, while it also claimed that any impact on competition from the tie-up 'will be limited solely to UK consumers.

(November 17, 2020) commsupdate.com

The telecoms regulator OFCOM has announced the finalizing of regulations relating to the planned award of spectrum in the 700MHz and 3.6GHz-3.8GHz bands. Having previously published a statement setting out its decisions for the release of frequencies in the aforementioned bands in March 2020, at that date the watchdog published a final draft of the regulations which would implement its decisions. Now, in its most recent update, it has confirmed that the final regulations which implement its decisions – the 'Wireless Telegraphy (License Award) Regulations 2020', dated 3 November – will enter into force on 18 November. The regulator said it will now proceed with preparations to hold the auction 'as soon as it is reasonably practicable to do so in light of the COVID-19 pandemic'. To that end, OFCOM has said it will work with all interested bidders to ensure the auction can proceed in a safe and secure way, while it has suggested that, in light of the practical steps that need to be taken in this regard, it is currently aiming for a formal start to the auction process in late November, with a view to starting bidding in mid-January 2021.

(November 6, 2020) commsupdate.com

United States

The Federal Communications Commission (FCC) has released an order finding that SNR Wireless and Northstar Wireless remain ineligible for the bidding credits they sought during the AWS-3 Advanced Wireless Services auction (Auction 97). The two companies together won a large number of licensees in the auction, with aggregate gross winning bids of approximately USD13.3 billion. In 2015, the FCC denied their requests for approximately USD3.3 billion in bidding credits, finding that they did not qualify for the 25% bidding credits available to very small businesses because they were controlled by DISH Network. The parties appealed, and in 2018 the US Court of Appeals for the DC Circuit affirmed the FCC's findings.

The memorandum released this week concludes – based on a review of the revised agreements and the record on remand – that DISH Network continues to possess de facto control over SNR and Northstar. As a result, the two companies continue to be ineligible for the very small business designated entity bidding credits sought for the licensees they won in Auction 97. Because SNR and Northstar defaulted on 197 licenses – including licensees in New York, Boston and Chicago – they paid the full price for the remaining spectrum they won in the 2015 AWS-3 auction. The applicants therefore do not owe the FCC the additional USD3.3 billion that they bid in the auction.

(November 25, 2020) commsupdate.com

In a victory for cable broadband operators and computer companies, the FCC has voted to free up the lower 45 MHz of the 5.9 GHz band for wireless broadband while transitioning the remaining upper 30 MHz to the latest iteration of vehicle-to-vehicle (V2V) communications, and cellular vehicle-to-everything (C-V2X) technology. That vote--on a Report and Order and Further Notice of Proposed Rulemaking (FNPRM)-- came at the FCC's virtual meeting Wednesday (Nov. 18). It was unanimous, but with the Democrats concurring because they would have preferred the vote come under the upcoming Democratic-led commission. The FCC said the item promotes the efficient and effective use of the band by freeing up long-underused spectrum and would deliver immediate benefits combined with adjacent spectrum to provide for up to 160 MHz wide channels to help meet the growing demand for WiFi. Those cable and computer companies pushed the FCC open up the entire 75 GHz--which had been reserved for licensed V2V services, to share between WiFi and V2V, but supported chairman Pai's proposal to divide up the band instead, giving each their own swath of spectrum. WiFi operators will get immediate access to the spectrum for unlicensed indoor operations and, potentially, outdoor as well. The FNPRM tees up rules for that outdoor use and asks for comment on whether the FCC should allocate additional intelligent transport systems spectrum in the future. Auto manufacturers have argued that sharing the band with WiFi, including a decision to split it up, could interfere with intelligent transportation Systems (ITS)/V2V safety systems, but the FCC said the new rules would improve auto safety by transitioning the upper 30 MHz from the "long-stalled" DSRC V2V technology, which the FCC said "has done virtually nothing to improve automotive safety" to C-V2X.

(November 18, 2020) nexttv.com

The Federal Communications Commission (FCC) has announced that its Wireline Competition Bureau has awarded US Virgin Islands (USVI)-based Broadband VI USD84.5 million worth of funding – payable over ten years – to bring 1Gbps download speeds to a total of 46,039 locations across the islands. The recipient was decided via the 'Connect USVI Fund Stage 2' competitive process. Earlier this month, the FCC confirmed that Liberty Communications and Puerto Rico Telephone Company (Claro) were the winning applicants in the corresponding 'Uniendo a Puerto Rico Stage 2' competitive process. The government will supply funding worth USD127.1 million to the duo to deliver 100Mbps connectivity to a total of 1.2 million locations, of which nearly one-third will receive 1Gbps speeds. Liberty will receive USD71.54 million to roll out services to 914,000 locations in 43 of Puerto Rico's 78 municipios, while Claro will receive USD55.56 million in support to provide high speed broadband access to 308,000 locations in the other 35 municipios.

(November 17, 2020) commsupdate.com

Uruguay

The head of Uruguay's Regulatory Unit of Communications Services (URSEC), Mercedes Aramendia, has said the country is preparing a spectrum and connectivity policy which will have a focus on 5G. The policy is expected to be ready in the first quarter of next year and aims to boost the availability of high-speed connectivity services throughout Uruguay. The regulator will also authorize mobile operators to carry out 5G pilots using temporarily assigned spectrum in the 26GHz band, Aramendia revealed during the Latin American Spectrum Management Conference. In addition to the 26GHz band, it is also considering the 3.5GHz-3.6GHz range for 5G services. 'We understand it is key to work on the expansion of connectivity, which is the reason why we believe it is essential to coordinate the awarding of spectrum, harmonize its management and seek an efficient use of the asset,' Aramendia was quoted as saying. TeleGeography's GlobalComms Database notes that state-owned operator Antel teamed up with Nokia to launch what it claimed to be

Latin America's first commercial 5G network in April 2019, although coverage is limited and services are aimed at corporate customers. The network utilizes spectrum in the 28GHz band. (November 16, 2020) BNamericas

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Zimbabwe

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) has signed a contract with Global Voice Group (GVG) to implement a telecommunications traffic monitoring and revenue assurance system (TTMS). The solution will allow independent monitoring and accounting of national and international telecom traffic, helping to combat network fraud and enforce billing integrity across all communication networks in the country. Agence Ecofin reports that GVG will carry out the project based on a Build, Operate, Transfer (BOT) contract.

(November 25, 2020) commsupdate.com

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