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SAMENA TRENDS

FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

BUILDING DIGITAL ECONOMIES

H.M. Queen Silvia of Sweden
Founder, World Childhood
Foundation, Sweden

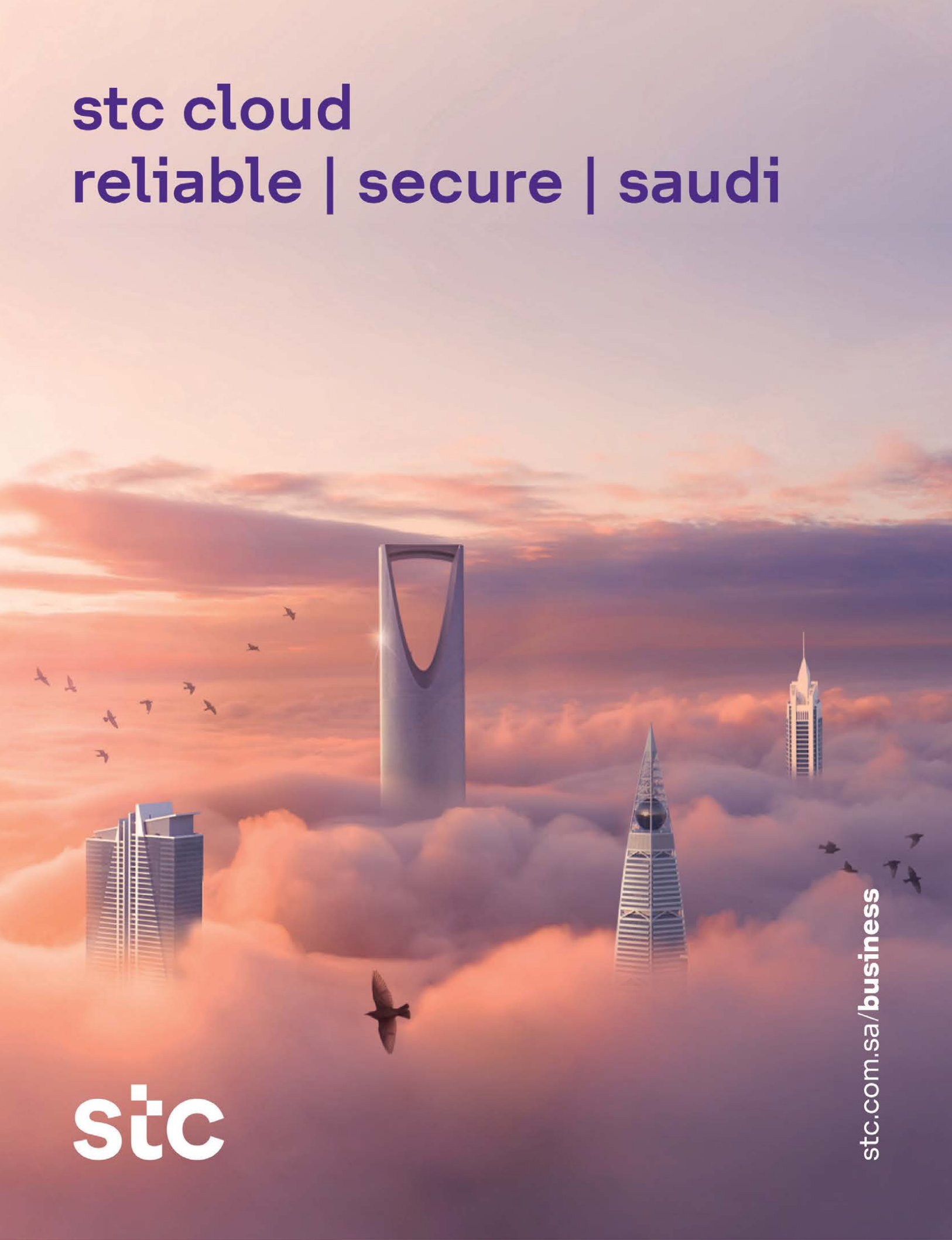**Ms. Doreen Bogdan-Martin**
BDT Director, ITU
Switzerland

Dr. Joanna Rubinstein
President & CEO, World Childhood
Foundation
USA

THIS MONTH

DIGITAL IDENTITY, CYBERSECURITY, AND CHILD ONLINE PROTECTION

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Digital Identity, Cybersecurity, and Child Online Protection

We now exists in the world of virtual interactions, digital vulnerabilities, and outdated network architectures, policies, mindsets, and industry approaches, all of which require reassessment.

Many commonly known factors have caused unprecedented complexities and insecurities to rise for the private sector and the public sector, lately. The key factor among those is the influx and exchange of data. This data influx trend has been more obvious during the current year than it ever was, earlier. In the evolving data landscape, the complexity of the current digital ecosystem, access to the network, and numerous uses of the communication infrastructure, inherently make networks and digital security a daunting challenge. This challenge of security in the cyber world has a direct bearing on the private sector and the regulators' ability to create and foster trust-building in the digital space, mitigate customer churn, fulfill policy and regulatory demands, protect end-users and in particular children and young people, conduct business and investment planning in a sustainable manner, and keep shareholders happy and ever-ready to approve further infrastructure investments. Ultimately, all of this has a direct impact on our collective ability to fulfill the breadth and the depth of the Sustainable Development Agenda; an objective that concerns both companies and governments alike.

The private sector, especially Operators understand their position and evolving role amidst latest digital transformation trends, and how they are required to transform themselves and adapt to the changing competition and Internet-driven landscape. They also understand where and how, despite trillions of dollars of investment, their continue to remain significant connectivity gaps and divides, which can further increase if fundamental network and data security measures are not taken as soon as possible. This is, in part, why lack of funding and financing new infrastructure investments – a notable part of which has to focus on security of both data and networks—are being discussed nowadays. Numerous accounts of interruption of business, reputational damage, and loss of intellectual property, and other enterprise and national-level issues encountered due to either lack of or insufficient availability of cybersecurity measures, have catalyzed unified industry-wide approaches and capabilities to address security concerns in the digital realm.

Because cyber threats cause great losses to private-sector players, and can do so for the governments as well on multiple national and international fronts, it is this realization that that has made cybersecurity a priority and and opportunity for all stakeholders. To help pace things forward in a speedy manner, governments should further incentivize cybersecurity measures by the private sector, and through such state-level incentivization of cybersecurity implementation, many co-related issues can also be addressed, such as children's online protection (COP), and proliferation of connectivity and digital services in the financial, education, and medical sectors.

SAMENA Council has made cybersecurity a key area of intervention and is determined to highlight and address all relevant aspects of this complex subject within the SA-ME-NA region, and to collaborate with concerned stakeholders in order to bring to light the most cutting-edge, implementable cybersecurity solutions in the world. The industry needs to start taking action on all cybersecurity fronts in parallel, and three good places to start would be, *one*, to implement data risk management solutions that provide much needed visibility of the large third-party blindspots; *two,* to implement stronger

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

protection against denial-of-service attacks, which in the current situation around the world, must remain a top contingency step, anyway; and, *third,* implement better routing of data traffic and conduct IP traffic cleansing.

While immediate action is needed to beneficially exploit the power of existing digital technologies in order to put recovery back on track, governments and regulatory authorities in the region, with the support and proactive engagement of the private sector and the digital space players, should also act upon the need to create synergies across various industries, to understand and highlight the cybersecurity and COP imperatives. SAMENA Council believes that public-private-people cooperation is essential for addressing such digital security concerns, which have been highlighted strongly following the Covid-19 crisis.

ITU Child Online Protection Guidelines

Implementing Measures to Protect Children & Young People Online

H.M. Queen Silvia of Sweden
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The Internet has increased access to information in all corners of the globe, and is now woven into multiple aspects of life

> *"The child shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child's choice."*

of more than 52% of the world's population. The increasing use of the Internet and the ICTs empowering children and young people to learn, express, entertain themselves, experience new things, and to connect and communicate with their families and friends. The Internet can also provide substantial access to health, education, financial, and information services, which otherwise might not have been readily available or accessible in different communities across the world, and we have lately witnessed the importance of the Internet since the Covid-19 crisis. In 2019, approximately half of the world's population used the internet. The usage of internet is fairly high among young people and children. Young people and children tend to adapt more easily and readily to new technologies. UNICEF estimates that approximately 71% of young people are

already online. Approximately, one third of all internet users today consists of children and young people (CYP).

Despite the profound benefits of the Internet, there are real threats online that children and young people can and do encounter. They can be exposed to age-inappropriate content or inappropriate contact, including from potential perpetrators of sexual abuse. They can suffer reputational damage from publishing sensitive personal information, and, among other things, can face risks related to online privacy. To add, the availability of child sex abuse material online is a matter of grave concern. According to IWF, in 2019, 132676 web pages were confirmed to be containing child sex abuse material, with a large percentage containing images children below the age of 10.

Similar to the use of the Internet, there are downsides to the use of emerging and more advanced ICTs. The ITU notes that developments in AI and machine learning, virtual and augmented reality, big data, robotics and the Internet of Things are set to transform children and young people's media practices even further. While these technologies are predominantly being developed to expand the scope of service delivery and enhance convenience (through, for example, voice assistance, accessibility and new forms of digital immersion), some such technologies could have unintentional impacts and even be misused by child sex offenders to serve their needs. Creating a safe and secure online environment for children and youth requires the effective participation of governments, the private sector and all stakeholders. Focusing on the digital skills and literacy of parents and educators is also one of the first targets for ensuring, as described in the United Nations Convention on the Rights of the Child, that *"the child shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child's choice."*

Child Online Protection - An Imperative Defined Over a Decade Ago

Since 2009, the Child Online Protection (COP) Initiative, an international multi-stakeholder effort established by ITU, has aimed to raise awareness of risks to children online and responses to those. The Initiative brings together partners from all sectors of the global community to ensure a safe and secure online experience for children everywhere. As part of the Initiative, in 2009 ITU published a set of COP guidelines for four groups: children; parents, guardians and educators; industry; and policy-makers. COP is understood in these guidelines as an all-inclusive approach to respond to all potential threats and harms that children and young people may encounter either online or facilitated by online technologies.

Two years ago, the Plenipotentiary Conference of the International Telecommunication Union 2018, held in Dubai, reaffirmed the importance of the COP Initiative by acknowledging it as a platform to raise awareness, share best practices, and to provide assistance and support to Member States, especially developing countries, in developing and implementing COP roadmaps. It also recognized the importance of the protection of children online within the framework of the United Nations Convention on the Rights of the Child and other human rights treaties by encouraging collaboration between all stakeholders involved in child online protection. Moreover, the Conference recognized the 2030 Agenda for Sustainable Development, addressing various aspects of child online protection in the Sustainable Development Goals (SDGs), in particular **SDGs 1, 3, 4, 5, 9, 10 and 16**; it further recognized Resolution 175 (Rev. Dubai, 2018), on accessibility for persons with disabilities and persons with specific needs to telecommunication/information and communication technology (ICT) and Resolution 67 (Rev. Buenos Aires, 2017) of the World Telecommunication Development Conference (WTDC), on the role of the ITU Telecommunication Development Sector (ITU-D) in child online protection.

Recognizing that COP is a complex challenge and encompasses multiple policy, regulatory, governance, operational, technical and legal, and collaborative aspects, the COP Guidelines attempt to address, organize and prioritize many of these areas, based on existing and well recognized models, frameworks and other references. Thus the Guidelines serve as a well-coordinated, and well-corroborated attempt to focus on protecting children in all areas and against all risks of the digital world, and to help guide industry stakeholders not only on managing and containing illegal online activity, but to also act upon other issues which may not be so well-defined as crimes across all jurisdictions. These include peer-to-peer violence, cyber-bullying and online harassment, as well as issues related to privacy or general well-being, fraud or other threats, which may only be harmful to children in certain contexts.

"We at ITU aim not only at keeping the COP Guidelines a living document that benefits from continuous exchange with implementing ICT companies, but we will support individual businesses in their efforts to protect and empower children online. We believe that the ICT Industry could do even more by building on the great opportunities of online platforms to support child participation in policymaking processes. We call upon all relevant industry stakeholders to join efforts on COP for and with children."

Ms. Doreen Bogdan-Martin, BDT Director, ITU, Switzerland
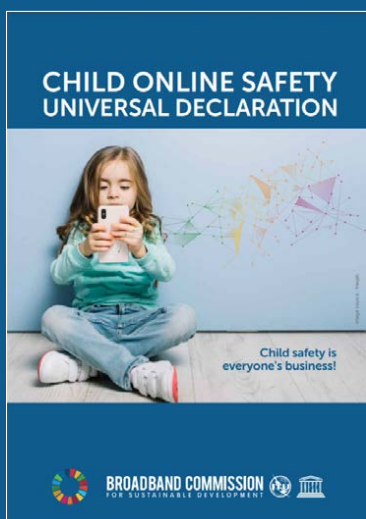
In late 2019, ITU/UNESCO Broadband Commission for Sustainable Development launched the Child Online Safety Report with actionable recommendations on how to make the Internet safer for children.

In June 2020, ITU launched the ITU 2020 COP Guidelines. Dr. Rubinstein, President and CEO of Childhood USA and a commissioner of the UN Broadband Commission for Sustainable Development, was one of the speakers at the launch. Childhood USA has actively worked with ITU and its partners to develop these new guideline. The UN Broadband Commission's report on Child Online Safety: Minimizing the Risk of Violence, Abuse and Exploitation Online and the accompanying Universal Declaration on Child Online Safety are a call to action to prioritize child safety online.

**Call for Action:** The Child Online Safety Universal Declaration can be signed at www.childonlinesafety.org

Cross-Industry Collaboration is a Necessity

With regard to protecting children's rights online, industries need to work together to strike a careful balance between children's right to protection and their right to access to information and freedom of expression. This calls for the private sector and the governments to prioritize measures to protect children and young people online that are targeted and are not unduly restrictive, either for the child or other users. This also necessitates promoting digital citizenship among children and young people, and developing products and platforms that facilitate children's positive use of ICTs.

Example of Implementation of COP Guidelines

One example of a program, which adheres to the COP guidelines, is Digi-world, launched by the Telenor Group, which is a learning resource and targets children aged 5-16. The resource aims to build children's capacity in online protection and safer use of the Internet through a series of interactive worksheets and challenges. Certifications are offered at the end of the program to encourage and incentivize the participants. The ease of access and accessibility of Digi-world is based on the ITU guidelines. Also,
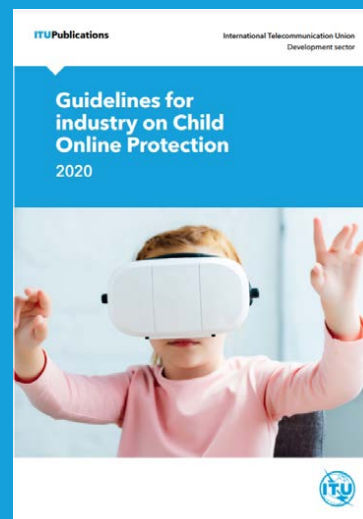
Now, in 2020, the ITU has issued Guidelines for industry on Child Online Protection (COP), with the aim to provide a useful, flexible and user-friendly frameworks for both the private sector and the governments to responsibly protect the CYP users online. The Guidelines are also aimed at establishing the foundation for safer and more secure use of Internet-based services and associated technologies for today's children and future generations, especially following the Covid-19 crisis, which has utterly transformed the online access and data usage landscape.

"We need collective action and zero tolerance to child sexual abuse and exploitation online. All children deserve to benefit from this transformational technology for education and entertainment and it is our collective responsibility to protect them online. By signing the declaration all the stakeholders sign up for being child protectors instead of enabling the abuse", says Dr. Rubinstein of Childood USA.

Digi-world activities are available in three local languages, which consist of Thai, Urdu, and Bengali. The locally contextualized content and offline activities enable greater participation in accordance with the ITU guidelines. Furthermore, Digi-world adequately follows the ITU guidelines regarding privacy details. No personal information is required by the participants, apart from a simple username and password. The data, which is collected through the usage of the program and the application, is internal and analyzed through the help of Google analytics. The information remains confidential. The worksheets can easily be downloaded, and a separate glossary exists in the application to assist parents and children understand the meanings behind some difficult words.

Common Considerations for Governments to Ensure Child Online Protection

Online safety is a common industry and international challenge, which offers an opportunity for all key stakeholders to collaborate and establish child online safety principles and practices in order to help build a sustainable digital world.

In order to develop an effective child online protection policy, in accordance with the ITU COP Guidelines, the state should aim to unify all efforts to promote child online protection. The state can also enter into partnerships and consultative meetings in order to develop a strategy rooted in the cause. Ideally, the strategy of the state should be to enact legislation centered on online child protection and the relevant legal framework. The state should also consider developing a reporting platform, where violations can be strictly dealt with. The regulatory framework, legislative framework, and the legal framework need to be construed in a harmony in order for an effective child online protection policy to be fully implemented.

A successful national COP strategy should:
1. be based on a holistic vision that incorporates government, industry, and society;
2. result from an all-encompassing understanding and analysis of the overall digital environment yet be tailored to the country's circumstances and priorities;
3. respect and be consistent with the fundamental rights of children as enshrined in the UN Convention on the Rights of the Child and other key international conventions and laws;
4. respect and be consistent with existing, similar and related domestic laws and strategies in place such as child abuse laws or child safety strategies;
5. respect children's civil rights and freedoms, which should not be sacrificed to protection;
6. be developed with the active participation of all relevant stakeholders including children, addressing their needs and responsibilities and meeting the needs of minority and marginalized groups;
7. be designed to align with broader government plans for economic and social prosperity and maximize the contribution of ICTs to sustainable development and social inclusion;
8. utilize the most appropriate policy instruments available to realize its objective, considering the country's specific circumstances;
9. be set at the highest level of government, which will be responsible for assigning relevant roles and responsibilities and allocating sufficient human and financial resources;
10. help build a digital environment that children, parents/caregivers and stakeholders can trust;
11. guide efforts of stakeholders to empower and educate children on digital literacy to protect themselves online.

Common Considerations for the Private Sector to Ensure Child Online Protection

All private-sector players need to develop corporate-wide policies regarding child online protection. The rights of children should be clearly understood. The private sector needs to work closely with the state and relevant government entities as a collaborative partner. The private sector has a moral obligation to block out any content that is in a direct violation of online child protection, specifically immoral content and content regarding child abuse of all types. Furthermore, the services offered by private companies should also be filtered in an age appropriate manner. Private companies must also impart knowledge to their customers to enhance their safe experiences.

Other important considerations for the private sector, as specified by the ITU, include:

1. Adopting an empowerment and education-based approach to child protection. Consider children's data protection rights, their right to privacy and to freedom of speech, while offering education and guidance through the company's services.
2. Providing mechanisms such as parental control software and other tools that enable parents and caretakers to manage their children's access to Internet resources while providing guidance to them on their appropriate usage so that children's rights are not infringed on. These include block/allow lists, content filters, usage monitoring, contact management and time/program limits.
3. Avoiding harmful or inappropriate advertising content online and establish customer disclosure obligations for service providers with content that is intended for an adult audience and could be harmful to children and young people.
4. Adopting safety and privacy-by-design principles in the company's technologies and services and prioritize solutions that reduce the volume of data relating to children to a minimum.
5. Implement age-appropriate designs in the services offered, and present information to children regarding the rules of the site in an accessible and age appropriate manner, providing the appropriate amount of detail.
6. Ensuring that data collection policies comply with relevant laws concerning children and young people's privacy, including considering whether parental consent is required before commercial enterprises can collect personal information from or about a child.

In the interest of society and a healthy future generation, child online protection needs to be effectively implemented and managed. All regional and global stakeholders need to work together diligently to ensure that ITU's COP Guidelines are heeded and implemented across the globe.

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SAMENA COUNCIL ACTIVITY

During GSR-20, the Private Sector IAGDI-CRO Meeting Emphasized on the Need for Connectivity-focused Regulatory Frameworks, PPP, and the Urgency with which Universal Digital Access and Services should be Achieved

SAMENA Telecommunications Council, represented by its CEO, Bocar A. BA, participated in the 20th Global Symposium for Regulators (GSR20), which took place virtually on 1-3 September 202. Earlier, held back to back with GSR20, SAMENA Council led the Industry Advisory Group on Development Issues and the Private Sector Chief Regulatory Officers (IAGDI-CRO) Meeting on 31 August, under the theme "The Regulatory Wheel of Change: Regulation for Digital Transformation - An industry perspective".

Under the chairmanship of Mr. BA, the IAGDI-CRO Meeting discussed critical questions and proposed ways to address and adapt to industry and regulatory challenges, including those stemming from transformational shifts catalyzed by the world's collective experience with the Covid-19 pandemic. The Meeting's Outcome Statement was presented by Chairman BA to the Plenary Session at the closing of the GSR20 as a proposal by the Industry to the Telecom Regulatory Authorities from around the world for consideration, and in support of the Private Sector's collaborative engagement with the governments.

> *SAMENA Council led the Industry Advisory Group on Development Issues and the Private Sector Chief Regulatory Officers (IAGDI-CRO) Meeting on 31 August. The Meeting's Outcome Statement was presented by Chairman Bocar BA to the Plenary Session at the closing of the GSR20 as a proposal by the Industry to the Telecom Regulatory Authorities from around the world for consideration, and in support of the Private Sector's collaborative engagement with the governments.*

The IAGDI-CRO Meeting noted that priority should continue to be given to ensuring meaningful, secure, affordable and sustainable broadband connectivity for all. However, as the Covid-19 crisis has become the "new normal", the Meeting underlined the increased urgency with which Universal Digital Access and Services need to be realized. In this regard, the Meeting stressed the need for a better enabling environment, including Regulatory Frameworks that specifically enable connectivity and increased public-sector participation in non-economical areas. To adapt to the "new normal", better preparedness and network resilience as well as an increased focus on connectivity and infrastructure investment were highlighted as key.

To enable Universal Digital Access and Services, the Meeting called for bold, new, and inclusive approaches that are technology neutral. Further, a need was identified for exercising approaches that take a long-term perspective; which are locally rooted yet cross-border in scope and are driven by stakeholders through commitment, collaboration, and partnerships. Moreover, such approaches should be non-prescriptive, provide the right balance between commercial and increased public sector involvement, and be supported by enabling regulation, and competitive market forces. The Meeting further stressed that a rethink was required on current financing and funding approaches and mechanisms, as well as existing business models.

A number of key focus areas were identified by Mr. BA in the Outcome Statement to help achieve Universal Digital Access and Services, including:
- the need for availability of sufficient and flexible spectrum
- the review and repurposing of USF funds and acceleration of USF disbursement to address gaps in connectivity and maintain and expand networks to ensure better preparedness and network resilience
- the review of industry fees and taxation, promotion of infrastructure sharing, and harmonization and standardization to enable secure and safe cross-border data movement
- and, the need for good governance and agility in regulatory measures to address issues emerging from the use of digital technologies

MEMBERS NEWS

stc: 3 Governmental Entities Use 4,765 Critical Communication Devices at the Holy Places

The number of critical communications devices used by Ministries of "Health" and "Hajj and Umrah" and Water Company for communication on the Holy Places amounted to 4,765 devices designated for emergency and sensitive services. Specialized Company indicated that it dedicated all its technical and human capabilities to serve the Pilgrims and ensure the success of the pilgrimage season, under the current extraordinary circumstances,

by providing a distinctive package of "critical communications" dedicated to emergency and sensitive services to secure providing the best services to the relevant sectors. stc affiliate also provides coverage networks for Tetra services as well as (press and talk) service, which is the next generation of critical communications for facilities that require immediate communication with reliability and safety through broadband technology, and other services in Makkah region. stc constructed, developed and expanded several sites, alongside with the Holy Places. It established other networks in critical areas of the Kingdom, e.g. most airports and ports of the Kingdom and the Industrial Zone. There is a plan to cover all major cities and critical regions in the Kingdom. Critical communications can accommodate huge working groups, in addition to its high security and high encryption level for calls, and its 99.99% dynamic operation in emergencies. Ordinary communication networks are not able to handle call traffic in emergencies, especially in crowded places, such as the Holy Places, where more than 2 million communication users meet in one place.

Batelco Net Profit Rises 6% in H1 2020

Bahraini telecoms group Batelco has announced its financial results for the six months ending 30 June 2020, reporting a 6% increase in net profit to BHD35.9 million (USD94.7 million). Revenues during the period decreased 6% year-on-year to BHD189.8 million, impacted by the sale in May 2019 of Qualitynet, which contributed BHD11.4 million in H1 2019. Operating profit rose 16% to BHD47.4 million in H1 2020, while EBITDA increased by 10% to BHD81.8 million thanks to a 16% year-on-year reduction in operating expenses. The group notes it retains a 'healthy' EBITDA margin of 43%. Batelco's total subscriber base stood at 3.7 million at the end of June, down from 4.0 million twelve months earlier, with international operations contributing 53% of revenues and 48% of EBITDA, compared with 57% and 55% in H1 2019. Batelco CEO Mikkel Vinter commented: 'We are proud of the strong financial results of the first six months during these challenging times which is a result of the dedicated efforts and operational efficiency of the company. This reflects the dedicated efforts that the entire Batelco team has put in. We adapted quickly to face the COVID-19 situation and have been committed since

early in the year to remain focused and positive in order to execute our corporate strategy plans and deliver on our promises to the Board of Directors.'

Batelco Partners With Sonicwall To Launch Integrated Security Solutions For Smes

Batelco, the leading digital solutions provider in the Kingdom of Bahrain, has announced its exclusive service provider partnership with SonicWall to provide SMEs (Small and Medium Enterprises) with comprehensive security solutions to enhance cyber-security for their customer base. The strategic partnership with SonicWall, in collaboration with its distribution partner in Bahrain, Westcon, is in line with Batelco's on-going commitment to provide its SMEs with the latest tools and technologies designed to secure their businesses and enhance their performance. Partnering with SonicWall, a trusted security partner protecting more than 1 million networks worldwide, allows Batelco to provide a full range of network security solutions to its SME customers, including next generation firewalls, secure switching, secure wireless, endpoint protection and cloud security and a number of integrated and innovative digital solutions to boost cyber-security among its small and medium enterprise clientele base. Commenting on the partnership, Batelco General Manager Abderrahmane Mounir said, "It is our great pleasure to partner with SonicWall, a globally recognized leader in providing integrated security solutions to small and medium enterprises. Security is a critical component in the success of this segment, and we pride ourselves on being able to provide our customers with an affordable and comprehensive, one-stop solution comprised of the latest technological tools that would facilitate and simplify the processes and procedures required to boost SME performance." "We recognized the need for digital security solutions for this segment and noted how much this need had increased recently as SMEs have become more dependent on digital solutions. Having access to reliable security solutions is considered crucial for business continuity, therefore we were very keen to partner with a trusted global security provider such as SonicWall to deliver solutions to our valued clients," he added. SonicWall Vice President, Global MSSP & Carrier Sales, Luca Taglioretti said, "There is no organization that is too small for the wandering eye and determination of cybercriminals. It's imperative to work closely with security providers to gain a clear and real-time picture of security risks and the impact they could potentially pose to their organization." "As a result of our partnership, Batelco's customers will be armed with enterprise-grade SonicWall TZ Series next-generation firewalls with installation and managed security services," he added. "We are delighted to collaborate with Batelco and SonicWall on this initiative to enhance the cyber-security offerings to the SME's in Bahrain," said Steve Lockie, Group Managing Director, Westcon-Comstor ME. "Through our strategic partnership with Batelco and our vendors, we remain committed to providing the latest and best-in-class technology solutions to their customers," he added. Supported by Batelco's managed security services, customers are fully supported by a skilled team of certified security professionals capable of delivering operational protection to the customers' network and infrastructure around the clock. Additionally, as part of the exclusive partnership with SonicWall, Batelco will host a number of digital webinars over the upcoming months to familiarize users with the different offerings of SonicWall's integrated network security solutions, designed to reduce the operational risks faced by SMBs in Bahrain.

Steve Lockie
Westcon Comstor

Luca Taglioretti
Sonicwall

Abderrahmane Mounir
Batelco

Batelco Expands Its Global Network by 49% in Response to Increased Network Traffic

Batelco continues to support various sectors during this exceptional period, with a particular focus on ensuring business continuity for companies and institutions of all sizes. Accordingly, Batelco has expanded its global network by 49% to accommodate data traffic across the network and the increasing use of digital solutions, including services over the Internet such as Virtual meetings, video conferencing and remote working, in addition to search engines and social

media platforms. Batelco has managed to maintain the same levels of efficiency due to the quality and resilience of its global network. Batelco has taken proactive steps in containing the increasing use of the Internet and its traffic through several important steps, such as developing and upgrading its global network, as well as improving the quality and flexibility of Internet services. In addition, the company has increased capacity for sites such as Google and Facebook. This is not only to meet the increased demand for local Broadband services, but also the regional operators to fulfil their IP growth. Batelco Global is amongst the top providers in the GCC to offer protected solutions over

terrestrial cable systems, with the Batelco Gulf Network (BGN) now robust enough to mitigate the risk of cable cuts and outages, which could impact customers' core operations. Additionally, the BGN provides interconnectivity with other regional and global terrestrial and submarine cable systems, resulting in a fully protected ring on both terrestrial and submarine routes. Batelco Chief Global Business Officer Adel Al-Daylami, said, "At Batelco, we are committed to catering to the ever growing demands for data by providing an underlying infrastructure that ensures the efficiency of the communications network and its readiness to meet the different needs of our valued customers.

Through Batelco Gulf Network, we endeavor to provide our corporate customers with an integrated and reliable infrastructure development, diverse fiber-optic routes, and connections to major telecommunications hubs, telehouses and PoPs, as well as links to both local and international fiber-optic cable networks." "Batelco Global's support is not limited to our Bahrain based customers but is also extended to our partners in the region to help in meeting the upsurge in demand from their customers during these unprecedented times. This is in line with Batelco's Strategy for providing digital solutions and data management services locally and regionally."

Batelco Changes the Internet Speed Standards in Bahrain

Batelco, Bahrain's leading digital solutions provider, has announced that fiber speeds will be boosted by up to 5 times for all fiber internet customers with no additional charges till the end of October. This initiative is in line with Batelco's on-going support for the efforts against the spread of the Coronavirus. With summer and school holidays upon us, Batelco has decided to boost its' fiber internet speeds

for all exciting and new fiber customers to enjoy additional speeds starting from 2 times up to 5 times of their current speed, depending on their selected package. This enables customers to benefit from the full potential of the internet and enjoy all kinds of digital entertainments including games, movies, video calls and social media at speeds never seen before in the Kingdom. Commenting on this initiative, Mikkel

Vinter Batelco CEO said: "We continuously monitor internet usage and listen to our customers' feedback and respond to their needs. We are fully aware of the importance of having a good internet experience especially during these summer months for all internet users. Accordingly, we have decided to raise the bar of fiber speeds and provide an unprecedented experience by offering speed boosts of up to 5 times the current speed to all existing and new fiber customers." "As Eid is around the corner and the authorities are recommending to avoid gatherings, the boost in speed will encourage everyone to stay home and will enhance the joyful feeling while enjoying the Eid spirit virtually," he added. "Batelco customers will now be able to experience something that has never been experienced before in Bahrain. We are motivated by the fact that we want to be generous with our customers during these extraordinary times. As the leading digital solutions provider in Bahrain, we are committed to unleash the full potential of the internet for our customers," he added. Customers will be notified by SMS and the additional speeds will be implemented automatically starting from the 30th of July until the end of October.

Arabsat Signs Badr–8 Satellite Contract with Airbus

Arab Satellite Communications Organization (Arabsat) signed a contract with Airbus Defense and Space to manufacture Badr-8 satellite, which is the first of its 7th generation satellites, expected to be launched at the beginning of 2023. BADR-8, as a 7th Generation satellite, will be based on the-state-of-the-art Airbus Eurostar Neo electric orbit raising platform giving access to a wide range of launchers, covering Europe, Middle East, Africa and central Asia. BADR-8 will also include the innovative Airbus developed TELEO optical communications payload demonstrator. This payload will enable very high capacity analogue optical feeder link communications, as part of the development by Airbus of a new generation of optical communications technology in space to be integrated in its future commercial products, which is highly robust against jamming. Khalid Balkheyour, President & CEO of Arabsat said: Badr- 8 satellite will be joining our Badr-network at Arabsat 26°E hotspot, Badr-8 will carry massive satellite transponders for satellite TV broadcasting, satellite

telecommunications and information exchanging services in ku- band / C – band that will enhance Arabsat satellite fleet capacities and ensure updated and developed services for years to come, reinforcing Arabsat leading role in the Middle East for satellite TV broadcasting & satellite telecommunications. Arabsat investments in Badr 8 will reach about US$ 300 million including launch, insurance and ground infrastructures." Jean-Marc Nasr, Head of Space Systems, said: "This important contract with our long-standing customer Arabsat has a special significance for Airbus Defense

and Space. It is the first 7th generation Arabsat satellite and the first Eurostar Neo satellite we are building for Arabsat after six previous Eurostar satellites. BADR-8 incorporates the best of our expertise and technologies, including a very innovative optical communications hosted payload. This further strengthens our continuing strategic partnership with the Arab Satellite Communications Organization, which has been connecting people by satellite across the Middle East and the world for more than 40 years."
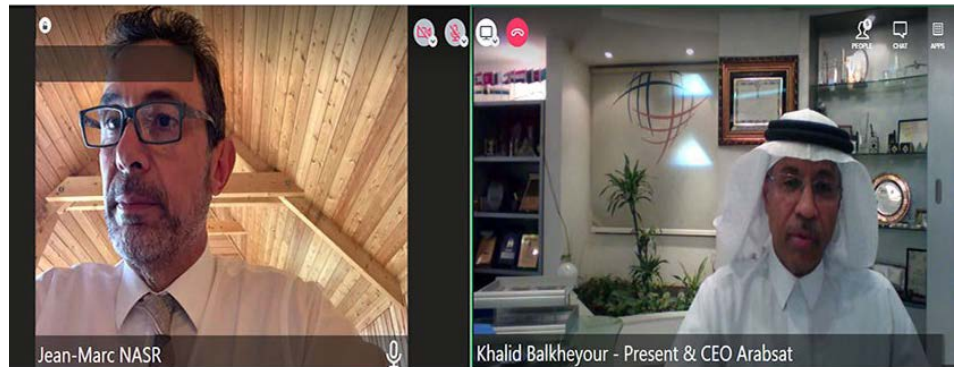
Etisalat Group Reports AED 4.6 Billion Consolidated Net Profits for H1 2020

Etisalat Group announced its consolidated financial results for H1 ending 30th June 2020.

H1 2020 Financial Highlights and Key Developments

- Etisalat Group subscriber base reached 146 million subscribers
- Consolidated revenues amounted to AED 25.6 billion and consolidated net profit after Federal Royalty amounted to AED 4.6 billion representing a year over year increase of 3% and resulting in a net profit margin of 18%.
- Consolidated EBITDA totaled AED 13.2 billion resulting in EBITDA margin of 52%.
- Etisalat named 'The Most Valuable

Consumer Brand' and 'The Most Valuable Telecom Brand' in MEA region
- Credit Rating Agencies Standards & Poor's and Moody's affirmed Etisalat Group's high credit rating at AA-/Aa3 with stable outlook
- Etisalat partnered with Department of Health, the regulator of the healthcare sector in Abu Dhabi to launch the 'Digital Healthcare' Centre
- Etisalat launched first-of-it-kind telehealth service in the private sector as a continuation of its mission to provide clinical excellence to patients in need.
- Etisalat partnered with Alef Education to enable a series of digital initiatives to

empower the region's education sector
- Etisalat unveiled the 5G-enabled smart patrol for Dubai Police, a first in the Middle East and North Africa region
- Etisalat in partnership with Ministry of Interior signs an MoU with Sheikh Zayed Housing Program to provide villas with the smart fire alarm solution 'Hassantuk'
- Etisalat launched multiple initiatives to support 'Stay at Home' directive including but not limited to:
- Free internet to families to facilitate access to distance learning services
- More than 10 million Etisalat mobile subscribers enjoyed free browsing to over 800 websites related to education,

health and safety
- Free access to apps and platforms for distance learning and for government services.
- Introducing new innovative applications and services to ensure seamless business continuity during work from home period.
- Launched enhanced offers for customers to upgrade their home and mobile plans at no extra charge
- Etisalat introduced a wide range of device bundles and free access to Etisalat's unified communication and collaboration platform CloudTalk Meeting to help businesses stay connected
- Etisalat deployed a dedicated task force to ensure business continuity, monitor the performance of basic applications and ensue smooth access to data locally and internationally
- Establishing command centres equipped with advanced tools to monitor the performance of services provided to government departments, businesses and customers 24/7
- Allocating extra network resources and services to the health sector
- Providing connectivity to quarantined and other critical areas in the health sector
- Conducted Stay-At-Home awareness campaign across multiple channels
- Etisalat partnered with Microsoft to enhance its public cloud first strategy infused with automation and AI
- Digital Financial Services, a joint venture of Etisalat and Noor Bank, partnered with MoneyGram to offer international remittance services in the UAE
- Etisalat completed the acquisition of Help AG, a privately held regional company specializing in the delivery of cyber security solutions and services.
- Etisalat expands 'SmartHub' presence with a Tier 3 data center facility at two new locations in UAE
- Etisalat successfully launched open virtual Radio Access Network (Open vRAN), becoming the first operator in MENA to achieve this technological feat
- Etisalat launched 'Business Edge', a new

comprehensive platform offering a wide range of services and solutions that cater to Small and Medium Business (SMB) customers
- Etisalat launched 'Easy Prepaid' enabling business customers to enjoy prepaid features on existing postpaid plans

H.E. Obaid Humaid Al Tayer, Chairman of Etisalat Group

"Etisalat Group has delivered a good performance in the first half of 2020 considering the circumstances; the world is voyaging through unchartered waters and COVID-19 has affected all industries including the telecom sector. Etisalat managed to adapt, respond and demonstrate resilience as we ensured the delivery of uninterrupted services to our customers and had the privilege of supporting our society through various initiatives. "We are witnessing an opportunity to fast track digital transformation. The unconventional conditions have spurred the adoption of digital services, bridging a divide by changing customers' behavior towards digital channels. Etisalat's innovative solutions have catered for the social distancing era, it has enabled remote working and education, it minimized human interactions and increased the pace of automation. Our infrastructure has accommodated the surge in requirements and is ready for more acceleration in digital adoption. "I would like to thank the UAE leadership for positioning the country as one of the most competitive nations globally. Despite the headwinds posed by today's extraordinary times we continue to pursue our digital goals to meet the distinctive needs of all customers. I would also like to extend appreciation to our shareholders and loyal customers for their sustained confidence during this period."

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

"As we conclude the first half of the year, we pride ourselves with

our ability to sustain shareholder value while ensuring the safety of our employees, the welfare of our customers, and the continued support to the community. The group's financial performance is a testimony of the strong foundations Etisalat was built on and a reflection of a robust network playing a pivotal role in harnessing solutions and services enabling governments, industries and communities to accelerate digital transformation. "Today the digital revolution is in full force with businesses looking at every window of opportunity to transform their services and solutions. At Etisalat our focus to realise the vision and strategy of 'Driving the digital future to empower societies' supported customers during these unprecedented times by providing them a plethora of new innovative services and emerging technologies backed with resilient connectivity to mitigate the exponential spikes in the network. "Despite the global economic pressure, Etisalat is confidently moving forward and progressing positively in enabling societies across its operations. We will continue to focus on capitalizing opportunities and enhancing overall customer experience while delivering long-term value for all our shareholders."

Subscribers
- In the UAE the subscriber base reached 11.8 million subscribers in H1 of 2020, while Aggregate subscriber base reached 146 million, representing a year over year increase of 2%

Revenue & Net Profit
- Consolidated revenues amounted to AED 25.6 billion and consolidated net profit after Federal Royalty amounted to AED 4.6 billion representing a year over year increase of 3% and resulting in a net profit margin of 18%.

EBITDA:
Consolidated EBITDA totaled AED 13.2 billion, resulting in EBITDA margin of 52%.

Etisalat Ready to Serve the "New Normal" Accelerating Digital Transformation and Adoption

Etisalat is ready to serve the 'New Normal' pushing the fast forward button on digital transformation by focusing on partnerships, collaborations, and investments with digital adoption being key for new digital services, said Dr. Ahmed Bin Ali, Senior Vice President, Corporate Communications, Etisalat Group. Bin Ali participated on behalf of Khalifa Al Shamsi, Chief Strategy and Corporate Governance, Etisalat Group at the 'The Telecommunications Sector and its impact on Future Foresight Post COVID 19', a virtual future foresight forum organised by UAE's Telecom Regulatory Authority (TRA) and UAE International Investors Council. The

event brought together all relevant strategic stake holders from the telecom and technology industry including senior executives from TRA, Ministry of Interior, Smart Dubai, Department of Economic Development (DED), Dubai Future Foundation, Khalifa University, University of Dubai, Federal Competitiveness and Statistics Authority, Microsoft and Noon. He highlighted the readiness and resilience of Etisalat during the pandemic, the main focus was to support the entire community including business and individuals ensuring its network and services enable business and learning continuity. During the period May-Feb 2020, Etisalat's network witnessed an increase in traffic of more than 300 percent in communication and collaboration solutions where as in Internet gaming it touched 500 percent. With work and study from home becoming a norm there was a surge in traffic of more than 90 percent in video streaming and social media. "Thanks to the UAE vision and Etisalat's strategy of 'Driving the digital future to enable societies', our network joined one of the most robust and digitally equipped to address the unique requirements during this period making it possible for businesses to work remotely, millions of students to enjoy distance learning and all citizens having access to vital services. Through our networks and dedicated teams we were geared to fully support and serve the community showcasing infrastructure preparedness and our ability to adapt and implement during today's extraordinary times," said Bin Ali.

Etisalat Participates in World Summit on Information Society Forum 2020

Etisalat participated in World Summit on Information Society (WSIS) Forum's special session on UAE focusing on the country's readiness and resilience for pandemics with its advanced telecom network and infrastructure ready to serve the 'New Normal' supporting all consumers and businesses to continue studying and working from home. Rayyan Alhashmi, Vice President, Regulatory Affairs, Corporate Strategy and Governance, Etisalat joined this global virtual session of the WSIS Forum that represents the world's largest annual gathering of the 'ICT for development' community. This forum being held since 22 June 2020 will continue until 10 September 2020 is co-organized by ITU, UNESCO, UNDP and UNCTAD, in close collaboration with all WSIS action line facilitators. The focus of the forum is to foster digital transformation and global partnerships with WSIS action lines to achieve sustainable development goals. The event brought together multi-stakeholders, share best practices and develop public/private partnerships to advance these goals. The global event will provide structured opportunities to network, learn and participate in multi-stakeholder discussions and consultations on WSIS implementations. Two special sessions focused on UAE highlighting projects from various eGovernment projects of various government entities in the country and its readiness to counter pandemics. Alhashmi shared insights on how the country and the telecom infrastructure are ready to face the 'New Normal' with one of the most advanced networks in the world. "During the pandemic, UAE's government's leadership and vision

showcased the country's resilience and readiness in dealing with this global crisis. Etisalat supported the government by enabling solutions and services that allowed consumers and businesses to study and work from home in the most efficient manner. This was possible due to our continuous focus on innovation as part of the strategy 'Driving the digital future to empower societies' embedded within our DNA manifested across the business." During the pandemic, Etisalat's main focus was to support the entire community including business and individuals ensuring its network and services enable business and learning continuity. During the period May-Feb 2020, Etisalat's network witnessed an increase in traffic of more than 300 percent in communication and collaboration solutions where as in Internet gaming it touched 500 percent. With work and study from home becoming a norm there was a surge in traffic of more than 90 percent in video streaming and social media. Etisalat worked closely with the Ministry of Education to provide zero rate access to educational URLs and free mobile data for students. There was also free access to the Madrasa platform on eLife and remote learning apps. For the healthcare sector there was a telemedicine platform made available to support hospitals and clinics in providing remote healthcare services. IoT/AI platforms were used for disease containment, AI video analytics including thermal cameras and wearable IoT solutions were among the other advance solutions used for the sector.

Omantel Records Net Profit of OMR 100 Million in First Half of 2020

Oman Telecommunications Company S.A.O.G Group announces its financial results for the six-month period ended 30th June 2020 achieving a net profit of R.O 100.5 Million (before non-controlling interests) compared to R.O 126.5 Million in 2019, a decline of 20.5%. This decline on the business was mainly driven by a 27% year-on-year (YoY) decline in Group's net profit for the second quarter of 2020 due to the unavoidable impacts of COVID-19 pandemic, predominantly on the core mobile business. The Group recorded relatively stable consolidated revenues reaching R.O 1242 Million in first half of 2020 compared to R.O 1258 Million in 2019. Omantel Group achieved these results despite the impacts of COVID-19 pandemic that virtually halted economic activity and travel across the region. Omantel's management priority was to ensure its network was operating at optimal levels to provide vital connectivity to the Omani authorities and community, as demand for mobile and fixed broadband reached historic highs. Furthermore, through its proactive steps and focused strategy, management was able to mitigate the COVID19 impacts through a series of initiatives that included significant investments in digital infrastructure (Enhanced Mobile App, Portal and the Call Centre) which helped in ensuring that the digital channels were available for the customers to enjoy uninterrupted services. Moreover, Omantel earlier investments in 5G infrastructure helped to grow Home Broad Band revenue by 8.1% in the first half of 2020 compared to the same period of 2019. Omantel domestic operations revenue witnessed an increase of 11% YoY reaching R.O 288 Million in the first half of 2020 compared to R.O 259 Million in the same period of 2019. This was mainly driven by increase in international transit international wholesale business and handset revenues, which are typically low margin revenue streams compared to the core mobile operation's revenue. Adjusted for the above, core mobile related revenues for first half of 2020 was RO 221

Million compared to RO 232.5 Million in 2019, a decrease of 5% YoY which had a significant impact on EBITDA and net profit during the period. On the international operations side, Omantel's international wholesale business diversification strategy helped the Company to grow the international capacities business by 7.6% in the first half of 2020 compared to 2019 which continues to exhibit a high amount of resilience. Proactive Cost Optimization measures on both Opex and Capex which included contract renegotiations, cancellation and re-scheduling of some capex projects, efficient cash flow management among others have resulted in overall reduction of 6% in operating and administrative expenses YoY. Zain Group contributed RO 94.8 Million to the net profit in the first half of 2020 (before non-controlling interest) of Omantel Group compared to RO 114.8 Million in 2019 a decrease of 17.4% YoY. After adjusting for non-controlling interest, Zain Group contributed RO 18.2 million in the first half of 2020 compared to RO 21.4 Million in year 2019. Among the key elements that had an impact on the margins were the decline in the overall voice revenue on account of free airtime offer launched from 27th March to 15th April 2020 to support the community members to stay at home and maintain social distancing, further decline in enterprise voice revenue on account of the lock down, lock down resulting in closure of retail shops, partners outlets etc. leading to lower recharge, leisure

and travel coming to a halt leading to reduction in roaming revenues, decline in Mobile Broad Band revenues on account of substitution effect with Fixed Broad Band revenues, increase in impairment charges (as required by IFRS 9) on the Enterprise and Government segment which is in line with the recent rating downgrades announced by the rating agencies in addition to the lower collection realized during the period. Commenting on these results, Talal bin Said Al-Mamari, CEO of Omantel said, "There is no doubt that the Corona pandemic and the precautionary measures taken by the concerned authorities to alleviate its effects have affected all business sectors around the world. Omantel proactively sought to mitigate the impacts of this pandemic, first by focusing on providing vital connectivity to all to ensure access to essential medical, commercial and financial services. Second, our business continuity strategy saw the implementation of a number of innovative measures and initiatives to mitigate the effects of the lockdown on the business". Al-Mamari continued, "We are pleased by the resilience of our business given that our domestic revenues grew by 11% and overall Group revenues were relatively stable. This would have not been achieved if it were not for our dedicated employees who made sacrifices throughout this time of crisis. Omantel ensured its employees' safety by supporting and providing them the necessary equipment to efficiently and safely function."

The fight against Covid19 initiatives implemented by Omantel:

• To support the national efforts to confront the pandemic led by the Ministry of Health, Omantel procured 24,000 COVID-19 test equipment and providing technical support to the parallel call center of the Ministry.

• Assisted various business sectors to ensure the continuity of their businesses especially during a period at which the economic activities were closed.

• Innovative ICT solutions enabled the acceleration of the digital transformation in different sectors and businesses. Among these initiatives were the free subscription to virtual collaboration platforms such as Webex, Microsoft team and Igtimaati platforms and reducing the burden of the pandemic on the SME sector such as the postponement of its monthly payments for a period of three months.

• Omantel worked through its existing partnerships with many international and local companies to facilitate the distance learning for governmental and private educational institutions in addition to the students in various school and university academic institutions.

• Provided free browsing of educational sites of the Ministry of Education, the Ministry of Higher Education, under EDU.OM domain.

• Launched a digital educational platform for all schools in the Sultanate in cooperation with Google.

• Provided 3000 free local minutes and 30 GB free for health workers, in addition to encouraging individuals to stay home to avoid the spread of the virus by giving them free local calls, doubling the speed of home internet and increasing the speed of wireless home broad band packages and 5G packages.

• Offered alternative innovative solutions to enable its customers to order services via digital channels namely, Omantel App, portal and the 24/7 call center.

• Strengthened its networks to keep pace with the increased demand from individuals and businesses for various telecom services. Improvements included the expansion of the fixed and mobile networks (3G and 4G) by increasing the capacity of existing sites and adding new sites in addition to increasing Internet capacity. During the period February to end of June 2020, Omantel added 77 new sites to the 5G network, upgraded 42 sites from 3G to 4G. Omantel also added 26 new stations to 3G and 4G networks, and increased the capacity of 23 sites in the 4G network in various governorates across the Sultanate.

Omantel said that these preliminary results are unaudited and are subject to the approval of the Audit Committee and the Board of Directors in their next meetings which will be held within the statuary period as stipulated by Capital Market Authority.

Zain Receives 'Kuwait's Fastest Fixed Broadband Network' Award for Q1-Q2

Zain, the leading digital service provider in Kuwait, received 'Kuwait's Fastest Fixed Broadband Network' award for Q1-Q2 2020 from Speedtest by Ookla, the global leader in transparent Internet testing applications, data and analysis. Zain took this opportunity to launch a limited time offer with unlimited 5G Internet downloads along with a number of revolutionary Internet devices, including Huawei's next generation of fixed routers; Huawei 5G CPE PRO 2, as well as the Zain 5G HUB; powered by HTC, and more. Zain expressed its pride in this prestigious achievement from Ookla, the global leader that is widely considered to be the first, most transparent, and most reliable source for Internet testing applications, data and analysis around the world. The achievement reflects Zain's efforts in offering the largest and most powerful 5G network in Kuwait since commercially launching fifth generation wireless technology (5G) back in June 2019. Zain was the first operator to offer

5G technology in the GCC region via the Kuwaiti market with nationwide coverage of all areas. The company succeeded in designing the first integrated network for 5G services built on a world-class infrastructure, ultimately transforming the telecom sector across the country and region. Ookla, the company behind the renowned Speedtest Internet testing platform, is the global leader in fixed broadband and mobile network testing applications, data and analysis. Every day, over ten million unique tests are actively initiated by Speedtest's users, making it a reliable source for measuring the quality and performance of Internet networks around the world. Since its founding in 2006, an unparalleled total of more than

25 billion tests have been taken with Speedtest, and the company's services are used by businesses, universities and government agencies alike who trust OOKLA's commitment to quality and neutrality.

Zain Inks Agreement With KOTC To Offer Latest Digital Solutions

Zain, the leading digital service provider in Kuwait, announced signing an agreement with the Kuwait Oil Tanker Company (KOTC), a subsidiary of Kuwait Petroleum Corporation (KPC), to offer the latest telecommunications solutions built on the most advanced technologies. The agreement is an extension of the long-term strategic partnership between the two companies throughout the past years. As part of this agreement, Zain will provide KOTC with a number of the latest telecommunications and networking solutions that are built on world-class technologies to serve the company's technical needs as per the highest international standards. This agreement is an extension to the long-term strategic partnership between the two companies, which reflects Zain's keenness on offering the latest solutions and technologies to Kuwait's oil sector. Zain expressed its delight to continue the strategic partnership with KOTC as part of the company's continuous efforts to serve the needs of the Kuwaiti oil sector as per the highest

international standards. Zain believes the private sector has a fundamental and active role in supporting the various vital sectors in the country, and as the oil and gas sectors represent one of the backbones of Kuwait's national economy, the company expressed its commitment to offer the latest telecommunications and networking technologies to the various oil institutions in the country, including KOTC. Zain's fruitful partnership with KOTC is not a new one, and the collaboration represents yet another step forward to expand this partnership and offer more of the most advanced services and solutions to power KOTC's digital infrastructure. This is especially true as KOTC is one of the oldest oil institutions in Kuwait and the region. Zain's offering of these services and solutions comes as part of its commitment to offer the latest and most advanced solutions to Kuwait's business community, whether large companies or SMEs, and as per the highest international standards. This commitment comes in line with the company's digital transformation

strategy through which it aims at empowering a more efficient business sector in the Kuwaiti market. Kuwait Oil Tanker Company expressed its pleasure to continue this fruitful co-operation between both companies, as the mentioned contract is considered to be Kuwait Oil Tankers Company's goal towards a comprehensive qualitative shift in the Oil Sector in general and for the Subsidiaries in particular. The enhanced 5G network from Zain and wider area coverage in the region would be beneficial to all KOTC users and vendors, and the company believes this is just the starting point for benefits to pour in. Zain continuously offers the latest and most advanced services and solutions to showcase its capabilities as an active partner in empowering a smart life, a safe community, and an efficient business sector. The company considers itself a main partner in the achievement of the goals of the Kuwait National Development Plan (New Kuwait 2035), which is based on five expected outcomes and seven key pillars.

Accenture Completes Acquisition of PLM Systems

Accenture in Italy has completed the acquisition of Turin-based boutique systems integrator PLM Systems. Terms of the transaction, which Accenture announced on May 19, 2020, were not disclosed. Founded in 1996, PLM Systems specializes in designing and building information systems for product lifecycle management. Its clients are Italian and international automotive, industrial equipment, fashion and aerospace and defense companies. PLM Systems' team is joining Accenture Industry X.0 in Italy, expanding Accenture's capabilities to help clients improve how they generate, manage and benefit from product data in design, engineering and manufacturing. Former majority stakeholder of PLM Systems, Altea Federation, welcomed the acquisition. "We are honored that leading global professional services company Accenture has chosen an Altea Federation subsidiary to boost its capabilities and presence in the market for digital engineering services," said Andrea Ruscica, president of Altea Federation. The acquisition of PLM Systems is part of an overall growth strategy to expand critical skills and capabilities in

strategic, high-growth areas. It is the fourth digital manufacturing advisory, services and solutions provider that Accenture has acquired recently, following Callisto Integration in Canada, Silveo in France and Enterprise System Partners in Ireland. Other recent acquisitions Accenture has made to strengthen its Industry X.0 business include German embedded software company ESR Labs, Dutch product design and innovation agency VanBerlo, U.S. product innovation and engineering company Nytec, and German strategic design consultancy designaffairs.

Accenture and Anglo American Extend Technology Services Agreement

Accenture and global mining company Anglo American have signed an agreement to extend Accenture's role as a strategic IT services provider to 2023. The new agreement will help accelerate the development of Anglo American's information management (IM) capabilities with new technologies and delivery practices through a collaborative approach to drive innovation. It builds on an already successful relationship between the two companies that began in 2011 when Accenture was selected as a key technology services provider. "Prior to the extension of the agreement, Anglo American and Accenture worked together to co-create future services and determine key priorities," said Pavan Sethi, managing director for Accenture Technology in Asia Pacific, Middle East & Africa. "We are honored to continue our work with Anglo American and help fulfil their IM ambitions and mandate."

AT&T, Texas Emergency Communications to Modernize 911 Platform

The Texas Commission on State Emergency Communications (CSEC) adopted AT&T ESInet™ as its NextGen9-1-1 platform to transition 17 Regional Planning Commission (RPC) public safety answering points (PSAPs) to NG9-1-1. The first nine counties, which are part of the Nortex RPC, recently went live with AT&T ESInet serving nearly 80,000 Texans with a more reliable and improved 9-1-1 experience. AT&T ESInet is built on AT&T's highly resilient IP network. The IP-based call routing service uses i3 standards from the National Emergency Number Association (NENA) to modernize legacy 9-1-1 infrastructure. And, in today's environment, that's crucial. The nine counties that make up the Nortex RPC – Jack, Young, Montague, Bowie, Clay, Archer, Baylor, Foard and Hardeman – provide police, fire, and EMS services. All the PSAPs were live and taking calls within six months of adoption. The Nortex PSAPs receive approximately 140,000 9-1-1 calls each year. When calls spike, AT&T ESInet can automatically distribute calls to neighboring PSAPs, which can lead to improved 9-1-1 call management. This will make it easier for PSAPs to be more responsive to emergencies. "Emergencies occur across the country daily, but when a severe or prolonged disaster strikes, like COVID-19, the demands on local emergency response organizations are extreme," said Tim Bryant, 9-1-1 Emergency Services Director, Nortex RPC. "We are proud to work with AT&T as we take advantage of the advances in information and communications technology to help ensure our citizens get the best possible service." "Having advanced 9-1-1 tools is an issue of public and personal safety. For rural communities like those in the Nortex RPC, having the same level of service and modern features as those in major metro areas is critical," said Stacy Schwartz, AT&T. "With the latest technology, these Texas counties can help call takers do their jobs more efficiently and continue to provide top-notch emergency response for the community." In Texas, the Capital Area Emergency Communications District and North Texas Emergency Communications Center are also supported by AT&T ESInet. AT&T ESInet has been recognized with the Frost & Sullivan 2020 NG9-1-1 Market Leadership award for its product performance and market leadership.
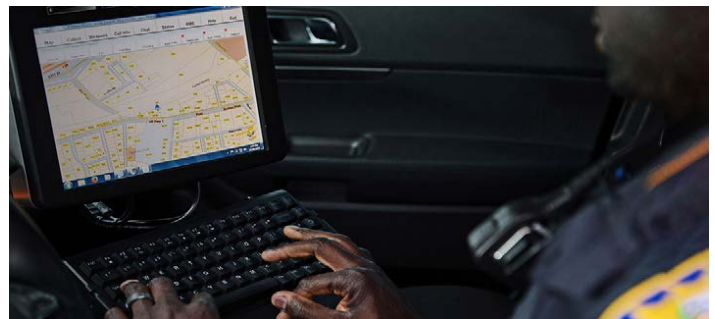
AT&T Charts Course to Standalone 5G Launch

AT&T doubled down on a targeted launch of standalone (SA) 5G in 2020, joining rivals T-Mobile and Verizon in jockeying for a leadership position on the technology. An operator representative told Mobile World Live (MWL) work on its SA core is "progressing as planned" despite the Covid-19 (coronavirus) pandemic. AT&T already has "working, integrated solutions in place today" and is on track to begin initial commercial deployments in the coming months, the representative added. The goal is to launch and expand commercial SA 5G when the broader ecosystem of devices and applications able to fully take advantage of the technology's features "is lined up to matter". AT&T's comments come as US operators jockey to lead on SA 5G, with T-Mobile US staking a claim last week as the first operator in the world to offer nationwide coverage and Verizon advancing toward "full commercialization" in 2021. While T-Mobile revealed it used Cisco and Nokia for its SA 5G core, neither AT&T nor Verizon named vendor partners. AT&T first launched non-standalone 5G service for select subscribers in December 2018, and opened the offer to all customers a year later. In December 2019, AT&T Mobility SVP Kevin Petersen told MWL advanced network slicing capabilities offered by SA 5G will provide new revenue-generating opportunities across both the enterprise and consumer segments.

AT&T and Big Blue Team Up on Transforming Post-Covid Business Operations by using 5G, MEC and AI

IBM Thomas J. Watson Research Center, Yorktown Heights, N.Y.

The Covid-19 pandemic has evolved into a fluid situation for businesses, but IBM and AT&T have a few ideas on how they can adapt going forward. AT&T and Big Blue will leverage the telco's 5G and multi-access edge computing (MEC) technologies and IBM's artificial intelligence and cloud capabilities to help businesses transition into new, post-Covid-19 work environments. AT&T and IBM announced a cloud partnership last year that included the co-development of business solutions. In a bog post on Tuesday, Mo Katibeh, chief product and platform officer at AT&T Business, and Steve Canepa, general manager of the global communications sector at IBM, fleshed out how both companies are working together to help businesses adapt to their new work environments. The collaboration will take place at IBM's Watson research lab in Yorktown Heights, N.Y. and include AT&T 5G+ (mmWave) and MEC technologies. MEC, which is a private cellular, low latency solution, can process data on a business premise instead of routing traffic over public networks. AT&T and IBM plan to apply these technologies, along with artificial intelligence, to showcase the possibilities across industries such as manufacturing, healthcare, energy and utilities. "In coping with the coronavirus crisis, organizations around the world have been using digital technology to continue operating their businesses remotely while they wait for the world to return to normal—or at least to settle into the next normal," Katibeh and

Canepa said in the blog. "From that crisis has come an opportunity: to accelerate the business world's digital transformation. That's why AT&T and IBM, building on our long-standing collaboration, are now focused on the use of 5G wireless networking and edge computing as key ways to help enterprises emerge smarter, more efficient and more resilient as they get fully back to business." Combining the low latency of 5G, security and MEC with IBM's Watson AI at the Watson research center will lead to new use cases for businesses as employees start to return to their work locations One of the scenarios the two companies are exploring at Yorktown Heights includes enabling a researcher to remotely adjust locations of IoT network devices in a laboratory. Another includes enabling a systems administrator to remotely rewire machines in a data center

to provide a more agile environment. At Yorktown Heights, IBM and AT&T will be deploying Watson Works, which is a set of return-to-work solutions for businesses. Watson Works, which also includes Workday's consulting service, embeds AI models to help businesses decide when it's safe for their employees to return to work. It also uses AI to manage facilities while adhering to new protocols such as social distancing in the workplace. Watson Works could also be used to stagger entry and exit times of employees, and trace potential exposures if there's a Covid-19 infection. "The low latency of 5G allows for remote operations in industrial settings, helping to keep workers from harmful situations," according to the blog. "And if any dangerous situations do arise, edge computing is designed to let businesses capture and analyze data quickly without extra storage or processing on a central cloud. "That same processing ability can help employees look after their health with devices to monitor their temperature, oxygen levels, blood pressure with instantaneous feedback. Hospitals can even take advantage of similar advances to make their current infrastructures more reliable, while implementing advances like wireless surgery, robotics, virtual reality simulations." Some of the same 5G and edge solutions could also be used to analyze supply chain data, detect spills or spoilage, or monitor metrics such as crowd density.

AT&T Claims 'Nationwide' 5G Coverage

AT&T Communications has announced that its 5G mobile network has achieved 'nationwide' coverage, around seven months after going live. According to the telco, 5G coverage is available to 205 million consumers in 395 markets across the US; notable new markets include Little Rock, AR; Jacksonville, FL; Minneapolis, MN; and Houston, TX. While large parts of the country still lack access to 5G technology, the rollout meets the Federal Communications Commission (FCC) definition of nationwide coverage, which is 200 million people served. By contrast, AT&T's 4G network covers 319 million people, or 99% of the population. The low band 5G network utilizes former 3G spectrum in the 850MHz band. Chris Sambar, EVP of Technology Operations at AT&T Communications commented: 'Our strategy of deploying 5G in both sub-

6GHz ('5G') and mmWave ('5G+') spectrum bands will provide the best mix of speeds, latency and coverage that are needed to enable revolutionary new capabilities to fuel 5G experiences for consumers and

businesses … As we have throughout our 144-year history, we'll continue to innovate and invest in our network to expand our 5G coverage to more consumers and businesses across the country.'
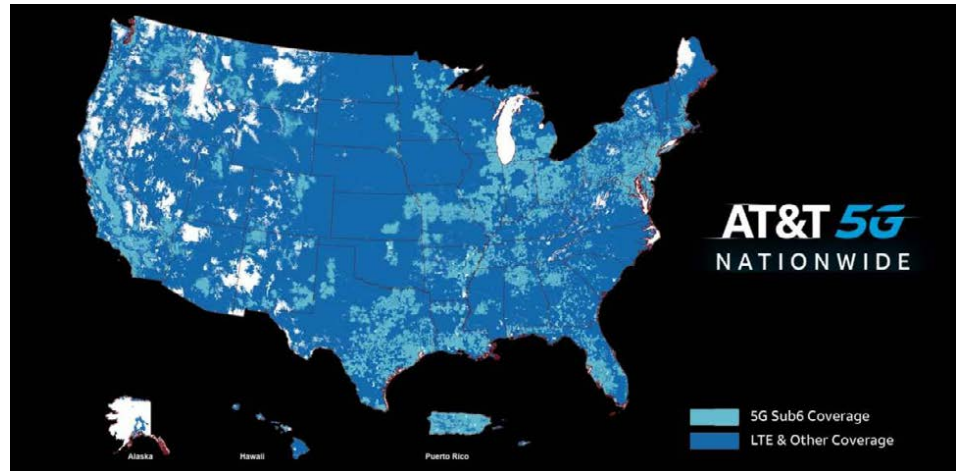
BT Accelerates the Next Phase of UK's First Live 5G Private Network for Industry 4.0 and Smart Manufacturing

BT announced that it is working with the Worcestershire 5G Testbed (W5G) as its lead technology partner to accelerate its vision of smart manufacturing delivered through the UK's first live 5G factory installation. Building on its role in the development of the W5G Testbed over the last two years, BT is providing its expertise across 5G Private Networks, wearable devices, IoT, data analytics and mobile edge computing. The combination of these technologies will make intelligent, dynamic and fully automated manufacturing processes a reality. BT will enable W5G to accelerate through the next phase of its development, moving it to a sustainable, scalable footing by expanding its scope to include new industry 4.0 enabled use cases. These include enabling local engineering company Worcester Bosch, and others, to boost productivity by using autonomous robots to transport products and materials, for example. The installation of collision detection sensors connected

over the 5G Private Network will also help to ensure health and safety on the factory floor. Gerry McQuade, CEO of BT's Enterprise business, said: "Working with W5G and Worcester Bosch, we're creating a smart factory where machines can learn and adapt to changes on the factory floor as they happen, and make instant, autonomous decisions to optimize the production line. "This is only possible by harnessing 5G Private Networks, IoT, data analytics and mobile edge computing. BT's role is in making these technologies work in perfect harmony to gather and interpret the vast volumes of data generated by connected machines and turning this into real-time and actionable insight. "We're already leading in 5G innovation across healthcare, education, broadcasting and education. The digital transformation of manufacturing processes will be critical in rebooting the sector and driving regional regeneration across the UK. We're really excited to be at the forefront of making

this a reality." The UK's first 5G factory installation has been switched on at the Worcestershire 5G Testbed, with Worcester Bosch working with BT and W5G to explore ways of boosting productivity through robotics, IoT, big data analytics and augmented reality. These technologies are running over the live Private 5G Network and edge computing infrastructure which is now being fully managed by BT. Carl Arntzen, CEO Worcester Bosch, said: "We have learnt an awful lot within the W5G Testbed, both about the 5G network itself, but most importantly about the skills and competencies we need in-house, and what data to stream in order to develop a real-time understanding of the behavior of various machines. We are very eager to continue this learning and are confident we can travel much further on this journey, deliver the productivity gains we predicted, and go much further in developing the smart factory of the future. We intend to play a key role in making

the fourth industrial revolution a reality." BT will also bring the scale and expertise needed to extend the benefits of 5G Private Networks to more manufacturers in key sectors such as Aerospace and to SMEs. Further details about these industry 4.0 use cases will be announced over the coming months. The insight gleaned from the Worcestershire 5G Testbed will be used to stimulate innovation across the manufacturing sector in the region. This will kick-start the regional growth which will be essential in driving a vibrant local economy following Covid-19 and beyond. BT will also use this insight to understand how to optimize private networking, IoT, data analytics and edge computing for the fourth industrial revolution. The data driven solutions created through the effective combination of these technologies will transform manufacturing and other industries nationally. The testbed's initial 5G Private Network installation has so far yielded positive results – increasing factory output by as much as two per cent. Councilor Ken Pollock, Worcestershire County Council's Cabinet Member for Economy and Infrastructure, said: "If this productivity gain was applied across the

whole of the UK's manufacturing sector, it would make a significant contribution towards boosting national productivity, revitalizing the manufacturing industry and stimulating the economy. This level of growth will be absolutely critical to the success of post-coronavirus Britain." As well as managing the 5G Private Network which uses Ericsson equipment, BT will also provide access to its world leading innovation capabilities at the EE Mobile Labs in Borehamwood. The EE Mobile Labs

team, working with Ericsson, will provide the resource and capability to support the W5G Testbed. Its primary scope will include support for the 5G private Core and Radio Access Network (RAN) from Ericsson, Wide Area Network (WAN) and the Multi Access Edge Computing (MEC) environment. BT and W5G are keen to work with more companies across Worcestershire, surrounding counties and regions to help explore how 5G Private Networks can be used to transform their operations.

China Mobile Sees Growth in H1 2020, as 5G Rollout Continues

China Mobile added 11 million subscribers to its books in the first half of 2020, taking its total number of telecoms subscribers to 946.74 million, as the world's biggest telco continued to grow. The company deployed 188,000 in the first half of 2020, as its gargantuan 5G rollout continued it earnest. The company said that it was on course to hit its target of 300,000 base stations by the end of 2020, despite the impact of the Coronavirus pandemic. China Mobile increased its capital expenditure in 2020 by 8.5 per cent to $25.9 billion (179.8 billion Chinese Yuan Renminbi). Earlier this year, China Mobile revealed that it would use Huawei and ZTE for the majority of its 5G network build out, with help from Ericsson and a smaller domestic vendor. China Mobile's nationwide 5G roll out will involve the deployment of 300,000 base

station units in 2020 alone. The deals were worth a collective $5.2 billion. According to a report in the Financial Times, Chinese tech giant Huawei would provide 57.2 per cent of the total base stations to fuel China Mobile's 5G roll out. Huawei's Chinese compatriot ZTE will provide 28.7 per cent while Swedish vendor, Ericsson,

will provide 11.5 per cent. The remaining 2.6 per cent will be supplied by smaller domestic players in China. China Mobile has already completed phase one of its 5G network rollout. The company has stated that it would like to provide 5G to 50 towns and cities by the end of 2020, deploying a total of 300,000 base station units.

Cisco Implements Restructuring Plan

Cisco saw its stock drop by as much as 6% in afterhours trading Wednesday night following its Q4 earnings report. On Thursday, Cisco's stock slid by more than 11%, which put it on track for the worst day since February 2011. During its earnings report, Cisco, which has long been a bellwether vendor for the telecom sector, laid out a restructuring plan that includes a voluntary early retirement program and layoffs. "Cisco earnings were disappointing on several levels, primarily on the news of a large restructuring and elimination of jobs as well as the forecast for a revenue decline, which shows the company is not meeting its growth forecasts," said Scott Raynovich, founder and chief analyst of Futuriom, in an email Wednesday afternoon to FierceTelecom. "The share price looks like it will fall on Thursday based on the fact that investors were too optimistic that cloud infrastructure expansion could support Cisco's business. The fact is that Cisco has never been a major player in the cloud, and this quarter may be proving out that point." Cisco, which has about 75,000 employees, didn't say how many employees would be laid off of going forward, but it has been laying off employees over the past few quarters as it transitions to generating more of its revenues from software rather than hardware. In the fourth quarter, Cisco reached its goal of generating half its revenue from software and services, but Robbins didn't say if there was a new goal going forward. The restructuring plan started in the current quarter and is expected to recognize a related one-time charge of about $900 million. "Over the next few quarters, we will be taking out over $1 billion on an annualized basis to reduce our

cost structure," Cisco CEO Chuck Robbins said on the fourth quarter earnings call, according to a Seeking Alpha transcript. "I think this pandemic is basically just giving us the air cover to accelerate the transition of R&D expense into cloud security, cloud collab, away from the on-prem aspects of the portfolio. Clearly, we've got a lot of technology that we're working on today to help our customers over the next three, four, five years in this multi-cloud world that they're going to live in, and you'll see more of that come out over the next couple of years." Investors were spooked by Cisco's guidance going forward. Cisco executives said current-quarter revenue could drop between 9% and 11% from last year, implying a range of between $11.71 billion and $11.97 billion, while analysts had expected $12.25 billion. Cisco also forecast adjusted earnings of 69 cents to 71 cents per share, below estimates of 76 cents per share, according to Refinitiv IBES data. For the fourth quarter ended July 25, Cisco's revenue fell about 9% to $12.15 billion, but it beat estimates of $12.08 billion, as more people working from home increased the demand for its web security and Webex teleconferencing applications and services. Excluding

items, Cisco earned 80 cents per share in the quarter, beating estimates of 74 cents. Cisco's product revenue in the fourth quarter decreased by 13% to $8.83 billion. Infrastructure revenue was impacted by the coronavirus pandemic with declines across switching, routing, data center and wireless. On the other hand, Cisco's Catalyst 9K switch portfolio was up by double digits in Q4 a some customers took advantage of their employees working from home to refresh their aging infrastructures. Cisco's application revenue decreased by 9% to $1.36 billion while sales of security products increased by 10% to $814 million. "Other Products," which brought in $35 million, declined by 17%. Cisco's public sector was down 1%, while enterprise was down 7%. Commercial was down 23%, and service provider, which has struggled over the past several quarters, was down 5%. While Cisco is in the midst of its restructuring plan and transitioning its R&D into cloud security and cloud collaboration, Robbins said Cisco has a list of M&A targets that it's monitoring. Robbins announced that CFO Kelly Kramer, who has been with Cisco for eight years, will be stepping down, but will stay on until her successor is found.

$12.2B Revenue −9% Y/Y	$0.62 GAAP $0.80 non-GAAP	$3.8B Operating cash flow $1.5B Returned to shareholders
Revenue	**EPS**	**Cash flow**

Cisco Completes Acquisition of ThousandEyes

Cisco announced it completed the acquisition of ThousandEyes. ThousandEyes' internet and cloud intelligence platform expands visibility and insights into the digital delivery of applications and services over the internet and the cloud. ThousandEyes enables organizations to visualize any network

as if it was their own, quickly surface actionable insights, and collaborate and solve problems with service providers. Cisco's strength in network and application performance, combined with visibility into the internet enabled by ThousandEyes, now allows customers to have an end-to-end view into the digital delivery of

applications and services over the internet. This combination enables customers to pinpoint deficiencies and improve network and application performance across enterprise and cloud networks. Cisco will incorporate ThousandEyes capabilities across Cisco's core Enterprise Networking and Cloud, and AppDynamics portfolios.

Cisco Announces Intent to Acquire BabbleLabs to Improve Video Meeting Experience

Work is what you do, not where you go. With this reality, unwanted background noise has become one of the most common and frustrating distractions in today's work environment. To help users control unwanted noise in meetings--be it from barking dogs, lawn mowers, a car alarm or sirens--Cisco (NASDAQ: CSCO) announced its intent to acquire privately held BabbleLabs, Inc. headquartered in Campbell, CA. BabbleLabs uses advanced AI (Artificial Intelligence) techniques to distinguish human speech from unwanted noise, enhancing the quality of communications and conferencing applications. BabbleLabs goes beyond existing noise suppression technology solutions by:

• Distinguishing speech from background noise;
• Removing background noise in real-time; and
• Enhancing the voice to elevate communication, regardless of language.

According to a Cisco global survey* focused on the future of work, 98 percent of workers say they experience frustration from distractions during video meetings when working from home. Two of the top 5 frustrations called out are about background noise—either from other participants or their own side the call. With the addition of BabbleLabs, Cisco will bring native noise removal capability to its entire Collaboration portfolio. Initially, Cisco will focus on integrating BabbleLabs to deliver a best-in-class audio experience to Webex Meetings users - wherever they are and however they connect via the Webex application (whether via a conference room or mobile device). A great user experience is also a secure user experience. BabbleLabs complements Cisco's focus on secure and private collaboration by processing noise removal

100 percent at the source where the noise happens (on the client side). In doing so, BabbleLabs aligns to strict data policies that underpin Cisco's culture of security by design. "A great meeting experience starts with great audio," said Jeetu Patel, senior vice president and general manager, Cisco Security and Applications Business Unit. "We're thrilled to welcome BabbleLabs' team of highly skilled engineers. Their technology is going to provide our customers with yet another important innovation – automatically removing unwanted noise - to continue enabling exceptional Webex meeting experiences." "BabbleLabs is excited to become part of Cisco and the Collaboration Group," said Chris Rowen, CEO and co-founder of BabbleLabs. "The Cisco team shares our passion about speech as the core of collaboration and communication. Cisco's Collaboration platform will enable us to quickly scale our exceptional speech enhancement technology for the hundreds of millions of Webex users."

OTEGLOBE Strengthens Its Network Backbone with Cisco 400G IP Infrastructure to Meet European Demands for More Bandwidth

Cisco announced that OTEGLOBE has improved its network backbone with Cisco ASR 9900 5th Generation Line Cards ready to respond to its customers' needs for a 400G-powered network. The Cisco ASR 9900 high-performance router allows OTEGLOBE's already robust, resilient, and secure network to tackle increased demand at the network edge with economic scale, and the ability to support application performance needed for 400G services. Headquartered in Athens, Greece, OTEGLOBE is a network backbone operator delivering transport, peering, and interconnect services throughout South-eastern Europe. It is also the wholesale carrier that reaches Western Europe through Greece over a fully mesh optical

backbone network. As the OTEGLOBE network infrastructure grows, the ASR 9900 helps to provide the network control and performance necessary to take quick actions that result in an optimal experience for subscribers. Other notable benefits include:

• Speed and Cost Savings: Industry-leading 7nm silicon CPUs provide higher throughput rates while delivering significant power savings
• Customization: A modern network operating system (IOS XR) that allows for custom deployments into the environment
• Automation: Drives improved network resiliency and reduces mean-time-to-repair

With the latest enhancements to its network, OTEGLOBE has also received MEF 3.0 certification, validating that its network is compliant with the highest industry standards for performance, assurance, and agility. "At OTEGLOBE, we are determined to continue to lead the industry in innovation and invest in the high-caliber technologies that enable us to offer the best services to our customers," said Panagiota Bosdogianni, CTO, OTEGLOBE. "By introducing Cisco's 400 GbE technology to our IP core network, we can respond seamlessly to traffic bursts during peak hours and accommodate even our largest customers' needs with simplification, economic scale, improved flexibility, and an optimal customer experience."

Eutelsat to Acquire European Satellite Broadband Activities of Bigblu Broadband

Eutelsat Communications (Euronext Paris: ETL) has reached an agreement with Bigblu Broadband to acquire its European satellite broadband activities. Bigblu Broadband is the largest distributor of satellite broadband packages in Europe with a proven track record, as evidenced by its success as the main Gold member of Euro Broadband Infrastructure's Preferred Partnership Program since 2019. Bigblu Broadband has developed a well-established platform for satellite broadband, relying on a unique network of installers and resellers. The activities to be acquired by Eutelsat (BBB Europe) currently count around 50,000 subscribers across an expanding pan-European footprint which includes operations in the UK, Ireland, France, Germany, Italy, Spain, Portugal, Poland, Hungary and Greece. [1] The agreement coincides with the entry into service of EUTELSAT KONNECT, due to start gradually from fall 2020 with operation at full capacity expected

from early 2021, bringing capacity in high-demand areas, improved end-user experience and unparalleled economics and flexibility. With its scalable platform for direct sales including digital marketing platforms, multi-lingual call centers, billing and CRM systems, the integration of BBB Europe will enable Eutelsat to overcome the limitations of its existing indirect model by offering enhanced access to the end-user, direct control over product definition and price for faster alignment with market needs, and increased control of distribution levers including sales force incentives, communication and promotions. The addition of this retail channel as a complement to wholesale agreements with telecom operators, such as the recent deal with Orange in France, will favor an accelerated ramp-up of upcoming capacity and the maximization of customer value over time. Commenting, Rodolphe Belmer of Eutelsat said: "We are delighted to integrate the activities of

BBBEurope which will greatly enhance our European broadband distribution network as we progressively bring into service next-generation capacity in the form of EUTELSAT KONNECT and KONNECT VHTS, capable of bringing fiber-like high speed internet connection to the many areas in Europe that remain unserved or under-served by terrestrial infrastructure. This deal represents an important step in our broader Broadband strategy."Eutelsat will pay a consideration of c.£38m for BBB Europe, which generated revenues of c.£35m in 2019with a low double-digit EBITDA margin. Given the level of inter-company eliminations, the net contribution to Eutelsat's revenues and EBITDA will not be material. The acquisition will obviate the necessity for the group to invest in the development of its own retail channel in Europe. The closing of the transaction is expected by October 2020, subject to customary conditions precedent.

Orange Partners with Throughout France

Orange has purchased from Eutelsat Communications (NYSE Euronext Paris: ETL) all available capacity on the EUTELSAT KONNECT satellite to cover the entire French territory. It will enable Orange's consumer customer base, even those living in the most isolated areas, to benefit from very high-speed fixed broadband via satellite from January 2021. The agreement comes against the backdrop the 'Plan France Haut / Très Haut Débit', adopted by the French government with the aim of rolling-out high-speed broadband of at least 30 mbps to the entire French territory by 2022. The service will be distributed by Orange's Nordnet subsidiary, the leading French distributor of satellite Internet services since 2008,

Eutelsat to Provide Broadband Via Satellite

enabling it to offer unlimited very high-speed Internet access to individuals throughout France. Commenting on the agreement, Michel Jumeau, Executive Vice President, Orange France, said: "The period of lockdown we have just experienced has demonstrated more than ever the need for connectivity throughout France. With this agreement with Eutelsat, Orange is proud to continue to fight against the digital divide by offering very high-speed fixed broadband throughout the country". Rodolphe Belmer, CEO of Eutelsat said: "We are pleased to reinforce and bring forward our collaboration with Orange to leverage our dedicated Connectivity capacity to deliver high speed internet to 100% of households in France. This agreement

secures the ramp-up of our EUTELSAT KONNECT satellite, and perfectly illustrates the complementarity between satellite and telecoms operators in ensuring ubiquitous coverage of the territory." The agreement will apply until the entry into service of the KONNECT VHTS very high-speed satellite, including a transition period during which the installed base will be gradually transferred to the new satellite. Launched in January 2020, EUTELSAT KONNECT has total capacity of 75 Gbps and is able to assure full or partial coverage of up to 15 countries in Europe and 40 in Africa, offering speeds of up to 100 Mbps to both companies and individuals in the digital divide at competitive monthly rates.

Eutelsat 8 West B Selected by Strong Roots for New DTH Platform in Ethiopia and the Middle East

Eutelsat Communications (Euronext Paris: ETL) and Strong Roots Ethiopia Broadcasting Service PLC have concluded a Master Service Agreement for a Ku capacity on a 36 MHz transponder on Eutelsat's EUTELSAT 8 West B satellite. The capacity will enable Strong Roots to launch a new free to air DTH platform covering Ethiopia as well as Ethiopian diaspora in zones within the satellite's footprint, notably the Middle East. Part of the Ethiopian-owned Strong Roots Group, Strong Roots Ethiopia Broadcasting Services PLC is an upcoming player in the

Ethiopian broadcast market. Its new DTH Platform will distribute high quality content on news, entertainment, education, kids, documentary, movies and sport in SD or HD. Eutelsat 8 West B is a state-of-the-art satellite with dedicated coverage of Ethiopia on its East beam, and is part of the 7/8° West video neighborhood, one of the most dynamic in the global satellite TV market. Commenting on the deal, Tsegaye Alemayehu, Chairman of Strong Roots said: "We are delighted to be supported by Eutelsat in our quest to provide a high-quality broadcast experience to

viewers across Ethiopia and beyond. As indicated by its name, Strong Roots is striving to put down solid foundations in the broadcast industry in Ethiopia, building its reputation based on quality of service and broad coverage with heartfelt Ethiopian Hospitality". Philippe Oliva, Chief Commercial Officer of Eutelsat added: "We are proud to add Strong Roots to our line-up, highlighting the dynamic broadcast landscape in Ethiopia and confirming the unparalleled coverage of Eutelsat's in-orbit assets for the African continent".

FACEBOOK

Facebook is Stepping Up Its Linux Work Once Again

Facebook has signaled its long-running support for open source software by signing up to the largest Linux organizational body around. The social network has revealed it has joined The Linux Foundation as a platinum member, meaning it will take a leading role in helping shape the future of the software platform going forward. The Linux Foundation looks to promote the spread of open-source ecosystems through training and awareness programs, and claims to be currently heading up $16 billion worth of projects.
- Stay safe online with the best business VPN services
- Best Linux apps: free and open source software
- Best laptop for programming: top picks for coders, developers and sysadmins

Facebook Linux

"From its efforts to reshape computing through open source to its aggressive push to increase internet connectivity around the world, Facebook is a leader in open innovation," a Linux Foundation blog announcing the news said. "Perhaps more important today than ever, Facebook's focus on democratizing access to technology enhances opportunity and scale for individuals and businesses alike. That's why we're so excited to announce the company is joining the Linux Foundation at the highest level." Facebook has long relied upon both Linux and other open-source software platforms, playing a major role in contributing to open-source projects such as the Open Compute Project and the React JavaScript library. It also has a number of major ongoing open-source projects, including the Deepfake

Detection Challenge to spot fake videos, the Data for Good program, which looks to use data sharing to solve humanitarian issues including the spread of coronavirus, and the open-source Telecom Infra Project (TIP) Foundation, which looks to spread reliable internet to previously underserved populations. Recently, the company relinquished control of its popular PyTorch open-source machine learning library for Windows 10 Linux systems back to Microsoft, which lets developers harness Python-powered machine-learning tools. As well as helping developers create and evolve AI learning models, PyTorch, which was launched by the social network back in 2017, before being open-sourced a year later, played a central role in many Facebook services, with use cases such as language translation and dynamic graphs.

Facebook Brings Payment Plays Under One Roof

Facebook created a new financial division to house all of its digital payments projects, with two former PayPal executives leading the charge as the company works to strengthen e-commerce offerings across its family of apps. Bloomberg reported

David Marcus was installed as head of Facebook Financial, adding to his existing duties overseeing the company's digital wallet play, Novi: he is a former PayPal president. In a tweet, Marcus said the company also appointed former Upwork

CEO and PayPal executive Stephane Kasriel as VP of Facebook Payments. Marcus and Kasriel previously worked together at mobile payment company Zong before it was acquired by PayPal in 2011. The shift comes as Facebook aims to overcome

challenges facing its various payment initiatives, which include including Novi; Cryptocurrency Libra; Facebook Pay; and WhatsApp payments. During Facebook's Q2 earnings call, CEO Mark Zuckerberg highlighted improvements to Facebook Pay and commerce business on Messenger and WhatsApp as key areas of focus. Marcus told Bloomberg unifying all of Facebook's payment efforts under leaders with experience dealing with financial regulation will ensure its products are built "the right way from the get-go".

Huawei Launches Intelligent Traffic Management Solution

Huawei recently held an online launch summit of the Intelligent Traffic Management Solution with the theme of "Transform the Way We Move". With faster urbanization leading to bigger population, there is a pressing need of information and communication technologies to reduce traffic incidents and improve enforcement efficiency. In the online launch summit, global customers and partners of this discipline were invited to share their experience and insights in dealing with the "new normal" in the post-pandemic era. At the Summit, Huawei has also officially launched Intelligent Traffic Management Solution for overseas markets to address challenges on traffic law enforcement, traffic violation inspection, and traffic control with advanced technologies including big data, AI, cloud, 5G, and more.

Huawei Recognized at the Frost & Sullivan Awards with Continuous Leadership in Intelligent Collaboration

Huawei achieved overwhelming success at the 2020 Frost & Sullivan Best Practices Awards with two awards for its proprietary collaboration products. The Huawei IdeaHub series won the Global Team Collaboration Device Innovation Award, and the Huawei video conferencing solution won the Asia Pacific Video-Conferencing Market Leadership Award for the third consecutive year. In April 2020, Huawei launched its intelligent collaboration product, HUAWEI IdeaHub, with the strategy of 1+3+X for all-scenario smart offices. The HUAWEI IdeaHub series fosters team collaboration and has become a globally recognized productivity tool for the cloud era, providing multiple functions, such as ultra-low writing latency white board, ultra-HD wireless projection, and extensive office apps. The series utilizes a powerful cloud and AI ecosystem to support the Huawei vision of bringing digital technology to every person, home, and organization, which helps massive enterprises to be equipped in smart office. Huawei leverages its extensive technical expertise in the audiovisual conference field to provide universal 4K+AI for video conferencing industry, they have top one market share in seven consecutive year in China market. Huawei video conferencing played an important role in intelligent communication and collaboration for enterprises in 5G telemedicine, smart finance, digital government, and digital manufacturing worldwide. Intelligent collaboration products have launched the digital transformation of customers in more than 170 countries and regions for the government, healthcare, education, finance, and Internet industries.

Huawei and Partners Launch the First Batch of 5GtoB Ecosystem

At the "5G for Good, Innovate for New Value" summit, Huawei and 5G industrial partners jointly launched the first batch of 5G industrial applications. This initiative accelerates the development of 5G, marking the maturity of the 5G industry ecosystem. Around 50 partners joined the ecosystem so far, including those specialized in both industry and general equipment domains. The scope spans multiple verticals, including 5G industrial communication modules and terminals, 5G antennas, smart manufacturing, smart logistics, smart coal mining, smart healthcare, new media live broadcast, smart city, and smart power grid. "Year 2020 will see scaled global commercial rollout of 5G and nation-wide deployment in China. The era of rapid 5G development has come. An essential part of the digital foundation, 5G will drive the upgrade in five industries: connectivity, AI, cloud, computing, and industrial applications. 5G is set to realize digital transformation across industries to trigger a new round of high-speed development. With the growing maturity of the 5G industry ecosystem, 5G module shipment has started on a massive scale. After half a year of R&D conducted by industry equipment and module vendors, a large number of 5G

terminals for industrial applications have advanced to the project testing phase. Over 100 types of 5G industry terminals are expected to be launched this year. To better support the incubation of the industry ecosystem, Huawei will open up its 5GtoB lab, which will be predominantly used for testing the capabilities of 5G vertical industry terminals. Huawei aims to build a robust platform for developing industrial applications in collaboration with industry organizations, and to promote industry chain development

and application promotion together with partners. Our vision is to enable the ecosystem to thrive, explore new fields, and create new value," said Mr. Xu Weizhong, Wireless Network Chief Strategy Officer of Huawei. 5G drives the digital transformation of industries, facilitating the adaption of 5G network capabilities (from eMBB to URLLC to mMTC) to achieve scaled commercialization of industrial applications. We look forward to working with industry partners to advance 5G across industries toward bigger success.

Huawei Reiterates Its Commitment to Advancing 5G in the Middle East

Huawei and China Telecom Shenzhen jointly launched the world's first pilot site that binds 5G Super Uplink and downlink carrier aggregation (CA). This pilot innovatively leverages Super Uplink to maximize uplink coverage and experience, as well as fully utilizes downlink dual-carrier CA to deliver optimal user experience. This is a new breakthrough following China Telecom and Huawei's joint commercial adoption of Super Uplink. The success of this pilot shows that the advantages of China Telecom and China Unicom sharing 5G networks, once seen only in technical solutions, are already available on commercial networks. It also marks a major milestone in the construction of 5G best-experience networks and a great achievement for China Telecom Shenzhen's

5G City initiative. The coordination of TDD and FDD reflects a new trend in 5G network construction. By pooling both Super Uplink and downlink CA, 5G networks leverage the complementary advantages between 5G high bands and low bands as well as the aggregation in both the time and frequency domains. This will further provide 5G networks with a higher bandwidth, wider coverage, and lower latency, which are urgently required to expand 5G's applications across 5G vertical industries. This will also enable 5G cells to support a bandwidth of up to 200 MHz, ensuring a premium downlink experience in network sharing use cases. This pilot site uses 200 MHz 3.5 GHz TDD spectrum and 20 MHz 2.1 GHz FDD spectrum in the uplink. Single-user concurrent tests were completed in

standalone (SA) networking mode. The results of the test showed that the average uplink rate reached 470 Mbps and the average downlink rate 2.43 Gbps, which are approximately 1.3 times and double that with a single 100 MHz bandwidth, respectively. 5G Super Uplink has notable advantages over uplink CA. Super Uplink enables integrated uplink scheduling between two uplink carriers in one cell. This scheduling mechanism is more efficient than uplink CA implemented between two cells. In addition, uplink and downlink bands are decoupled, enabling downlink carriers to be flexibly added to adapt to data traffic requirements. For example, CA can be disabled or implemented within one band or between two bands. As uplink CA depends on downlink CA and

its bands must be a subset of downlink CA bands, uplink CA cannot be used in the cases of asymmetric uplink-only bands, further highlighting the greater flexibility of Super Uplink. The "5G Super Uplink and downlink CA" pilot is hugely significant to maximizing 5G capabilities through converged deployment between 5G FDD and TDD bands, particularly when it comes to network sharing and expanding 5G's applications into vertical industries. China Telecom and China Unicom will continue to increase investment in innovation of solutions through close collaboration, steadily turning the potential advantages of network sharing into an important component of 5G networks to deliver the premium experience.

Huawei OptiXtrans DC908 Completes SAN Interoperability Tests at EANTC

Huawei's OptiXtrans DC908, an intelligent data center interconnect (DCI) product, was successfully awarded Storage Area Networks (SAN) certification by the European Advanced Networking Test Center (EANTC) for its specialism in DCI scenarios and industry-leading capacity. SAN certification is specifically for storage networks and is mandatory for vendors to enter the DCI market. It comprehensively tests the compatibility, reliability, and stability of storage network devices to ensure uninterrupted service. Huawei's OptiXtrans DC908 successfully gained certification after passing all of the strict interoperability test cases designed by EANTC, which are based on real-world DCI service scenarios. As big data, cloud computing, and mobile Internet services cause inter-DC traffic to increase sharply, more and more financial organizations,
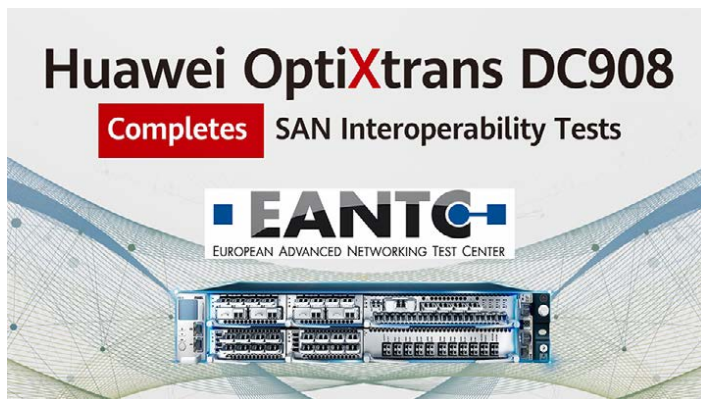
OTTs, ISPs, and governments around the globe are choosing to build their own DCI networks that deliver higher speed, stability, and security, supporting cheaper and faster rollout of new services. Kim Jin, President of Huawei Enterprise Transmission & Access Domain said, "EANTC's certificate is in recognition of Huawei's WDM product innovation. The certificate confirms superior quality of the Huawei OptiXtrans DC908 in DCI scenarios as an integrated, high speed, low latency, and highly available solution to help more customers build an all-optical network base towards digitalization and business success." Huawei OptiXtrans DC908 recently won the Best of Show Award at Interop Tokyo 2020 and is the only DCI product to receive this honor. Huawei OptiXtrans DC908 is built on more than 20 years of optical field experience and helps customers cope with challenges brought by massive data transmission in the cloud era. It offers twice the stability of industry's average performance. By implementing port-level encryption at the physical layer and supporting 50 ms protection switching, it can ensure service continuity. Utilizing built-in fiber channel (FC) interfaces to maximize the synergy between storage and optical transmission, the product thereby reduces the latency of the active-active application in 100 km to less than 1 ms for intra-city disaster recovery. Moreover, it enables effortless zero-touch deployment with network-level WebGUI. Leveraging simplified design to cut the number of optical-layer fiber connections by more than 90%, the product greatly reduces footprint and simplifies O&M.

China Telecom Shenzhen and Huawei Launch World's First 5G "Super Uplink + Downlink CA" Pilot Site

Huawei and China Telecom Shenzhen jointly launched the world's first pilot site that binds 5G Super Uplink and downlink carrier aggregation (CA). This pilot innovatively leverages Super Uplink to maximize uplink coverage and experience, as well as fully utilizes downlink dual-carrier CA to deliver optimal user experience. This is a new breakthrough following China Telecom and Huawei's joint commercial adoption of Super Uplink. The success of this pilot shows that the advantages of China Telecom and China Unicom sharing 5G networks, once seen only in technical solutions, are already available on commercial

networks. It also marks a major milestone in the construction of 5G best-experience networks and a great achievement for China Telecom Shenzhen's 5G City initiative. The coordination of TDD and FDD reflects a new trend in 5G network construction. By pooling both Super Uplink and downlink CA, 5G networks leverage the complementary advantages between 5G high bands and low bands as well as the aggregation in both the time and frequency domains. This will further provide 5G networks with a higher bandwidth, wider coverage, and lower latency, which are urgently required to expand 5G's applications across 5G vertical industries.

This will also enable 5G cells to support a bandwidth of up to 200 MHz, ensuring a premium downlink experience in network sharing use cases. This pilot site uses 200 MHz 3.5 GHz TDD spectrum and 20 MHz 2.1 GHz FDD spectrum in the uplink. Single-user concurrent tests were completed in standalone (SA) networking mode. The results of the test showed that the average uplink rate reached 470 Mbps and the average downlink rate 2.43 Gbps, which are approximately 1.3 times and double that with a single 100 MHz bandwidth, respectively. 5G Super Uplink has notable advantages over uplink CA. Super Uplink enables

integrated uplink scheduling between two uplink carriers in one cell. This scheduling mechanism is more efficient than uplink CA implemented between two cells. In addition, uplink and downlink bands are decoupled, enabling downlink carriers to be flexibly added to adapt to data traffic requirements. For example, CA can be disabled or implemented within one band or between two bands. As uplink CA depends on downlink CA and its bands must be a subset of downlink CA bands, uplink CA cannot be used in the cases of asymmetric uplink-only bands, further highlighting the greater flexibility of Super Uplink. The "5G Super Uplink and downlink CA" pilot is hugely significant to maximizing 5G capabilities through converged deployment between 5G FDD and TDD bands, particularly when it comes to network sharing and expanding 5G's applications into vertical industries. China Telecom and China Unicom will continue to increase investment in innovation of solutions through close collaboration, steadily turning the potential advantages of network sharing into an important component of 5G networks to deliver the premium experience.

Education Ministry, Huawei To Establish 24 Labs In 150 Universities In Pakistan

Ministry of Federal Education and Professional Training (FE&PT) and Huawei are collaborating to establish 24 labs and networking for video conferencing facility in 150 universities. Ministry of FE&PT in a statement issued said that CEO Huawei Mark Meng called on the Federal Education Minister Shafqat Mahmood at his office to discuss a range of bilateral issues of mutual interest. It added that both sides exchanged

views on 5G Technology, different training programmes and collaboration in different areas of Ministry of Education. Huawei is working with HEC to establish 24 Haina labs for training purpose, DWDM networking, video conferencing for 150 universities and smart classroom project. CEO Huawei also donated Personal Protective Equipment (PPE) kits to the Minister and the latter commended the

donation by Huawei. Federal Minister for Education and Professional Training Shafqat Mahmood also applauded the services and contribution of the company in Pakistan. Federal Minister for Education Shafqat Mahmood reiterated to further strengthen the collaboration in the sector of Education and Professional Training. The meeting was marked by traditional warmth, mutual interest, and trust.

Jawwy TV Supports e-Learning High Quality Live Streaming for all 19 iEN Channels

In line with its commitment to support the Saudi community by empowering digital education, Intigral, the leading OTT provider in the MENA region, has announced that it will continue to broadcast the national education portal's channels (iEN channels) live on its Jawwy TV App throughout the coming school season. The Ministry of Education has recently announced that the first seven weeks of the academic year 2020-2021, which will begin on Sunday August 30, 2020, will be conducted remotely under the "stay home stay safe" initiative as part of the government's efforts

to curb the spread of COVID-19. All iEN channels have been added to Jawwy TV's offerings since the Ministry's e-learning initiative was launched last March. Jawwy TV will be the only platform to live stream the channels online concurrently with their free broadcast on Arabsat. Junior High and High school classes will be broadcasted from 7 AM while Elementary school classes will be broadcasted from 3 PM. Intigral's CEO Markus Golder said Intigral is looking forward to continue contributing to the educational goals outlined in the Saudi Vision 2030, namely in terms of

encouraging the shift to digital education. "Our goal is to support the success of the e-learning programs by simplifying access to the national education platform channels for students and parents, aligning with the leadership's futuristic vision for the education in Saudi." Mr. Golder lauded the Ministry of Education's efforts to resume online learning for the first seven weeks which would enable students to pursue their education while reaffirming the government's commitment to ensure the safety of the community. "Jawwy TV has been praised not only as a

premium gateway for digital entertainment for the whole family but also as a supplier of educational content that has gained further recognition during the pandemic-prompted lockdown. Jawwy TV App will enhance the e-learning experience from home or on the go with its many features that add value to the service and provide a worthwhile experience for students and parents." Through Jawwy TV App students can access the e-learning channels with seamless streaming and high-quality viewing, anywhere and anytime via their

phone or tablet. Students can also benefit from Jawwy TV's multiple features which include the Start Over, Rewind and Catch Up options that allow students to revisit the courses at their convenience, offering them flexibility in managing their schedule. The platform also helps students and parents keep track of all 19 iEN channels, ensuring they would not miss any of the courses. Additionally, families can still have access to Jawwy TV's vast entertainment library and channel streaming through the multiple devices feature which allows

sharing the same account on two different devices simultaneously. The platform's parental control feature also helps parents ensure that their kids are spending their time studying and customize the content available to their children's age group. Users can obtain access to iEN channels in addition to Jawwy TV's 200+ channels and its extensive library of over 23,000 titles by subscribing to Jawwy TV service through visiting www.jawwy.tv and downloading the Jawwy TV app or calling customer service at STC to order the home device.

![nexign logo]

Nexign Expands International Presence with New Office in Latin America

Nexign, a leading Business Support System (BSS) and Internet of Things (IoT) solutions provider, announced that it is pioneering a TM Forum Catalyst project entitled "Vertical industry telcos: A federated DLT-based marketplace". The project will be presented at the TM Forum Catalyst Digital Showcase on July 30, 2020. This is the first Catalyst project driven by vendors and Champion CSPs of Russian origin, and will allow Nexign to create new business opportunities for its customers, helping them increase capacity and reduce expenses. This project is part of TM Forum's renowned proof-of-concept Catalyst program, which focuses on co-creating innovative solutions to important industry challenges. Nexign has joined forces with Champion CSPs such as Orange, BT Group PLC (formerly British Telecom) and Rostelecom and vendors such as Nokia, IOTA and Argus to create a collaborative solution that helps telecom operators manage their digital assets better and gain new business opportunities from up-to-date BSS solutions. Notably, this is the first ever Catalyst project that is driven by and involves companies of Russian origin: two vendors (Nexign and Argus) and an integrated provider of digital services and solutions (Rostelecom). "Nexign has been a TM Forum member since 2007, and we have always seen TM Forum as a strategic platform for our product development and thought leadership efforts. We aim to help CSPs

unlock new revenue streams by creating solutions based on innovative business ideas and modern technology stacks. Our goals align with TM Forum's vision on how to drive the evolution of the telecom industry and help CSPs and vendors work together effectively. Participation in the Catalyst program is a significant milestone for us. We believe that, together with the TM Forum community, the project Champions and other parties, we can level up the global marketplace solution," says Alexey Vedin, Director of Network Monetization Products at Nexign. The "Vertical industry telcos: A federated DLT-based marketplace" project aims to build an ecosystem for dynamic resource sharing between Digital Service Providers (DSPs). As collaboration and partnerships will be the key to successful 5G monetization, this global marketplace will be a secure foundation for more transparent and dynamic interaction between CSPs of various profiles. Nexign and other team members have agreed to collaborate on developing industry standards for access to blockchain-based telco marketplaces, which give Digital Service Providers (DSPs) the chance to sell globally. These standards will facilitate additional interoperability by creating interfaces from existing BSS/OSS solutions to emerging exchange platforms. Ultimately, Nexign's global digital DLT-based marketplace Catalyst project will enable DSPs to directly and securely transact with each other and

b2b2x customers and introduce various digital services on global marketplaces without the risk of cannibalizing the current revenue models and subscriber base. "One of the use cases for our joint Catalyst project is the eSIM-based travel products, which allow CSPs to leverage big data to find subscribers who are travelling and offer them services in their current location without roaming charges. We expect CSPs' potential revenue from leveraging eSIM technology to skyrocket once eSIMs are legal and in common use across Russia. This is partly because more than 40% of new devices being produced worldwide have eSIM chips, and the number of eSIM devices on the market is set to double year-on-year. Predictions like this suggest that eSIM product ecosystems are going to be playing an increasingly important role in telecom providers' operations. We are pleased to be involved in a project, which tackles some of the key challenges faced by providers and all their customer segments," comments Aleksey Chernetsov, Mobile Virtual Network Operator (MVNO) Director at Rostelecom. "Catalyst projects showcase the power of collaboration, bringing together a wide range of companies, industries and ecosystems not only in telecom but also in IoT, smart cities, smart energy, industrial manufacturing and more," concludes John Gillam, Chief Digital Officer at TM Forum. "Championed by the world's largest service providers, Catalyst projects accelerate innovation, prove the

application of new technologies, validate standards and make many other valuable contributions to our industry." The results of the project "Vertical industry telcos: A federated DLT-based marketplace" will be unveiled during the TM Forum Catalyst Digital Showcase on July 30, 2020.

Nexign Expands International Presence with New Office in Latin America

Nexign (part of ICS Holding), a leading Business Support System (BSS) and Internet of Things (IoT) solutions provider for telecommunications service providers, announced that it expands its international presence to Latin America by opening a new office in Santo Domingo, Dominican Republic. This initiative will enable Nexign to strengthen its positions in emerging markets by offering LATAM customers solutions to drive digital transformation efforts. According to the GSMA report, the data traffic in LATAM will grow more than sixfold by 2024. Also, GSMA expects the mobile penetration rate to reach 73% by 2025. Nexign aims to use its 28 years of engineering excellence to help local telecom operators consolidate

their systems and provide customers with better connectivity, uninterrupted internet access and other services. The office in Dominican Republic will focus on business development initiatives for the entire LATAM and providing operators with modular, truly convergent solutions to enable stress-free modernization and sustainable performance. "During the past three years, Nexign has grown significantly. As a maturing company we are taking the next step in our international expansion strategy and establishing our corporate presence in Latin America. We believe that understanding of the local market specifics is critical for smooth digital transformation of local CSPs. We will leverage our market knowledge and

industry expertise to support operators in the region and speed up the modernization process for them. With Nexign's BSS solutions, they will be able to meet local customer demands and bring added value to business," said Igor Gorkov, CEO at Nexign. "LATAM is an emerging market with great potential. Operators in the region realize that they need up-to-date BSS solutions to keep up with customer needs. As a result, they are ready to embrace new development opportunities and find new ways to monetize traffic. We are happy to support local operators and offer them solutions that can enable them achieve their business goals and deliver superior services to subscribers," said Andrey Moldovan, Regional Director, LATAM.

PCCW Global and SURE Universal Combine to Launch Groundbreaking IoT Home Care Medical Solution

PCCW Global and SURE Universal, a leading Internet of Things (IoT) software and platform developer, have signed an IoT Ecosystem Partnership Program (IEPP) agreement to deliver IoT home care medical solution. The collaboration aims to address the urgent need to deliver connected medical care from

home, thereby reducing hospital visits for simple medical diagnostics, which in turn will help to prevent overloading medical facilities and reduce exposure to hospital-acquired infections. The current global impact of the COVID-19 pandemic and the quarantine measures that have been put in place highlight the

importance of reliable, cost-effective home healthcare and the role it can play in helping to address public health and safety resources. IoT medical devices, including measuring equipment and wearables used for monitoring and diagnostics, will now be able to communicate important healthcare information among patients, family members, doctors and other medical personnel. PCCW Global's Console Connect IoT connectivity service will support the SURE Universal platform by providing a customizable platform and interface to deliver global connectivity, simplify device management and IoT operations. The IoT connectivity service also features real-time monitoring from a single interface across multiple operator networks. The service covers over 180 countries, providing support for 2G, 3G, 4G and 5G mobile networks, and delivering a one-stop, user-friendly SIM life-cycle management capability to service providers. Under the collaboration,
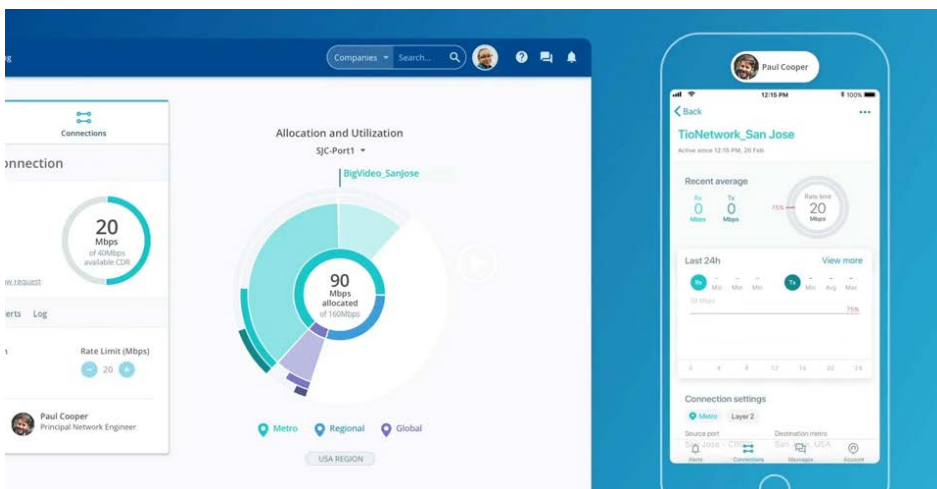
PCCW Global will provide access to its international IoT network, fabric and global services, while SURE Universal will concentrate on delivering its IoT platform, associated applications and data. The goal is to rapidly provide best-in-class, end-to-end IoT home care solutions worldwide.

The PCCW Global IoT Ecosystem Partnership Program delivers:

• An opportunity for IT, cloud, telecom, and industry solution providers to develop solutions for the rapidly-growing IoT market worldwide

• Easier access to otherwise complicated network, service, devices, and applications, enabling the full value of IoT to be realized by end-users

• Access to a community of leading solution providers and suppliers to jointly promote the use of IoT solutions

Mr. Craig Price, Senior Vice President, Mobility Products and Marketing, PCCW Global, said, "We are delighted to collaborate with SURE Universal to power its home care solution by providing the network, technical know-how, and

functional distribution to bring it to the international market. IoT will deliver tremendous value and benefits to the medical industry, especially in these unique times." Dr. Viktor Ariel, CEO, SURE Universal, said, "SURE Universal is driven to provide exceptional, standardized and compliant IoT solutions for home care and we are honoured to be partnering with PCCW Global in order to rapidly deliver an urgently-needed home care IoT solution worldwide."

Console Connect Now Live in all Global Switch Data Centers Worldwide

PCCW Global announced that its Console Connect Software-Defined Interconnection® (SDI®) platform is now available in many more data centers via an extended collaboration with Global Switch, a leading owner, operator and developer of large-scale carrier and cloud neutral data centers in Europe and Asia Pacific. Global Switch owns and operates 13 data centers centrally located in Tier 1 cities, offering a total of 390,000 sq. m. of highly resilient technical space and hosting some of the world's largest cloud providers, hyperscalers and enterprise customers. The company works with all industry verticals and segments and provides tailored solutions to meet each customer's specific needs, whilst also ensuring the availability of a wide range of high-performance interconnect solutions from leading players such as Console Connect. Following the highly successful launch of Console Connect in Global Switch's Singapore Tai Seng data center in 2019, the platform has now been extended to all Global Switch locations and is immediately available. The collaboration gives Console Connect users an extensive choice of on-net data centers and cloud access points in Europe's largest and most interconnected data center hubs - London, Amsterdam, Frankfurt and Paris. It also brings the Console Connect platform to Madrid, Spain, one of the most important gateways to Latin America, as well as other major European markets. In Asia Pacific, Console Connect is available at the Global Switch data centers in Sydney and

Hong Kong, in addition to the pre-existing facility in Singapore's Tai Seng data center. Mr. Michael Glynn, Vice President of Digital Automated Innovation, PCCW Global, said, "We are delighted to extend our collaboration with Global Switch by bringing the Console Connect platform into all of its data centers worldwide. The addition of eight on-net data centers in Europe forms part of a major expansion plan for the platform across the region, while the new facilities in Sydney and Hong Kong further consolidates our position as a market leader for on-demand fabric in Asia Pacific." The Console Connect network-as-a-service platform is fully integrated with the world's leading cloud, SaaS, IoT and IX providers, including Google Cloud, AWS, IBM Cloud, Microsoft Azure, Oracle Cloud, Alibaba, Tencent and NAVER Cloud. The automated Console Connect fabric is underpinned by PCCW Global's leading IP backbone and one of the largest MPLS networks in the world, spanning more than

3,000 cities and 160 countries. Global Switch customers will be able to instantly access this ecosystem of clouds, SaaS providers, and network, and seamlessly connect to over 300 data centers worldwide through Console Connect. The platform provides users with the redundancy and flexibility to scale their businesses on demand at any Global Switch data center, and have access to the PCCW Global physical network, which is separate to the public Internet and offers uncontended and highly redundant core connectivity with multiple diverse paths between countries. Mr. Paul Selwood, Group Director, Strategic Accounts and Networks, Global Switch, said, "We are extremely excited that the Console Connect platform is available at all of our data centers. Our customers will be able to securely access services from any cloud or SaaS provider, connect to business-critical applications with ease, and scale connections up and down on-demand."

PCCW Global Provides Nayar Systems with Worldwide Single SIM IoT Coverage

PCCW Global has signed a collaboration agreement with Spanish technology company Nayar Systems that will provide the European technology specialist with access to a global telecommunications network and fabric, with coverage of over 120 countries using PCCW Global's Console Connect IoT SIM connectivity. Nayar Systems is a major industrial Internet of Things (IoT) technology developer serving the global elevator industry, and the collaboration will enable it to significantly reduce the time and cost associated with deploying the telecommunications services most required by modern high-tech elevator systems. In addition to its IoT relationships in the elevator industry, PCCW Global's growing portfolio of IoT vertical markets already include the media, logistics, aviation and transportation industries. PCCW Global will provide Nayar Systems with Console Connect IoT single SIM technology, which delivers a global fabric of connectivity and enables Nayar Systems to offer a complete IoT solution to their clients worldwide. Through the

Console Connect IoT management portal, Nayar Systems has the ability to activate, monitor, and manage any number of IoT SIMs remotely in over 120 countries where the company has presence, enabling immediate 4G connectivity for the telemetry, safety and remote control functions of its elevators. Incorporating single SIM IoT technology into the elevator production process will result in a significant reduction in time and costs related to provisioning for telecommunications services at the point of production. Nayar Systems' customers and end-users will benefit from simplified installation and the deployment of reliable elevator communications using single IoT SIM technology over extensive worldwide mobile partner networks, supported by PCCW Global's high-speed, robust and secure international IPX infrastructure. In addition to supporting both single SIM and eSIM technology across a global infrastructure, PCCW Global's Console Connect IoT connectivity service offering includes an intuitive self-service portal, 24x7 international NOC monitoring and

multilingual service hotline, fully private on-demand connectivity to clouds and data centres, Software Defined Network (SDN) orchestration, and support for a universal API facilitating connectivity monitoring and management. Mr. Craig Price, Senior Vice President, Mobility Product and Marketing, PCCW Global, said, "We are proud to be powering Nayar System's IoT solution, and we look forward to assisting to deliver this integrated IoT solution to the international market. It is exciting to be the enabler of such an innovative service, which will deliver real benefits to Nayar Systems' end-users." Mr. José Luis Sanchis, CMO, Nayar Systems, said, "The collaboration will allow us to expand the business footprint around the globe and provide after-sales service in real-time to our clients. All problems related to elevator telecommunication connectivity are solved as the manufacturer controls the condition of the lift remotely at all times, without the installer having to deal with the problem of obtaining telecommunications connectivity from a local supplier."

STC Kuwait Trials 2100MHz 5G

STC Kuwait has reported successful trial usage of 2100MHz spectrum to expand its 5G network in partnership with Huawei, claiming a 'first' in the country. The operator said that deploying 2100MHz 5G services will enable it to offer better 5G solutions

to its customers and lay the foundations for vertical industry applications. STC, which already claims 'nationwide' 5G coverage in Kuwait using the 3.5GHz band, added that the 2100MHz upgrade will enhance 5G indoor coverage and uplink capacity, and further improve network latency, with plans for deploying carrier aggregation for 5G NR 3.5GHz/NR 2.1GHz operations. CTO Fahad Abdulrahman Al Ali commented: 'Currently, mobile operators are working with vertical industries to jointly explore applications and network architectures for 5G services. Live uploading of HD videos, for example, and other industry applications require significantly greater uplink capacity at specific locations in the mid- to long-term. Accordingly, new solutions are needed to enhance the uplink performance of TDD 5G NR at cell edge.' He added: 'The deployment of our upgraded network will provide our enterprise customers with enhanced connectivity options that will boost indoor coverage, thereby accelerating smart developments and promoting digital transformation.'

stc Announces New IoT Strategy, M2M Plans and Advanced Fleet Management Solution

Kuwait Telecommunications Company - stc, a world-class digital leader providing innovative services and platforms to customers enabling the digital transformation in Kuwait, announced new plans to explore machine-to-machine (M2M) and Internet of Things (IoT), as well as the launch of an advanced fleet management solution. stc business focused on introducing solutions within this realm to enable digital transformation for all verticals in Kuwait through IoT, especially considering the impact of COVID-19 on businesses which has highlighted the need for digital mastery and accelerated digitization across countries. The M2M plans are set in place to satisfy the market demand for IoT solutions with roaming capabilities for global asset tracking. To meet market and technology demand, stc is offering M2M plans to its wide network of businesses and companies

in Kuwait, enabling networked devices to exchange information and perform actions without human interference. M2M connectivity plays a major role in data transfer between IoT devices, which draws on stc's pursuit to maintain this aspect up to date with current market trends while offering flexible and efficient management of M2M connections. With IoT applications becoming more widespread in the global market, implementing the technology in an industrial setting can reap great benefits, especially with the instrumentation and control of sensors in sync with devices that engage with cloud technologies utilizing M2M to achieve wireless automation and control. The technology can in return derive data-driven insights from IoT to optimize operations, increase productivity, enhance efficiency, create new business models and generate higher revenues by interlinking the physical

business to the digital world. stc business has also launched its comprehensive and advanced fleet management solution in a step forward towards implementing its IoT strategy. This advanced monitoring system provides valuable information and readings to enhance operational efficiency by fully utilizing resources to reduce overall expenses. The software features real time vehicle tracking through an online GPS and sensors that track unit locations on any specified route, monitoring speed, fuel and temperature statistics, all through an intuitive dashboard integrated with predictive functions capable of detecting problems prior to their occurrence. Commenting on stc's M2M solutions, General Manager of Sales & Account Management at stc, Meshari Al Hamad, said, "Building on our commitment to serve and provide our enterprise clients with the latest smart solutions and technology, our plans cover a multitude of applications that will enhance the operational and management functions across businesses. Our IoT strategy allows companies to manage their resources more efficiently and extract the most out of their business models through digitization. By connecting the physical business to the digital world, business owners gain access to a wealth of analytical data to support their decision-making process." He added, "We have formed strong local, regional and global IoT alliances and partnerships to offer any IoT requirement needed to support businesses, complimented by our nationwide 5G network. We will continue to introduce products and services that streamline functions and provide a wealth of advantages using stc's wide range of resources." stc is also developing a new M2M flexible platform that eases the management of connectivity like never before. The feature-packed platform offers an array of services and solutions that regular systems are incapable of providing. This initiative also falls in line with stc's IoT strategy to introduce the latest technologies and digital solutions that serve the interests of business owners and companies.

Keep an eye on your fleet at anytime from anywhere

with stc Fleet Management
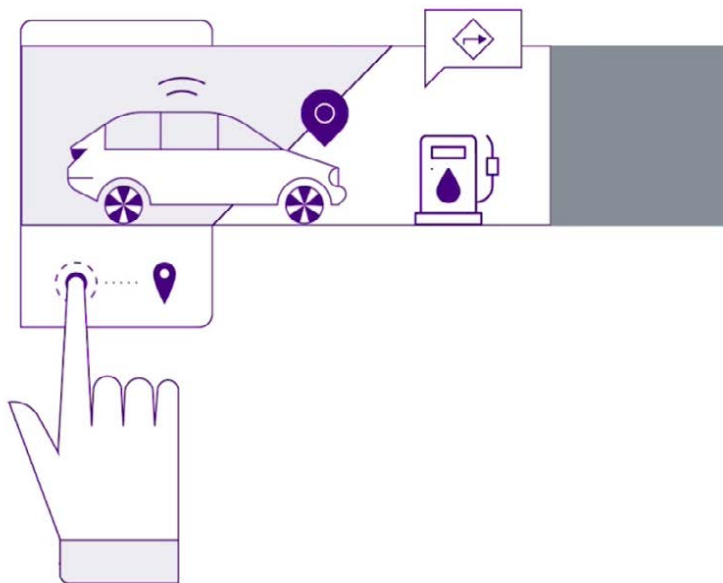
Telefónica Deutschland Selects Tech Mahindra to Support Efficient Network and Services Operations

Telecommunications provider Telefónica Deutschland and Tech Mahindra Ltd, a leading provider of digital transformation, consulting and business re-engineering services and solutions, have agreed on a strategic cooperation in the network and services operations segment. Telefónica Deutschland selected Tech Mahindra for its network and services operations in addition to further develop 5G, artificial intelligence and machine learning use cases. Mallik Rao, Chief Technology & Information Officer of Telefónica Deutschland, explains: "We are pleased to announce this partnership with Tech Mahindra. We are supported by a globally experienced service provider to consistently drive forward the development of our network and services operations, thus leading to further enhancement of 5G, artificial intelligence and data analysis use cases".

Vikram Nair, President, Europe, Middle East and Africa (EMEA) of Tech Mahindra, said: "This strategic partnership strengthens our long-standing relationship with Telefónica, in which we support the company in realizing its vision of becoming the 'Mobile Customer and Digital Champion' by 2022.

As part of our TechMNxt charter, Tech Mahindra is strongly committed to 5G, the network of the future, and focuses on technology-driven innovation for digital transformation. We look forward to working together to drive innovation and deliver real value and quality to our customers".

PRESS RELEASE

Telefónica Deutschland selects Tech Mahindra to support efficient network and services operations

Yahsat to Boost Thuraya's Next Gen Capabilities

Airbus has been selected by Al Yah Satellite Communications Company (Yahsat), the UAE's leading global satellite operator, to build Thuraya 4-NGS, the next-generation mobile telecommunications system that will drive the continued advancement of Thuraya's L-band business. Thuraya 4-NGS will deliver higher capabilities and flexibility while increasing capacity and coverage across Europe, Africa, Central Asia and the Middle East, enabling next generation mobility solutions for all customer segments, including defense, government and enterprise. This is a major milestone in Yahsat's commitment towards transforming Thuraya and rolling out its next-generation system, which entails a complete overhaul of its space and ground platforms, enabling a new set of services, products and solutions, across a greater coverage area. The new capabilities will drive leadership across many strategic

product lines, such as maritime, IoT, and data solutions offering a wide spectrum of throughput capabilities and the highest speeds available in the market, while reinforcing Thuraya's strengths in the MSS voice market. Thuraya's next generation system will provide a world of opportunities to customers, service partners, hardware manufacturers and integrators, enhancing user experience across land, sea and air to support multiple customer segments, including government, consumer and enterprise. Furthermore, an advanced portfolio of solutions to support government and defense users will accelerate Thuraya's leadership in this market, both within the UAE, regionally and globally. Meanwhile, all existing products and services will continue to be supported by Thuraya's space and ground segments, enabling service continuity during and after the transformation program. This

latest commitment from Yahsat takes its total committed investment to date to well over AED 2 billion, and more is anticipated in the coming years, including an option with Airbus to build Thuraya 5-NGS (an additional satellite identical to Thuraya 4-NGS), strengthening its coverage and capabilities across the Asia Pacific region. Khaled Al Qubaisi, Chairman of Yahsat's Board of Directors and CEO of Mubadala's Aerospace, Renewables & ICT stated, "The AED 2 billion commitment, will reaffirm our position as a market leader, pioneer and disruptor. We are creating a multipurpose and flexible satellite ecosystem that is attuned for growth and future diversification and Thuraya 4-NGS is a key milestone in our ongoing mission to provide advanced yet affordable satellite solutions with levels of performance, reliability and security at the leading edge of today's technology." Ali Al Hashemi, CEO

of Thuraya and General Manager of Yahsat Government Solutions (YGS) continued, "Thuraya 4-NGS represents a significant evolution of our L-band capabilities, enabling a wider range of interoperable FSS/MSS solutions for Thuraya and YGS customers. This will be critical in delivering superior defense solutions, such as battlefield communications, to our government users, while offering a complete MSS portfolio to all of our current and future customers and partners to drive the next phase of innovation and growth." Jean-Marc Nasr, Head of Airbus Space Systems said, "Building on a relationship with Yahsat that dates back more than 10 years, our selection is testament to the innovation and engineering excellence of Airbus' geostationary satellites. Thuraya 4-NGS, as well as being electric, will also benefit from our latest processed payload technology giving increased flexibility and adaptability over the course of its life in orbit. Yahsat's new project reinforces Airbus Defence and Space's position as the world's number one in electric propulsion satellites."

stc

5G LIVEBUS

Innovative solutions for safety and security

Introducing **stc *5G LIVEBUS*,** a custom-made innovation outfitted with state-of-the-art security solutions that keeps you updated in real time while monitoring the safety of the passengers.

| Surveillance system | Driver's behavior sensors | Stop arm | On-bus sensors | GPS bus tracking |

5G Geared up for Cross-Industrial Digital Transformation

Fahad Al Ali
Chief Technology Officer
stc Kuwait

Unlike its predecessors, the Fifth-Generation technology is a key enabler of digital transformation across industries. With the capacity to withstand functions that require higher bandwidth demands, 5G is capable of meeting the diverse needs for enhanced digital lifestyles, such as high definition videos, virtual reality, and augmented reality.

5G, or the fifth-generation technology for mobile networks, is a new global wireless standard after 1G, 2G, 3G, and 4G networks designed to meet the requirements of IMT-2020 set by the ITU-R, the ITU Radio communication sector. Unlike its predecessors, primarily built to deliver communication services such as voice, messaging and mobile broadband, 5G is expected to fundamentally transform the telecommunications technology role in society. The technology serves as an opportunity to create agile, purpose-built networks tailored to accommodate the diverse needs of individuals, corporates, and industries.

Fifth Generation technology is used across three core types of connected services, these include Enhanced Mobile Broadband (eMBB), Ultra-reliable and Low-latency Communications (uRLLC), and Massive Machine Type Communications (mMTC). The enhanced capabilities will be able to support high data throughput of 20Gbps peak data rate, 100-1000Mbps as experience rate, 1ms ultra-low latency, 1 million massive connections per km2, high mobility for up to 500Km/h, and 100x energy efficiency. Through these upgrades, 5G will enable the next-generation of user experience, empower new deployment models and deliver new solutions. It is expected that mobile ecosystems will eventually expand into new domains through 5G, impacting industries, while virtually connecting anyone and anything with machines, objects, and devices.

Unlike its predecessors, the Fifth-Generation technology is a key enabler of digital transformation across industries. With the capacity to withstand functions that require higher bandwidth demands, 5G is capable of meeting the diverse needs for enhanced digital lifestyles, such as high definition videos, virtual reality, and augmented reality. The revolutionary network can also meet the digital industry's increasing demand for latency-sensitive services, such as assisted and automated driving, remote management, smart manufacturing, public safety, transportation, media and entertainment.

The success of implementing 5G is directly correlated to the maturity level of ecosystems. Consumers may witness this progress as more affordable 5G smartphones and other devices are released in the market that utilize the 5G connectivity solutions, such as cloud gaming and AR/VR. On the business front, the revolutionary network is inspiring new industrial models worldwide, providing valuable case studies and experiences. Places like South Korea and China, industries are being supported by hundreds of 5G-powered applications ranging from education to agriculture, with more validations on a daily basis. Meanwhile in Europe, logistics, manufacturing, and other domains are swiftly building their own 5G based models. The Middle East, which has been become a pioneer in 5G commercialization and service innovation since 2018, has accelerated industry digital transformation across operators, vendors, and vertical industry partners jointly exploring innovative use cases. Today more than 70 partners are actively working to bring diverse 5G services into the market.

As a leader in enabling digital transformation of Kuwait, stc is constantly exploring new services and platforms that can add value to society. The Company is proud of the progress that Kuwait has achieved amongst the pioneering countries in the region in terms of commercialization and expanding the 5G network. stc has led the 5G market progression in Kuwait through user centric tech innovations, a milestone that recognizes the Company as the first operator in the world to implement nationwide coverage . Today, stc Kuwait is launching its SA 5G to unveil the true power of the network, maximize synergy with LTE, and expand business from basic connectivity to digital services enablement.

On a consumer level, stc Kuwait is recognized as the market leader for MIFI

packages designed to bring the 5G Giga experience to users, as well as 5G indoor coverage which has already been deployed in several shopping malls. stc's 5G network is also gearing up for the 5G smartphone boom, which is expected to accelerate in Q3 2020, providing continuous and seamless 5G coverage through a network highly dominated by 5G smartphone users. For gamers, stc Kuwait is currently in talks with leading global gaming providers to collaborate on ways to guarantee the best gaming experience for popular games such as PlayerUnknown's Battlegrounds (a.k.a. PUBG) in Kuwait.

stc has led the 5G market progression in Kuwait through user centric tech innovations, a milestone that recognizes the Company as the first operator in the world to implement nationwide coverage . Today, stc Kuwait is launching its SA 5G to unveil the true power of the network, maximize synergy with LTE, and expand business from basic connectivity to digital services enablement.

To enhance home connectivity, the Company introduced a speed-based 5G fixed wireless solution to empower Giga-level internet connections. This solution is complimented with mesh Wi-Fi to provide seamless and continuous Giga-throughput coverage, especially in larger 2-3 level homes. With volume-based packages witnessing increased competitive throughout Kuwait and the region, speed

and experience-based packages still have room to improve. stc Kuwait believes that wireless, speed-based packages in particular, will be key to providing a stable experience with shorter time-to-market compared to fiber.

Services tailored for business use are also key segments to consider in the 5G era. Back in August 2019, stc Kuwait launched the world's first speed-based 5G Data Access commercial service, aimed at creating high-quality broadband connectivity to local enterprises. Many businesses are using stc's 5G data access solution, which features low costs and faster time-to-market compared to microwave offerings. 5G "Dedicated Access" is also satisfying SME's requirements during the pandemic period and supporting mobile data access points for local banks, such as the mobile ATM branch. Thanks to 5G "Dedicated Access", users can now directly talk to an NBK Agent using audio and video conferencing to complete transactions such as issuing a debit card, depositing or cashing a check, and more.

Various industries are taking the stride towards digitalization, an initiative that is recognized as 'Industry 4.0'. Through gradually expanding the business across industry verticals, stc Kuwait is providing innovative solutions to the oil & gas, education, government and other sectors to enable digital transformation. By leveraging its 5G, Mobile Edge Computing, and other state-of-art ICT technologies, stc Kuwait will accelerate the industry digitalization process in Kuwait and open the door to "0" cabling, AI and fully digitalized production procedures. Looking forward, stc Kuwait will continuously enhance and improve its infrastructure, services, delivery efficiencies, and local ecosystem development in order to offer innovative products and solutions to enhance the user experience and accelerate cross-industry enablement.

REGIONAL NEWS

TRA Organizes A Virtual Discussion On "The Role Of Women In The ICT Sector"

On the occasion of the Emirati Women's Day, the Telecommunications Regulatory Authority (TRA) organized a virtual discussion on "The role of women in ICT sector: ideas, experiences and visions of TRA", with the participation of a number of female TRA employees. The discussion focused on the professional and practical experiences of women working in the ICT sector, and the professional development that they have achieved in this vital field by taking advantage of the opportunities provided by TRA senior leadership in line with the directives of the wise leadership and its unlimited support in this context. The session started with an opening speech by Ahlam Al Feel, Director of Corporate Communication Department and CEO of Happiness and Wellbeing in TRA, where she praised the major achievements of Emirati women in various fields, and their role in TRA various projects and programs. She said: "On the occasion of Emirati Women's Day, I extend my greetings to all colleagues and sisters in various fields of national work, and on behalf of all of you I greet the Mother of the Nation, Her Highness Sheikha Fatima bint Mubarak, President of the General Women's Union Supreme Chairperson of the Family Development Foundation President of Supreme Council for Motherhood and Childhood, and the leadership of the UAE for the distinguished global position we have reached in women's empowerment and gender balance, which has been reflected on people's happiness in the UAE." She added: "Today, while we witness the presence of women in all fields, we are convinced that the founding fathers plans have resulted happiness and prosperity today, and that our current leaders' strategies will bring about more success and leadership for us and for generations after us. Today's ICT sector is the incubator of all digital transformations, the driving force of the fourth industrial revolution including smart cities, big data, 5G and technologies supported by artificial intelligence. The

speakers included Eng. Khawla Al Mheiri, Eng. Suaad Al Shamsi, and Eng. Shaimaa Al Hefeiti. The discussion was moderated by Shahd Al Muhaideb, Marketing Manager Corporate Communications Department. The speakers addressed the importance of building women capacities in the ICT sector, in addition discussing their effective role in this sector since the establishment of the union, the challenges they have faced, and how to overcome them and prove their competencies to assume the most important positions. The session also discussed the active women's role in national projects such as the UAE Pass project, the first digital national identity for all citizens, residents and visitors, allowing users to access the services of local and federal government entities, and other service providers. The speakers also discussed digital transformation and its future implications on the role of women, and their empowerment in the ICT sector, to achieve a balance between women's professional and family duties. H.E. Hamad Obaid Al Mansoori, TRA Director General, announced the launch of two important initiatives, the first one is "Digital women: Emirati women at the forefront of digital transformation" which includes the development of a digital platform for women working in the sector, including a knowledge portal, a discussion forum, a blog, as well as an annual event

that sheds light on the efforts of Emirati women in the ICT sector. The second initiative focuses on strengthening the role of women as representatives of their country in international ICT forums, by sending a certain number of women every year for training and practicing in global organizations such as the United Nations, the International Telecommunication Union and the World Summit on the Information Society. Emirati women lead a number of strategic projects in TRA at the national level, with Khawla Al Mheiri managing the UAE Pass project. Moreover, Suaad Al Shamsi was awarded the Prime Minister's Medal for technical/ technological employee, for leading "Mabrouk Ma Yak" team, and a number of women have represented the UAE in the ITU sessions and in numerous internal and external participations. TRA has launched many initiatives under the guidance of TRA senior leadership for empowering Emirati women, such as Eve Committee, believing in the role of women and their contribution to the development of all fields. Eve committee is keen on motivating female human cadres to maintain professional excellence, as well as creating a productive work environment that encourages creativity and innovation, and ensuring the highest levels of happiness for female employees.
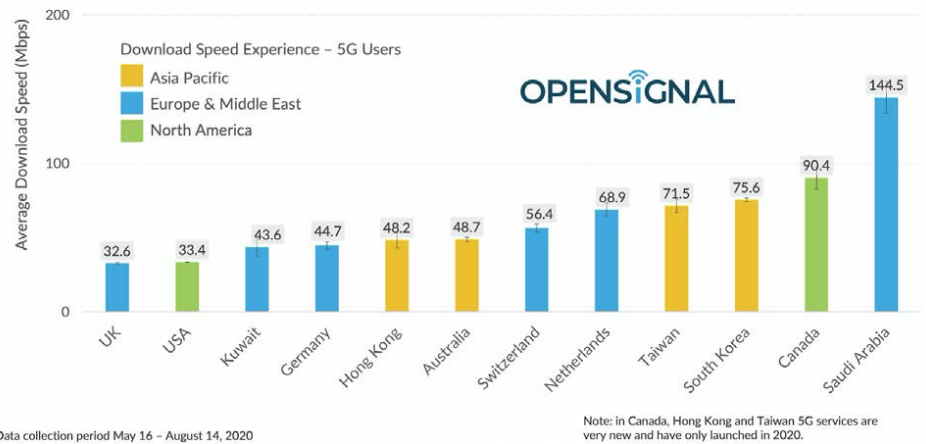
Saudi Arabia Leads in Global 5G Speed and Coverage

Saudi Arabia leads globally in terms of 5G speed and coverage, according to a study conducted by OpenSignal, an independent UK-based mobile analytics company specializing in quantifying mobile network experience. OpenSignal looked at 5G speeds in isolation and also in combination with 4G use; the company also looked at the amount of time users spend connected to 4G and 5G in the 12 countries/regions studied. Saudi Arabia, South Korea, Australia, the United States, the United Kingdom, Kuwait, Germany, Switzerland, the Netherlands, Canada, Hong Kong and Taiwan were included in the study. As far as the overall download speed was concerned, users in Saudi Arabia experienced 144.5Mbps, much ahead of Canada. This measure covered both 4G and 5G as it was looking at total use. Considering 5G alone, Saudi Arabia was again at the head of the rankings with

414.2Mbps — 14 times faster than 4G — followed by South Korea (312.7Mbps), Australia (215.7 Mbps) and Taiwan (210.2 Mbps). OpenSignal's measurement of the amount of time that users spent on 4G and

5G found users in Saudi Arabia were at the top of the list, spending 34.4 percent of their time connected to 5G services.

5G users' overall download speed depends on both the 4G & 5G experience

Download Speed Experience – 5G Users
Asia Pacific
Europe & Middle East
North America

OPENSIGNAL

Country	Speed
UK	32.6
USA	33.4
Kuwait	43.6
Germany	44.7
Hong Kong	48.2
Australia	48.7
Switzerland	56.4
Netherlands	68.9
Taiwan	71.5
South Korea	75.6
Canada	90.4
Saudi Arabia	144.5

Average Download Speed (Mbps)

Data collection period May 16 – August 14, 2020

Note: in Canada, Hong Kong and Taiwan 5G services are very new and have only launched in 2020.

Steps Sought to Speed Up Digital Transformation in Bahrain

Bahrain needs to develop legislative infrastructure to speed up digital transformation in e-commerce, the country's main association of business owners has said. In its latest report on the economic impact of the coronavirus crisis, the Bahrain Chamber for Commerce and Industry (BCCI) has also urged the government to bring in laws that provide more support for intellectual property and trademark protection and bring about improvements in communications infrastructure and digital networks. The country needs an ecosystem that encourages the financial sector to provide easy and accessible digital banking services, said the chamber in its list of recommendations to overcome the Covid-19 crisis. After the recovery, reliance on new technology will increase the risks of cybercrime and consequently the private sector will need help from the governments to manage these risks and reduce the effects. The Bahrain Chamber is calling for a revision to the list of business activities permitted under the virtual CR system. It wants the number of activities

allowed to be increased in keeping with the current situation and the major shift towards business automation after the pandemic. Calling raising the level of food security a national priority, the BCCI has also requested that the private sector get more support to increase investment in the food sector. The business community has also sought official recognition for remote communication programmes, virtual meetings and direct learning, which would help ensuring implementation of such projects. For businesses struggling to cope with the slump, the chamber has advised administrative flexibility and changing the business model. It said today's world demands that enterprises have the ability to adapt to new situations and procedures to serve business interests, develop skills and encourage innovation. To make the most of the trend of digital transformation, companies must look at applications and learning e-marketing methods, adopting digitalization responsibly and safely, and entering the world of e-commerce. The BCCI has also advised businesses to seek out merger options or strategic

partnerships (joint ventures) at the present time to reduce losses incurred due to the spread of the global pandemic. Merged companies are better able to remain in the market, reduce their expenses, and have enough liquidity to meet operating obligations, it said. Companies would do well to use the liquidity to take advantage of opportunities available in the market, especially high demand commodities, and investing in what is needed, at the same time they should eliminate or reduce all excess fixed costs such as rent and variable operating costs. They must also avoid restrictions on the movement of human capital and ensure that appropriate occupational health and safety requirements are followed to reduce risks, the BCCI has recommended. Finally, the chamber has urged telecom companies to develop attractive packages allowing more companies to go for digital transformation, ranging from websites and electronic applications, incentives to migrate to the cloud, automating business processes (CRM, ERP, POS), to risk management and cost optimization.

Jordan, Iraq Discuss Cooperation in Telecom, Technology Sector

Minister of Digital Economy and Entrepreneurship, Muthanna Gharaibeh, discussed with the Iraqi Minister of Communications, Arkan Shaibani, joint cooperation in the telecom and information technology fields. The discussions also went over means to benefit from Jordan's experience in implementing "distance learning" during the Covid-19 pandemic. According to a press release released by the ministry, the two ministers held a series of virtual meetings, which focused on frameworks of cooperation in the field of communications and Jordan's experience in the distance learning area, data technologies, and cyber security and protection. During the talks, Gharaibeh said meetings are " important" as they dealt with the frameworks of joint cooperation in the telecom services sector, and extent to which Iraq has benefited from Jordan's

experience in applying distance learning concepts through the "Darsak" platform, which Jordan's telecom regulator has helped develop. The meetings focused on discussing expanding the transfer of Internet capacity from Jordan to Iraq, as the Iraqi market is heading to install the fourth-generation services during the next year, which needs to equip its infrastructure and expand Internet capacities, expecting Iraq's internet growth to double 20-30 times, according to Gharaibeh. Gharaibeh indicated the main telecom companies operating in the Kingdom have expressed their willingness and ability to transfer more Internet capacity to Iraq, while Iraq affirmed its interest to get these capacities from Jordanian companies, as they are characterized by high quality and security services.

17 Million People to Get Benefit From CPOFP

China-Pakistan Fiber Optic Project (CPFOP), the major project of digital connectivity between China and Pakistan, has started and for the first time fiber optic cable has become operational between the two countries. This project is considered to be the backbone of digital connectivity and is important for the information technology exchange between China and Pakistan. The digital connectivity technology of China can now be transferred to Pakistan through fiber optics, China Economic Net (CEN) reported. Transformation of industrial revolution in the age of information and artificial intelligence has converged the whole world at the finger tips. In a rapidly changing arena, Pakistan has to keep pace with this ongoing revolution to reap the benefits by ensuring ample and seamless global connectivity. In order to improve the international connectivity, special communication organization conceived an optical fiber cable link with china to provide an alternate route for national communication as well as international

traffic. The project included laying of 850 km of underground and Ariel optical fiber cable from Rawalpindi to khunjerab ultimately linking with China. The system is supported by high capacity microwave links as backup, thus the stage was set to execute one of the most challenging and unique telecommunications and information technologies projects in the highest mountain ranges of the world. Extreme weather conditions, frequent landslides, limited deployment corridors with glaciated mountains, continuous water channels and negotiating large number of bridges and tunnels were some of the major problems. The work was executed in most professional manner with multiple tiers of supervision and management and execution levels. To address the problems of limited deployment corridors, specialized machinery was imported to avoid damage for recently constructed roads. The work on optical fiber cable deployment through the planned route has been completed along with the installation of high-end capacity

microwave transmission equipment in a record time of two years against the projected timeline of 3 years. Besides this strategic significance, the project has broad socio economic dimensions as well, with its key role in support of other schemes being implemented under the ambit of CPEC, the optical fiber cabling has great importance for international transit traffic. Due to low latency, the project with such broad socio economic and technological dimensions is excepted to be a game changer by transforming trade corridor into digital corridor. The Pak-China fiber optic cable is to be laid along three main routes of CPEC, including railway tracks. The project is aimed at enabling another high-speed international connection and caters to the rapidly growing Internet traffic needs of both countries. The project will help improve the telecom and ICT industry of Pakistan, promote tourism and create trading opportunities for northern areas of the country. It will also provide the ICT infrastructure for

3G/4G services in the northern areas and enhance communication security with an alternative fiber route. CPFOP is one of the core projects, which will deliver safe route of voice traffic between both countries. CPFOP is greatly beneficial in terms of enhanced security and revenue generation. Currently, Pakistan's international connectivity is via submarine cables. CPFOP will provide an alternative route for international telecom traffic and also assist in achieving the rapidly growing internet traffic demand in Pakistan. It is estimated that 17 million people will get benefit from this project. The new network will be beneficial to Pakistan by improving internet penetration and increasing speed, especially in Baluchistan and Gilgit-Baltistan, regions where internet connectivity has ranged from poor to non-existent. It should also reduce the cost of internet connections.

UAE No.1 Globally in Mobile Subscription Index

The UAE has been ranked first in the Arab region and seventh globally in the Telecommunication Infrastructure Index (TII), according to the UN E-Government Survey 2020. It also ranked second in Asia, according to the index. In addition, the UAE made significant progress in the global competitiveness indicators of the telecommunications sector in the report, maintaining the 1st place globally in the mobile subscription index, and advancing from 2nd to 1st globally in the mobile broadband Internet subscription index. As for the Internet users index, the UAE moved up to 5th from 13th globally, achieving a qualitative leap in the fixed broadband subscription index, as it moved up to 29th from 68th in the world. These achievements resulted from the efforts of the TII Executive Team headed by TRA and UAE mobile operators (etisalat and du), where the team worked to raise the country's ranking in the TII sub-indicators by launching a number of initiatives over the past years, contributing to maintaining the UAE as a world leader in such indicators. Tariq Al Awadhi, Executive Director of Spectrum Affairs Department, TII Executive Team Leader, and Head of TRA's National Agenda Team, said: "The TRA has developed plans and strategies that contribute to strengthening the telecommunications sector infrastructure, out of its belief in the central role that this sector plays in achieving the UAE Vision 2021 and National Agenda goals. Telecom operators in the country have allotted a huge budget for infrastructure investment of up to Dh36 billion, making the UAE's infrastructure among the best in the world in terms of fiber services and overall coverage." Al Awadhi stressed that the significant development in UAE's telecommunications sector infrastructure comes in preparation for the upcoming milestones, adding: "This achievement reflects the development and quality of the telecom sector infrastructure in the UAE, which was a key enabler that contributed to business continuity of vital sectors in the country during the Covid-19 crisis, as well as raising UAE's readiness for future changes and technology. Owing to the evolved and quality infrastructure, the UAE was able to easily adapt to variables, adopt smart techniques such as distance learning and remote working, provide services ensuring the natural pace of work, and provide opportunities for growth in light of the ever-changing world." The UAE ranked 1st in the Arab Region and 4th globally in launching and using 5G networks. The UAE has been ranked first in the Arab region and 8th globally in the Online Service Index (OSI) issued by the United Nations within the E-Government Development Index (EGDI).

Bahrain Launches Eight New Online Services

Eight new online services have been launched, as part of a comprehensive electronics package that includes 76 services. The new services include: Requesting a good conduct and behavior certificate, inquiring about the status of the certificate request, checking its validity, visa extension, inquiring about the visa application, viewing the visa data, paying Customs fees and viewing traffic certificates. The introduction of the integrated electronics package is part of national efforts to combat the spread of Covid-19. The new services were launched in co-operation between the Information and e-Government Authority, Nationality, Passports and Residence Affairs, the Traffic Directorate, the General Directorate of Criminal Investigation and Forensic Science, and Customs Affairs. Interior Minister General Shaikh Rashid bin Abdulla Al Khalifa, who launched the new services remotely yesterday, praised His Majesty King Hamad's directives to invest in technology at all levels to serve the country and its citizens. "Launching these new services is within the framework of digital transformation for the ministry's services

and their expansion," said Gen Shaikh Rashid on the occasion. "It contributes to Excellency and speed in providing services as well as work towards achieving the UN Sustainable Development Goals as part of the government's priorities and strategies." He highlighted that the coming phase will include developing services provided at

police directorates and stations within efforts to increase the use of technology in various initiatives and services. He also underlined the importance of educating all segments of society to benefit from these electronic services, which contribute to eliminating the need to attend in person to avail of the services.

Oman Going Digital in COVID-19 Times

Government bodies in Oman have set up digital services for people to reach out to them, so that they can avoid physically coming to these places, and bring down the rate of COVID-19 infection in the country. Judicial courts in Oman will soon go digital, after a circular issued by Dr. Khalifa bin Mohammad Al Hadrami, Secretary-General of the Judicial Administrative Affairs Council, said people didn't need to come to the courts, as everything could be managed electronically during the time of the pandemic. Oman's Ministry of Commerce and Industry has also asked people to submit their relevant documents and enquiries through email, instead of approaching them in person, and the Special Economic Zone Authority of Duqm (SEZAD) has requested its customers to reach out to them through its digital

channels. "Dr. Khalifa bin Mohammad Al Hadrami, Secretary General of the Judicial Administrative Affairs Council, issued a circular for everyone's attention that all the services for the litigants will be available electronically from August 2, 2020," said a statement from the organization. "Therefore, people will not be received in the courts of judicial services." Adding to this the Ministry of Commerce and Industry said: "As part of the framework to facilitate the provision of requests and document submissions electronically, between the ministry, government and private bodies and individuals, and as part of the commitment towards these precautionary measures to stop the spread of COVID-19, we would like to draw everyone's attention to the necessity of sending them via email, according to

relevance. We will also receive all queries of investors sent through the ministry's social media accounts. SEZAD, responsible to administer and bring investment into the special economic zone in Duqm (SEZD), has also set up three channels – a website, an email address, and a WhatsApp account – specifically for investors to reach out to them electronically. Located in the central Wusta Governorate, Duqm is expected to contribute much of Oman's non-oil revenue in the years to come. "In compliance with the decisions of Supreme Committee and adhering to precautionary measures to combat Coronavirus, SEZAD has introduced digital solutions to customers & investors," said a statement from the authority.

Amazon Officially Enters Pakistan with Web Services

Having registered a local office under the name Amazon Data Services Pakistan (Pvt) Ltd, Amazon is forming a team for Amazon Web Services (AWS) in Pakistan, to drive the adoption of cloud computing. The move comes two weeks after the technology company experienced a disruption worldwide, which largely impacted parts of the US and Pakistan as a whole. According to the SECP database, the Pakistan office is led by Paul Andrew Macpherson as the CEO while Shoaib Munir is a Director along with Macpherson. Speaking to Profit under the condition of anonymity, a spokesperson from Amazon shared that the technology leader is currently seeking a public policy specialist for Pakistan, with a focus on driving AWS cloud computing solution adoption. The

role focuses on removing regulatory and political blockers to cloud adoption. This is a common approach among technology companies when entering small markets, with Bytedance doing the same in June by hiring Hassan Arshad as the head of public policy to work with the Pakistan Telecommunications Authority (PTA) to stall a ban of the TikTok app. As for AWS in Pakistan, the "Framework on IT Governance and Risk Management in Financial Institutions" by the State Bank of Pakistan (SBP) directed banks to utilize cloud computing technology under the condition that systems and service providers shall be located in Pakistan along with all physical servers and services. Under this rule, AWS would need to set up its own data center and cloud server in the country. According to the e-commerce policy framework of Pakistan, the Ministry of Information Technology and Telecommunication are in the process of formulating Pakistan's first cloud policy, while the Draft Data Protection Act is at an advanced stage of consultations. The latter draft, which also concerns Amazon, addresses issues concerning data protection in e-commerce. AWS hopes to work with relevant government departments in Pakistan as they develop and revise policies related to the digital economy, including cloud-first policies, data protection regulations, outsourcing guidelines, Cybersecurity policies, tax policy, and over the top regulations. They will also proactively build relationships with key policymakers, politicians, and influencers.

EU and Orange Jordan to Create the Innovation Space Project in Jordan

The European Union and Orange Jordan signed a €7.3 million agreement to create a new Innovation Space that promotes private sector-led innovation and digital economy in Jordan. The EU-funded Innovation Space is a pioneering initiative in Jordan and a one-stop-shop for digital innovation and entrepreneurial support. It will introduce digital culture to the wider Jordanian public, foster digital skills, especially among women and youth, and promote and nurture entrepreneurship by identifying key opportunities for digital economic growth. The Innovation Space is co-funded by the European Union's "Innovation for Enterprise Growth and Jobs" program, also known as Innovate Jordan. The Innovation Space will utilize and expand existing digital centers affiliated with Orange Jordan, to catalyze investments to ensure that Jordan's

nascent digital economy and innovation culture mature. The project also aims at boosting social inclusion, with a special attention to women and youth. Twenty-three digital centers across Jordan will be renovated or established, as well as five new coding academies, five new FabLabs, five new BIG (Start-ups' Growth Accelerators) , three new incubators across the country and an aggregating Innovation Hub at Orange Digital Village in Eastern Amman . EU Ambassador to Jordan Maria Hadjitheodosiou said, "I am delighted to launch this new project with Orange Jordan to support digitalization and innovation, which will boost economic growth and job creation. Through this initiative, we will invest in young entrepreneurs and innovators with cutting-edge ideas, whilst also supporting digital innovation education and skills.

We also strongly believe that innovation and a digital economy can help alleviate the socio-economic consequences of the COVID19 crisis." CEO of Orange Jordan Thierry Marigny said: "We are proud of our partnership with the European Union for such an important project that will promote innovation and support entrepreneurship to accelerate economic progress, this is a stepping stone towards digitalizing the economy, which is consistent with Orange Jordan's strategy". Marigny added: "We are happy that this collaboration will enable the expansion of our current programs leading to the maximization of positive impact on society in terms of quality, number of beneficiaries and wider footprint in the Jordanian governorates". It is worth noting that the execution of this 3-year project will start this year.

Tunisian Companies Invest in Innovative Tech Solutions

Tunisia was found to be the country where companies invested the most in innovative tech solutions during the crisis, an Oxford Business Group (OBG)'s Africa CEO Survey conducted at the end of April and which results were published in report in July, revealed. Tunisia's emphasis on science and technology in recent years has meant that the country is well placed to adapt in response to the disruption caused by the pandemic, reads the 29-page report entitled "Tunisia Covid-19 Response Report", conducted in collaboration with the Foreign Investment Promotion Agency (FIPA Tunisia). "Indeed, having demonstrated exceptional digital abilities, many of its African peers have identified Tunisia as a cradle of innovation during the crisis." One of the technological innovations cited by the report is the Tunisian start-up Enova Robotics developed a robot known as Veasense, which is being used to safely assist Covid-19 patients in Abderrahmen Mami Hospital in Tunis. The robot allows medical staff to remotely conduct preliminary diagnoses and monitor patients without any

physical contact. The Ministry of Interior also acquired Enova Robotics' PGuard, a robotic ground vehicle used to assist with the enforcement of the country's lockdown rules. Controlled remotely by government officers, the robot includes infrared and thermal cameras, an audio system, GPS tracking, and a sound and light system that can be used to request identification papers and issue verbal warnings. Another example of the application of new technology amid the pandemic is the Corona Bot, a digital application that can provide information and support for individuals over Facebook. The app uses artificial intelligence and has sent over 200,000 messages to 10,000 individuals. According to the report, the pandemic has also dramatically accelerated the implementation of mobile payment systems. "Prior to the outbreak, some private sector players had been calling for the removal of red tape that had held back the widespread adoption of mobile transactions since 2013, but there had been little success," it pointed out. "The crisis created an urgent need to quickly and securely transfer small amounts of money to a large number of people, after a TD200 exceptional aid package was rolled out for 350,000 low income citizens." "Covid-19 has showcased the importance of embracing digitalization and improving digital infrastructure," Adnane Ben Halima, vice-president of public relations for the Mediterranean region at Huawei told OBG. "Changes since the start of the pandemic have been accompanied by political will and a shift in mentality in favor of digitalization. This has led to an expedited delivery of projects that have been on standby for years in just a matter of weeks," he added. The crisis revealed the importance and potential held by early-stage businesses in helping address many of the challenges that emerged, with innovative solutions devised by local start-ups, such as telemedicine, the report concluded.

Tata Communications Obtains Local Telecoms License in Saudi Arabia

Tata Communications has announced that it has secured a Type B telecom license in the Kingdom of Saudi Arabia, enabling it to provide Internet Service Provider (ISP) and related telecom services to enterprises in a defined capacity. Tata Communications will now become a carrier-neutral service provider to the OTTs, large enterprises and MNOs in the region. The company will be able to offer network transformation services in Saudi Arabia and address internet, network security, private cloud and SDWAN requirements across the region. "A strong digital backbone has become essential for businesses to address the

changes in the industry landscape," said Vaneet Mehta, associate vice president and region head, Middle East, Central Asia & Africa, Tata Communications. "By securing this telecom license in KSA, we will be able to seamlessly bring carrier-neutral services like internet connectivity, public/private cloud, cyber security, borderless mobility and more such services to the region. This will help simplify the digital experience for our customers and aid them in transforming their businesses in the new normal," he added. Saudi Arabia is developing into a regional business hub in the Middle East, thanks in part to its

evolving business regulatory frameworks. The acquisition of the type B license will enable Tata Communications to expand its reach in the Middle East, leveraging its global expertise and capabilities coupled with regional knowledge and experience to cater to the new customer requirements. Tata Communications owns and operates the world's only wholly owned subsea network that encircles the globe. This network enables businesses to reach more than 200 countries and territories. Today, around 30 per cent of the world's Internet routes travel over Tata Communications' network.

5.5 Million Visitors Reach UAE Government Portal

The number of users of the official portal of the UAE government reached more than 5.5 million during the first half of 2020, a 50% increase over 2019. The portal has been visited nearly 8 million times, with more than 12.5 million page views. The portal provides information and services of interest to citizens, residents, visitors and investors, and serves as the first reference for government information on the Internet. Portal visitors come to check government developments, laws, policies, services and trends. Mr. Salem Al Housani, Acting Deputy Director General of the Information and mGovernment Sector, and Chairman of the Online Service Index Team, said: "The portal is the forefront of government online presence, and is a common platform for government entities in general, and a manifestation of team spirit between the TRA and those entities. In the executive team, we have a sub-team on portal content and digital engagement, where the portal and its components are an important part of digital government development standards, according to the UN survey issued every two years in this regard." Contents of government websites and services of federal and local entities can be accessed through the portal. Everyone can participate in developing the content of the portal based on the shared responsibility for such content addressing various audiences. The portal includes four sections: About the UAE, Information & Services, E-Participation and Media. The first section covers key information relevant to UAE's economy, political system, government, plans, strategies, initiatives, long history and bright future. The information and services section covers many topics such as 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. The portal is the first of its kind in the world with a single-letter domain name, the letter U, which has more than one meaningful meaning. It can also stand for "you", and refer to the first letter of words denoting union and uniqueness, which are some qualities of the UAE. The UAE is the only country in the world that has adopted the single-letter domain as the address of its portal, taking advantage of UAE's unique name in English, making the portal domain appear as u.ae. Recently, the portal has witnessed much effort to enrich its contents, in light of the emerging exceptional circumstances, as more than 40 new portal pages have been added to cover the initiatives and precautionary measures enacted by the government to address this exceptional circumstance. This page has covered detailed information about government efforts during the exceptional circumstance to ensure safety of UAE citizens and residents and continuity of government services, business, education, and other vital sectors. More than 500K users have visited this page since its launch in late March 2020. A new page has also been added for digital government services available around the clock to facilitate conducting of remote transactions so as to ensure customer safety. More than 750K users have visited this page. The official portal of the UAE Government was launched in 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.

UAE Government Portal from January - July Q1 2019- 2020

Users	2019	3,721,612
	2020	5,595,644
	Increase	50.36%
Sessions	2019	5,899,128
	2020	8,263,765
	Increase	40.08%
Page views	2019	9,915,286
	2020	12,862,187
	Increase	29.72%
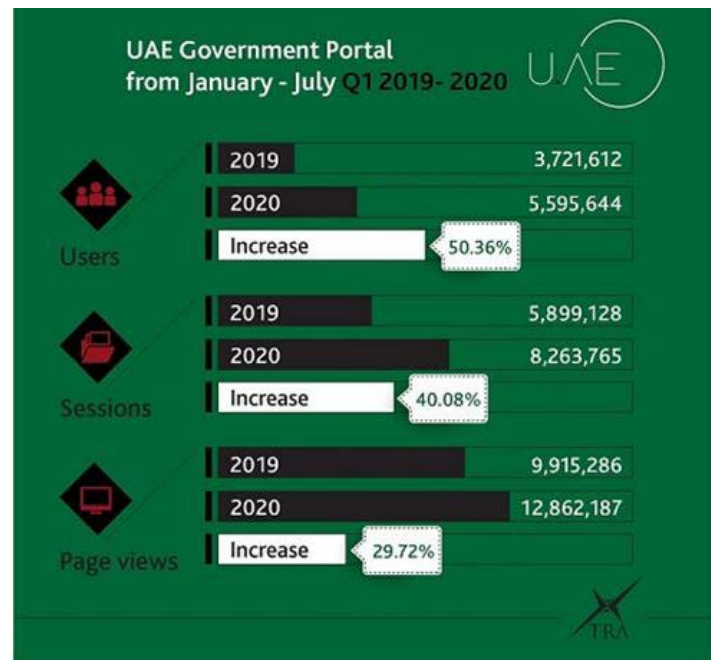
Telia Pulls Out Of Afghanistan by Selling Roshan Stake

Sweden's Telia has sold its 12.25% stake in Afghanistan's Roshan Telecom to the Aga Khan Fund for Economic Development. The Swedish group revealed in 2016 that it was planning to sell up in Afghanistan, although evidently it had to wait to find the right buyer. The Aga Khan Fund is a majority stakeholder in Roshan Telecom.

Terms of the agreement were not revealed. With this long-anticipated divestment, Telia has fully withdrawn from the market, in line with its strategy to exit the Eurasia region while strengthening its focus on the Baltic and Nordic regions. Since announcing this strategy in 2015, Telia has divested holdings in a total of seven markets in Eurasia: Azerbaijan, Georgia, Kazakhstan, Moldova, Nepal, Tajikistan and Uzbekistan. Telia seems to have broadened the strategy's remit over the years. In June, it reached an agreement to divest its indirect holding in Turkey's Turkcell.

Abu Dhabi Early Childhood Authority Launches 'Child Online Protection Guide'

The Abu Dhabi Early Childhood Authority, ECA, has launched the first of its kind, "Child Online Protection guide", in the UAE, as part of the Takween Summer Program 2020. The guide focuses on providing a holistic approach to all potential threats and risks of harm that children at an early age, and beyond, may encounter online on social media platforms, electronic games and other digital platforms. The guide is available for parents and caregivers to download via the ECA website. With high internet usage in the UAE and 99 percent of the population being active on social media,

the guide is intended to support parents in the development of good digital habits while providing local and international resources to ensure they can fulfil their responsibility in keeping their children safe online. The "Child Online Protection Guide" will help parents understand how they can guide their children by supporting safe, structured and healthy online activity from an early age. It also helps parents understand the potential risks of children using the internet and electronic games, such as cyberbullying and child abuse. The guide provides information on dealing with problems and reporting them. Besides, the guide introduces the most important resources that the internet can provide to children of determination to meet their educational, social and entertainment needs. ECA reaffirmed that the internet can be a wonderful tool for young children, particularly during this current period, where it can help facilitate distance learning. However, an increase in the amount of time spent online by children also brings online risks such as cyberbullying, inappropriate content, and online predators. This guide has been created to empower parents and provide them with the knowledge and tools to protect their children online. It also aims to develop their skills such as access to educational content, logical thinking, problem-solving, research and language. The Authority calls on parents and the workforce in the early childhood development sector to familiarize themselves with the guide by visiting the parents' platform, which was recently launched within the Takween program via www.eca.gov.ae for all to benefit from the ECA initiatives and activities, and enhance their experiences and skills to protect their children and provide optimal child development, enrich the family and educational environment with diverse learning resources, knowledge to establish a safe and healthy environment, and ensure optimal use of the summer vacation.

Saudi Arabia Becomes the 5th Fastest Mobile Internet Network Worldwide

Saudi Arabia has jumped five places globally in terms of mobile internet speed, ranking 5th worldwide with a speed of 71.73 MB/s as announced by Speedtest website, specialized in measuring internet speeds around the world. Ookla company, the owner of Speedtest website, has already announced that stc has won the award

for the fastest 5G mobile network during Q2 2020. Stc has also won, for the 4th consecutive year, the award for the fastest mobile network speed, and the award for the best mobile coverage provided by a telecommunication company in the KSA. Winning these awards which are offered by the top platform for measuring internet

speeds in the world, is a testament of stc's commitment to offer the best services to its customers in the Kingdom, elevate community services in the Kingdom, and offer a perfect customer experience, as well as its commitment to its central role in enabling digital transformation in accordance with Saudi Vision 2030.

TRA Signs Deal with OBC to Connect Villages and Schools

Oman's Telecommunications Regulatory Authority (TRA) has announced the signing of an agreement with state-owned Oman Broadband Company (OBC) to supply

telephony and internet services to rural villages and schools in the fourth quarter of the year. Under the agreement, OBC will connect 598 villages and 141 schools

via satellite, in order to bridge the digital divide.

Oman Data Park (ODP) Receives MTC Accreditation to Provide Government, Private Organizations with Data Storage, Retrieval Facilities

Oman Data Park (ODP), the Sultanate's first IT-managed and cloud services provider, has successfully been accredited by the Ministry of Technology and Communications (MTC) for delivering "Security Assessment Services" and "Cloud and Hosting Services" to government institutions in the country. ODP has been added to MTC's Register of Accredited IT Service Providers on its official website: www.mtc.gov.om/ITAccreditation. The organization has been awarded two Economic Activities License Certificates by the Ministry of Technology and Communications (Subject to Free Zones laws and regulations). The license form has been signed and certified using a Digital Signature Certificate as specified under the Electronic Transactions Law of the Sultanate of Oman issued by the Royal Decree No. 69/2008. The accreditation as a Cloud and Hosting Services permits ODP to provide data storage, retrieval and cloud and hosting services to government administrative units. The accreditation as a Security Assessment Services permits ODP to conduct penetration testing and vulnerability assessment to protect the government administrative units of the country against external and internal threats by identifying the entity's security weaknesses and preventive measurements. Maqbool al-Wahaibi, CEO

of Oman Data Park, said, "As the premier Cloud, Hosting and Security services provider in Oman, we are delighted to receive this accreditation in recognition of our excellence in delivering world-class services to users in Oman. Having already served key government institutions with our hosting and security services, this accreditation will further strengthen our commitment towards the digital enablement of our government entities and its preparation for the 4th Industrial Revolution. Our talented and professionally qualified Omani teams are ready to serve any government institution to enable them in their digitization journey while saving costs and increasing overall efficiency," he added. ODP offers managed cloud services to reduce cyber threats and is fully

equipped to educate and serve private and government sectors with cost-effective and secure IT needs. The company offers a wide range of security services for all government sectors to improve their services in a more cost-effective manner. ODP's security assessment services can help government institutions to reduce the risks of possible security breaches and take all necessary measures to prevent them or minimize the harm they can cause. ODP's security assessment services are used to generate a defence strategy in the area of information technology that can be implemented by organizations to reduce potential security risks. It is a preventative system that greatly reduces the risk of an intrusion and keeps up with ever-evolving threats.

MTN Says Iran Exit Is Not Imminent

MTN Group of South Africa says it has no 'immediate' plans to exit is operation in Iran, though it is expecting to 'dispose of its operations in the Middle East in an orderly manner over the medium term,

which is over the next three to five years'. The group says its 49% subsidiary MTN Irancell will continue to operate as before and 'business will be run as usual'. MTN has confirmed that it is in 'advanced

talks' to offload its business in Syria, with operations in Afghanistan and Yemen next in line for a sale as it moves to focus its strategy on Africa.

Robi Expands 4G Coverage to 80% of Population

Bangladeshi mobile operator Robi Axiata has expanded its 4G service to 80% of the population via the deployment of over 11,000 4G sites across the country. The

company claims that it now offers LTE in all 492 upazilas (district subdivisions). In addition, Robi/Airtel customers in Dhaka and the Chattogram have access to VoLTE

services – launched in February 2020 – with around 5,000 sites supporting the technology.

China Mobile | International

iCONNECT PRO

As a one-stop shop telecommunications equipment provider, CMI offers an extensive range of hardware and equipment through iConnect Pro, from smartphones and routers to base station power supply units. Extensive experience gained serving CMCC Group and overseas customers, and a deep understanding of the industry enable us to provide bespoke, cost-effective equipment solutions to support business and network strategies.

Device

One-stop device provider

Phone

3G/4G Smart Feature Phone

3G/4G Smartphone

Device

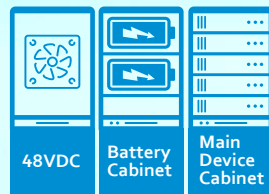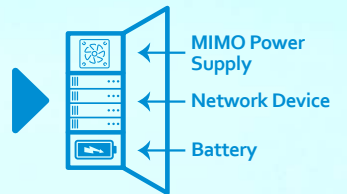MBB Device:
CPE / MiFi

Smart Device:
TV-box / Screen Projector

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iCONNECT

Investing to Bring the Belt and Road to Life

China Mobile International Limited ("CMI") is investing globally in infrastructure, like the extensive 2Africa subsea cable, that will enhance connectivity along the Belt and Road and help the telecoms sector and the businesses and consumers it serves grasp new opportunities.

The Belt and Road Initiative is a bold plan to promote communication and cooperation between Asia, the Middle East, Europe and Africa. Initiated by China in 2013, it is creating economic corridors that touch more than 138 countries. The idea is to build infrastructure that promotes connectivity through trade, investment and cultural exchange. And telecommunications is a key part of it.

As the China Mobile subsidiary responsible for the network operator's international business, CMI continues to invest and innovate to extend its network resources so that companies and communities can benefit from the Belt and Road vision.

Through its investments in cable systems,

> *Through its investments in cable systems, data centres and cloud infrastructure, CMI is building the capability to provide high-quality communications services and solutions to people all along the Belt and Road.*

data centres and cloud infrastructure, CMI is building the capability to provide high-quality communications services and solutions to people all along the Belt and Road. "We are committed to a digital future where telecommunications is a bridge that promotes the flow of people, capital and goods in a more connected world." said Dr. Li Feng, Chairman and Chief Executive Officer of CMI.

Extensive global footprint: 2Africa and beyond
CMI has an extensive global footprint of more than 70 submarine and terrestrial cable systems, including nine self-built subsea cables. This enables seamless connections within and between Asia Pacific, the Middle East and Africa, the Indian Ocean region and Europe, with links to more than 300 cities in 31 provinces and regions throughout Mainland China.

Among CMI's recent investments is the 2Africa subsea cable being developed by a global consortium to substantially enhance connectivity across Africa and the Middle East. One of the largest subsea projects ever undertaken, the 37,000-kilometre cable will connect 23 countries in Africa, the Middle East and Europe and extend to Asia via major Europe-to-Asia subsea cables. It is due to go live in 2023/24,

when it will supersede the total combined capacity of all subsea cables serving Africa today, with a design capacity of up to 180Tbps on key parts of the system.

To enhance capacity, the 2Africa cable will implement a new technology, SDM from Alcatel Submarine Networks, allowing deployment of up to 16 fibre pairs instead of eight. It will also incorporate optical switching technology for flexible bandwidth management and increase subsea cable burial depth by 50%, avoiding areas known for subsea disturbance, in order to help ensure high availability.

Growing data centre network: new U.K. hub
Customer demand for connectivity, cloud and content delivery solutions has continued to soar between Asia Pacific and Europe and also within the Middle East and Africa. Complementing its cable network, CMI is also building a global data centre network to support closer ties for businesses operating in the Belt and Road region. It opened its first data centre in Europe late last year, with a purpose-built U.K. facility that serves as an International Network Exchange hub, an Internet Data Centre and a point of presence (PoP) for CMI's Cloud Connect platform.

The U.K. hub connects with CMI's Singapore data centre, its Global Network Centre in Hong Kong, and its extensive global mobile communications and cloud network infrastructure. CMI is currently also building dedicated data centres in Frankfurt and other locations.

Strengthening its collaboration in the Middle East, CMI has established its third PoP in Oman enabling better connectivity within and between the Middle East, Africa, Asia and Europe. In the future, as more new cables are linked to this new PoP, CMI's improved connectivity will provide an alternative communications route through this important region.

5G roaming: driving connectivity and growth

CMI provides affordable voice and data roaming services along the Belt and Road, covering more than 90% of the region. With 26 cross-border systems, eight terrestrial

Strengthening its collaboration in the Middle East, CMI has established its third PoP in Oman enabling better connectivity within and between the Middle East, Africa, Asia and Europe.

cables and nine submarine cables connecting the Belt and Road region to the rest of the world, 5G is one of CMI's growth drivers.

China Mobile Communications Group Co., Ltd. ("CMCC") has over 70 million 5G subscribers and nearly 140,000 5G base stations built, and all 5G roaming with CMCC is supported by CMI IPX, with the existing 70 IPX-ready PoPs around

the world. CMI connects more than 400 operators through peering partners, as the true IPX hub for Asia, with the most extensive IPX coverage.

"CMI offers customers convenient communication services and low-latency connectivity as well as broad coverage and capacity along the Belt and Road. As a trusted and reputable wholesale provider of international connectivity, CMI has optimised its services to cater to customers' needs. CMI strives to enhance its wholesale solutions and services to bring more value to our customers." Dr. Li Feng said.

CMI has optimized IoT roaming connectivity, supporting 5G roaming since last year and planning for NB-IoT roaming soon. This solution is not only one of the first to market, but also easy to implement and backed by 24x7 service support.

"CMI offers customers convenient communication services and low-latency connectivity as well as broad coverage and capacity along the Belt and Road. As a trusted and reputable wholesale provider of international connectivity, CMI has optimised its services to cater to customers' needs. CMI strives to enhance its wholesale solutions and services to bring more value to our customers." Dr. Li Feng said.

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SATELLITE NEWS

Amazon Gets FCC Approval for Project Kuiper Satellite Constellation

The US Federal Communications Commission (FCC) has given Amazon approval for its Project Kuiper low orbit satellite constellation, to provide Internet access. The planned constellation of 3,236 satellites is intended to address "unserved and underserved communities" around the world. SpaceX is a rival in this area, with its planned Starlink eventually consisting of 4,425 satellites. The FCC granted Amazon approval by a 5-0 vote to deploy and operate the service to deliver satellite-based broadband services in the United States. The Ka-band system will
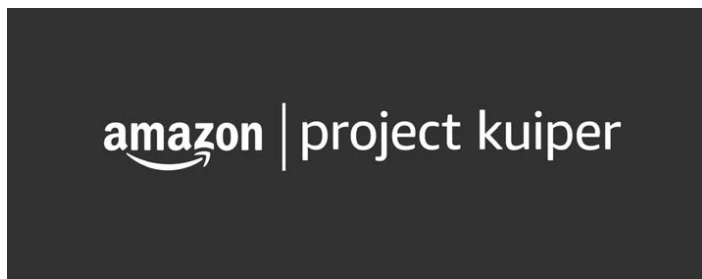
require an investment of $10 billion, says the company. As well as satellite-based broadband, Kuiper will also provide backhaul solutions for wireless carriers, says Amazon, extending LTE and 5G service to new regions. "We have heard so many stories lately about people who are unable to do their job or complete schoolwork because they don't have reliable internet at home," said Dave Limp, Senior Vice President, Amazon. "There are still too many places where broadband access is unreliable or where it doesn't exist at all. Kuiper will change that. Our $10 billion investment will create jobs and infrastructure around the United States that will help us close this gap. We appreciate the FCC's unanimous, bipartisan support on this issue, and I want to thank Chairman Pai and the rest of the Commission for taking this important first step with us. We're off to the races." According to the company, Project Kuiper will be designed and tested in its new research and development facility opening in Redmond, Washington. Amazon was first reported to be planning a low orbit satellite constellation for internet access back in April 2019.

Intelsat Launches Its First Quad-Band Satellite, to Boost HDTV, Broadband and Mobile Network Coverage

International satellite operator, Intelsat, has launched its first ever quad-band satellite, to boost digital TV, broadband and mobile network service provision. The Galaxy 30 is capable of utilizing spectrum in the C-, Ku-, Ka- and L-bands, enabling it to deliver a diverse portfolio of services to Intelsat customers. "Today's launch of Galaxy 30 demonstrates Intelsat's long-term commitment to our North American media customers," said Intelsat CEO Stephen Spengler. "At Intelsat, we're constantly innovating, investing in and upgrading our satellite fleet and terrestrial infrastructure. Galaxy 30 is a great example of how we help our customers stay ahead of evolving consumer demands, today and well into the future." The Galaxy 30 is a geosynchronous communications satellite that will primarily provide high-performance services to Intelsat's North American customers. Galaxy 30 is the first satellite in Intelsat's Galaxy fleet refresh plan and will replace Galaxy 14 at 125 degrees west once it is in service in early 2021. The Intelsat Galaxy fleet is the most reliable and efficient media content distribution system in North America, offering customers an unmatched penetration of cable head-ends. Galaxy 30 will play an important role in Intelsat's U.S. C-band spectrum transition plan, which is accelerating America's path to 5G. Intelsat is facilitating the work of the U.S.

Federal Communications Commission (FCC) in transitioning and safeguarding media services currently utilizing the lower portion of the band to make way for 5G wireless services. Intelsat is not seeking any reimbursement costs from the FCC's public auction proceeds for any aspect of the Galaxy 30 launch or relocation.

Kleos to Launch Second Satellite Cluster on SpaceX Falcon 9

Kleos Space, a space-powered Radio Frequency Reconnaissance data-as-a-service company, announces that as part of the expansion of its constellation a contract has been signed with rideshare provider Spaceflight Inc to manifest a cluster of Kleos satellites on the SpaceX Falcon 9 launch, scheduled for mid-2021. This will be the second cluster to be launched by Kleos, following the first four Kleos' Scouting Mission satellites that are in the Sriharikota Range in India, awaiting launch on PSLV C49 by the Indian Space Research Organization (ISRO). This mission will be named Polar Vigilance Mission and is a cluster of four satellites, launching into a 500 km Sun Synchronous Orbit. The Polar Vigilance Mission will enhance the company's RF geolocation data delivered by the Kleos Scouting Mission by covering areas North and South of the Scouting Mission 37-degree inclined orbit in addition to increasing overall coverage time in the equatorial region. Kleos' objective is to own, launch and operate up to a maximum of 20 clusters of satellites creating a constellation that provides critical coverage for monitoring global events and key locations of interest. Andy Bowyer, CEO of Kleos, said, "Our vision is to deliver a trustworthy, cost effective, reconnaissance data product with revisit rates that will help disrupt illegal activities, protect borders and save lives. The launch

of the Polar Vigilance Mission means we take another step on that journey, collecting more data, over new areas opening additional markets whilst also providing a higher value product for our existing customer base." The Kleos business model is to create subscription-based revenues from delivery of essential data to government and commercial entities around the globe. Kleos will be the first company to fly clusters of four satellites to accurately detect and locate the usage of the RF spectrum by legitimate and illegitimate actors. The data is collected and downlinked from the satellites

then processed through the Company's proprietary algorithms. Once 'packaged' into data products and transferred to Kleos' licensed subscribers 'as-a-service', the same data can be sold unlimited times creating annuity type revenues. Kleos will ultimately aim to provide refresh rates of near real-time which will require a small constellation of no more than 20 satellite clusters delivering highly useful operational capability. The timeline for building up to a constellation will be driven by customer demand i.e. required revisit times or geographic areas of interest.

RSCC Launches Two New Satellites

Russian Satellite Communications Company (RSCC) has successfully launched two new satellites, Express-80 and Express-103, from the Baikonur cosmodrome. The two craft were put into the target geo-transfer orbit and later will be placed in the geostationary orbit at the 80° and 96.5° East orbital slots. The spacecraft are intended to provide fixed and mobile services; digital TV and radio broadcasting; high-speed Internet access and data transmission across the Russian Federation and abroad. The satellites

should begin commercial operation in January and February 2021. The satellites were manufactured by Russia's JSC ISS Reshetnev, in collaboration with its European partner, Thales Alenia Space. RSCC now operates a fleet of 10 geostationary satellites operating in the C-, Ku-, Ka- and L-bands on an arc from 14° West to 140° East, providing services to clients in 58 countries on all continents. "With two newly-launched satellites, Express-80 and Express-103, the throughput of our constellation is now

up by a quarter," said Yuri Prokhorov, RSCC acting Director General. "It is crucial for RSCC that these spacecrafts in orbital slots centered over the Russian Federation are already demanded by our customers. This will allow telecom operators to transfer their networks from foreign spacecraft and provide domestic subscribers with the most advanced digital communications and broadcasting services, including Internet access for maritime and aerial customers."

SpaceX is Manufacturing 120 Starlink Internet Satellites per Month

SpaceX is manufacturing its Starlink satellites at an unprecedented rate for the space industry, analysts say, as the company dives headlong into building a space-based global internet service. Elon Musk's company told the Federal Communications Commission in a presentation last month that its Starlink unit is "now building 120 satellites per month" and has "invested over $70 million developing and producing thousands of consumer user terminals per month." "Invested hundreds of millions of dollars in Starlink to date," the SpaceX presentation added. Starlink is SpaceX's ambitious plan to build an interconnected network of about 12,000 small satellites, to beam high-speed internet from orbit to anywhere in the world. The company has so far launched nearly 600 Starlink satellites and is currently building a system of ground stations and user terminals, to connect consumers directly to its network. It's difficult to contextualize what SpaceX satellite production rate means has given the difference in size and complexity of spacecraft built by other companies. But Quilty Analytics founder Chris Quilty told CNBC that Starlink manufacturing is happening at a speed never before seen in the satellite sector. Quilty's boutique research and investment firm focuses on the satellite communications sector, which he founded after leading Raymond James' coverage of the space industry for 20 years. "To put it in perspective, Iridium, which previously held the record for the largest commercial satellite constellation, was manufacturing satellites at the rate of

about six satellites per month at the peak of production," Quilty said. Iridium's NEXT satellites are nearly three times the mass of a Starlink satellite, at about 670 kilograms versus an estimated 260 kilograms. But, even with the caveat that each Starlink is smaller than an Iridium satellite, SpaceX is building its spacecraft 20 times as fast. Notably, Quilty pointed out that Iridium's satellites were built by European aerospace conglomerate Thales Alenia Space. Additionally, rival satellite internet startup OneWeb was building satellites at a rate of about 30 per month before it went bankrupt — and Quilty highlighted that OneWeb's production line was designed and built in collaboration with Airbus, another European aerospace giant. That makes Starlink the only of the three with satellites built solely by a U.S. firm, as well as the most productive. "American ingenuity wins again," Quilty said. On the

customer side, SpaceX last week told the FCC that is already seeing "extraordinary demand" from people interested in Starlink's internet service. The company said "nearly 700,000 individuals" across the United States said they were interested in the service, causing SpaceX to request that the FCC increase the number of authorized user terminals to 5 million from 1 million. Right now it seems the primary bottleneck for Starlink's service lies in how quickly SpaceX can launch the satellites, according to industry analytics firm Bryce Space and Technology. The company has been launching Starlink missions about once per month with its Falcon 9 rocket fleet. "At 60 satellites per Falcon 9, SpaceX is also driven to bring its Starship launch vehicle online as soon as it can, as the company says each will be able to carry 400 Starlink satellites at a time," Bryce senior space analyst Phil Smith told CNBC.

Launch of Russia's Next-Generation Glonass-K Satellite Postponed

The launch of Russia's next-generation Glonass-K navigation satellite, which has been postponed several times since March, is planned for mid-October, a space industry revealed recently. "The launch of Glonass-K satellite has been postponed until October. The preliminary date of the launch is 17 October. There are no any technical difficulties to carry

out the launch", the source said. In early August, another space industry source stated that the launch of the satellite was planned for the end of the month. The Glonass-K satellite, the third Russian navigation satellite of the type, is planned to be launched using the Soyuz-2.1b carrier rocket with the Fregat upper-stage booster. The first Glonass-K satellite was

launched in February 2011, while the second one was launched in December 2014. There are currently 27 satellites in the Russian Glonass constellation, 23 of them are operational. In February, spokesperson of Russian satellite maker ISS-Reshetnev said that nine next-generation Glonass-K satellites would be added to the constellation by 2022.

Saab Explores Low-Earth Orbit (LEO) Satellite Communication for Global Maritime Connectivity

Saab will, together with the companies ORBCOMM and AAC Clyde Space, lead a groundbreaking Swedish space project; to develop space based communication for the maritime sector via the new automatic tracking standard, VDES. The new VDES package does not only enable safer, more sustainable and greener shipping but the technology also has spin-off potential for other industries. Saab has in recent years broadened its offer to include space based products and solutions. The company is now taking a next step and investing in a satellite project that will expand global data communication opportunities for the maritime industry but also potentially for other industrial Internet of Things (IoT) applications. The first demonstration satellite is intended to be followed by a larger constellation of satellites that will form the new part of the maritime communication infrastructure. The space-based infrastructure would increase VDES range from the shoreline to anywhere in the world, converting what is currently a predominantly coastal system into a global maritime system. For the first time, all ships in service with VDES can carry out two-way communication with each other across the globe, like a secure wireless internet for shipping. For the last 20 years, Saab has been leading maritime traffic management with products using the Automatic Identification System (AIS). Now the next generation of AIS is taking form within an international VDES standard. The VHF Data Exchange System (VDES) has up to 32 times more bandwidth compared to AIS. The system will transmit small data packages between satellites, ships and

shore, which will facilitate the maritime transport systems. Furthermore, AIS can be used as before since the system boasts full backward compatibility. But the VDES system will not only provide the opportunity for positioning and communication (as the AIS system does) but also serve as an enabler for e-navigation and autonomous shipping. The technology might even be applicable for other usage as for example (IoT) communication between owner and cargo, transported both at sea and on land. "This is a very exciting project where Saab is testing new technology in space, which we think will become the enabler of future secure communication services and applications," says Christian Hedelin, Chief Strategy Officer at Saab. E-navigation and other solutions based on the VDES technology also has the potential to deal with the growing global maritime traffic. This will lead to safer and more optimal traffic management, which will save a lot of fuel and emission. "With the deployment of this technology, we will also contribute to

a more sustainable society," says Christian Hedelin. The consortium running the space project consists of Saab, ORBCOMM a leading global provider of IoT and AAC Clyde Space a manufacturer of spacecraft. The project, to place a VDES nanosatellite in LEO, is co-funded by the Swedish Transport Administration (Trafikverket). "The new LEO nanosatellites are part of what is now called 'New Space' and this project is a good example of how industry can develop powerful and cost efficient space based solutions. Saab entering in to this business with its technology is a significant opportunity for all involved," says Christian Hedelin, Chief Strategy Officer at Saab. The purpose with the project is to test and develop new technology in preparation of a future operational VDES satellite constellation with global coverage. The VDES project is expected to begin in October 2020, with the launch of the demonstration satellite in mid-2022, followed by in-orbit demonstration and testing, which will end in the first quarter of 2023.
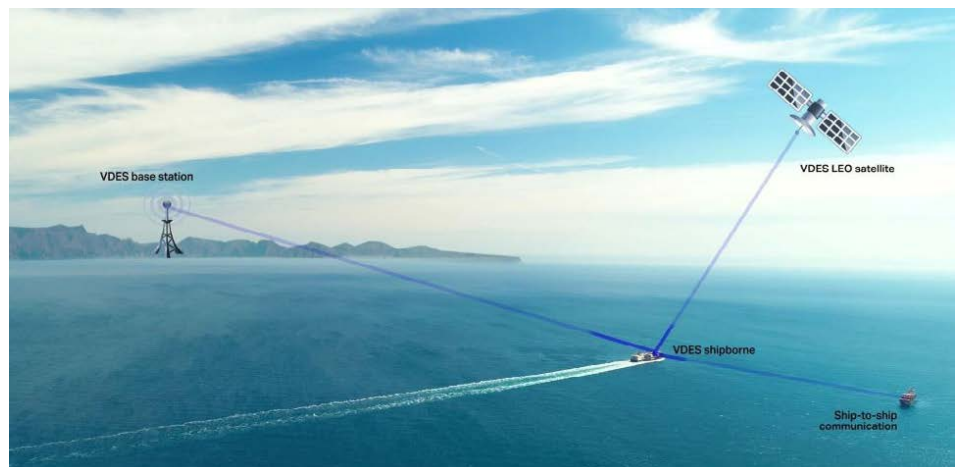
Telecom Namibia Upgrades VSAT to Bring Connectivity to Remote Areas

Telecom Namibia has upgraded its VSAT hub to ensure faster and reliable connectivity for users in remote areas and will soon begin deploying remote terminals to various areas across the country following successful pilot installations. Lukas Shuuya, Acting Chief Technical Information Officer, noted in a press

release that the VSAT service, dubbed 'Satlink', is an ideal solution for those who cannot get a voice and/or broadband internet access via the company's existing wireless or wireline access technologies. 'Telecom's upgraded VSAT is based on the latest high capacity, high throughput and low latency satellite technology and

supports delivery of both narrowband and broadband connectivity anywhere in Namibia, even in the remotest places,' he added. Telecom markets a range of Satlink packages offering unlimited data volumes and download speeds of up to 10Mbps.

Ka-Band Transceiver for Satellite Communications

Scientists at the Tokyo Institute of Technology and Socionext have developed a transceiver for enabling seamless communication between earth ground platforms and satellites in the low, middle, and geostationary earth orbits. According to the scientists involved in the project this transceiver could help to bring the Internet to people in remote rural areas and at sea. Despite communications technologies having advanced rapidly there are still issues when it comes to bringing connectivity to remote locations, such as rural areas or the open sea. Satellite communication (SATCOM) is an attractive option for providing data links to such places; but for effective SATCOM, the right equipment must exist both in space and on Earth. At the forefront of research into SATCOM technologies are scientists from the Prof Kenichi Okada's lab at Tokyo Institute of Technology (Tokyo Tech), who have developed a transceiver for SATCOM using standard CMOS technology. The transceiver, which operates in the 'Ka band', means a 27–31 GHz frequency range for uplink (ground to satellite) and 17–21 GHz range for downlink (satellite to ground). The design carries a variety of features. On the transmitter (TX)

side, a high-quality-factor transformer is employed to achieve efficient power use and high linearity in transmission, which results in lower distortion during transmission. The receiver (RX) side features a dual-channel architecture that unlocks several capabilities. By having two RX channels it allows for receiving signals from two satellites simultaneously. These signals are received in parallel using either two independent polarization modes or two different frequencies. In addition, the proposed design can perform adjacent-channel interference cancellation; that is, the 'contamination' on a signal received in one channel by another signal on an adjacent frequency band is eliminated using information received at the other channel. This strategy increases the dynamic range of the system, thus allowing it to operate correctly even in less-than-ideal scenarios with stronger noise and interference. Both the TX and RX perform direct conversion of a signal; that is, the TX directly converts a baseband signal into a modulated signal and the RX performs the inverse process without additional intermediate frequency conversions, unlike the more commonly used superheterodyne receivers. This helps to reduce the overall complexity, size,

and power consumption of the transceiver. The scientists have created a prototype chip to test the actual performance of their design when using all the modulation schemes regulated by the SATCOM DVB-S2X standard. This includes high-order modulation techniques like 64 APSK and 256 APSK, which provide fast data rates. The performance test results are said to be very promising, especially when compared with other existing SATCOM transceivers. Commenting Prof Okada said, "Our paper presents the first Ka-band SATCOM transceiver implemented using standard CMOS technology and designed for an earth ground platform communication with geostationary and low Earth orbit satellites." These orbits are at 35,786 km and 200–2,000 km, respectively. "Satellite communication has become a key technology for providing interactive TV and broadband internet services in low-density rural areas. Implementing Ka-band communications using silicon - CMOS technology in particular - is a promising solution owing to the potential for global coverage at low cost and using the wide available bandwidth," said Prof Okada.

SNC Unveils New Satellite Platforms

Sierra Nevada Corporation) Sierra Nevada Corporation (SNC) has added two new satellite platforms to its spacecraft offerings, the SN-200M satellite bus designed for medium-Earth orbit (MEO) and the SN-1000, offering increased payload capacity for MEO and other orbits. The SN-200M variant specifically adapts SNC's standard SN-200 bus for the MEO radiation environment. The SN-1000 is a demonstration platform based on the SN-200M bus flying an Evolved Expendable Launch Vehicle (EELV) Secondary Payload Adapter (ESPA). Both satellites build on the flight heritage gained from the Air Force Demonstration and Science Experiment (DSX) program. Last June, the Air Force Research Laboratory (AFRL)

launched DSX into MEO and it has been operating successfully on-orbit for the past year. "We are proud to be able to say SNC is in a small, select group of satellite suppliers who've delivered a proven MEO spacecraft," said SNC CEO Fatih Ozmen, referring to the on-orbit success of DSX. "Our unique SN-1000 approach supports increased payload demonstrations or operational missions in any orbit." The SN-1000 platform can host one large payload or multiple payloads at the same time using a common bus to provide power, attitude control, communications and other standard functions. Its architecture evolved from SNC's 250kg SN-200M satellite utilized on DSX that included additional radiation shielding for the

higher radiation environment in MEO, and large reaction wheels and torque rods for control of the ESPA ring with large payloads attached. DSX includes two large deployable booms of 80-meters and 16-meters. "The SN-200 bus was first proven as a standalone satellite bus with a standard payload capacity close to 250kg back in 2006 during the TacSat-2 mission," said John Roth, vice president of business development for SNC's Space Systems. "With the addition of the of the ESPA Grande ring in the SN-1000 configuration, each port can hold 700-800kg of payload, greatly increasing capacity. The SN-200M can also be used alone as a standard bus hosting payloads in MEO."

SES Touts American Companies for C-Band Satellite Work

SES has selected U.S.-based United Launch Alliance (ULA) to launch two C-band satellites. This launch is part of the company's accelerated C-band clearing plan to meet the Federal Communications Commission's objectives to roll out 5G services in the United States. ULA's Atlas V rocket will launch from Cape Canaveral, Florida in 2022 and carry the two stacked satellites. Earlier this year, SES contracted with American companies Northrop Grumman and the Boeing Company to deliver four C-band satellites. These satellites will enable SES to clear 280MHz of mid-band spectrum for 5G use while seamlessly migrating SES's existing C-band customers and ensuring the continued delivery of digital television to nearly 120 million American TV homes and other critical data services. ULA will launch the two C-band satellites manufactured by Boeing. SES is investing in America through its C-band transition plan and its work with large and small businesses across the country and its selection of Atlas V, an American launch vehicle launched from the American soil underlines that commitment. "Clearing mid-band spectrum expeditiously while protecting cable neighborhoods across America is a huge undertaking and one that requires partners that can deliver mission success and schedule assurance," said Steve Collar, CEO at SES. "We are thrilled to be working with ULA again and partnering to meet the FCC's ambitious timeline for the accelerated clearing of C-band spectrum." "We are pleased SES selected ULA and our proven Atlas V for this important commercial launch service," said Tory Bruno, ULA's president and CEO. "Atlas V is known for its unmatched level of schedule certainty and reliability and this launch is critical to the timely clearing of C-band spectrum, empowering America's accelerated implementation of 5G. ULA's legacy of performance, precision and mission design flexibility allow us to deliver a tailored launch service that minimizes orbit raising time and perfectly meet our customer's requirements. We are thrilled to provide this optimized launch solution to SES for this crucial launch."

SCT, Dunes Middle East Sign MoU to Provide Satellite, VSAT Services

Amazon.com said that it will invest more than US$10 billion to build a network of 3,236 satellites that will provide high-speed broadband internet services to people around the world who lack such access. The announcement follows the Federal Communications Commission's approval of the plan, called "Project Kuiper," for the constellation of low-Earth orbit (LEO) satellites that will compete with the Starlink network being built out by Elon Musk's SpaceX. It also comes on the heels of Amazon posting its biggest profit in its 26-year history. "A project of this scale requires significant effort and resources, and, due to the nature of LEO constellations, it is not the kind of initiative that can start small. You have to commit," the company said in a blog post. The project will also benefit wireless carriers deploying 5G and other wireless service to new regions, Amazon said. By comparison, SpaceX has launched more than 500 satellites of the roughly 12,000 expected for its Starlink constellation in low-Earth orbit and plans to offer broadband service in the US and Canada by the year's end. The FCC approved SpaceX's request in 2018. SpaceX President Gwynne Shotwell, who in February floated the idea of spinning Starlink off for an IPO in the coming years, has said the Starlink constellation will cost the company roughly $10 billion. While extremely costly to deploy, satellite technology can provide high-speed Internet for people who live in rural or hard-to-serve places where fiber-optic cables and cell towers do not reach. The technology could also be a critical backstop when hurricanes or other natural disasters disrupts communication. The FCC authorization, adopted with a 5-0 vote, requires Amazon to launch half of its satellites no later than mid-2026 and build out the rest of the constellation by mid-2029. Amazon said that it would begin to offer broadband service once 578 satellites are launched. It had 110 open positions for its "Project Kuiper" posted on its website on Thursday. The satellites will be designed and tested at a new research and development facility opening in Redmond, Washington.

Data-Relay Satellite Beams at Light Speed

The most sophisticated laser communication network ever designed has gained its second satellite. The European Data Relay System (EDRS) was built to accelerate the flow of information from Earth-observation satellites to people on the ground. The second satellite in the network, EDRS-C, has now passed its user commissioning review and entered into full service. Launched on 6 August 2019, EDRS-C is in geostationary orbit some 36 000 kilometers above Earth. This geostationary position enables the communication satellite to maintain an almost constant connection with Earth-observation satellites that are closer to the planet's surface and circle the Earth every 90 minutes or so. The EDRS satellites use lasers to communicate with Earth-observation satellites and beam their data back to Europe in almost real time. Without them, there would be delays of up to 90 minutes. EDRS-C has joined its sister satellite, EDRS-A, and can now be used by its customers to relay information from all four Sentinel satellites that watch over Earth, capturing day-and-night radar images and multispectral high-resolution images of vegetation, soil and water cover, inland waterways and coastal areas – as well as information for emergency services. The Sentinel satellites form part of the EU's Copernicus program. EDRS is a new, independent European satellite system, and is a Partnership Project between ESA and operator Airbus as part of ESA's efforts to federate industry around large-scale programmes, stimulating technology developments to achieve economic benefits. The EDRS-C satellite platform was built by OHB System in Germany and the laser terminals were developed by Tesat-Spacecom and the DLR German Space Administration.

Inmarsat, CPN, MiniFarm Simplify LoRaWAN Satellite Connections

Inmarsat is working with CPN Satellite Services and MinFarm Tech to simplify connecting Low Power Wide Area (LoRa) networks to satellite. The companies are launching the MF 400 IoT Satellite Bridge incorporating Inmarsat's IsatData Pro (IDP) service. According to a release, the solution enables data from Internet of Things (IoT) sensors operating on LoRaWAN networks to be optimized for transmission over Inmarsat's IDP service, which Inmarsat said will enable additional connectivity to IoT devices in remote locations. Powered by a single 80 W solar panel and with battery backup capacity of two to three days, the MF 400 IoT Satellite Bridge uses protocol optimization to forward sensor payload traffic over the high-latency, non-IP packet data satellite services of the Inmarsat IDP. "IoT is already proving to be hugely influential in enabling effective remote operations across many different sectors, and we are continually focused on innovation with the objective of making our services even better. Backhauling LoRaWAN network data over satellite utilizing the MF 400 IoT Satellite Bridge is a major step forward in this regard," commented Inmarsat President of IoT, Enterprise, Tara Maclachlan.

Tuvalu Signs Satellite Deal with Kacific

The government of the Pacific island nation of Tuvalu has signed a five-year agreement with satellite operator Kacific for the provision of nationwide connectivity, trunking, mobile backhaul, marine and back-up services. The bandwidth, supplied by the Kacific1 satellite, will connect agencies, businesses and communities across Tuvalu's nine islands with high quality internet. Under the agreement, Tuvalu – via the Ministry of Justice, Communication and Foreign Affairs – will take all available capacity – a total commitment of 150MHz – from the dedicated high-throughput beam Kacific has positioned over Tuvalu. Under the agreement, Kacific will provide a comprehensive turnkey service comprising: 400Mbps to 600Mbps of satellite capacity depending on size of terminals; 60 VSAT terminals for schools, medical clinics, government agencies and small businesses; 40 outdoor Wi-Fi access points to support community connectivity; three maritime antennae to connect ferry services; and eleven Ka-band antennae to provide trunking and backhaul services for the mobile phone network.

Two Team for Satellite IoT Asset Tracking

Australian satellite IoT operator Myriota has teamed with a vehicle tracking provider for its first asset tracking system Future Fleet will use Myriota's low power satellite links for a new vehicle and asset tracking technology called NX-01. Future Fleet is one of the leading providers of advanced telematics for fleet management across Australia and New Zealand and plans to expand into global markets, hence the need for a satellite data capability. The NX-01 intelligent tracking system, launching by the end of 2020, will use Myriota's patented direct-to-orbit transmission links for agriculture, mining, and logistics and transport with a more reliable and cost-effective tracking solution to complement

traditional cellular-based GPS tracking devices especially in remote and isolated areas. "Our partnership with Future Fleet is a testament to the forward-thinking nature of both organizations. Together, we're creating an opportunity to not only rapidly advance the capabilities of the transport and logistics sector at large, but also lower the sector's carbon footprint through optimized routes and reduced fuel consumption," said Alex Grant, CEO, Myriota. "Future Fleet's new NX-01 intelligent tracking solution is the culmination of two best of breed companies working together, providing transport organizations with a distinct advantage over their competition and total

visibility of their assets." At the start of the Covid-19 pandemic, industries, such as mining and long-haul transport, faced an uncertain new reality with less staff on the ground than ever before due to social distancing restrictions. The ability to reliably and affordably track assets is key to the stability of these industries during a time when there is a cap on available labor. "When analyzing the IoT landscape as a whole, we knew quickly that we wanted to partner with Myriota as they've consistently been ahead of the competition in driving innovation in IoT and growing a global network," said Richard Saad, General Manager at Future Fleet.

MediaTek Conducts the World's First Public Test of 5G Satellite IoT Data Connection with Inmarsat

MediaTek is pushing the boundaries of advanced IoT 5G satellite communications with a successful field trial that transfers data through Inmarsat's Alphasat L-band satellite, in Geostationary Orbit (GEO) 35,000 kilometers above the equator. The results of MediaTek and Inmarsat's IoT field test will be contributed to the 3rd Generation Partnership Project (3GPP)'s Rel-17 standardization work on Non-Terrestrial Network (NTN), which is part of its overarching initiative to establish 5G standards toward new use cases and services. The new 5G satellite NB-IoT technology established a bi-directional link from MediaTek's satellite-enabled standard NB-IoT device to a commercial GEO satellite, breaking new ground for a truly global IoT coverage. The successful test builds the foundation for hybrid satellite and cellular networks to enable new ubiquitous 5G IoT services at a global scale. "MediaTek's collaboration with Inmarsat will accelerate industry efforts to converge cellular and satellite networks in the 5G era. MediaTek is a leading connectivity provider and contributor to 3GPP standards, and our ongoing work with Inmarsat GEO satellites will help drive 5G innovation across verticals like IoT," said Dr. Ho-Chi Hwang, MediaTek General

Manager of Communication System Design. MediaTek is the world's 4th largest fabless semiconductor company and Inmarsat is the world leader in global, mobile satellite communications. The two companies ran the test with a base station located at the Fucino Space Center in Italy and developed by Taiwan's Institute for Information Industry (III). The test device, built with MediaTek's satellite-enabled NB-IoT chipset, was located in Northern Italy. The prototype system successfully established a communication channel and data transfer with the GEO satellite

'Alphasat'. The successful test could provide proof as to the feasibility of new global standards and open market potential of using a single device for connecting both satellite and cellular networks. "Testing MediaTek's standard NB-IoT chip over Inmarsat's established GEO satellite network has proven technology from mobile networks works effectively over GEO satellites with little modification and will provide a very cost effective path to ubiquitous and hybrid global IoT coverage," said Jonathan Beavon, Senior Director, Inmarsat Product Group.

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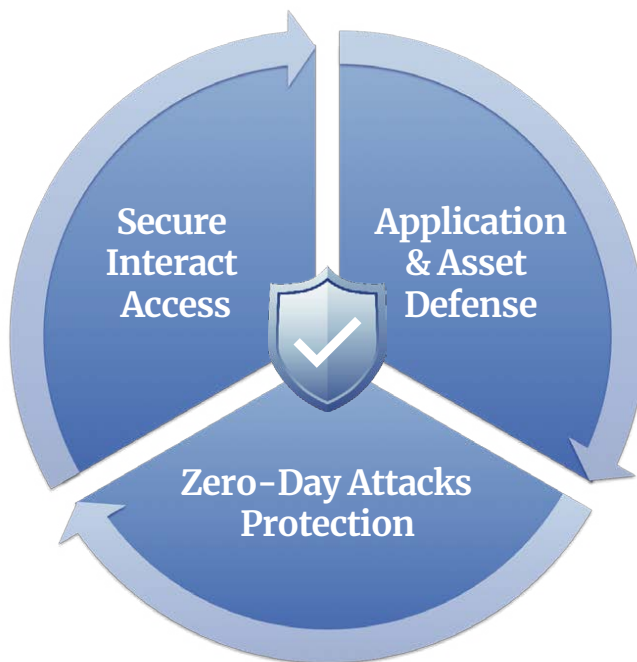
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ARTICLE

Cyber Threats Are Surging due to the Pandemic
Critical Post-COVID Cybersecurity Considerations

> *As digital transformation continues to pick up steam, companies need to be aware of the significant security implications at hand.*

For most SAMENA businesses, one of the most noteworthy aspects of the current pandemic has been its impact on digital transformation. Businesses across all sectors have been forced to pivot and embrace digital operations. For some companies, digital transformation has merely involved a shift to remote offices, with employees moving to virtual desktops, video conferencing platforms, and cloud services. Yet, for many SAMENA companies, COVID-19 has required an even bolder leap into digital markets. For example, MGM Resorts International is now making a pivot into online sports gambling, as they look to recoup lost profits and cater to customers who can't make it into physical casinos. "As digital transformation continues to pick up steam, companies need to be aware of the significant security implications at hand," says Sameh Sobhy, Managing Director META region for communications provider PCCW Global. "Digital transformation is permanently changing the way that companies communicate with workers, partners, and customers," he adds. Mr. Sobhy identifies three critical security issues that are emerging as the pandemic slowly chips away at our lives. "Across the globe, we're seeing an increased reliance on virtual interactions; more vulnerable end users; and outdated network architectures," he stresses.

Sameh Sobhy
Managing Director META region
PCCW Global

PCCW Global

1. Increased Reliance on Virtual Interactions
The pandemic has led to widespread brick and mortar closures, forcing non tech companies to digitize to survive. For example, many regional retailers have all been forced to update and expand their online shopping strategies, to protect their market share and compete. Unfortunately, many smaller organizations — like small restaurant owners and retailers — are now in over their heads. One issue that businesses are facing is that customers are increasingly moving to virtual hubs to make transactions. As a result, companies are at increased risk for threats like distributed denial of service (DDos) attacks, which can lead to lengthy bouts of downtime. Sustained DDoS attacks, after all, can sometimes last up to 24 hours. "It's one thing for a large enterprise to be knocked offline for this long," adds Mr. Sobhy. "It's quite another for a small to medium-sized business to go 24 hours without internet, especially during busy times."

It should be noted that DDoS attacks remain a top cybersecurity threat heading into 2H20. By the end of 2019, as many as 167k DDoS attacks were detected, for a total of 437k TB of traffic. This was a 30% YoY increase. And about 170k IoT devices were found in DDoS attacks last year.

SAMENA companies can protect against large-scale DDoS attacks by "scrubbing" or cleaning IP traffic before it reaches the network. This typically involves routing incoming network traffic to multiple data centers, so that DDoS attacks can be filtered and eliminated. Filtering separates legitimate traffic from false traffic, and is done as close to the attack sources as early as possible — shielding the organization from getting overwhelmed by malicious data packets.

However, it's important to keep in mind that routing traffic to thwart a DDoS attack can add extra time for data to transit the network, which can also negatively impact business operations. As such, it's important to use local scrubbing centers located at key peering hubs around the world where large volumes of traffic are exchanged.

2. Vulnerable End Users

One of the top reasons why many SAMENA companies have been nervous about allowing remote workers is because end-user behavior tends to change on home networks. Staff members tend to become more relaxed about security when working from home, using insecure devices, running programs, and downloading files that may otherwise be avoided in a private office environment. "In fact, many home workers don't even run network security assessments, and use networks that are insecure — increasing the attack surface exponentially for the business that's using the network to transmit sensitive data," says Mr. Sobhy.

> *The industry has seen a major uptick in phishing attempts, which mimic a "Trojan horse" approach to luring unsuspecting victims into opening emails that they think are safe, but in fact carry malicious payloads.*

Cybercriminals are aware of this vulnerability, and are actively targeting users over insecure networks via email. Google alone, for instance, has discovered hundreds of millions of daily spam messages related to COVID-19. The industry has seen a major uptick in phishing attempts, which mimic a "Trojan horse" approach to luring unsuspecting victims into opening emails that they think are safe, but in fact carry malicious payloads. Businesses need to try and minimize the chance of data loss from targeted email attacks, and are strongly encouraged to use cloud email protection services, which leverage advanced threat intelligence data and machine learning engines, as well as URL protection, and forged email detection services.

3. Outdated Network Architectures

Organizations also need to update their remote network infrastructure, and migrate away from the traditional combination of leased lines, and VPN-based structures to flexible software-defined wide area networking (SD-WAN) setups that can provide dynamic security management. SD-WAN can reduce infrastructure costs and provide the required flexibility to build or tear down sites in a short period of time — making it faster and easier to provision network services to remote users.

One of the most important things to consider when deploying SD-WAN is that it can be much riskier running traffic over the public internet, versus a private carrier MPLS network. The public internet poses much greater levels of exposure to bad actors and malware. Allowing SD-WAN devices to access the internet directly with its limited onboard security protection is not adequate to protect enterprise assets behind it, so extra protection is needed. The best way to fortify SD-WAN outside of a private MPLS environment is to leverage an advanced managed firewall or cloud security solution, which incorporates a variety of advanced security functions, such as sandboxing, application control, intrusion detection and prevention (IDS/IPS), quarantining, and web filtering.

Summary

"Of course, these are just a few of the many factors that companies need to consider when enabling remote work," Mr. Sobhy adds. The above suggestions should be used in conjunction with services such as real-time security information and event monitoring (SIEM), and advanced identity management and access control. "By incorporating these strategies, SAMENA companies can drastically reduce their attack surface."

PCCW Global's European-based security operations center (SOC) manages customers' security services 24x7, and helps them pro-actively address security issues.

About the author
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Bob Flinton has been with PCCW Global for 6 years, and leads product marketing for the company's cybersecurity service offerings.

WHOLESALE NEWS

No Roaming Charges between Central African Countries in 2021

First agreed back in February, the six countries of the CEMAC have confirmed that they will abolish roaming changes between their territories, beginning at the start of 2021. The countries – Cameroon, Congo, Gabon, Chad, Equatorial Guinea, and Central African Republic – have been in discussions on this topic for many years, with similar agreements being struck across the continent in recent years. For example, a union of Western African countries, the Economic Community of West African States (ECOWAS), had agreed to remove roaming fees for its 15 members back in 2017. Finally confirmed, the roaming agreement will allow nationals of any of the CEMAC countries to visit these other selected nations without fear of expensive calls and texts. "The Council welcomes this decision, which contributes to the densification of the integration of peoples within CEMAC, in that it aims to facilitate the mobility of populations through Information and Communication Technologies, reducing communication costs," said a statement from the Union économique de l'Afrique centrale. This agreement should also begin to encourage the national telcos to work together across borders, particularly when it comes to accessing subsea cables around the Gulf of Guinea.

Roaming Fees Between Argentina And Chile To Be Scrapped

Roaming charges for mobile users travelling between Argentina and Chile will be abolished from 29 August, La Nacion reports. The elimination of roaming fees was one of the main points discussed back in November 2017, when a bilateral trade agreement between the two countries was signed. The reciprocal agreement was designed to promote investment and the exchange of goods and services. The report notes that the scrapping of roaming charges was initially scheduled to take effect in 2019 and then postponed until 1 May 2020 but will finally come into effect at the end of this month.

ANCOM Cuts FTRs

Romania's National Authority for Management and Regulation in Communications (ANCOM) has announced that fixed termination rates (FTRs) will be reduced by 30% to EUR0.00098 with effect from 1 November 2020. The new rate was determined following the update of several parameters in the pure Long-Run Incremental Cost (LRIC) cost calculation model (the method used for setting the current tariff) and of the cost of capital. The rate will apply to wireline operators designated by ANCOM as having significant market power, and cover national calls and those made to and from the European Economic Area (EEA), unless existing international agreements allow different charges to be imposed.

Icelandic Regulator Proposes 2% Cut in Mobile Termination Cost in 2021

Iceland's Post and Telecom Administration (PTA) said it is proposing a 2 percent drop in the price for mobile call termination in 2021 to ISK 1.00 per minute, but the price for termination on fixed networks will remain unchanged. Interested parties have until 31 August to submit comments, after which the PTA will send draft proposals to the EFTA Surveillance Agency (ESA). The current prices for call termination are ISK 1.02 per minute on mobile networks but ISK 0.12 per minute on fixed ones.

CAN Bloc to Implement 'Roam Like at Home' by January 2022

International roaming charges for travelers moving between Bolivia, Colombia, Ecuador and Peru are set to be gradually reduced following the implementation of Decision 854 of the Andean Community (Comunidad Andina, CAN). Under the terms of the agreement, from 1 January 2022 operators must not charge additional fees for roaming between the bloc's member states, and must apply the same tariff conditions that apply in the user's home state for local outgoing calls, SMS and data. In the interim, the decision establishes price ceilings for retail and wholesale international roaming services. Wholesale fees for mobile data were set at USD0.0039 per MB until 31 December 2020, and USD0.0033 per MB from 1 January 2021 to 31 December 2021, whilst wholesale incoming mobile

voice service must be charged at cost. Commenting on the development, Jose Aguilar, General Director of Policies and Regulation at Peru's Ministry of Transport and Communications (Ministerio de Transportes y Comunicaciones, MTC) praised the move, noting: 'It means that

it will allow an average reduction of 60% and 80%, until in two years the concept of international calling will end.' The official went on: 'It is very important that the CAN decision comes into force because it is in line with practices applied in other regions such as the EU and Mercosur.'

Verizon Prepares for Global 5G Roaming with South Korea Trials

Verizon Wireless has become the first US operator to successfully complete 5G global roaming trials and has a 'commercially ready' 5G global roaming service. As such, customers traveling from the US to South Korea with a compatible device will be able to enjoy the benefits of 5G service internationally. The successful trials for voice, data and text messaging

were conducted on the live production 5G network in South Korea with a prototype device using dual frequencies. The 5G device, which can access 5G services in the US using millimeter wave (mmWave) spectrum, accessed 5G on 3.5GHz spectrum in South Korea. Average speeds recorded during the trial were 252Mbps/119Mbps (down/uplink).

Interconnection Impasse: Claro, Tigo Reluctant to Cooperate with Partners

Chris Bannister, the CEO of Colombian newcomer Partners, has informed La Republica that both Claro and Tigo have refused to sign interconnection agreements with it to date, meaning that Movistar is the sole national operator to agree terms. The executive added that 'conflict meetings' with the Communications Regulatory Commission (Comision de Regulacion de Comunicaciones, CRC) came to nothing, with Claro claiming that its only lawyer

was otherwise engaged and unable to attend the talks. It is understood that Partners infuriated its rivals by using its 700MHz spectrum allocation to bolster the networks of its recently acquired mobile subsidiary, Avantel. Bannister, however, has assured industry observers that the 700MHz spectrum has now been withdrawn, pending a full investigation by the National Spectrum Agency (Agencia Nacional del Espectro, ANE). According to

TeleGeography's GlobalComms Database, in December 2019 Partners (representing Icelandic-owned, UK-based private equity firm Novator Partners) successfully bid on frequencies in the 700MHz band and 2500MHz bands in Colombia's multi-band spectrum auction. In July 2020, meanwhile, Novator Partners acquired an unspecified majority stake in Colombian mobile operator Avantel and launched a restructuring of the business.

ICT spend growth to accelerate 2-3x over the next 5 years, riding on the strongest ever wave of digitization in history

COVID-19

Emerging ICT use cases
Digital-driven (e-healthcare, e-education, …)

Telcos & Enterprises
Ensure network capacity/ redundancy; re-optimize operating models, develop partnerships

Consumers
Permanent change towards digital

Support ICT

Economy
Digital-driven growth post-COVID-19
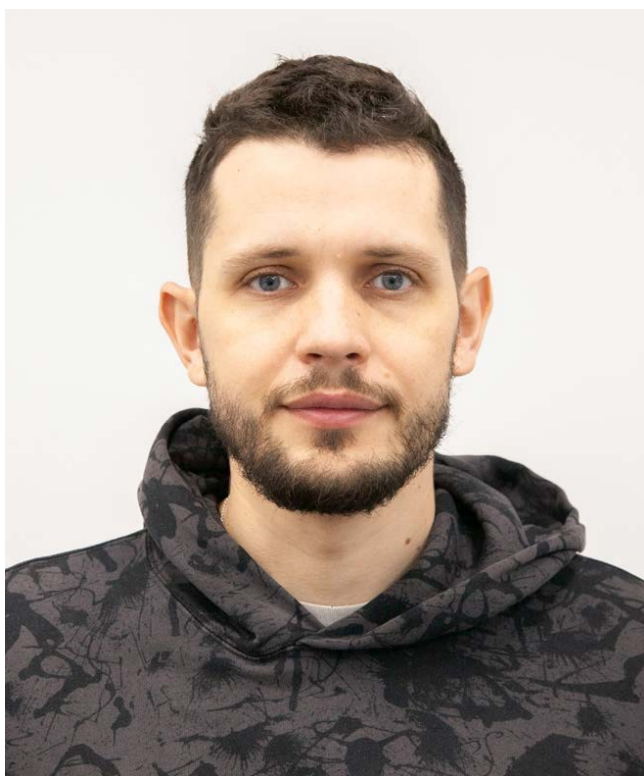
Government
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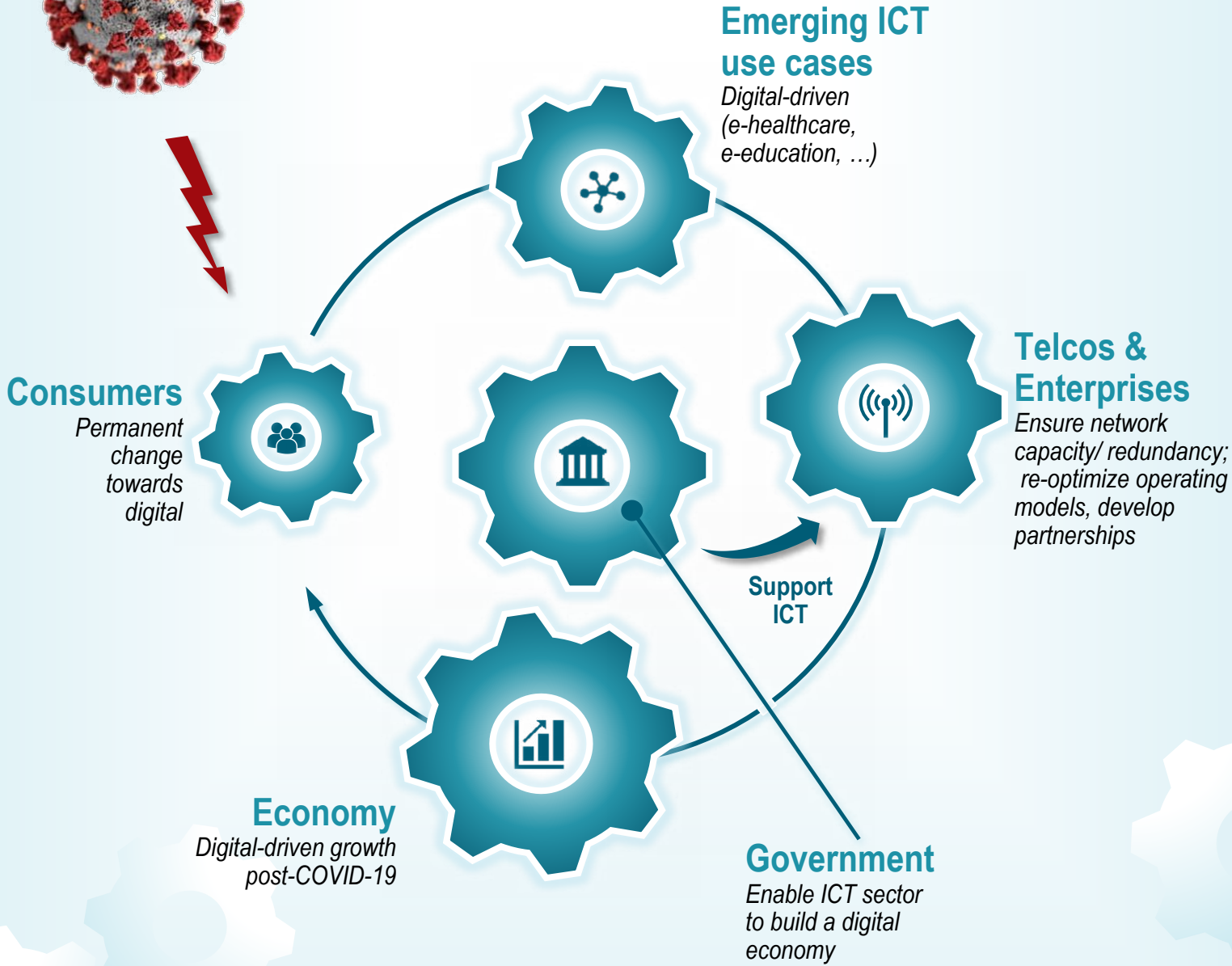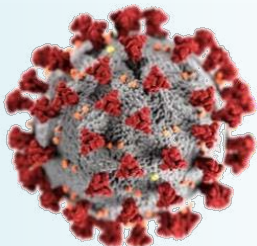
Whitepaper full report here:
https://www.rolandberger.com/en/Publications/Post-COVID-19-opportunities-in-the-Middle-East.html

Roland Berger

ARTICLE

A Post-pandemic Era: How Telecom Operators are Dealing With the Challenges of the New Reality

Artemy Ustimenko
Product Development Manager
Nexign

nexign

Connectivity is vital to everyone, from emergency services to ordinary people who have to work remotely and move their professional and social lives online. This situation has been a stress test for CSPs as well, since it has brought with it changing traffic patterns and new congestion in residential areas.

This article examines some of the ways CSPs can handle the challenges that the post-COVID world has brought, like maintaining connection stability and providing exceptional customer service during tough times. Most of the examples here are drawn from Russia and the CIS, but any company worldwide can use these examples to deal with new challenges and boost their business.

Contactless is key to success
Unfortunately, the pandemic has made real-life interactions very risky. This has led to innovative examples of CSPs using eSIM technology, which allows them to attract new subscribers without the need for physical shops. People's usual travel plans are now on hold, making eSIM a go-to method for attracting new home-bound customers for CSPs and MVNOs.

Telcos in emerging markets should also make sure their BSS supports the latest payment methods, so customers can pay for their services online and won't have to leave their home to get pre-paid cards. CSPs can also drive the development of e-commerce technologies and new consumption models.

Case study: Uzbektelecom
Uzbektelecom, the largest telecom operator in Uzbekistan, wanted to provide uninterrupted service to all their clients, no matter what payment method they were using. The company gave all fixed broadband and ITPV subscribers a grace period of 2 months, which helped customers ensure connectivity even if their bills were not paid on time. CSPs can use the experience of Uzbektelecom to build trust with subscribers, especially in markets where penetration of new payment methods has so far been limited.

Work from home becomes the new normal

In many residential areas, broadband networks were designed for intermittent use only. When the pandemic made millions of people switch to remote work, their new office-like usage model posed challenges for providers, such as problems with video conferencing and Internet access for customers. In this situation, mobile networks are better able to stay functional. At a time when WFH has become the new normal, MNOs can introduce the latest dynamic congestion management and traffic prioritization solutions, and serve those who choose to forgo home Wi-Fi and rely on their smartphones for video conferencing and other tasks associated with remote work. If MNOs take these measures, their subscribers will likely stay loyal and switch to heftier data packages to get their jobs done.

Partnerships lead to better infrastructure

This new, unforeseen load on broadband and mobile connections leaves no room for underusing infrastructure. Many parties can benefit from a shared effort approach used in many places to build 5G networks. To ensure uninterrupted service, content providers are using integration mechanisms such as SCEF and adjusting their traffic streams to new changes in the network. The number of organizations with distributed teams will grow, which means that businesses will demand increasingly secure and reliable connections. As a result, operators will look for new ways to keep up with this demand and maximise utilization of their already-existing infrastructure.

Drones are coming

Mission-critical medical and rescue services that aim to digitally transform their operations feel great need for reliable connection. In the time of uncertainty, when everyone is still better off at home, the 5G-enabled security and delivery drones will ensure that we all are fed and safe.

Mobile networks become an alternative to FWA

Analysts used to say that Fixed Wireless Access (FWA) is the best way to provide connectivity in rural areas, typically underserved by fixed operators. However, the newest developments have shown that mobile networks can be more reliable, robust and manageable than wired counterparts. With mobile device tethering being a rescue to those who have problems with their home internet, people feel more comfortable with the idea of radio as their main internet access method, which will be a commonplace in the upcoming 5G era. Fixed networks will still be the nerve system for the long-distance traffic flows, but more elastic radio networks will gain popularity and become more and more suitable as a last mile option. Fixed operators can jump on this bandwagon by creating specialized MVNOs or standalone 5G segments, and a modern convergent BSS solution will be essential for this development.

Interference from neighbors' networks is another reason why home Wi-Fi can be too slow. Meanwhile, direct connection to a 5G network can be extremely helpful, providing the requested quality of service for real-time applications to the end users and enabling new revenue models for CSPs.

Case study: Yota

Yota, a CSP that emphasises its unlimited data services, made an effort to attract new business customers who are currently working from home by arranging modem and router delivery to new subscribers' doorsteps. Thanks to their use of the latest generation of policy control and congestion awareness products, they are now able to provide great service to newly connected data clients with business-level needs.

Case study: Megafon

One of the largest digital service providers in the Russian and global telco sector started offering free perks to help those working from home streamline their workflow and adapt to their new WFH reality. Access to an audiobook library, digital media and cloud services keeps subscribers entertained and informed at home, while unlimited data for messenger apps, email, food and medicine delivery and online education provides them with the kinds of opportunities they had before the pandemic.

Example: Russian oil-and-gas-oriented MVNO

A practical application of this vision is an industrial IoT solution launched by an oil-and-gas-oriented MVNO in Russia. This solution currently offers a flexible way of providing telemetry for transport and machinery and ensures more autonomous operations as 5G networks emerge.

Example: Rostelecom

Rostelecom, one of the leading Russian digital services providers, took a comprehensive approach to demand for better home connectivity and faster Internet speed. They automatically provided all their mobile customers with an extra 10 gigabytes of data, giving them another reason to use their mobile connection as a home broadband substitute. At the same time, they quickly adapted their fixed network to the increased load and upgraded home subscribers to maximum-speed connections at no extra cost, thus standing out from competition with other broadband providers.

TECHNOLOGY NEWS

Operator Forum Unveils 5G MEC Specs

The 5G Future Forum delivered on a promise to release its first set of specifications this month, unveiling a pair of documents outlining technical requirements for interoperable multi-access edge computing (MEC) deployments. An MEC Computing Services Integration specification provides a framework for integrating cloud infrastructure into telecom networks and sites. And an Exposure and Experience Management API specification defines how operators can make their 5G and MEC APIs available to external developers. Jeon Hong-beom, chief DX officer at South Korean operator KT, stated the documents offer "a practical approach to put MEC solutions into the market". Vodafone Group CTO Johan Wibergh added greater interoperability will help "shorten the time it takes to develop new services using these technologies and make them available to many more customers over a wider geographical area". Verizon, Vodafone, America Movil, KT, Rogers Communications and Telstra formed the 5G Future Forum in January.

T-Mobile Claims 'World First' Standalone 5G Nationwide Launch

T-Mobile US has announced that it has become the first mobile operator in the world to launch a commercial nationwide Standalone (SA) architecture 5G network. In the near-term, the SA network launch allows T-Mobile to utilize its entire 600MHz footprint for 5G. The move immediately expands the cellco's 5G footprint by around 30%, or nearly 2,000 additional cities and towns. The expansion means that T-Mobile's 5G network now covers 1.3 million square miles and more than 7,500 locations. In SA areas, T-Mobile engineers have already seen up to a 40% improvement in latency during testing. The cellco explains: 'With Non-Standalone (NSA) architecture, 600MHz 5G is combined with mid-band LTE to access the core network, but without SA the 5G signal only goes as far as mid-band LTE. With today's launch, 600MHz 5G can go beyond the mid-band signal, covering hundreds of square miles from a single tower and going deeper into buildings than before.' In terms of vendor support, T-Mobile has partnered with Cisco and Nokia to build its 5G core, and Ericsson and Nokia for its 5G radio infrastructure.

OnePlus, Qualcomm Technologies and Samsung have helped ensure existing devices can access SA 5G with a software update, based on compatibility.
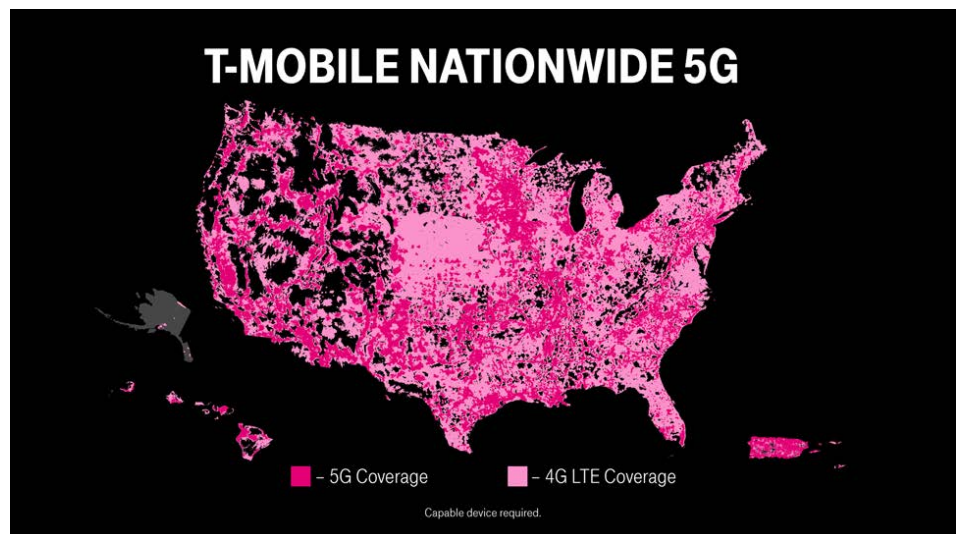
Mobilis Algeria Testing 5G

State-backed Algerian mobile operator Mobilis will begin testing 5G network technology in August 2020, initially in the capital Algiers, its CEO Bellal Mekkid announced, as reported by Agence Ecofin. Mobilis – a subsidiary of Algerie Telecom – aims to improve the quality of its high speed mobile internet services to meet strong demand for broadband connectivity. Mobilis is meanwhile focused on complying with regional 4G coverage/ quality requirements, having received formal notice from the telecoms authorities to improve its LTE network in the wilayas (provinces) of Blida, Djelfa, Tlemcen, Adrar and Constantine.

New 'Versatile Video Coding' Standard to Enable Next-Generation Video Compression

The new Versatile Video Coding (VVC) standard advances the state of the art of video compression and has unprecedented application versatility. It has the flexibility to enable emerging applications such as 360-degree omnidirectional immersive multimedia, remote screen sharing, cloud-based collaboration, cloud gaming, and region-based extraction and merging. It also offers improved quality encoding for ultra-high definition (UHD) and high-dynamic-range (HDR) video as well as conventional video coding applications. The experts team responsible for the

development of VVC recently agreed the technical specification of the new standard, moving VVC toward final ITU approval with the 'consent' to enter the concluding 'last call' phase of its standardization process. VVC will be published as ITU H.266 | ISO/IEC 23090-3. VVC results from the work of the Joint Video Experts Team (JVET), the latest team to lead the longstanding collaboration of the ITU-T Study Group 16 Video Coding Experts Group and ISO/IEC JTC1/SC29/WG11 (Moving Picture Experts Group, MPEG). "The video compression algorithms standardized in collaboration by ITU, ISO and IEC continue to enable giant leaps forward in video quality," said ITU Secretary-General Houlin Zhao. "They

are also central to industry's ability to meet rising demand for video, the most bandwidth-intensive source of data exchanged over global networks." "VVC is the result of a global collaboration of the video coding community, which has joined forces again to produce a major advance in video compression technology," said JVET Co-Chair Gary J. Sullivan. "VVC is more than yet another compression standard. Its versatility comes from combining well-established and novel technology elements. The design has been rigidly tested with various application cases in mind," said fellow JVET Co-Chair Jens-Rainer Ohm. "The completion of VVC is a major milestone for the work of ITU-T Study Group 16, marking the conclusion of the last decade of video coding standardization and the beginning of the next," said Noah Luo, Chairman of ITU-T Study Group 16 (Multimedia). Video now accounts for about 80 per cent of all Internet traffic. VVC will need only half the bit rate of its predecessor 'High Efficiency Video Coding' to achieve the same level of video quality for high-resolution video content. It will reduce the amount of data necessary to enable high-quality video for an unprecedented range of new and existing applications. The compression

performance of VVC will enable the delivery of UHD services at bit rates today used to carry high definition (HD) services. Halving the required bit rate for a desired video quality will also ease pressure on global networks, for example by enabling twice as much video content to be stored on a server or provided by a streaming service. VVC values coding efficiency and versatility in equal measure. The new standard offers specialized tools for the coding of screen content, the computer-generated content of applications such as remote screen sharing, cloud-based collaboration and cloud gaming. Reference picture resampling with VVC will support the adaptive streaming solutions that adjust video streams to users' available bandwidth. VVC also provides for independent sub-pictures for applications such as tiled streaming of 360-degree video, enabling higher resolution for the portion of a 360-degree video in view. VVC expands the range of technical options available to support video, but the standards preceding VVC will continue to enable video applications and services worldwide. 'High Efficiency Video Coding' (HEVC, published as ITU H.265 | ISO/IEC 23008-2) entered the market in 2013 and was honored with a Primetime Emmy Award in 2017 in recognition of its emergence as the primary coding format for UHD TV services. The standard became the key enabling technology for UHD viewing experiences while concurrently enabling operators to utilize network capacity more efficiently. ITU H.264 | MPEG-4 'Advanced Video Coding' entered the market in 2003 and achieved the recognition of a Primetime Emmy Award in 2008 for unlocking significant advances in video spanning from high definition TV (HDTV) to 3G mobile multimedia. The standard enabled improvements in video quality to an extent that motivated the broad deployment of HDTV services. It remains the world's most widely deployed video compression standard.

DT Selects Ericsson for 5G RAN Deployment

Swedish equipment vendor Ericsson has announced the signing of a new multi-year deal with Deutsche Telekom (DT) to deploy the operator's 5G Radio Access Network (RAN) across Germany. According to the terms of the contract, several mobile sites will be upgraded to the latest 5G technology standard over the next few years using Ericsson Radio System products and solutions. The 5G deal is in addition to a multi-RAN agreement as DT, which provides fixed and mobile services in Germany via its Telekom Deutschland unit, takes the next step following the joint modernization of its 2G, 3G and 4G radio networks over the past two years. The Ericsson Spectrum Sharing solution will also be deployed, allowing DT to dynamically manage 4G and 5G traffic in its network through efficient use of existing spectrum, enhancing coverage, performance and mobility. 'We are pleased to have found a leading 5G supplier in Ericsson as a partner, who has also convinced us in the past in the modernization of our mobile access network,' stated Claudia Nemat, DT Board Member for Innovation and Technology, adding: 'After the reliable and on-time modernization, the bar for the 5G rollout in the antenna network is naturally also high.' In addition to their cooperation in the field of public mobile networks, the two companies also work together to equip industrial companies with private mobile networks, also known as 'campus networks'. Most recently, the partners jointly equipped individual BMW and Osram plant sites.

Telekom Reaches Half of Germans with 5G

Telekom Deutschland, the domestic fixed and mobile unit of Deutsche Telekom (DT), has announced that its 5G network now covers 40 million Germans, representing half of the population. Services are available in over 3,000 towns and municipalities, after a further 18,000 antennas were upgraded for 5G and integrated into the live network in the past five weeks. Telekom uses spectrum in the 2100MHz band to provide customers with 5G coverage in less densely populated areas, while the 3600MHz band is being used in large cities like Berlin and Cologne. Dynamic Spectrum Sharing (DSS) is also being deployed, enabling Telekom to operate both 4G LTE and 5G mobile communications standards in parallel in one frequency band. 'Today, we are celebrating a special day for 5G. Half the population in Germany is now covered. 5G has arrived in all German states. This is a big step for our customers, our network and for digitization in Germany,' stated Walter Goldenits, Head of Technology at Telekom Deutschland, adding:

'But the 50% is no reason for us to rest on our laurels. The 5G rollout continues with the same intensity. Two thirds of the population are our next target and we want to achieve this too this year.'

Vodafone Switches on 5G in Frankfurt Using 1800MHz Band

Vodafone Germany has launched its 5G network in the city of Frankfurt, using frequencies in the 1800MHz band. A total of 150 antennas in over 50 locations of the city are providing 5G services at speeds of up to 500Mbps. Vodafone is now 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. Vodafone has so far switched on around 1,000 5G antennas in over 350 urban and rural locations across the country. It is aiming to increase this to 8,000 antennas – covering ten million Germans – during this year.

Zong 4G Completes Successful Trial of NB-IoT Network in Pakistan

In line with its commitment to innovation, Pakistan's leading telecommunication network, Zong 4G has announced the successful testing of Narrow Band IoT (NB-IoT) network in the industry and has completed it in collaboration with U-blox– a world-leading chipset and modules manufacturer – as its technology partner. NB- IoT is a fast-growing cellular technology and offers low-power, highly-efficient and cost-effective connectivity which can support up to 50,000 devices per cell while

using only a fraction of the 4G LTE frequency band. Supported by all major mobile equipment, chipset and module manufacturers, NB-IoT can co-exist with 2G, 3G, and 4G mobile networks. "With IoT expected to take over the technological landscape in years to come, the NB-IoT test is a pivotal development for Zong 4G as it leads the data market with numerous initiatives to enable a variety of industrial applications including tracking, agriculture, smart City solutions and more," said the company spokesperson. "We are the pioneers in adopting emerging technologies to provide a best-in-class experience to our valued customers, and are committed to meeting the evolving needs of the industry through disruptive services and solutions," he added. As a consequence of this successful NB-IoT trial, Zong 4G is harbingering a new digital revolution in the country. Zong 4G's technological prowess brings the new era of digital future close for its valued customers and successful trial of NB-IoT Network is testament to company's commitment to provide its customers access to the most cutting-edge and technologically advanced solutions available globally. Being the pioneer of 4G technology and successfully testing 5G in Pakistan, Zong 4G is leading the digital innovation in the country.

Jazz Successfully Deploys Pakistan's First 400G Network

Jazz, Pakistan's number one 4G operator and the largest internet and broadband service provider, has successfully deployed the country's first 400G technology on its fiber-optic network. This development will greatly benefit customers with faster and higher data requirements. The increase in data capacity on this 400G network can deliver high speeds equivalent to over 180,000 HD video streams at the same time or more than 70,000 songs downloaded in a single second. Jazz CEO Aamir Ibrahim said, "We see that customers are increasingly using high-bandwidth applications which resultantly, puts pressure on existing data networks. Our 400G technology enables us to deliver faster and more data on the existing network to meet the growing demand. Jazz is committed to developing a digital ecosystem that supports the evolving technology needs of individuals and businesses." The demand for broadband speed and volume grows exponentially with a rise in low-latency activities like virtual meetings, online gaming, video streaming, etc., there is an urgent need to deliver more data through existing fiber networks. This 400G technology solves most issues because it significantly increases the data-carrying capacity of existing networks without any changes to infrastructure and can deliver up to 400 billion bits of information per second. While projects like smart cities take shape in the country, and emerging applications make use of technologies like VR, AR, 4K, 8K, 16K and the Internet of Things, Jazz believes that investment in more adaptive networks that foster innovation and enable the delivery of more advanced services are paramount. Jazz CTO Khalid Shehzad said, "This technology essentially allows us the freedom to provide more data at greater speeds through

a programmable network that we can ramp up, like flicking a switch. Such a sustainable technology creates the basis for many subsequent developments including smart city solutions, ultra-fast internet including 5G, and further opportunities to be jointly developed with public authorities." It is also pertinent to mention that this is not the first step that Jazz has taken to future proof its network against the growing data demand. Recently, the mobile operator successfully launched 200G technology on its long haul optical transport network and 100G on its metro networks. Jazz's 400G network is for now carrying live customer traffic across the Lahore metro region with plans underway for further expansions.

A look at what's possible in a single second with 400G speeds.

South Korea and Japan Surge Ahead in 5G Speed

It's been more than a year since the first commercial 5G network was introduced, and while there are now a number of countries globally that have rolled out some version of a high-speed 5G network, it appears that Asia Pacific (APAC) countries are leading the way in terms of 5G speeds and network experience. In its latest study The State of Mobile Network Experience in 2020: One year into the 5G Era, consumer mobile industry observer Opensignal collected data from over 43 million devices to analyze the mobile experience of consumers in a new era of connectivity that 5G is supposed to enable. Using data from the first few months of the year, South Korea and Japan occupy the first two spots with average downlink speeds of 59 megabits per second (Mbps) and 49.3 Mbps, respectively. South Korea was also the first country to roll out commercial 5G, and as of last month, the country has over seven million subscribers using a 5G handset across its three major carriers, marking an extremely productive adoption of the new wireless standard with a 9.7% 5G penetration rate in the country. Japan only started rolling out 5G infrastructure earlier this year, but it does have the highest 4G availability. Japanese residents are predominantly connected to 4G networks (98.5%), and their superior network speeds highlight an important distinction that those outside the telecommunications sector might be unaware of: 4G and 5G standards are not mutually exclusive. In fact, as progressive network upgrades occur as telcos adopt 5G technology, much of the underlying infrastructure is most likely down to 4G capacities that have been established and are capable of handling large data loads. Other nations that now have 5G and have an average downlink throughput of above 40 Mbps are Norway, Australia, and Switzerland. Interestingly, despite only just introducing its 5G network, Canada is already seeing download speeds on par with South Korea, both coming in at a benchmark-setting 59 Mbps – 50% faster than their fellow G7 nations France, Germany, Italy, UK, and the US. In terms of top mobile network experience in APAC cities, Hong Kong came out ahead of South Korea's Seoul and Singapore, which is not introducing 5G standalone networks this year. Hong Kong and Seoul are already running non-standalone 5G access, along with Taiwan's Taipei and Japan's Tokyo that came in fourth and fifth, respectively, in terms of network experience. The study also analyzed connectivity's impact on video experience, using a point scale between zero and 100 to measure video experience quality – a score of 75 and above qualified as "excellent video experience" while a score between 65 and 74 equaled "very good video experience". Here, four countries (the Czech Republic, the Netherlands, Austria, and Norway) all tied for first place, while Japan, Singapore, and Australia were the only APAC nations (as well the only non-European countries) to be rated as having "excellent video experience". The report's findings highlight that 5G-ready countries experienced better download speeds by 24.9% than their counterparts that haven't introduced the standard, but they make up a minuscule proportion of users. In comparison, more countries have more matured 4G penetration, with nearly 30 nations scoring 4G availability ratings above 90% and serving a combined population of over 680 million people – indicating the most connected phase in human history. While 5G network introductions are expected to slow for the rest of 2020 as regional economies recover from the after-effects of the COVID-19 pandemic, rollouts should resume in earnest in 2021. 5G will be a crucial enabler of other emerging technologies like artificial intelligence (AI), automation, and the potential to interconnect a far greater number of Internet of Things (IoT) devices, opening a vast new landscape of connection and communication possibilities.

StarHub Starts Six-Month 5G Trial Using 2100MHz Spectrum

Singaporean mobile operator StarHub has confirmed that its six-month Non-Standalone (NSA) 5G trial has started today (18 August), using 2100MHz spectrum. Customers subscribed to Mobile+ or Biz+ plans will be able to automatically experience some early 5G benefits using compatible mobile devices that are currently available on a commercial basis. The 5G trial will run until 16 February 2021. By mid-2021 StarHub expects to offer Standalone (SA) 5G services using its newly acquired 3.5GHz spectrum. Nokia has been confirmed as the technology partner that will deploy StarHub's 5G network. StarHub's 5G signal currently covers 53% of Singapore's populated areas and will expand to reach 70% coverage by September 2020. The areas include busy locations and major residential hubs, such as Ang Mo Kio, Bedok, Central Business District, Clementi, Jurong, Orchard, Tampines, Woodlands and Yishun.

MagtiCom Tests 5G in Georgia

Georgian mobile operator MagtiCom has announced it has started testing 5G technology. Without providing further details, the company says it is cooperating with 'three leading telecommunication

equipment manufacturers around the world' to conduct the trials, and will also partner with a fourth in the near future. MagtiCom did emphasize, however, that it does not at this stage plan to launch 5G

commercially, stating that as long as the average mobile data consumption in the retail segment does not exceed 15GB-20GB, then the launch of the technology cannot be justified.

Huawei and ZTE Pass GSMA 5G Security Assessment

China's under fire mobile network equipment providers have successfully passed GSMA assessment of their product development and lifecycle management processes, using the GSMA's Network Equipment Security Assurance Scheme (NESAS). Chinese based firms Huawei and ZTE joined European vendors Ericsson and Nokia in completing the first stage of the 3GPP and GSMA sponsored scheme. "The GSMA recognizes the support and participation of Ericsson, Huawei, Nokia and ZTE who have satisfied the scheme's

security requirements via an independent security audit and we congratulate them on achieving this important first step," said Alex Sinclair, chief technology officer, GSMA. "By committing to NESAS, vendors are helping network operators, and other stakeholders make informed decisions about secure product development. We look forward to others participating in the scheme, evidencing their commitment to good security practice by promoting a security-by-design culture within the industry." The next phase of the scheme

will entail vendors submitting their network equipment products for laboratory testing, where it will be evaluated for stringent security protocols defined by 3GPP. "The evaluation concludes with the production, by the test laboratory, of a valuation report that records the test results. The report is provided to the vendor who can make it available to its customers and other stakeholders at its discretion," the GSMA explained in an online statement.

Tcell Goes Live with 5G in Tajikistan's Capital

Tajik operator Tcell has activated its first 5G base stations in the city of Dushanbe. The operator received a license for 3500MHz spectrum in June last year, and its commercial 5G network is now live. Local news outlet Asia-Plus reported that Tcell has achieved download speeds of nearly 1Gbps – ten times faster than the top speed of its 4G network. The operator's CEO Ozodkhon Davlatshoev said: "We will create free test centers in the city so that people can test [5G] … There are already applications from our corporate clients who would like to use 5G right away. There are still restrictions on the consumer side … The technology is new, so the devices are expensive…full commercialization of the project will take at least three to five years." The executive added that Tcell was investing in fiber infrastructure to support future 5G growth. CommsUpdate noted that the operator had not confirmed

commercial 5G tariffs, but was offering customers the chance to win 5G devices with data allowances via its website. Tcell is not the first operator to launch commercial 5G services in Tajikistan -

in February this year, the local unit of MegaFon announced that customers with 5G-ready devices would be able to access 5G speeds in the center of Dushanbe without paying a higher rate.

Vodafone UK Claims British First with Switch-On of OpenRAN 4G Site

Vodafone UK claims to have become the first British mobile network operator (MNO) to switch on a live Open Radio Access Network (OpenRAN) 4G site. In a press release regarding the development, the cellco revealed that this first site is connecting customers around the Royal Welsh Showground in Powys, Wales, with Mavenir supporting Vodafone UK with the deployment. With its first OpenRAN site now live, Vodafone UK has said it will begin work to identify communities across the UK where they can more economically introduce voice and high-speed data using the new technology. Commenting, Scott Petty, Vodafone UK's CTO, said: 'This is our first live OpenRAN site in the UK, and that's an important milestone. This new approach has the ability to make us less dependent on current larger technology suppliers, and find ways to reduce the cost of rolling out mobile coverage. OpenRAN can also help close the digital divide between urban and rural Britain.'

Taiwan Star Launches Commercial 5G Service

Taiwan Star has become the latest of the country's mobile network operators (MNOs) to announce the commercial launch of 5G services, Digitimes reports, following launches from Chunghwa Telecom, Taiwan Mobile Company and Far EasTone last month. Initially Taiwan Star is reported to have 5G coverage of 50% of the country's major metropolitan areas, and it is aiming to increase that figure to 80% by the end of 2020, while it has plans to reach other cities, counties and suburbs of the metro areas by 2023. Meanwhile, it has also been reported that the MNO is now aiming to use the launch as a key driver for subscriber growth, with the cellco said to be looking to increase its customer base to four million within five years, up from the 2.4 million it currently has.

Orange Announces Full 5G Coverage in Bucharest

Orange Romania has announced its 5G network in Bucharest has now been expanded to cover the entire city, enabling 100% of its population to access download speeds of up to 1.2Gbps. Initially launched in Bucharest, Cluj-Napoca and Iasi on 5 November 2019, the operator's 5G network has since been expanded to Timisoara, Brasov, Constanta and Mamaia. Orange customers who want to upgrade to 5G can now choose the Smart 15 subscription with unlimited 5G data, an option previously included only in the more expensive Smart Plus 20 and Smart Plus 25 tariffs. Priced at EUR15 (USD17.7) a month with a contractual period of 24 months, the Smart 15 plan offers unlimited 5G data, 7.2GB of roaming data within the European Economic Area (EEA), unlimited calls and SMS within Romania and the EEA, 600 international minutes, as well as access to Orange TV Go services.

Orange Offers 680Mbps 4G in Slovakia

Orange Slovensko has launched 680Mbps 4G LTE-A services in 21 cities across Slovakia. A report from Zive.sk notes that the faster networks are available in parts of Bratislava, Samorin, Dunajska Streda, Galanta, Komarno, Nove Zamky, Nitra, Trnava, Piestany, Trencin, Prievidza, Levice, Martin, Zilina, Banska Bystrica, Zvolen, Poprad, Presov, Kosice, Bojnice and Vrutky, plus some surrounding areas. The operator's previous peak 4G speed was 300Mbps, and this is currently offered in around 50 cities. The firm says that 50% of the population now has access to networks providing download rates of 150Mbps or greater.

Nokia Working with 3 Indonesia to Enhance LTE Network Quality

Nokia today (19 August) announced that it is working with mobile network operator (MNO) Hutchison 3 Indonesia (Tri), to optimize and expand its 4G LTE network coverage and capacity, via a new Zero Drive Test solution. The gear maker says the Zero Drive Test platform 'will reduce CO2 emissions by replacing manual drive tests which is the typical method of assessing network coverage, capacity and quality' to help give the MNO 'a clear view of network performance, capacity, radio signal coverage and traffic localization and collects similar drive test information with higher accuracy, speed and efficiency for network optimization and acceptance purposes'. 3 Indonesia's 4G LTE signal is currently available in over 33,000 villages in Sumatra, Kalimantan, Sulawesi, Java, Bali and Lombok, supported by 16,000km of fiber-optic cable.

Ooredoo Qatar, Ericsson Perform 4.2Gbps Mid-Band Spectrum Test

Ooredoo Qatar and Ericsson have tested mobile broadband speeds of 4.2Gbps using 200MHz of mid-band spectrum and the latest Ericsson Radio System products. Advanced 5G and 4G aggregation functionality was used to boost the data rate per user, highlighting future benefits in enabling higher data speeds on mobile handsets, improving the experience of apps such as streaming 8K videos, remote learning, cloud gaming and AR/VR applications and supporting opportunities in areas such as smart cities, healthcare and logistics. Ooredoo Qatar CEO Mohammed Bin Abdullah Al Thani said: 'We are making use of the latest innovative technology to apply 5G in existing frequency bands and deploying the latest 5G radios to shift our subscriber experience to a whole new level.'

Kolbi Extends 4G Coverage to 98.1% of Population

Grupo ICE, the state-owned parent company of Costa Rican telco Kolbi, has announced that recent network expansion work means that the operator's 4G network is now available to 98.1% of the population. A total of 194 new cell sites were rolled out in 28 cantons outside the Greater Metropolitan Area, meaning that LTE connectivity is available in a total of 11,780 communities, towns and cities. New locations served include the likes of Pococi, Osa, Upala, Los Chiles and Golfito. 3G coverage stands at 98.7%, or 11,843 locations.

Progression and Potential: The DSA Highlights the Importance of the 6 GHz Band for Unlicensed Access and Wi-Fi 6

Martha Suárez
President
DSA

> *Wi-Fi 6 will increase network efficiency by more than four times and deliver up to 40% higher peak data rates for a single client device. Such technologies will also bring with them important security improvements, battery life extension in client devices and the possibility to handle many more devices in the same network.*

According to Ofcom UK, the growing use of Wi-Fi is causing heightened expectations from consumers as to the capacity of their broadband as they begin to access ultrafast and full-fibre technology. This comes as a result of the arrival of innovative applications such as Augmented Reality (AR), Virtual Reality (VR) and Ultra High Definition video in residential, corporate and public environments. As the popularity of wireless devices increases among society, so too does the demand for connectivity, high throughput and low latency. The 6 GHz band presents a golden opportunity to address such demand immediately. Making this band available for Wi-Fi and other related wireless technologies on a license-exempt basis is crucial to enable new, innovative applications and address some existing problems of slow speeds and congestion. For example, Wi-Fi 6 will increase network efficiency by more than four times and deliver up to 40% higher peak data rates for a single client device. Such technologies will also bring with them important security improvements, battery life extension in client devices and the possibility to handle many more devices in the same network.

Laying Foundations for the Next Generation
Wi-Fi currently carries over 70% of data traffic. To keep up with such demand and technological advancements, Wireless and Radio Local Area Networks (WLAN/RLANs)[1] can now utilize wider channels to provide wireless gigabit broadband inside homes and buildings, which was not possible with previous generation wireless technologies. In doing so, WLAN/RLAN will offload data from cellular 5G technologies; a process that is expected to increase from 74% to 79% by 2022. This will

[1] WLAN/RLAN refers to Wi-Fi 5, the new Wi-Fi 6 and 5G NRU.

lower the costs of network deployment for mobile operators and for edge investment by neutral hosts and third-party providers (e.g., cable companies, enterprises that want to build private 5G networks to run factories). Furthermore, combined with high capacity backhaul, it will also allow gigabit class networks to be deployed in rural and suburban environments. Consumer costs will definitively be lowered.

> *The 6 GHz band (5925 – 7125 MHz) presents an important opportunity for more efficient spectrum use; it is crucial to allow unlicensed access in this band to lay stable foundations for innovation.*

The 6 GHz band (5925 – 7125 MHz) presents an important opportunity for more efficient spectrum use; it is crucial to allow unlicensed access in this band to lay stable foundations for innovation. As technology advances, regulators have the opportunity to utilize the emerging spectrum sharing techniques to address the increasing demand for unlicensed wireless devices and Wi-Fi 6 whilst also protecting incumbents in this band, i.e. fixed and satellite links that are key for backhaul and coverage.

Three different unlicensed operating classes have been identified in the 6 GHz band: Very Low Power Portable (VLP), Low Power Indoor (LPI) and Standard Power. The Federal Communications Commission (FCC) and several European spectrum authorities have studied a variety of mitigation techniques and proposed rules for the protection of incumbent services, allowing for those services to grow while meeting the demand for wireless broadband services.

By enforcing appropriate sharing conditions within the 1200 MHz of the 6 GHz band, more spectrum can be freed for use by other services without interference. One of the most anticipated advancements

by consumers is next-generation Wi-Fi 6, offering stronger connections, wider reach and lower latency. Using the 5.9 GHz and 6 GHz bands to support its deployment by tripling the Wi-Fi spectrum, Wi-Fi 6 networks can be implemented in several environments, including home, business and leisure settings, providing users with constant connection.

The Importance of Wi-Fi 6
A slow internet connection without a feasible solution results in a disrupted service and dissatisfied users. The disruption also draws the applications industry to a halt as they become unwilling to release ground-breaking apps without a reliable platform.

Wi-Fi 6 eases this cycle of expectations by implementing Orthogonal Frequency-Division Multiple Access (OFDMA) to allow the transmission of multiple signals at any one time by splitting them and sending them over different frequencies. By allocating each signal its own specific frequency to streamline the transmission, congestion is alleviated. This combined with the upgrade that Wi-Fi 6 will bring to MU-MIMO technology results in an increased number of communication routes, meaning that more data can be transmitted. In fact, the technology offers speeds up to 40% faster than its predecessor and allows for multiple devices to be operational at once without disruption. This will revolutionise

Wi-Fi technology and, therefore, the connection experience for users, especially in densely populated areas such as cities, conferences, stadiums, apartment buildings and office spaces.

The introduction of Wi-Fi 6 will bring with it security upgrades following last year's implementation of the new Wi-Fi Alliance WPA3 security protocol as a standard requirement for all Wi-Fi 6 devices. Wi-Fi 6 also brings increased efficiency to the battery life of devices by introducing Target Wake Time, allowing the device to plan its communications with the router to ensure that it is only actively updating and receiving transmissions when required.

> *As the number of IoT devices rises, projected to reach 13.4 billion devices and connections per capita in the US and 3.6 billion worldwide, Wi-Fi 6 is vital to bridging the gap in connectivity that exists globally.*

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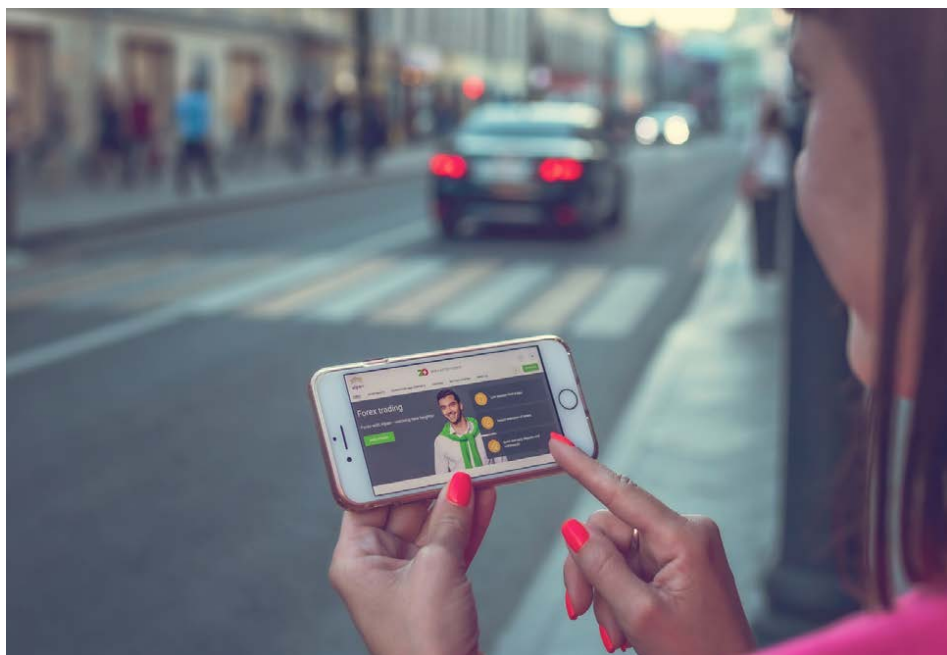
to bridging the gap in connectivity that exists globally. The Automated Frequency Control spectrum sharing technology that Wi-Fi 6 utilises makes it a complimentary service to many other technologies including CBRS and 5G, which ultimately supports a network that establishes and upholds strong, broad coverage. With the amount of Wi-Fi 6 hotspots expected to grow 13-fold globally to 628 million by 2023 – accounting for 11% of all public hotspots – this will increase the global reach of internet connectivity, impacting communities worldwide, as well as increase the potential for connectivity in already digital societies. Ultimately, Wi-Fi 6 is a crucial contributor to this next generation of dynamic spectrum management.

The Future of Wi-Fi 6

The future of Wi-Fi 6 sees the utilisation of the spectrum being broadened with the use of larger bandwidth channels in the 6 GHz band; easily expandable from

> *With operators now embracing the introduction of Wi-Fi 6 to their networks and routers, its roll-out to the mainstream consumer is moving rapidly. It is expected that a multitude of Wi-Fi 6 compatible devices will see their release throughout this year, with 56% of new devices harnessing the technology by 2022.*

the already heavily used 5 GHz band. By harnessing larger bandwidth channels, this new Wi-Fi frequency will act as an instant pathway to faster connection speeds free of congestion. This increased range and efficiency of data transmission will therefore be boosted further, allowing for a greater potential of Wi-Fi usage to be realised in the industry.

With operators now embracing the introduction of Wi-Fi 6 to their networks and routers, its roll-out to the mainstream consumer is moving rapidly. It is expected that a multitude of Wi-Fi 6 compatible devices will see their release throughout this year, with 56% of new devices harnessing the technology by 2022. This indicates that a range of brand new, cutting-edge technologies will also be released in the future, eliminating the barriers that gaming, smart home and IoT industries previously faced.

Wi-Fi 6 and the DSA

The DSA advocates for policies that promote unlicensed and dynamic access to spectrum to unleash economic growth and innovation. Spectrum authorities should target a balanced regulatory approach between licensed, license-exempt (unlicensed), and lightly licensed, to enable making unused spectrum available for broadband.

The DSA advocates for more unlicensed spectrum to be allocated to Wi-Fi networks and wireless devices. This is important to future innovations in augmented and virtual reality (AR/VR), as well as advanced peripherals and in-car connectivity that will accelerate the deployment of 5G capable networks. A large number of new use cases, including these and beyond,

will emerge from the evolution of Wi-Fi 6 and the harmonization of 6 GHz, positively impacting citizens and businesses.

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The introduction of Wi-Fi 6 would expand the possibilities for connection not only in well-developed areas of the world, but also in less-developed countries wherein connectivity is sparse, yet crucial for improving citizens' quality of life. Regulators should conscientiously allow a license-exempt use of the 6 GHz band, enabling Wi-Fi 6, to ensure that the accessibility of this new, vital technology has no limitations and reaches its full potential and audience. This way, it is far more likely that those who need connection most will receive it without it being capitalised upon. Wi-Fi has rapidly become a crucial tool in our global society and is no longer a luxury. Wi-Fi 6 has the potential to improve lives worldwide, relieving and meeting the needs of both developed and developing countries.

About the author
Since May 2019, Dr. Martha Suarez is the President of the Dynamic Spectrum Alliance DSA, a global organization advocating for laws and regulations that will lead to more efficient and effective spectrum utilization, which is essential to addressing key social and economic challenges, worldwide.

REGULATORY NEWS

The UAE Chairs the First Arab Preparatory Meeting for the ITU's World Telecommunication Development Conference

The Arab Working Group first Preparatory Meeting for the ITU's World Telecommunication Development Conference (WTDC), headed by the UAE represented by the Telecommunications Regulatory Authority (TRA), concluded its activities. The meeting was organized by the ICT Development Department - General Secretariat of the League of the Arab States, from 25 - 27 August 2020. The meeting discussed the topics and priorities of the region, including the strategic plan for the development sector, the final statement, and the various decisions and recommendations. All other regions, the Asia-Pacific Group, the African Group, the American Group, the European Group, and the Commonwealth of Independent States have participated in the virtual meeting. The meeting aimed to identify the views and proposals of other regional groups and their preparations for WTDC, in addition to introducing the Arab proposals to the other regional groups. Over the course of three days, the participants discussed the proposals of Arab countries on participation in WTDC, including the Arab interests, enhancing effective participation in the team's meetings and submitting contributions and proposals. The meeting's agenda also included proposals submitted by other countries, defining the Arab position in this regards, effective coordination with other regional groups, and Arab countries' support for various positions in the development sector, whether presidential positions or chairing study committees and coordination between various Arab countries regarding various positions. In his opening speech, H.E. Eng. Majed Al Mesmar, TRA Deputy Director General for the Telecommunication Sector and head of the UAE delegation, addressed the leadership and people of Lebanon with the deepest expressions of condolences and sympathy for the victims of Beirut explosion, expressing the full support of the UAE and all Arab countries to Lebanon

at this difficult time. He added: "Arab countries played a major role in establishing and supporting the Telecommunication Development Sector. Since its establishment in 1989, Arab countries have obtained the position of director of the development sector twice, and the Arab region hosted the WTDC in 2006 in Doha and 2014 in Dubai. The Arab group had an effective role in various conferences and meetings in the development sector, and I am pleased to see many young faces in the various meetings of development sector, specifically in the development sector studies." H.E. Al Mesmar added: "The conference agenda is full of many topics that interest the Arab region, most notably the decisions related to supporting Arab countries, Arab regional initiatives, and other decisions such as Cybersecurity, statistics, bridging the standardization and digital gaps, building and developing capabilities, especially empowering youth of both genders, emerging modern technologies, and communication in situations of emergencies and disasters and other important topics. The previous preparatory meetings of the Arab Group constituted distinct model for joint Arab

action, where we were united, worked as a team and achieved significant gains, which had major impact on strengthening the Arab voice and influence in the ITU and the ICT sector at the global level." The meeting's agenda included a review of the report and recommendations related to the participation of the Arab Group in WTDC-17, and the mechanism and methodology of the Group work. The meeting also discussed the developments of WTDC-21, and reviewed the most prominent outcomes of the meeting of Telecommunication Development Advisory Group and the Study Groups of the Development Sector. The International Telecommunication Union (ITU) organizes the WTDC through the Telecommunication Development Bureau to address topics, projects and programs related to the telecommunications development. This conference seeks to define strategies and goals for the ICT development, and provides guidance and advisory to the ITU Telecommunication Development Sector regarding future work. The government of Ethiopia will host the WTDC-21 in Addis Ababa from 8 - 19 November 2021.

FCC Sets December Auction for C-Band Spectrum

C-Band spectrum will go up for auction on Dec. 8, under a plan that the Federal Communications Commission adopted Thursday (August 6) in its controversial decision to sell 280 megahertz in the 3.7–3.98 GHz mid-band frequencies for 5G "and other advanced wireless services." The FCC expects the auction will offer 5,684 new flexible-use overlay licenses based on Partial Economic Areas (PEAs) for spectrum. The plan envisions procedures that will ensure that auction winners receive contiguous spectrum blocks that will enable wide channel bandwidths to support 5G deployment. The FCC adopted the plan on a partisan 3-2 vote, with Democrats Jessica Rosenworcel and Geoffrey Sparks approving in part and dissenting in part from the auction plan. Chairman Ajit Pai acknowledged the dissent, saying, "That's why we rejected politically motivated calls to do literally nothing until Congress passed a law on the subject," Pai said, noting that Congress has not addressed the issue in the six months since the FCC made plans for the mid-band auction. He also emphasized

the "accelerated relocation payments to incumbent satellite operators that will make spectrum available for 5G two to four years earlier than otherwise would have been the case." Bidding in Auction 107 (as the C-Band auction is designated) will begin on Dec. 8, 2020. There will be two clock-phase categories of certain parts of PEAs that are scheduled for the first early clearing deadline in December 2021. The rules also specify upfront payment and

minimum opening bid amounts as well as bidding credit caps for rural service providers and small businesses. "Mid-band already is providing hundreds of megabits of 5G mobile performance in markets across the country," Commissioner Brendan Carr said, citing the spectrum's value in new telehealth, remote learning and work-from-home activities. "We can be sure that this mid-band capacity will help us meet" further demands.

FCC Generates USD4.6Bn from 3.5GHz Auction; 91.1% of Licenses Sold

The Federal Communications Commission (FCC) has announced that Auction 105 – its sale of 5G-suitable (3550MHz-3650MHz) 3.5GHz spectrum – has concluded after 76 rounds of bidding. Gross proceeds reached USD4.586 billion, with the winning bidders securing 20,625 (91.1%) of the 22,631 available concessions. The spectrum on offer represented the

'greatest number of spectrum licenses ever in a single FCC auction'. Going forward, the regulator intends to release a public notice in the coming days, providing the names of the winning bidders and announcing deadlines for payments and other post-auction procedures needed for the prompt issuance of licenses. As previously reported by TeleGeography's

CommsUpdate, the auction offered seven Priority Access Licenses (PALs) in each county-based license area. Each PAL is a ten-year renewable license, consisting of an unpaired 10MHz channel. The 271 registered bidders included mobile giants AT&T, Verizon, T-Mobile US, alongside a mixture of fixed line operators, cablecos, regional telcos and utility firms.

Spectrum Cap Confirmed for Australia's Planned 26GHz Auction

Allocation limits have now been set for Australia's planned auction of 5G-suitable spectrum in the 26GHz band, which is scheduled to take place in March 2021. Announcing the development, communications minister Paul Fletcher confirmed that he had directed the Australian Communications and Media Authority (ACMA) to implement a cap

of 1GHz on the amount of spectrum any one entity can obtain in the sale process. This direction was made via the 'Radiocommunications (Spectrum License Limits–26GHz Band) Direction 2020', dated 9 August 2020, and commenting on the matter, Mr. Fletcher said: 'I have directed the [ACMA] to set allocation limits of 1GHz. This decision was informed by

advice and analysis from the Australian Competition and Consumer Commission (ACCC) and aligns with the government's communications policy objectives … Success in the mobile market ultimately depends on access to spectrum. Applying allocation limits means that the 26GHz spectrum cannot be monopolized by any one operator.'

Ofcom Releases Media Nations 2020 Report

Media Nations 2020
Interactive report

Published 5 August 2020

A surge in screen time during lockdown saw UK adults spend 40% of their waking day watching TV and online video services, Ofcom has found in its annual study of the nation's media habits. As people across the UK followed official health advice to stay home during April 2020, they kept themselves informed and entertained by spending six hours and 25 minutes each day on average – or nearly 45 hours a week – watching TV and online video content – a rise of almost a third (31%) on last year. The biggest factor behind this increase was people spending twice as much time watching subscription streaming services such as Netflix, Disney+ and Amazon Prime Video – one hour 11 minutes per day on average in April 2020. The trend was even more pronounced among 16-34s, who streamed for an average two hours each day.

Silver streamers widen their viewing. Ofcom's Media Nations 2020 report also finds that an estimated 12 million UK adults signed up to a new video streaming service during lockdown, of whom around 3 million had never subscribed to one before. Some of these were older viewers who previously watched only broadcast TV. One third (32%) of 55-64 year olds, and 15% of people aged 65+ used subscription streaming services in the early weeks of lockdown – up from 25% and 12% respectively before

the pandemic. Disney+, which launched on the first day of the UK's lockdown, made an immediate impact. The new service attracted 16% of online adults by early July, surpassing NOW TV (10%) to become the third most-popular subscription streaming service behind Netflix (45%) and Amazon Prime Video (39%). Among children aged 3-11, Disney+ was used in a third of homes (32%) by June – overtaking BBC iPlayer which saw use among these children fall from 26% to 22% during the spring. The public service broadcasters – the BBC, ITV, STV, Channel 4 and Channel 5 – briefly achieved their highest combined monthly share of broadcast TV viewing in more than six years in March (59%), driven by a demand for trusted news programmes as the pandemic grew. The BBC was the most popular source of news and information about Covid-19 – used by 82% of adults during the first week of lockdown. The BBC, ITV, Channel 4 and Channel 5 were trusted by around eight in 10. Broadcasters' video-on demand services have also seen some success in lockdown. Dramas Normal People and Killing Eve helped BBC iPlayer attract a record 570 million program requests in May 2020 – 72% higher than in May 2019. Similarly, Channel 4's on-demand service, All 4, generated 30% more views among 16-34s in the first two weeks of lockdown;

and viewers spent 82% more time on ITV Hub. But the boost to the PSBs' audience figures during peak-lockdown was short-lived, as the pandemic interrupted production of soaps, major sporting events and entertainment shows. By June 2020 their combined monthly share of broadcast TV viewing fell to 55%, its lowest level since August 2019. The outlook for commercial public service broadcasters PSBs is especially tough, as they manage cost-cutting measures amid financial uncertainty. Their cumulative revenues declined by 3.5% in 2019 to £2.2bn, and TV advertising revenues are expected to fall 17-19% in 2020. As lockdown measures eased towards the end of June, the uplift in viewing to video streaming services and other non-broadcast content held steady, at 71% higher than the year before. In contrast, by the end of June, traditional broadcast TV viewing declined from its peak in early lockdown – falling 44 minutes to 3 hours 2 minutes per day. Broadcast TV viewing is now comparably lower than it was in 2014-2017, although it remains 11% higher than this time last year. And our adoption of streaming services appears likely to continue after lockdown. The overwhelming majority of online adults signed up to Netflix (96%), Amazon Prime Video (91%) and Disney+ (84%) said they plan to keep their subscriptions in the months ahead. Similarly, more than half of UK adults (55%) say that they will continue to spend the same amount of time watching streamed content in future as they did during lockdown. Yih-Choung Teh, Ofcom's Strategy and Research Group Director, said: "Lockdown led to a huge rise in TV viewing and video streaming. "The pandemic showed public service broadcasting at its best, delivering trusted news and UK content that viewers really value. But UK broadcasters face a tough advertising market, production challenges and financial uncertainty. So they need to keep demonstrating that value in the face of intense competition from streaming services."

El Salvador Imposes Conditions on AM's Takeover of Movistar

El Salvador's competition regulator the Superintendencia de Competencia (SC) has imposed a number of conditions on the sale of Telefonica Moviles El Salvador and Telefonica Multiservicios (both operating as Movistar) to Mexican group America Movil (AM). Following its technical, legal and economic analysis of the USD315 million deal, the SC determined that the acquisition would limit competition in the markets for mobile, fixed telephony

and business connectivity services and therefore has decided to impose a set of conditions to remedy the potential impact and protect consumers. In order to secure approval, AM's local wireless unit Claro must hand back 25MHz of 850MHz and 30MHz of 1900MHz spectrum currently held by Movistar, which will then be auctioned off by the Electricity and Telecommunications Superintendency (Superintendencia General de Electricidad

y Telecom, SIGET) to a new entrant or to a smaller player. In addition, Claro must also retain all of the marketing strategies developed by Movistar and by Claro for seven years, and should a new entrant arise in that time frame, then Claro must provide national roaming services for a period of three years, extendable for a further three years.

Australia Takes Action Over Personal Data Practices

The Australian Competition and Consumer Commission (ACCC) filed a case against Google in federal court alleging it misled consumers about the expanded use of personal data for a targeted advertising program. In a statement , ACCC said the company didn't seek consumers' explicit consent and failed to inform them when it started combining personal information in

their accounts with data about their activities on non-Google sites "that used Google technology, formerly DoubleClick technology, to display ads", in 2016. ACCC Chair Rod Sims said: "We are taking this action because we consider Google misled Australian consumers about what it planned to do with large amounts of their personal information, including internet activity on websites not connected to Google." "Google significantly increased the scope of information it collected about consumers" which it used "to serve up highly targeted advertisements without consumers' express informed consent". The ACCC argues the resulting boost to the commercial performance of Google's advertising business was akin to a price increase for consumers, which "effectively pay" for the company's services "with their data", Sims said. ACCC also alleges millions of Australian's were misled about a related change to Google's privacy policy from 28 June 2016 until at least December 2018, when they were prompted to agree to a pop-up notification which purported to explain how the company planned to combine their data, and sought consent. Google faced a number of obstacles in Australia over the past two years, with the government in April detailing plans to require tech giants to share advertising revenue with domestic publishers, directing ACCC to develop a code of conduct to address perceived imbalances in bargaining power between news media businesses and digital platforms. In December 2019 the government accepted key ACCC recommendations to work on reform of digital platforms, with the consumer body previously proposing Google and Facebook be overseen by a new regulatory body.

Japan Set to Slash Mobile Number Porting Fees

The government of Japan has announced new measures to fuel competition in the domestic mobile market by making it easier for users to switch to another carrier while keeping their current number. Under the plan, the Ministry of Internal Affairs and Communications (MIC) is aiming to cut the current charge to switch at shops from JPY3,000 (USD28) to JPY1,000, while removing the fee altogether if the

application is made online. At a meeting yesterday (27 August), a panel of experts broadly agreed on the plan, with the MIC now hopeful it can introduce changes to improve the country's mobile number portability (MNP) regime by the end of the year. The government is mindful that as things stand, the big three cellcos – NTT DOCOMO, KDDI (au) and Softbank Corp – are dominant and newcomers are

struggling to offer lower fees to compete effectively. Although the MNP regime went live back in October 2006, the number of people using the system has stalled in recent years. In fiscal 2018, it stood at around 5.06 million, but it fell to 4.33 million in fiscal 2019, or just 2.7% of the total wireless subscriber base, according to government data.

NTC Extends Filipino Telco Permits until 31 December, Cites Lockdown Restrictions

The National Telecommunications Commission (NTC) of the Philippines issued a memorandum on 29 July 2020 formally extending all existing permits, certificates and licenses of telecom services providers and broadcasters until 31 December 2020, citing the many 'mobility limitation issues in many regions around the country' due to lockdown restrictions. The regulator's statement confirmed: 'All existing certificates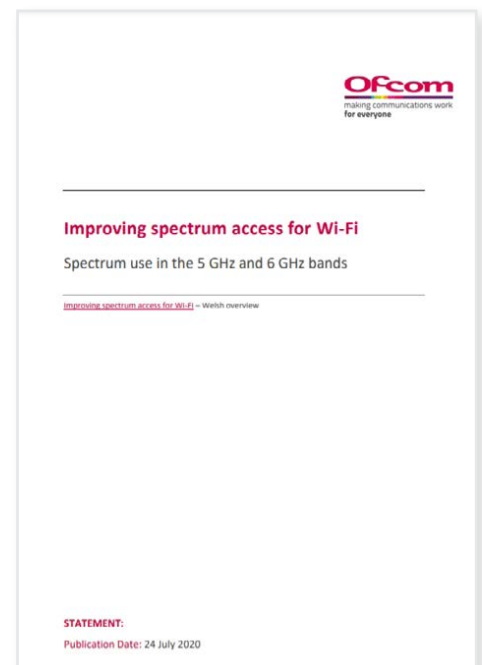, permits and licenses, to operate radio communications equipment, networks and facilities, public (telecom), broadcast, government or private, in various radio services, expiring in the current year shall remain valid and may be renewed on or before the last working day of December 2020 without penalties or surcharges.' It added, however, that thereafter 'appropriate penalties or surcharges shall be imposed'. It invited telcos/broadcasters to apply for necessary renewals and/or licenses at the NTC Central Office. Commenting on the NTC's pragmatic decision, PLDT Chief Revenue Officer and Smart President and CEO Alfred Panlilio said: 'We appreciate this assistance provided by Commissioner Gamaliel Cordoba and the NTC in dealing with these difficulties created by the pandemic … Hand-in-hand with the government, we will be able to surmount the challenges presented by COVID-19 and continue improving communications services for Filipinos nationwide.'

Ofcom Confirms It is Making Lower 6GHz Band Available for Wi-Fi Use

British telecoms regulator Ofcom has confirmed that it is making the lower 6GHz band (5925MHz–6425MHz) available for Wi-Fi and other radio LAN (RLAN) technologies. In announcing the development the watchdog claimed that opening the band would 'make more channels available, increase capacity and reduce congestion in existing bands caused by large numbers of devices'. Alongside this, the regulator also noted that the release of this spectrum would also enable very low power (VLP) outdoor use which, in turn, should allow for the development of new, innovative applications. In a separate development, meanwhile, it also confirmed that it is to remove the Dynamic Frequency Selection (DFS) requirements from channels used by Wi-Fi in the 5.8GHz band (5725-5850 MHz); DFS requires a router to scan for radars and to switch channel if suspected radar transmissions are detected. With the regulator arguing that DFS can represent a constraint for equipment manufacturers regarding quality of service and throughput as well as being the cause of connection delays for users, it said it is amending the requirements on this band 'on the basis that the risk of undue interference from indoor Wi-Fi use is extremely low'.

Ofcom
making communications work
for everyone

Improving spectrum access for Wi-Fi

Spectrum use in the 5 GHz and 6 GHz bands

Improving spectrum access for Wi-Fi – Welsh overview

STATEMENT:
Publication Date: 24 July 2020

Russian Operator Receives Country's First 5G License

Russia's major mobile network operator MTS announced that it received the country's first-ever license for providing 5G//IMT-2020 mobile services in the 24.25-24.65 GHz range in 83 regions across the country, with the license expiring on 16 July 2025. Business clients and large manufacturing enterprises will be the first users of the fifth-generation network. "Obtaining the first 5G license in Russia is a historic moment for the industry. We are now one step closer to a new era in the history of communication, digitization and the development of new IT products. For MTS, the fifth-generation technologies are an important tool for more active development of the new eco-system, primarily in the field of automation projects for business users", MTS President Alexey Kornya said, as quoted in the company's statement. Connectivity to 5G networks in the Commonwealth of Independent States region will reach up to 54 million people by 2025, the GSM Association (GSMA), the trade body that represents mobile network operators globally, said in 2019. By late 2018, the CIS region had 235 million unique 4G mobile subscribers, with Russia, Ukraine and Uzbekistan accounting for 80 percent of the saturation. The report highlights the need for policymakers to actively invest into 5G networks in the region to harness business opportunities, growth and transformation of traditional industries in the digital technology and mobile sector.

Digital Revolution Spurs Greater Demand for Limited Radio-Frequency Spectrum in the Americas

The ITU Regional Radiocommunication Seminar 2020 for the Americas Region (RRS-20-Americas) was held virtually from 13-24 July in collaboration with the Caribbean Telecommunications Union (CTU). Participants discussed future radio-frequency spectrum requirements for radiocommunication systems in the context of the outcome of the ITU World Radiocommunication Conference (WRC-19) held in Sharm el-Sheikh, Egypt, in 2019. "The digital revolution is continuously opening doors to a variety of new applications that are spurring greater interest in, and demand for, the limited spectrum resource," said ITU Secretary-General Houlin Zhao. "The Regional Radiocommunication Seminars are, therefore, an important tool to help our members promote the efficient and effective management of spectrum." The Seminar covered the regulatory framework for both terrestrial and space services and the procedures for recording of frequency assignments in the Master International Frequency Register (MIFR). It also included basic training on tools developed by ITU for frequency notices for those services and the technical examinations. Various tutorials also enabled participants to familiarise 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 Americas region continues to make great strides in expanding access to and use of ICTs, but more work is still needed to bring accessible and affordable

telecommunications to all countries and to accelerate digital transformation," said Mario Maniewicz, Director of the ITU Radiocommunication Bureau. "I look forward to continuing to work with our membership in the region towards the implementation of the decisions of WRC-19 and the preparatory process for the WRC-23."

Forum: WRS-19 Outcomes: Challenges and opportunities for the Region

The RRS-20-Americas concluded with a Forum on "WRS-19 Outcomes: Challenges and opportunities for the Region". Featuring panel sessions about the diverse radio communications services and systems, including among others: Digital TV, Broadband Satellites (GSO and non-GSO), IMT and other wireless broadband technologies, High-altitude platform station (HAPS), RLAN/Wi-Fi, Maritime and Aeronautical Systems, Intelligent Transport Systems, Emergency Communications, 5G Spectrum Pricing, and the WRC-23 Agenda. In her welcome remarks, Bernadette Lewis, Secretary-General of the Caribbean Telecommunications Union, noted that the organization has been working in the area of harmonizing spectrum management policies and practices for many years, including in recent times, coordinating the work of the Caribbean Spectrum Management Steering Committee and the Caribbean Spectrum Management Task Force, the regional bodies addressing radiofrequency spectrum issues. She added: "We are delighted to partner with ITU to enhance the capacity of our members to make effective use of the technology to achieve our goals." The main objective
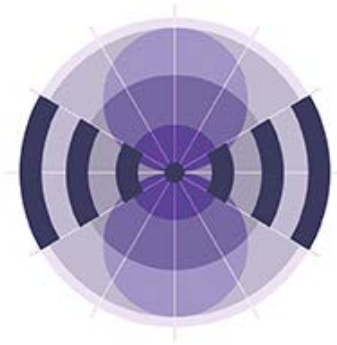
of the ITU Regional Radiocommunication Seminars is to extend assistance to Member States in spectrum management activities and the application of the ITU Radio Regulations (RR), with special attention to developing countries. The seminars are organized to complement the larger, biennial World Radiocommunication 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 350 participants from 38 countries, including 29 countries from the Americas Region, as well as 6 international organizations, and representatives of the telecommunication industry, operators, international organizations, associations, and academia from the Americas.

DCMS Outlines Regulatory Changes Designed to Boost Gigabit Availability and Enhance Mobile Coverage

The UK's Department for Digital, Culture, Media & Sport (DCMS) has detailed how the government plans to bring the European Electronic Communications Code (EECC) into UK law, claiming that the legislative

changes will 'boost gigabit broadband rollout and bring better mobile coverage to the whole of the UK'. In a press release regarding the matter, the DCMS noted that – while the EECC largely consists of minor

changes to the existing legal framework – the government intends to introduce some new pro-investment measures from the Code that it considers are 'in the UK's national interest' and support the state's

plans for nationwide gigabit broadband. Meanwhile, it said other measures will provide greater consumer protection and ensure Ofcom's regulatory powers are up to date. With regards to Ofcom's powers specifically, the DCMS noted that the changes to legislation will include: new powers for the watchdog to gather information on operators' planned network rollouts; and a new 'broad duty' for Ofcom to promote connectivity, access to, and take-up of gigabit-capable networks. Further, in areas where it is costly or difficult to install new networks, Ofcom will have the power to impose obligations on operators already present to offer network access or share equipment. Meanwhile, Ofcom's market review period will be increased from three to five years, with it claimed that this change 'will give a longer period of regulatory stability to the telecoms market and more certainty for investors in

gigabit broadband'. Further to the above, the DCMS also confirmed that it is taking forward proposals designed to simplify planning rules, with a view to speeding up the rollout of 5G connectivity and allowing for improvements to rural mobile coverage. Reformed planning laws in England will reportedly allow mobile network operators (MNOs) to put more equipment than they currently can on phone masts, making it easier to share masts and increase mobile coverage areas. Moreover, the reforms will also permit: new masts to be taller, subject to prior approval by the planning authority; existing phone masts to be strengthened without prior approval, so that they can be upgraded for 5G and shared between MNOs; building-based masts to be placed nearer to highways, to support better mobile coverage of the UK's road networks, subject to prior approval; and cabinets containing radio equipment to be deployed

alongside masts, without prior approval, to support new 5G networks. Before amending the existing legislation, the government has, however, confirmed it intends carry out a technical consultation on the detail of these proposals. Finally, the DCMS has noted that it plans to consult on changes to the Electronic Communications Code, which is separate from the EECC, and is the domestic legal framework underpinning agreements between landowners and communications operators in the UK. With the Code having been substantially reformed in 2017 to make it cheaper and easier for electronic communications apparatus to be deployed, maintained, shared and upgraded, the government wants to consider reforms to the Code 'in due course' that may be required to hopefully ensure such deployments can made quickly.

FCC Strikes 'Historic' Agreement on Wireless Co-Location

The FCC has struck an agreement with historic preservation groups to help build out wireless infrastructure while protecting historic properties. That comes in the form of an update to the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas (Collocation NPA) that the FCC entered into with the Commission, the Advisory Council on Historic Preservation (ACHP), and the National Conference of State Historic Preservation Officers (NCSHPO) in 2011. The agreement was announced by FCC Commissioner Brendan Carr, who has headed up the FCC's efforts to streamlining wireless broadband buildouts as a way to speed the deployment of

5G. The agreement further streamlines wireless siting reviews. "I commend the FCC for its amendment of the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, which will help further improve infrastructure deployment around existing tower sites," said Steven K. Berry, president of the Competitive Carriers Association. "Streamlined infrastructure policies are critical for competitive carriers to be able to enhance and build out their networks, and I thank Chairman Pai and Commissioner Carr for their important work on wireless infrastructure issues. Consumers stand to benefit most from clear, efficient policies, and today's announcement certainly is a

step in the right direction toward achieving this important goal." The change means that excavation for co-location (adding wireless equipment to an existing site) that is related to but occurs outside a current tower site can qualify for streamlined review, which had not been the case previously. Carriers were allowed to excavate outside the existing site if they were taking down and replacing the tower, so the change give co-locations the same leeway. "This is a vitally important agreement to ensure our infrastructure policies can meet the challenges and opportunities of 5G," said Carr. NATE, the communications infrastructure contractors association, praised the agreement.

US 3.5GHz Auction Draws Wide Interest

Executives at US Spectrum Access System (SAS) provider Federated Wireless told Mobile World Live major mobile players, cable companies, wireless ISPs, utility companies and large enterprises had all entered the race to acquire 3.5GHz spectrum in an auction which commenced

23 July. Federal Communications Commission (FCC) officials said more than 270 bidders were vying for 22,631 licenses being offered in 10MHz blocks for the spectrum, which is regarded as key for 5G. Federated Wireless CTO Kurt Schaubach and VP of legal advocacy

Jennifer McCarthy said the high level of interest could result in the auction running into the fourth quarter, with winners named by the year-end. McCarthy explained the large number of participants was in part due to the FCC's decision to award licenses for smaller, county-sized

geographies rather than the larger partial economic areas (PEAs) it normally uses. She noted this offers utility companies a prime opportunity to buy operator-grade licenses, which offer more security than unlicensed spectrum and "are more suited towards their own service and geographic requirements". She added the FCC's

rules also offer license holders a unique opportunity to lease unused spectrum through a secondary marketplace, predicting this would revolutionize "how spectrum gets licensed and leased going forward". Federated Wireless is one of a handful of FCC-approved SAS providers, with the system required to prevent

interference in the 3.5GHz band, which is designated as shared spectrum. FCC Chairman Ajit Pai hailed the start of bidding as a "key milestone" in advancing 5G as a national priority. Unlicensed access to the band was opened in January. A second sale of mid-band spectrum in the C-Band (3.7GHz to 4.2GHz) is set for December.

Indian Operators Still Seeking Clarity on 26 GHz Band for 5G

The latest in a series of reminders from Indian operators has been delivered to the country's Department of Telecommunications (DoT) over the absence – so far – of the 26 GHz band in the long-awaited 5G spectrum auction process. Pointing out that if mmWave bands like 26 GHz are not offered soon spectrum may get claimed by other government agencies, the operators, through the Cellular Operators Association of India (COAI), have asked the DoT to
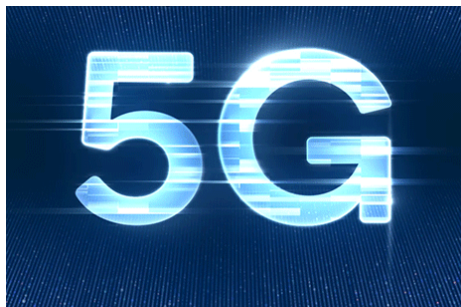
request the Telecom Regulatory Authority of India (TRAI) to suggest a price for the band. As Indian press reports point out, it has been eight months since the International Telecommunication Union finalized rules for global 5G deployment in the 26 GHz band, but the DoT has not, so far, sought pricing recommendations from the regulator for 26 GHz spectrum – or even let operators know whether this band will be available for 5G trials. The interest in 26 GHz is partly because of its capacity: the higher the frequency, the greater the ability to support high data-transfer speeds, though range may be more limited than at lower frequencies. In fact a DoT panel suggested in a draft report last year that some 26 GHz spectrum and 3.5 GHz spectrum should be offered for 5G network trials, but this suggestion doesn't seem to have been followed up. So far only spectrum in the 3.3-3.6 GHz band has been

set aside for 5G and, in any case, ongoing delays in spectrum auctions, in part over whether Huawei and ZTE will be involved in 5G network deployment, have meant that there is still no date for the auction of 5G spectrum. In any case, even if 26 GHz became part of the offering, operators have made it clear that the suggested base price for 5G spectrum in general is too high. This activity comes only a couple of days after press reports that operator Reliance Jio has applied to DoT for 5G spectrum allocation for the field trials of its proposed 5G network in selected areas. This is interesting for two reasons. One is that Jio has requested spectrum that includes 26 GHz, about which a DoT decision is still awaited. The other is Reliance Industries' bullish recent announcement that its telecommunications unit has created a made-in-India 5G solution.

TDSAT Stays TRAI Order on Airtel/Vodafone Idea Premium Plans

India's Telecom Disputes Settlement and Appellate Tribunal (TDSAT) has stayed an order from the Telecom Regulatory Authority of India (TRAI) which blocked premium plans offered by Bharti Airtel and Vodafone Idea without giving the cellcos a hearing. The Economic Times writes that the TDSAT found that the TRAI's order lacked justification and had been prompted by a complaint from a competitor, Reliance Jio Infocomm (Jio). Earlier this month the TRAI had instructed Airtel and Vodafone to cease signing up customers to their 'RedX' and 'Platinum' plans – which offer priority services and faster data transfer

rates – whilst it conducts a detailed review to establish whether the offerings violate rules regarding service quality and net neutrality. TDSAT's decision noted that the TRAI did not need the providers to terminate their offerings to carry out its investigation, adding that Vodafone Idea's offering had been available for eight months, having initially been filed with the regulator in November 2019, with a modified version submitted in May 2020. Further, the tribunal added that it was 'clear' that the watchdog's action had been prompted by a complaint from Jio on 8 July; the TRAI had denied the claim,

with Vodafone Idea accusing the regulator of 'bias and mala fide' in its appeal. Jio, in its letter to the TRAI and the subsequent TDSAT hearings, has argued that telcos could not guarantee faster speeds and that such claims are intended to mislead customers. The TDSAT order allows Airtel and Vodafone Idea to resume sales of their plans, but does not halt the TRAI's inquiry and the tribunal instructed the cellcos to respond to the regulator's queries regarding the impact of the plans on service quality for other users by 22 July.

THE OMNI-CHANNEL, MULTI-PLAY COMMERCE SOLUTION SUPPORTING DIGITAL AND PHYSICAL PRODUCTS WITH A CONSISTENT CUSTOMER EXPERIENCE.

SOLUTION KEY FEATURES

CROSS-TOUCHPOINT ACTIVITY

PERSONALIZED ENGAGEMENT

MULTI-PLAY AND CUSTOMIZABLE OFFERS

REAL-TIME CPQ

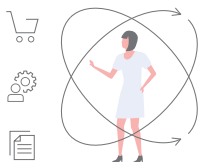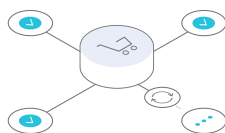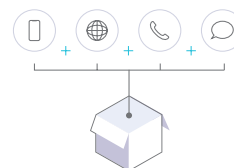**PERSISTENT SHOPPING CART**

CONFIGURABLE ORDER CAPTURE

INCREASE SALES	REDUCE AHT	REDUCE ORDER ERRORS	GO-LIVE	DIGITAL CHANNEL APPLICATION
+10%	- 40%	- 40%	3 MONTHS	6 WEEKS
Leverage upsell and cross-sell opportunities and increase conversion rate	Reduce Average Handling Time to improve your team's efficiency	Save costs and provide quicker delivery to customers	Go-live within a 3-month time frame	Create digital channel application within 6 weeks

About Tech Mahindra

Tech Mahindra represents the connected world, offering innovative and customer-centric information technology experiences, enabling Enterprises, Associates and the Society to Rise™. We are a USD 5.2 billion company with 125+K professionals across 90 countries, helping 973 global customers including Fortune 500 companies. Our convergent, digital, design experiences, innovation platforms and reusable assets connect across a number of technologies to deliver tangible business value and experiences to our stakeholders. Tech Mahindra is the highest ranked Non-U.S. company in the Forbes Global Digital 100 list (2018) and in the Forbes Fab 50 companies in Asia (2018).

The Mahindra Group is a USD 21 billion federation of companies that enables people to rise through innovative mobility solutions, driving rural prosperity, enhancing urban living, nurturing new businesses and fostering communities. It enjoys a leadership position in utility vehicles, information technology, financial services and vacation ownership in India and is the world's largest tractor company, by volume. It also enjoys a strong presence in agribusiness, aerospace, commercial vehicles, components, defense, logistics, real estate, renewable energy, speedboats and steel, amongst other businesses. Headquartered in India, Mahindra employs over 2,40,000 people across 100 countries.

techmahindra.com

Connected World.
Connected Experiences.

ARTICLE

Re-defining Customer Experience Journey

Krishnendu Sengupta
VP and Head – CME Delivery (Middle East & Africa)

Sumallo Dasgupta
Transformation Partner, Middle East

Tech **Mahindra**

Customer today expect a consistent and personalized experience across all touchpoints. The need is for an end-to-end customer experience solution with focus on commerce and sales journeys. The solution needs to drive a complete transformation of the customer experience in order to keep up with the "always-connected" customer.

WINNING CUSTOMERS OVER AGAIN AND AGAIN

The telecom industry is now in the state of hyper consumerism. There is a definite shift from traditional service delivery and care to a new paradigm wherein the customer is all powered to make his own choices making use of the latest technology and obtaining services tailored for him / herself at the ease of his fingertips.

The inability or limited ability to deliver this experience has had an immediate impact in increase in customer churn. As a result, Telecom providers are forced to look at retaining and maintaining customer bases with increased customer stickiness. The price delivering services however has remained at par which has resulted in cost pressures. While the industry has had a successful "customer first" management approach for the last decade or so, customer needs and sentiments are changing rapidly. To keep pace, operators must take large technological leaps. Fortunately, with the growth in touch points, the opportunities to improve CX have also grown. For operators determined to address CX at each moment of truth in the customer's journey, the rewards are ample and quick.

The bottom line of this is for all to see. Customer experience in coming days will become more and more important. Customers are expecting a seamless experience from onboarding to care journeys. Customer experience is highly dependent on software systems of the organization. Enterprises need to upgrade their IT systems in order to overcome cut throat competition and customer retention in the world of numerous choices. Also the number of channels/touchpoints will increase significantly, think of Chatbot, kiosks and conversational commerce. Customers are expecting to receive the same service across all these touchpoints.

> *What all Telco need is a product suite that enhances their existing systems by converging data from multiple IT stacks, and orchestrating sales and delivery practices consistently on all touchpoints. The TM Forum agrees that this approach to digital transformation provides the best balance between time-to-market, cost and risk.*

However, many Telco's are struggling with aging and legacy IT systems. Mergers and acquisitions in the telecom industry have led to siloed operation and disjoint IT backend systems, including an inconsistent distribution of data. All of this makes it difficult to achieve the required flexibility, agility and consistency in the customer experience. Complete transformation of large IT applications are complex, lengthy, risky and expensive projects.

SIMPLIFY CUSTOMER JOURNEYS
The silo nature of many BSS/OSS make it hard for service providers to give customers the products and information they want, when they want it. Vendors often propose an extensive transformation project to replace inflexible legacy systems. Such projects are often long, tedious and expensive and guaranteed to disrupt business. They are looking for a different approach. What all Telco need is a product suite that enhances their existing systems by converging data from multiple IT stacks, and orchestrating sales and delivery practices consistently on all touchpoints. The TM Forum agrees that this approach to digital transformation provides the best balance between time-to-market, cost and risk.

MAKE IT EASY TO SELL COMPLEX PRODUCTS TODAY
Customer today expect a consistent and personalized experience across all touchpoints. The need is for an end-to-end customer experience solution with focus on commerce and sales journeys. The solution needs to drive a complete transformation of the customer experience in order to keep up with the "always-connected" customer.
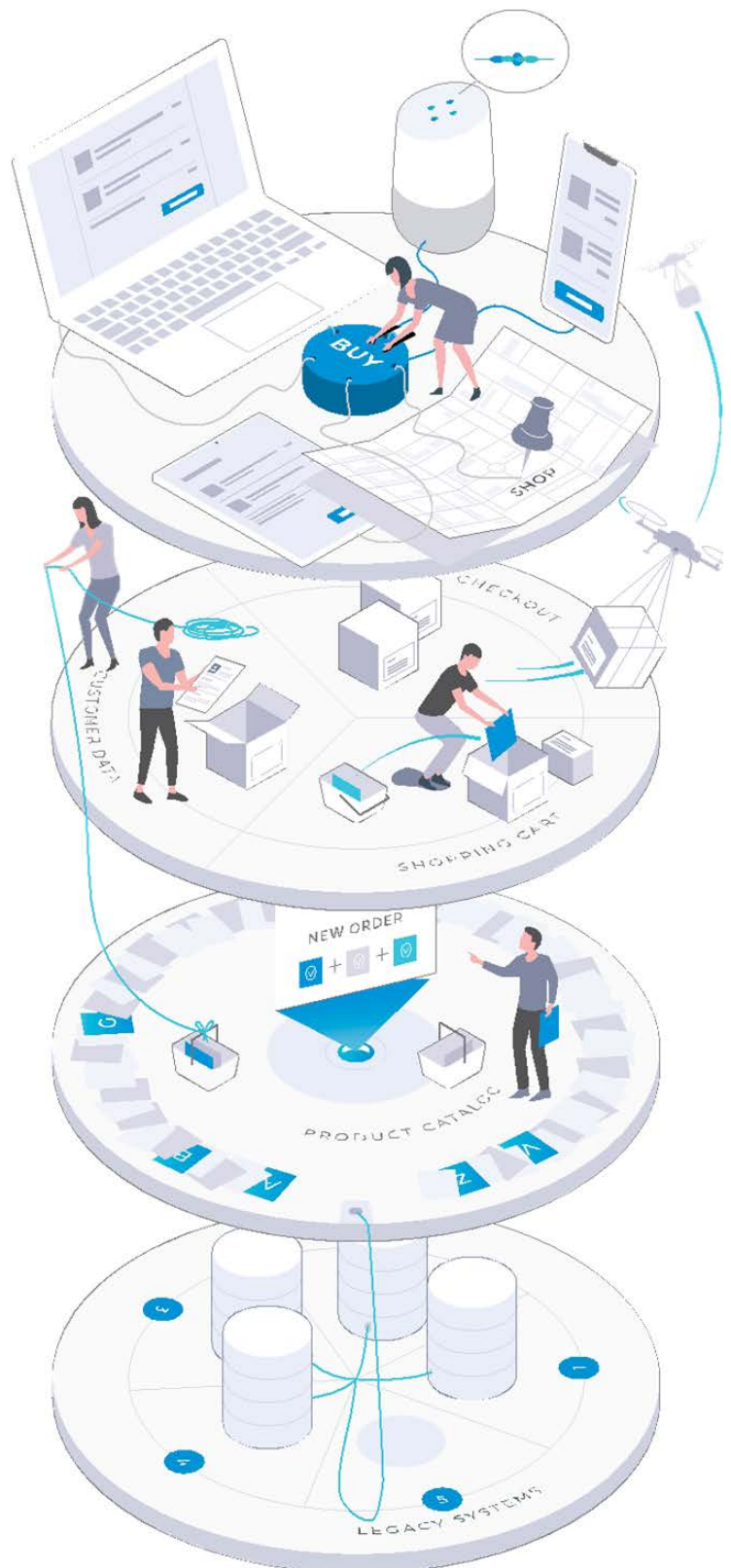
BLUEMARBLE COMMERCE™

A CLOUD-NATIVE, MICROSERVICES-BASED SOLUTION WHICH EMPOWERS A TRUE OMNI-CHANNEL CUSTOMER EXPERIENCE. IT UNITES MULTIPLE LINES OF BUSINESS AND INTEGRATES EASILY WITH EXISTING IT BACKEND SYSTEMS

BlueMarble – Tech Mahindra's digital transformation accelerator – a micro services based framework with productized business services focusing on the transformation of existing IT systems and towards a digital customer experience. It is based on a consistent, cloud-native, containerized deployment and runtime environment, with integrated support for a complete CI/CD pipeline. It supports the consistent development, deployment of micro services.

We simplify the selling of complex products and enable our clients to provide a consistent, personalized & contextually relevant experience across all customer touch points. We also help clients transform sales and delivery process from an IT driven process to a customer-centric experience.

BUSINESS BENEFITS

In several Tier 1 client deployments BlueMarble Commerce™ supports business across all lines of business, fixed, mobile, cable and services and across assisted channels, retail and call center and digital channels, web shop and application, consistently.

Components are developed using a modern, flexible, adaptable and easy to integrate microservices architecture. It contains all the specifics required to support leading communication service providers and provides a low-code, easy to configure solution that enables rapid product and proposition launches and the ability to address customer requirements in a dynamic environment.

With the Customer 360-View customer account data and service subscriptions will be merged into a single view. The Shopping Cart is the essential component of the sales customer journey, supporting real-time rules evaluation and charge calculation. Shopping Carts are persisted to support cross-channel customer journey. Finally, the configurable Checkout not only decreases the average handling time, it also lowers the order fallout due to immediate data validation.

> *We simplify the selling of complex products and enable our clients to provide a consistent, personalized & contextually relevant experience across all customer touch points. We also help clients transform sales and delivery process from an IT driven process to a customer-centric experience.*

HIGHLIGHTS

FAST
Easy-to-deploy and integrate with existing BSS/OSS and IT stacks, with a range of out of the box sales and delivery workflows.

REAL-TIME
Get real-time analytics on orders, transactions, and product sales across channels, and customer journeys.

CUSTOMIZABLE
Process workflows and intuitive user interfaces can be tailored to your operational requirements.

SCALABLE
As traffic and customer flow increases, BlueMarble adjusts to meet the demand.

SECURE
Proven and reliable authentication and authorization features protect against data breach and loss.

The headless design of the BlueMarble Commerce™ components supports the easy implementation of an omni-channel customer experience across digital and assisted customer touchpoints. BlueMarble Commerce™ APIs are aligned with the TMForum Open-API specification, with compatible extensions where required to support real-life deployments.

INCREASE SALES
+ 10%
Leverage upsell and cross-sell opportunities and increase conversion rate

REDUCE AHT
- 40%
Reduce Average Handling Time to improve your team's efficiency

REDUCE ORDER ERRORS
- 40%
Save costs and provide quicker delivery to customers

GO-LIVE
3 MONTHS
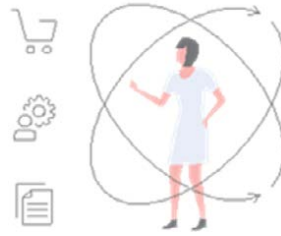Go-live within a 3-month time frame

DIGITAL CHANNEL APPLICATION
6 WEEKS
Create digital channel application within 6 weeks

PRODUCT COMPONENTS

CROSS-TOUCHPOINT ACTIVITY
Create a consistent experience across all sales channels. Understand customer activities across all touchpoints.

### PERSONALIZED ENGAGEMENT
One customer = one identity.
A consolidated customer view merges customer account data and service subscriptions into a single view.
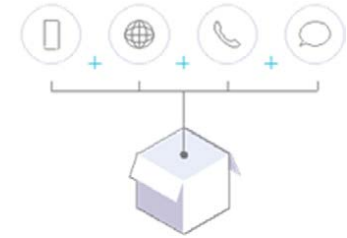
MULTI-PLAY AND CUSTOMIZABLE OFFERS
Combine physical and digital products to form bundles, promotions and multi-play offers. Create deals based on customer segments, value, brand and channel.

REAL-TIME CPQ
Customers can configure multi-play products and obtain a quote in real-time. Purchase is encouraged via sales hints based on the customer's discovery and purchase activities.
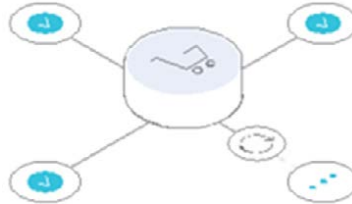
PERSISTENT SHOPPING CART
Customers can finalize transactions at their convenience. Sales agents identify and pursue customers who have abandoned a shopping cart.

CONFIGURABLE ORDER CAPTURE
Adapt the checkout process depending on customer data and shopping cart. Capture and validate data in real-time with pre-defined options.

> *The headless design of the BlueMarble Commerce™ components supports the easy implementation of an omni-channel customer experience across digital and assisted customer touchpoints. BlueMarble Commerce™ APIs are aligned with the TMForum Open-API specification, with compatible extensions where required to support real-life deployments.*

PRODUCT CATALOG
The Product Catalog converges customer and product data automatically in near real-time to provide a single customer view and actionable business analytics. Converged data is easy to maintain and supports the creation of multi-play bundles that combine traditional and digital products from different IT stacks. This allows you to quickly launch new propositions targeting specific consumers.

SHOPPING CART
Configure, Price, Quote (CPQ) is helping to define the price of products in a quick changing market. It is giving the opportunity to increase the deal size via cross-selling and upselling as well as closing deals quicker. Rule-driven logic and context-aware features allows customers to create personalized multi-play products, in addition to suggesting up-sell and cross-sell possibilities.

BUSINESS SERVICES
All BlueMarble business services provide pre-built UI components and complete functional components that enable fast creation of new user-facing applications. For standard use cases, like retail or call center, BlueMarble provides complete business applications that enable a consistent, optimized user experience within a single workflow.

GLOBAL ZONE

Digital Platform of Tomorrow

Global Zone is a carrier neutral digital business platform based on a highly secure Tier III Data Centre, located in Bahrain, the heart of the Arabian Gulf. Global Zone is built to support the development of the digital economy and attract leading ICT players by enabling them to meet and exchange data in a robust ecosystem.

globalzone.bh

A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION

Afghanistan

National Radio and TV senior officials asked for implementing six digital infrastructure projects for expanding e-government, funded by TDF. "National Radio and TV is ready to provide space for development and storage of digital contents and for implementing digital projects in the compound of national Radio and TV", stated Mr. Ismail Maikhel, National Radio and TV Director, in the meeting attended by Mr. Omar Mansoor Ansari, ATRA senior officials and the authority high council. Mr. Ansari also stressed in his speeches that high quality, high speed and cheap internet is required for developing digital content and this objective is possible once both sides cooperate each other. "ATRA would soon begin evaluating proposals for National Radio and TV and discussions would continue for cooperation between the two sides", added Mr. Ansari.

(August 11, 2020) atra.gov.af

The draft law on electronic transactions and signatures, which was recently approved by the Cabinet of the Islamic Republic of Afghanistan, was shared with the public and media during a press conference on Wednesday, August 26, 2020. This Act has been prepared in six chapters and thirty articles, and with its implementation, many changes and facilities will be provided in the field of electronic transactions, communications and correspondence. Mohammad Fahim Hashimi, Acting Minister of Information Technology, Communications and Science, during the press conference, called the approval of this law a big step towards digitalization of government, economy and society, which he said is the basis for the growth of digital economy, digital governance and Information society. Minister Hashimi said the law is in line with international standards, and the passage

of this law will lead to attracting investment from international companies." According to him, if financial, economic and banking transactions are electronic, it will greatly help in the work of e-commerce and the growth of the digital economy. He called the approval of the Electronic Transactions and Signatures Law the result of joint work of the Ministry of Information Technology, Communications and Science, the Ministry of Justice, the ATRA Administration, the National Statistics and Information Office, and added: "It is expected that other public and private institutions will be able to take advantage of this law effectively as well. Mr. Hashimi termed the replacement of electronic mail instead of paper mail a big step, he expressed that the Electronic mailing and transactions were taking place in the past; but had not legal aspect that with the adoption of this law, transactions, correspondences and electronic signatures will gain legal validity, and with its implementation, the way of conducting transactions and communications will be streamlined and easier.

(August 26, 2020) mcit.gov.af

ATRA senior officials had a pursuing meeting with telecom companies for improving quality of telecom and internet services. "Telecom and internet services quality is very low in the country even in major cities and people are not satisfied", added the senior officials. Mr. Omar Mansoor Ansari, ATRA Acting-Chairman, instructed the telecom companies to take crucial actions for improving quality of service, find reasonable solutions for citizen's problems and make people satisfied. Such meetings aim to make telecom and internet services better in the country and as well seek out solutions for existing problems in the sector.

(August 6, 2020) atra.gov.af

Algeria

Algeria's three mobile network operators Algerie Telecom Mobile (Mobilis), Djezzy and Ooredoo will be issued additional frequencies to combat the problem of substandard internet access following widespread network disruptions experienced over the last week, it was decided at a meeting between the Telecoms Minister Brahim Boumzar and senior telecoms company executives on 25 August 2020. Minister Boumzar said that the release of new telecoms spectrum would be implemented in coordination with the Authority

for Regulation of Post & Electronic Communications (ARPCE), although details on the type(s) of frequencies under consideration were not immediately reported. The meeting followed an order from President Abdelmadjid Tebboune on 23 August demanding a 'definitive solution to the problem of low internet speed', after Algerians experienced degraded internet connectivity from 19 August onwards, although indications were that the immediate problems were caused by international connectivity issues rather

than a lack of spectrum. Public complaints on social media had accumulated particularly on the pages of state-backed Algerie Telecom, which manages fiber-optic submarine/terrestrial cross-border cable links. In a statement on 20 August Algerie Telecom said: 'This disruption has nothing to do with Algeria's national telecommunications network or its basic facilities; it is rather a fluctuation of the international network.'

(August 27, 2020) Agence Ecofin

Bahrain

His Majesty King Hamad bin Isa Al Khalifa of Bahrain has issued Royal Decree restructuring the Board of Directors of the Telecommunications Regulatory Authority (TRA). Chaired by Eng. Mariam Ahmed Jamaan, the new board shall comprise Brigadier General Eng Mohammed Abdullatif Al-Mahmoud, Khalid Ibrahim Humaidan, Shaikh Salman bin Mohammad Al Khalifa and Amal Ahmed Al-Abbasi as members for a four-year term, said a Bahrain News Agency report. The Prime Minister shall implement the provisions of the Royal Decree, which takes immediate effect and will be published in the Official Gazette, it said.

(August 17, 2020) tradearabia.com

Bangladesh

Bangladesh Telecommunication Regulatory Commission (BTRC) Chairman Jahurul Haque said that standard telecom service for mobile users cannot be ensured without adequate spectrum. Bangladesh Mobile Phone Consumers Association organized the program virtually where the BTRC chief was the Chief Guest. It is undeniable that operators face a shortage of spectrum, Haque said, adding that "Desired telecom service can't be provided with shortage of spectrum" He requested operators to acquire adequate spectrum so that clients can avail proper service, saying "We are always welcoming the operators." The Commission can't reduce the price of spectrum as it is a government decision, he stated, urging them to sit for more dialogue over the matter, reports UNB. Meanwhile, different mobile operators including Robi, sought government incentives centering spectrum, price of optical fiber, and tax to enhance quality of service.

(July 26, 2020) thefinancialexpress.com.bd

Egypt

The National Telecom Regulatory Authority (NTRA) has issued a report on the quality of voice and internet services provided by mobile operators during June in Egypt. The quality tests were conducted at nearly 81 cities and neighborhoods, covering nearly 27,000 km of populated areas. According to the report, Vodafone performed best among the four mobile companies in Egypt in terms of voice service quality. The examination covered 81 areas, of which only 14 faced problems in initiating calls, including Nasr and Obour cities. In terms of blocked calls at Vodafone network, eight regions were affected, the most important of which were in Cairo and Shubra al-Khaymah. In terms of the voice service quality, six regions faced quality problems, mainly in Nasr City, Obour, and west Alexandria. As for Orange, voice calls in 25 areas found problems going through, including Obour, Nasr City, Salam, Helwan, and Mokattam in Cairo; the 6th of October in Giza; Alexandria, Matrouh, and North Coast. In terms of the voice service quality, right regions faced difficulties, mainly in Shubra in Cairo and areas in east and west Alexandria. Regarding Etisalat, the quality of its voice services was tested in 81 areas, and quality problems were detected in 22 regions, including Obour, Al-Rehab, Nasr City, Hadayek Al-Kobba, Maadi, and Mokattam in Cairo, and the 6th of October in Giza. In terms of blocked calls, the NTRA report monitored five affected regions, mainly Obour and Mokattam in Cairo. The report also examined the voice services in WE network at 81 regions, of which 45 regions suffered problems in initiating calls. They included Obour, Rehab, Shorouk, the Fifth Settlement, Heliopolis, Nasr City, Al-Marg, Al-Salam, Abbasiya, Manial, Shubra, Shubra Al-Khaimah, Zamalek, Helwan, Maadi, and Mokattam in Cairo, and the 6th of October in Giza, and Alexandria. The report also tested the quality of mobile internet services at the four companies, in which Orange topped the charts in 59 regions with an average speed of 32 Mbps. WE mastered in nine regions with an average speed of 27 Mbps. Etisalat came third as it outperformed in eight areas with an average speed of 26 Mbps,

while Vodafone tailed the list, outperforming in only five areas with an average speed of 20 Mbps. (August 3, 2020) menafn.com

Egypt has raised the stamp duty tax on telecom services, marking the first time that the levy has been increased since subscribers began being billed directly for it in 2012. Effective from July 2020,

a new monthly stamp duty of EGP0.67 (USD0.03) will be collected by operators from pre-paid subscribers, up from the previous charge of EGP.051. Meanwhile, post-paid subscribers – who are billed annually for the tax – will see their fee increase from EGP6.1 to EGP8.0.

(July 21, 2020) Ahram Online

Iran

Deputy Minister of Communications and Information Technology (ICT) said that first trial of high-speed 5G mobile internet technology has been successfully tested in Iran with a speed of 1.5 gigabits per second (Gb/s). Speaking in an interview with Mehr news agency on Wed., Sattar Hashemi expounded on the reasons behind Iran's entry into G5 technology and added, "ICT's Research Center is the location of the first 5th generation communications site and all stakeholders in this field can participate in the research and development (R&D) of this project." In the pilot test of this project, a speed of 1.5 gigabits per second was successfully tested, he said, adding, "5G also has a significant improvement over 4G in terms of data transmission delay, so that we could

reduce the delay by 5 to 6 milliseconds in this test." Elsewhere in his remarks, the deputy ICT minister pointed out that targeting the speed of data exchange in 5G network in the world is theoretically one to 20 gigabits, adding, "this speed is proportional to the investment and other components but the average considered for it (5G) will be a speed between 1.5 and 2 gigabits." Hashemi reiterated that the test trial in ICT Research Center would enable all stakeholders of the ethnology in Iran, including other mobile operators, to contribute to the project. Currently, the average speed of the Internet in 4G communications is estimated at about 20 Mbps per user, the Deputy ICT minister Sattari added.

(July 23, 2020) en.mehrnews.com

Kuwait

CITRA launched a new update to its application for electronic services on Wednesday, which is in line with the future vision of the State of Kuwait towards enabling E-Government. In a statement to Kuwait News Agency (KUNA), CITRA stated that the application provides electronic services in an interactive way in order to facilitate the procedures of the authority's clients as well as enable customers to view its latest developments and decisions. CITRA indicated that the application updates included applying for individual services and following up on the status of the requests for the authorization of radio services for radio amateurs, the import of communications equipment, the radio service (Citizen Band) and the marine. Moreover, the application

would also allow the submission of a request for the release of communications devices with the availability of online payment in addition to sending a complaint or suggestion to the authority and submitting the registration of (.kw) domain. Furthermore, CITRA stated that the application will provide features such as testing the internet speed and requesting the blocking of websites, in addition to the most important updates that are made to the content of the official website, such as the authority's news, the Cybersecurity and emergency response page, the communications and information technology sector data for the State of Kuwait and the page on the emerging corona virus.

(August 19, 2020) citra.gov.kw

Morocco

The Morocco ranks 43rd globally for mobile internet speed. Morocco ranks 43rd globally out of 138 countries for its mobile internet speed, data from American site SpeedTest shows. The website in charge of evaluating the performance of the internet across the globe unveiled data for July 2020 for 138 countries. The data shows that Morocco moved up nine places from the

previous month, with a 4G internet speed estimated at 39.32 megabits per second (Mbps). Morocco also ranked first in North Africa. The country is seventh in the MENA region. The country's fixed broadband internet ranked 117, moving up eight spots. Data shows the UAE topping the list with the fastest mobile speed, at 110.90 Mbps per second, followed by South Korea, China, Qatar,

and Saudi Arabia. Netherlands is the sixth on the list, followed by Australia, Canada, Bulgaria, and Norway. France is 25th on the list, while the US is 33rd and the UK is 54th. Algeria ranks 130th, while Tunisia is 68th. South Africa ranks 55th. Morocco has few telecommunication operators, including Maroc Telecom, Orange, and Inwi. The three operators offer internet data for customers. Morocco also ranked 62nd out of 100 countries in the 2019 Inclusive Internet Index. The index scores 100 countries on availability, affordability, relevance, and readiness of internet connectivity. Out of the four categories, the country ranked best, 47th globally, in availability. The availability category indicates the quality and breadth of available infrastructure for access and levels of internet usage. The report, however, indicates that Morocco has a low rating for "service quality of internet." The data shows the country also scored low in the "relevance" criteria.

The relevance category examines the presence and "extent of local language content and relevant content." It ranked 72nd globally out of 100 countries due to a "dearth of relevant content." According to the index, the affordability ranking in Morocco is also low. The list puts Morocco 66th out of 100. The category reviews the "cost of access relative to income and the level of competition in the internet marketplace." Morocco ranked 65th in readiness, which examines "the capacity to access the Internet, including skills, cultural acceptance, and supporting policy." Morocco's National Telecommunications Regulatory Agency (ANRT) said that the number of internet subscribers in the country amounted to 25.38 million in 2019. The agency recorded an 11.43% increase in internet subscriptions in 2019, representing a 2.6% growth from 2018. ANRT also recorded an increase of 11.22% in 2019, a growth of 2.21% compared to 2018. (August 30, 2020) moroccoworldnews.com

Nepal

Radio Frequency Policy Determination Committee has decided to provide 5MHz additional frequency bandwidth in 1800 MHz band to Nepal Telecom. Earlier, the telecom operator had been lobbying for the same spectrum. The committee under the Ministry of Communication and Information technology (MoCIT) is also headed by the Minister himself. Whereas other members are the secretary from the Home Ministry, Defense Ministry, Tourism Ministry, and MoCIT. Nepal Telecom currently holds 15 MHz bandwidth in the 1800 MHz. After the addition of 5 MHz, the total frequency bandwidth becomes 20 MHz, which is the upper ceiling for any operator to hold in that spectrum band as per frequency policy. Similarly, Ncell already holds the 20 MHz that they could get from spectrum auction. Earlier there was a 16 MHz residual spectrum in 1800 MHz band, among which Ncell got contiguous 9 MHz bandwidth from the auction. NTA also performed the spectrum refarming in the 1800 MHz band to make the continuous spectrum possible. Ncell's bid price of 1 MHz was Rs 5 crore and 80 lakhs, which was now the price of the frequency in this

band for Ncell. While awarding the frequency, NTA put several conditions to Ncell for 4G expansion. As per the decision, Nepal Telecom also has to pay the same 5 crores and 80 lakhs per MHz frequency, if the company want to get that chunk of the frequency band. Whereas the company was lobbying to get the spectrum at their own bidding price. But Nepal Telecommunication Authority recommended the price of the frequency in this band to be the same as that of Ncell's highest bid price.

(August 8, 2020) nepalitelecom.com

The Nepalese government's Finance Bill for fiscal year 2020/21 extended the 'mobile ownership fee' to new post-paid SIMs and recharge cards with effect from 16 July. The 2% tax previously applied only to pre-paid SIM cards, while a one-time fee of NPR500 (USD4.13) was levied on post-paid SIM purchases. In addition to the ownership tax, mobile recharges are also subject to a 13% telecommunication service fee and 13% VAT.

(August 3, 2020) Nepal Post Daily

Oman

The Telecom Regulatory Authority (TRA) in Oman has made a statement on the automatic renewal of value-added services. "In case you do not want to renew the subscribed service automatically, be sure to choose the subscription for one time only, and the company has no right then to renew that service automatically," TRA said. One of the conditions for participation in value-added services is that the company sends a secret number and the subscriber must enter the number to ensure the approval and validity of the subscription, it added.

(August 2, 2020) omanobserver.om

Oman's Telecommunication Regulation Authority has issued a new directive to ensure all telecom companies operating in the country continue to remain competitive, so that any one company does not get an unfair advantage over the others. Mohammed Al Rumhi, the chairman of the board of directors of the TRA, issued Decision No. 59/2020, amending provisions to the existing Resolution Number 70/2013, regarding the rules for market regulation and behavior that goes against the efforts of ensuring it remains competitive. "The authority, on its own initiative, or based on complaints submitted by a concerned party, may initiate investigations to ensure the actions or activities of the licensee

limit or prevent competitive behavior, that are contrary to the spirit of competition, or that violate prior regulatory obligations, in accordance with the procedures for officiating competitiveness complaints," said a statement from the organization. The decision comes just days after the Telecommunication Regulatory Authority decided to update its report on the current state of the Omani telecom market, and called for all stakeholders involved in this sector to provide feedback on the public consultation document it has recently released in this context. "In light of the TRA's role in conducting periodic reviews of the telecommunications services markets, the TRA is currently updating the market definition and dominance report issued in 2013," said the authority.

(August 9, 2020) timesofoman.com

Oman's telecom sector currently has a total of 16 telecom service providers operating in the following three categories: Category 1 – Omantel, Ooredoo, Awasr, Telecom Oman 'TEO', Arab International Connect, Oman Broadband Company, and Almadakhel Investment Company; Category 2 – Renna Mobile, Friendi Mobile, Zajel Communications, Awasr, and Albahlani Communication; and Category 3 – Azyan Telecom, Rignet, MHD telecom, MHD Sat Services, and Kuthban Middle East. The announcement came in the newly published 2019 Annual Report of the Ministry of Technology and Communications. Telecom towers installed by licensed operators across all service categories reached 14,167 in 2019 distributed across 2G (4,498 towers), 3G (5,399), and 4G (4,270), the report stated. To ensure telecom service coverage in the rural areas, the TRA introduced the "Universal Service" in collaboration with licensed telecom companies. The operators provide the services to the rural areas in return for facilitation and exemptions. This initiative is being implemented in two phases during 2018-2019 and covered 350 villages. In the next stage, the operators will focus on upgrading the coverage to include 3G and 4G networks. Meanwhile, broadband subscriptions by residential and commercial customers surged 53 per cent in Muscat Governorate last year, but subscription trends were significantly lower in other governorate, according to the Ministry. The Ministry attributed the high uptake of services in Muscat to the high population density in the capital area, as well as concentration of commercial activities. Service providers too have been active in developing and promoting their services within the capital area, it noted. There was a rapid increase in the number of residential subscribers of fixed broadband services, but fewer subscribers in comparison in the commercial and institutional segments. Mobile broadband subscribers saw their numbers grow 12 per cent in 2019. Around 99 per cent of the population currently enjoys 3G/4G coverage, representing a 10 per cent growth over 2018 trends. A significant decline was recorded in the volume of traditional postal services last year, with outgoing international postal articles slumping 76 per cent. "This can be considered as a normal result as many people have moved from using the traditional mail system into electronic mailing services which are also considered another type of communication service, in addition to the electronic billing that is widely available in many mobile applications," said the Ministry. At the same time, there was a 121 per cent increase in the number of domestic postal packages, fuelled by strong growth in eCommerce. Ecommerce also contributed to a 24 per cent jump in incoming international and domestic Express postal articles handled last year.

(August 4, 2020) omanobserver.om

Enjoying the 50th global position in e-government in the UN index, the Sultanate's focus areas now are telecom and human capital, which stand at 63 and 72 positions respectively. The Ministry of Technology and Communications (MoTC) is studying how to improve these two sectors. Shariffa al Maskery, Director of International Relations and Communications at MoTC, said, "We are currently studying all possible aspects, the biggest challenge being updating timely and accurate data with UNESCO's Institute of Statistics and telecom data with International Telecom Union (ITU)." "These two organizations need time to validate 193 member states. So if we delay uploading our information on their dashboard, we would miss the chance. Once the UN begins to gather the information and if our information is not up to date, they would use the old one. So we will be working very closely with the Telecommunication Regulatory Authority (TRA) and ITU as well as the Human Capital Index and Institute of Statistics of UNESCO. They are all very cooperative but we just need to ensure that information is uploaded," explained Shariffa. COVID-19 has seen a move towards digital services more than ever and has seen a speed up to use Artificial Intelligence technology. "The Ministry of Health is using Artificial Intelligence (AI) technology to monitor people in quarantine. The Royal Oman Police is using drones to urge people to stay indoors. Government employees have been working from home is something we would have never dreamt of. Thanks to technology, we did not stop working even when we are at home due to the pandemic. Universities, colleges and schools have adapted to the situation by bringing education online," she noted. Many factors enabled the Sultanate to secure the 50th position in e-government. The two major factors – the e-transformation program, and the MoTC's work with the potential ministries to improve their portals and e-services – were mainly due to cooperation among the government entities. The e-transformation program sees the MoTC engaging with the whole of government – supporting, advising and training, to transform services to digital services, and hence in 2018 for the Online Service Index, Oman was ranked 43 and now it is on 24th position. (July 19, 2020) omanobserver.om

Pakistan

Federal Minister for Information Technology and Telecommunication Syed Amin Ul Haque has said that the steps are being taken for the development of IT and Telecom sector. The Federal Minister for IT was chairing the 7th meeting of the Prime

Minister's Taskforce on IT and Telecom at the committee room of the Ministry of IT on Wednesday. Federal Secretary Ministry of IT Shoaib Ahmad Siddiqui was also present in the meeting while the Co-Chairman of the PM's Taksforce on IT and Telecom Dr. Attaur Rehman joined the meeting through video link. Matters related to spectrum, fabrication and IT exports were discussed during the meeting. Addressing the meeting, the Federal Minister for IT said that merit and transparency are the top priority in the Ministry of IT and its attached departments. He said that we are accountable to masses and using our mandate for the betterment and the uplift of the people. He said that youth are the asset and work is underway on different projects for creating employment opportunities for them through IT industry. Syed Amin Ul Haque said that Ministry of IT is committed for increasing IT exports and manufacturing of quality mobile phones in Pakistan. He said that work is going on regarding fabrication and steps are being taken for providing broadband services both in unserved and underserved areas of the country. Federal Minister for IT said that he will soon meet Chief Minister Sindh to discuss ending sales tax on IT export revenue, adding that IT industries are moving from Sindh to other provinces due to sales tax on IT export revenue. He said that Prime Minister of Pakistan keeps special interest in the development of the IT sector of Pakistan. He said that joint efforts and work with honesty is vital for completion of the vision of digital Pakistan. Earlier, the chair was briefed about the recommendations regarding IT and Telecom sector. The meeting was also attended by authorities from PTA, Pakistan Engineering Council among others. (August 26, 2020) moitt.gov.pk

Delegation of Pakistan Software Houses Association (P@SHA) called on Federal Minister for Information Technology and Telecommunication Syed Amin Ul Haque. The Federal Minister for IT welcomed the PASHA delegation in his office, and number of ongoing matters including IT exports were discussed at length during the meeting. Federal Minister for IT appreciated Sector's growth of more than 23% in IT/ITES Exports. P@SHA representation acknowledged Ministry of IT's support to promote growth in IT/ITES Sector. The Federal Minister assured that Ministry of IT will be available on Sector's disposal to provide every kind of support for IT/ITES Sector's growth.
(August 13, 2020) moitt.gov.pk

The Universal Service Fund (USF) Policy Committee approved annual budget of Rs 11.376 billion for financial year 2020-21 for the Fund to carry out different connectivity projects in un-served and underserved areas of the country. Federal Minister for IT and Telecommunication Syed Amin Ul Haque Syed Amin Haque chaired 39th meeting of the Universal Service Fund (USF) Policy Committee meeting here on Monday. Federal Secretary Ministry of IT Shoaib Ahmad Siddiqui was also present in the meeting. The meeting approved the minutes of the 38th meeting of the Universal Service Fund Policy Committee meeting. The meeting also gave approval for the USF annual budget of Rs 11.376 billion for financial year 2020-21. Universal Service Fund Chief Executive Officer (CEO) Haaris Mahmood Chaudhry briefed the chair about the USF projects for providing broadband services in unserved and underserved areas of the country. According to documents USF has spent around Rs 66.044 billion to extend cellular, broadband internet, fiber optics and other telecommunication services to un-served or underserved areas but some areas in Baluchistan as well as South Waziristan and Kurram districts of Khyber Pakhtunkhwa still lack access to basic telephony and mobile broadband services. USF was created in 2007 to stretch cellular, broadband internet, fiber optics and other telecommunication services to un-served or underserved areas. All telecom companies have been contributing 1.5 percent of their revenues to the USF.
(July 27, 2020) phoneworld.com.pk

Saudi Arabia

The Communication and Information Technology Commission (CITC) launched a public consultation to set its five-year outlook for commercial and innovative use of radio spectrum. In the consultation, CITC proposes to make available over 10 GHz of additional radio spectrum by 2024 across a wide range of frequency bands, thus creating a thriving digital environment that will meet Saudi Arabia's technological needs as it moves forward. The Kingdom currently ranks among the lead G20 countries in spectrum allocation for mobile broadband services. The consultation invites the views of all interested parties on a range of measures, which will transform Saudi Arabia into one of the world's leading digital societies, in line with plans laid out in Vision 2030. CITC is inviting feedback on the upcoming spectrum allocation from many sources, including local and international wireless industry, academia, public and private entities, as well as end-users of digital services and radio technologies. Dr. Mohammed Al Tamimi, governor of CITC, affirmed: "CITC will proceed with the release of this unprecedented amount of commercial spectrum, over the period 2020-2024, to achieve the goals of National Spectrum Strategy. "The release of this spectrum should set a paradigm shift in the region with regard to spectrum allocation for innovative use and enabling emerging radio technologies in the Kingdom. "This consultation will elicit invaluable feedback from a wide variety of international stakeholders and help us to formulate an effective spectrum outlook to contribute significantly toward making Saudi Arabia one of the world's advanced digital societies." The public consultation is an important initiative, which comes as part of CITC's recently approved National Spectrum Strategy (NSS). The NSS was set up to manage and enhance the efficient usage of the national spectrum by 2025. The submissions from interested parties of the consultation document are open till September 27, 2020. (August 23, 2020) saudigazette.com.sa

Saudi telecoms regulator the Communications and IT Commission (CITC) has launched a public consultation on its plans to release more than 10GHz of additional radio spectrum across a wide range of frequency bands by 2024. CITC is seeking opinions on a number of topics, including frequency bands, licensing regimes, access rights, award mechanisms, spectrum utilization, spectrum licensees, competition and complementarity of technologies, and fair access to adjacent sectors. Interested parties are given until 27 September 2020 to submit their comments.

(July 29, 2020) commsupdate.com

Sri Lanka

The Telecommunication Regulatory Commission has begun "preliminary measures" aimed at introducing nationwide mobile number portability (MNP). Announcing the move on Twitter, the regulator said: "TRC initiates preliminary steps on implementing number portability which would enable consumers to select service providers without change of existing mobile numbers." TRCSL neglected to provide an estimated timeframe for the move, and TeleGeography reports that the pace of introducing MNP to Sri Lanka could be described as glacial. The regulator first considered the idea in 2008 before asking for consulting firms for input on the required regulations in 2010. Thereafter, little was said on the matter until early 2014, when TCRSL's then-director general Anusha Palpita stated that MNP had effectively been shelved until a larger percentage of Sri Lanka's mobile subscribers switched to postpaid plans, arguing that MNP would not be cost-effective with a majority of prepaid subscribers. At the time, Palpita said: "The main beneficiary of [MNP] and those demanding it [will be] post-paid mobile subscribers. In Sri Lanka's case, however, we have less than 10% of the total mobile subscriber population owning a post-paid mobile connection. Therefore, in my opinion implementation of MNP will not be cost-effective at the moment." Another factor that has deterred TCRSL from pushing ahead with MNP is the implementation costs, as it fears that operators would attempt to pass these on to their user bases. This would disproportionately affect prepaid subscribers who were not benefitting from the service.

(August 25, 2020) developingtelecoms.com

Turkey

Deputy Minister of Transport and Infrastructure Dr. Ömer Fatih Sayan attended the Informatics 500 Ceremony held digitally. Sayan drew attention to the importance of indigenization in informatics. Due to successful IT companies award this year Turkey pandemic, it took delivery of programs arranged in digital media. Speaking at the opening of the ceremony, Deputy Minister Dr. Ömer Fatih Sayan stated that they are very proud of the achievements of IT companies. In recent years, Turkey in almost history written evaluation with local and national technology Sayan, "about ten of growth statistics in the field of informatics countries worldwide economic growth rate floor. While in worldwide economic growth average in recent years 3,5 and 4 percent this rate "It is about 4 to 5 in developing countries and around 22 in developed countries. As the Ministry, we attach great importance to investments in technology, digitalization and human resources, and we conduct research in this context." Stating that they have carried out many studies for the components of our growth and development strategy as a country, Sayan said, "Within the framework of this vision, first of all, establishing an effective competitive environment, making technological products and infrastructure accessible at reasonable prices, supporting domestic production, improving cyber security capacity, big data analytics, artificial intelligence and We care about the creation of added value through machine learning. We continue the work we have been carrying out from the past to the present, targeting the supply and demand side needs of the sector on these issues, "he said.

(August 27, 2020) btk.gov.tr

Turkish mobile and fixed network operator Turkcell disclosed on its investor website that the Information & Communication Technologies Authority (Bilgi Teknolojileri ve Iletisim Kurumu, BTK) has approved two share transfer transactions required to complete the multi-stage ownership deal agreed in June 2020 which will result in the state-owned Turkey Wealth Fund (TWF) becoming the company's largest shareholder. The dual transactions will redistribute the existing 51% stake currently registered to joint venture Turkcell Holding: 26.2% will be transferred to a new controlling shareholder, Turkiye Varlik Fonu Bilgi Teknolojileri Iletişim Hizmetleri Yatirim Sanayi ve Ticaret (TWF), and the other 24.8% will be moved to IMTIS Holdings (a unit of LetterOne). Turkcell noted that the process for the respective transactions is ongoing. In June, TWF agreed to take a 26.2% stake in Turkcell by purchasing Telia Company's entire 24.0% indirect stake and a 2.2% tranche from Cukurova Group, with the latter agreeing to sell its other remaining 11.6% to existing shareholder LetterOne (making LetterOne the second largest Turkcell parent with 24.8% of equity).

(August 24, 2020) commsupdate.com

United Arab Emirates

The UAE, represented by the UAE Telecommunication Regulatory Authority (TRA), has participated in the virtual workshops and special tracks of the World Summit on the Information Society Forum. The TRA participated in two sessions, and presented the UAE success story in empowering a trustworthy digital society and its readiness to handle crises and guarantee sustainability. The WSIS forum, held annually, is the largest global gathering of the 'ICT for development' community. The WSIS Forum is co-organized by ITU, UNESCO, UNDP and UNCTAD. The forum events aim at sharing of best practices and continues to provide assistance in developing multi-stakeholder and public/private partnerships to advance development goals. The WSIS Forum started on 22 June with a series of virtual workshops and special tracts in addition to a virtual exhibition. The UAE was represented by the Telecommunication Regulatory Authority, Ministry of Energy and Infrastructure, Abu Dhabi Digital Authority, General Women's Union, Etisalat, Du and Yahsat. They highlighted the success stories of the UAE and how social, economic and cultural life is facilitated with the use of ICT technologies to achieve development. On this occasion, Eng. Majed Al Mesmar, the Deputy Director General of the Telecommunications sector at the Telecommunications Regulatory Authority (TRA) said: "The UAE plays an important role in the success of the WSIS Forum since its launch more than 10 years ago. We, in the TRA, get inspired from our wise leadership to be equipped with future foresight visions to enhance sustainable development and use advanced technologies for the benefit of the humanity. The current exceptional conditions have proved the importance of cooperation and coordination in different sectors to achieve sustainability. These conditions proved also that digital government is necessary for digital economy and that people must be digitally enabled to handle such conditions. One of the sessions highlighted the stages of the UAE Pass launched by the TRA, in cooperation with Abu Dhabi Digital Authority, Smart Dubai, the Federal Authority for Identity and Citizenship, and the Dubai Electronic Security Center. The UAE Pass and digital wallet have been enabled to exchange data among government and private entities to enhance the digital transformation. The UAE Pass is one of the important pillars of an integrated and interconnected government that provides common services to the public in partnership with the private sector. On this achievement, Eng. Mohamed Al Khamis, Director of the UAE Smart Government Program at the Telecommunications Regulatory Authority, commented: "We are confident that what we have worked on in order to achieve digital transformation has paid off by activating the first national digital identity for all citizens, residents and visitors. The UAE Pass connects users and service providers to facilitate more than 5,000 government services." The UAE Pass provide easy solution to get services via mobile phones without need for multiple access credentials. It enables users to sign documents digital without visiting service centers. The digital wallet enables users to exchange and provide documents required to achieve their transactions. In the second session, the TRA talked about the UAE readiness to face pandemics, highlighting the projects launched by the TRA and other service providers to enhance vital infrastructures and present ICT services in remote areas during exceptional conditions. Eng. Majed Al Mesmar, the Deputy Director General of the Telecommunications sector at the Telecommunications Regulatory Authority (TRA) commented: "The current exceptional conditions all over the world proved the high importance of telecom infrastructure to keep companies, government and society connected. Our country achieved great success in relation to its readiness to face pandemics and guarantee sustainability." It is noteworthy that the World Summit on the Information Society Forum seeks to implement sustainable development strategies by evaluating and honoring individuals, governments, civil society, local, regional and international agencies, research institutions and private sector companies for outstanding. It coordinates global efforts in terms of ICT and digital content. (August 30, 2020) www.tra.gov.ae

At the invitation of the UAE's Telecommunications Regulatory Authority, TRA, a meeting was held between TRA officials and Vincenzo Aquaro, Chief of Digital Government at the United Nations Department of Economic and Social Affairs, UNDESA, to discuss the prospects of the UN e-Government Study and its use for the digital performance development. On the UAE side, the meeting was chaired by Salem Al Housani, Acting Deputy Director-General for the mGovernment Sector, with the participation of Tariq Al Awadhi, Executive Director of Spectrum Affairs, and a number of officials from the work teams of digital services, digital participation, and ICT infrastructure. During the meeting, the UAE presented its observations on the United Nations e-Government Study 2020, the global experiences mentioned therein, and lessons and information that countries can take into account in their digital transformation endeavors. The UAE side also presented its ideas on the methods of the study and raised its inquiries on a range of issues such as the specifics, challenges and prospects related to the UAE and the Arab region in the fields of digital transformation. The meeting discussed the global challenges represented by the fast pace of developments and changes, and the era of the fourth industrial revolution including applications of Artificial Intelligence such as robots, blockchain, and other emerging technologies, and how to employ these technologies in the field of digital government. Al Housani welcomed the UN representative, saying, "We value the role of UNDESA in disseminating the culture of spreading knowledge and mutual benefit by highlighting global success stories within the mentioned study, and we thank them for fulfilling our request to clarify matters whenever we need to." Vincenzo congratulated the UAE on its outstanding performance in all indicators and responded to the inquiries of the work teams in great detail. On the changes in the evaluation mechanisms of the e-Government Development Index, Vincenzo said, "First, I would like to thank the UAE for its cooperation in translating and publishing the e-Government Study in Arabic in a joint initiative

with the UN. Every time we find progress that requires raising the threshold of expectations, it encourages us to move forward, and we are happy with this meeting that reflects the UAE's willingness to benefit from the study." The e-Government Development Index consists of three sub-indicators: Online Services Index, OSI, Telecommunication Infrastructure Index, TII, and the Human Capital Index, HCI. It also includes the e-Participation Index as part of the OSI. The UAE seeks to achieve global leadership in OSI and other indicators. (August 3, 2020) wam.ae/en

The UAE, represented by the Telecommunications Regulatory Authority, TRA, has chaired the 28th Meeting of the GCC Committee of Postal and Telecommunications Under-Secretaries. The meeting discussed a number of topics, including the unified draft law regulating the activities of private companies and institutions working in express mail and parcels. The meeting also discussed a study to reduce the prices of interconnections between the GCC states. In his opening speech, Majed Al Mesmar, TRA Deputy Director-General for the Telecommunication Sector, said, "This meeting is held in exceptional circumstances which necessitates constant comprehensive review of plans, projects, programmes and strategies." He added that the telecommunication sector is playing a vital role in the battle of life. "We have lived this great transition to virtual space as a kind of adjustment to crises, so we turned our attention to communication through the available digital channels, and applied remote work and distance learning, as well as the commerce activities whose digital platforms flourished during the last months." The meeting reviewed the conclusions of previous meetings, the circulation of the unified draft law regulating the activities of private companies and institutions working in express mail and parcels, by the Secretariat General, to the heads and postal entities in the GCC states. This move aims to obtain the approval of Member States, in preparation for the draft law's submission to the Ministerial Council. The meeting touched upon the report submitted by the Kingdom of Bahrain regarding a study of reducing the cost of interconnection between the GCC states, highlighting the importance of this topic. It also suggested the formation of a team to prepare a study on reducing the prices of international connections between the GCC states. The committee recommended the formation of an interim team to study the current situation in relation to the prices of international connections. (July 19, 2020) wam.ae

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

Argentina

Argentina has extended a price freeze for mobile, broadband and pay-TV services until the end of the year, deeming them 'essential public services'. Prices for the services in question have been frozen since May, with the ban set to expire at the end of this month. The freeze means providers will not be able to raise prices without government approval. Argentina has already frozen prices on a further 2,000 consumer goods it also deems essential. The article notes that inflation is running at 42% annually, and the nationwide lockdown to curb the spread of COVID-19 has only served to deepen the economic contraction. (August 25, 2020) Bloomberg

Australia

With the Australian Communications and Media Authority (ACMA) planning to make spectrum available in the 26GHz and 28GHz mmWave bands 'for 5G applications and for fixed satellite services', it is now consulting on the introduction of area-wide apparatus licenses (AWLs) across both bands. The new concession type has been created 'in response to changes in Australia's spectrum landscape', and includes: the 'area-wide' type for transmitter licenses; and the 'area-wide receive' type for receive licenses. In a press release, the ACMA said that it was also consulting on new arrangements for ongoing access to 27GHz–30GHz frequencies by fixed-satellite service (FSS) earth stations. Under the proposed arrangements, it has claimed that satellite users will benefit from additional access to spectrum. The development comes in the wake of the ACMA's consultation on the draft legislative instruments for the country's upcoming sale of spectrum in the 26GHz band, which closed earlier this month. This latest consultation is accepting submissions until 16 September 2020.

(August 21, 2020) commsupdate.com

Allocation limits have now been set for Australia's planned auction of 5G-suitable spectrum in the 26GHz band, which is scheduled to take place in March 2021. Announcing the development, communications minister Paul Fletcher confirmed that he had directed the Australian Communications and Media Authority (ACMA) to implement a cap of 1GHz on the amount of spectrum any one entity can obtain in the sale process. This direction was made via the 'Radiocommunications (Spectrum License Limits–26GHz Band) Direction 2020', dated 9 August 2020, and commenting on the matter, Mr. Fletcher said: 'I have directed the [ACMA] to set allocation limits of 1GHz. This decision was informed by advice and analysis from the Australian Competition and Consumer Commission (ACCC) and aligns with the government's communications policy objectives. Success in the mobile market ultimately depends on access to spectrum. Applying allocation limits means that the 26GHz spectrum cannot be monopolized by any one operator.'
(August 15, 2020) commsupdate.com

Australia's Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) has announced that it is now accepting applications for the Alternative Voice Services Trials (AVST) program. In a press release regarding the development, the regulator noted that AVST is designed to provide grants to organizations to trial different ways to deliver voice services in rural and remote areas of Australia. It added that the objective of the trials is 'to identify new ways to deliver voice services, including by new providers and technologies, and assess their effectiveness to provide improved services and functionality'. Trials will reportedly be delivered within NBN Co's fixed-wireless and satellite footprints, including those serviced by Telstra's high-capacity radio concentrator (HCRC) network, and a total of AUD2 million (USD1.4 million) in funding is being made available for the trials, as part of the AUD220 million 'Stronger Regional Digital Connectivity Package'. Applications are being accepted until the 14 September 2020 deadline.
(August 4, 2020) commsupdate.com

The Australian government called for operators, regional communities and all levels of officialdom to collaborate and apply for AUD53 million ($37.8 million) in funding allocated to improve rural connectivity. In a statement, Minister for Communications, Cybersafety and the Arts Paul Fletcher said the Regional Connectivity Program will provide targeted investment in local telecoms infrastructure projects to maximize economic and social opportunities in regional, rural and remote communities. Minister for Regional Communications Mark Coulton said applicants should work together to develop projects for funding to maximize the benefits for communities. "Collaboration is an excellent method to give an application real bite. We are looking for projects that will provide the most profound benefit to local communities, and by joining forces I'm confident we will see many great solutions come from the bush".

Examples of projects which could be funded include upgrades to mobile infrastructure to improve access to telehealth, remote education, and retail internet and phone services; or developing enterprise-grade broadband networks to support local agricultural, manufacturing and tourism businesses. Applications are open until 20 October. The program complements the government's National Broadband Network and Mobile Black Spot Program.

(July 28, 2020) mobileworldlive.com

Austria

Austria's second 5G auction will begin in mid-August and is expected to be completed by the end of next month, Minister of Agriculture Elisabeth Koestinger told press agency APA. The allocation of licenses for frequencies in the 700MHz, 1500MHz and 2100MHz bands was originally expected to take place in April but was postponed in March due to the COVID-19 pandemic. A total of 27 blocks will be up for sale, including six blocks in the 700MHz band, twelve in the 2100MHz range and nine in the 1500MHz band. Koestinger also revealed that a total of EUR800 million (USD942 million) had been awarded by the government to subsidize the deployment of broadband networks in Austria by the end of 2019. The funding has enabled more than one million residents in over 1,260 municipalities to benefit from high speed services.

(August 10, 2020) commsupdate.com

Belgium

Telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has begun a public consultation on plans to grant operator Citymesh additional temporary user rights in the 3.5GHz band for its offshore network in the North Sea. The operator, which is mainly active in the B2B market, industrial areas of Flanders and offshore wind farms, submitted a request in February to extend its allocated frequencies in the North Sea from 40MHz (3430MHz-3450MHz and 3530MHz-3550MHz) to 100MHz of contiguous spectrum (3410MHz-3510MHz). The BIPT has issued a draft decision granting the request, provided that future onshore networks are not disrupted, and has given interested parties until 16 September to submit their comments.

(August 20, 2020) commsupdate.com

Bermuda

The Regulatory Authority of Bermuda (RAB) has approved the issuance of Integrated Communication Operating Licenses (ICOLs) to two new recipients – Paradise Mobile and Horizon Communications (Wave Bermuda) – to establish, construct, and operate one or more electronic communication network(s) and provide services on an integrated basis in Bermuda. In addition, it has awarded a Submarine Communication Operating License (SubCol) to Cable & Wireless Network Services (C&W) to connect submarine cables(s) to the network(s) of domestic ICOL operators to provide international connectivity services. However, in the press release dated 24 August, the regulator said: 'In acknowledgement of the various concerns raised about the deployment of 5G mobile technology (5G), the RAB will mandate a temporary moratorium on the deployment of 5G for all ICOL and COL holders, (existing and new licensees), pending the completion of a Radio Frequency Study (RF Study) and the issuance of a final determination … As previously stated, the RF Study will include the opportunity for the public to provide their input to the RA prior to making its final determination.' TeleGeography notes that Horizon Communications, which will operate under the banner Wave Bermuda, is a start-up fronted by Gilbert Darrell which claims to have 'built a highly detailed technical plan with a team that has extensive experience in technology and telecommunications'. It aims to provide broadband internet services, IPTV and VoIP to residential and business customers via a fixed-wireless and mobile network. Meanwhile Paradise Mobile – whose directors are listed as Ontario, Canada-based entrepreneurs Kareem Bikhit, Houssam Tabbara and Zlatko Zahirovic – seeks to establish a mobile network offering a range of pre-paid and monthly contract service plans. Finally, C&W – which as part of the Liberty Latin America (LLA) group operates an extensive fiber-optic submarine cable network in the Caribbean – is looking to provide Bermudan ICOL licensees with high-bandwidth leased services, IP capacity and Ethernet.

(August 26, 2020) commsupdate.com

Brazil

The Directing Council of the National Telecommunications Agency (Anatel) decided unanimously, to send to the Superintendence of Granting and Provisioning Resources (SOR) proposals for public calls to assess the existence of possible interested parties in the use of the 1.9 GHz, 2.5 GHz and 39.5 GHz bands to provide broadband service. The 39.5 GHz band has been increasingly used in several countries for the provision of high capacity wireless broadband and its use is studied for applications in fixed 5G and WiFi 6. The 1.9 GHz bands and 2.5 GHz, in turn, were allocated to 3G and 4G technologies in previous Anatel tenders; the remaining lots must be the subject of a public call. The public call process, it should be clarified, aims to raise the number of possible interested parties in order to allow the Agency to decide whether to carry out a bidding process for the sale of radio frequency use authorizations.

(August 6, 2020) anatel.gov.br

Chile

Chile's Undersecretary of Telecommunications Pamela Gidi has responded to criticism from consumer rights activists Conadecus for not including in the tender documents for 5G spectrum an obligation for licensees to provide coverage in rural areas. Diario Financiero quotes the official as saying that '5G is not a tool for closing the digital divide and the big problem is the fixed internet.' The consumer advocate organization claimed that the Department of Telecommunications (Subsecretaria de Telecomunicaciones, Subtel) had missed an opportunity as the upcoming 5G spectrum auction will feature a block of 700MHz spectrum, which is well-suited to providing services in rural and remote areas. Elaborating on the decision to exclude such requirements from the auction, the Undersecretary argued that fiber rather than mobile infrastructure would be required to narrow the digital divide. The official noted that whilst 54% of Chileans have a fixed broadband connection, only a quarter of those are fiber. Ms. Gidi went on to explain that there are currently issues with both the supply and demand sides of the equation, with people able to afford fibre connectivity in areas that are not covered and people in areas with fiber coverage that cannot afford the service. To address these issues, Subtel is looking to regulatory changes in the form of a universal service bill and a possible subsidy. Movistar threw its weight behind Subtel's decision, with Director of Strategy, Regulation and Corporate Affairs Fernando Saiz quoted as saying: '5G is not a panacea, it is a super important technology for industrial uses, automating processes and applications such as IoT. It is useful for companies and entrepreneurs but not so much for people.'

(August 21, 2020) commsupdate.com

Chilean regulator the Department of Telecommunications (Subtel) has published the tender documents for the nation's upcoming 5G spectrum auctions. The regulator is planning to hold four parallel sales, one for each of the bands in which spectrum is being made available: 700MHz, 2100MHz, 3500MHz and 26GHz. Each of the concessions will have a duration of 30 years and, following a consultation period, interested bidders will be able to submit applications between 13 October and 19 October. Announcing the publication of the documents, Chilean President Sebastian Pinera was quoted as saying: 'the spectrum tender for 5G technology is based on four fundamental principles: quality, coverage, technological neutrality and security. For this reason, the contest ensures an adequate level of quality and coverage of at least 90% of the inhabitants of our country.' The president went on to claim that the technology would initially contribute 0.2% to GDP in direct investment in the first year and 0.5% one the networks are operational at a national level. (August 18, 2020) commsupdate.com

Chile's telecom sector watchdog the Department of Telecommunications (Subtel) has set out the timeline for four separate, parallel 5G spectrum auctions, to take place in Q4 2020, Diario Financiero writes. The tenders are for spectrum to be used for LTE-A Pro, 5G (or better) technologies and comprise airwaves in the following bands: 703MHz-713MHz/758MHz-768MHz; 1755MHz-1770MHz/2155MHz-2170MHz; 3300MHz-3400MHz and 3600MHz-3650MHz; and 25.9GHz-27.5GHz. Documents related to the tenders will be published by Subtel on 17 August, followed by a public consultation process between 7 September and 28 September. Interested parties will then have until 19 October to submit applications.

(August 3, 2020) commsupdate.com

Chile's Comptroller General has taken note of legislation regulating guaranteed minimum internet access speeds, with implementation set to begin later this week, following the publication of the regulations in the Official Gazette. The long-running initiative under the Department of Telecommunications (Subsecretaria de Telecomunicaciones, Subtel) comprises a series of regulations governing commercial offers and the provision of broadband services and aims to ensure that the users receive the download speeds featured in their contracts. The regulations include the establishment of an Independent Technical Organization (Organismo Tecnico Independiente, OTI) that will be responsible for conducting periodic measurements to ensure that providers are delivering promised access speeds. The

data collected by the OTI will also form the basis of a regular publication of statistics and service quality rankings, with the aim of providing users with more information when selecting a service plan. Customers will also have access to an application that will allow them to measure their connection speed and inform the regulator if the measurements falls short of the rates featured in their contract. Meanwhile, Subtel has established a series of quality requirements that must be met by all fixed and mobile internet service providers. Firstly, the regulator has established the definition of 'broadband' services to be 5Mbps for mobile connections and 25Mbps for fixed connections. Operators are permitted to provide lower transfer rates but must not advertise such offerings as 'broadband'. This definition will take effect during the first year of the OTI's operation, whilst from the second year the definition will be based on national average access speeds as measured by the new body. Secondly, Subtel set standard ranges within which ISPs must guarantee connection speeds. During peak hours, providers must guarantee 95% of the contracted speed for fixed connections and 90% for wireless connections, and for off-peak hours the rates were set at 98% (fixed) and 93% (wireless). For example, a customer with a 100Mbps fixed broadband plan must receive download speeds of at least 95Mbps during peak hours and 98Mbps during off-peak hours. Finally, the regulations require that operators that fail to meet the above standards must offer users discounts or an adapted service plan, with such compensation to be proportional to the length of time that the service malfunctioned. Notably, customers' download speed measurements will be assumed to be correct – unless the provider can demonstrate otherwise – to ensure a greater level of protection for users. (July 23, 2020) commsupdate.com

Colombia

The Colombian government is set to intensify its attempt to sell its 32.5% stake in Telefonica Colombia (Movistar) – two years after its initial sale attempt floundered. According to La Informacion, the government will seek to exploit the recently approved Legislative Decree No. 811, which has opened the door to the privatization of public companies, or companies in which the state has a significant participation. The government's commitment to selling the stake is likely to benefit Telefonica too; the Spanish giant is committed to offloading all its business in Latin America, except Telefonica Brasil. Any interested bidders are now theoretically able to acquire both stakes and gain full control of the telco. As previously reported by TeleGeography's CommsUpdate, on 13 July 2018 the Ministry of Finance issuing Decree 1215, setting the price of its 32.5% shareholding at COP2.3 trillion (USD800 million at that time, USD631 million using the current exchange rate). A total of 1.108 billion shares were to be sold via a two-step public offering, with the price set at COP2,075 per share, only for the process to be derailed by a lack of interest.

(July 22, 2020) commsupdate.com

Czech Republic

The telecoms regulator, the Czech Telecommunication Office (CTU), has launched a tender to award radio frequencies in the 700MHz and 3400MHz–3600MHz bands, suitable for fifth-generation wireless services. In a press release dated 7 August, the CTU confirmed its intention to boost competition in a market that has long faced vocal criticism from politicians and consumers for the high cost of mobile services. Following its public consultation on its proposals, the regulator has highlighted a number of key aims of the tender. Specifically, it has:
a) reserved a comprehensive section of 2×10MHz in the 700MHz band for new applicants for entry into the mobile market
b) set spectral limits for both offered frequency bands, taking into account the range of radio frequencies already held by potential participants
c) set the condition for the provision of national roaming services to existing mobile operators for the benefit of new operators, provided that they meet the set conditions for the development of their own 5G networks
d) defined the obligation to lease frequencies in favour of support for so-called 'Industry 4.0.'
e) defined development criteria for the rapid development of new networks, including deadlines for the coverage of motorway and railway corridors
f) set the conditions for the provision of Public Protection and Disaster Relief (PPDR) communication services on the basis of a future contract of the Ministry of the Interior. Interested bidders have until 30 September 2020 to submit applications to take part in the auction, the CTU said, however the proposals have been met with skepticism and criticism from the country's mobile network operators (MNOs) O2 Czech Republic, T-Mobile CR and Vodafone CR. In a statement issued after the watchdog's update, Vodafone criticised the CTU saying: 'Given the mistakes and problems in the conditions, it can be expected that the auction will result in clashes at courts and also the European Commission'. Rival T-Mobile also raised concerns over the plan, which is seen as not well prepared, with spokesman Jiri Janecek quoted by Reuters as saying: 'We have to study the conditions and ponder our next

steps, including possible charges'. Only last month, O2 Czech Republic had lodged a complaint with the European Commission over some of the terms and conditions of the auction. As previously reported by CommsUpdate, in January 2020 CTU chief executive Jaromir Novak quit over government modifications to the upcoming auction of 5G-suitable spectrum, believing the last minute changes could be a turn-off

to bidders and hinder the rollout of 5G technology. Novak confirmed his resignation saying: 'I cannot sign under auction conditions that in my deep conviction will not improve the competitive environment in the Czech market, they will jeopardize the target of rapidly introducing 5G networks and they will likely lead to a number of court disputes.'
(August 10, 2020) commsupdate.com

Ethiopia

As part of a stakeholder consultation on two new regulatory directives, the Ethiopian Communications Authority (ECA) said it was taking the 'unusual step' of reissuing the English versions of the final draft versions. In publishing the 'Telecommunications Interconnection Directive' and the 'Telecommunications Infrastructure and Collocation Directive' in both Amharic and English, the regulator said it had opted to release updated versions of the latter – having originally published drafts on 3 August – so as to incorporate helpful comments it had received from stakeholders since that date. Meanwhile, the ECA has also now confirmed a closing date for the consultation, with interested parties directed to make any submissions by 12 September 2020. (August 24, 2020) commsupdate.com

With Ethio Telecom having argued against foreign infrastructure companies being allowed to enter the country and build new infrastructure that could be leased to any new operators that are licensed, it looks set to get its way. The attempts by the Ethiopian Communications Authority (ECA) to bring in foreign telecom infrastructure firms were said to have angered the incumbent, whose executives had argued that it had spent billions of dollars on infrastructure across

the country in recent years and should be able to profit from leasing towers to any new operators that are licensed. According to the report, the Ethiopian government has now decided to suspend the entry of foreign infrastructure companies after Ethio Telecom's management filed a complaint letter seeking state intervention in the matter. Commenting on the development, Ethio Telecom's Chief Executive Frehiwot Tamiru said: 'The government has decided not to allow foreign telecom infrastructure companies. They will not be allowed to operate here … We have built sufficient telecom infrastructures like fiber cables and mobile base masts that we can rent it to the newly entering companies. So, the incoming telecom operators will either use our existing infrastructure by renting or build their own.' Meanwhile, Ethio Telecom was also said to have written a letter to the ECA expressing concerns over the ongoing privatization process of the incumbent, though it is still awaiting a response. 'We do not believe that the authority will take any action that could jeopardize Ethio Telecom's existence,' said Ms. Frehiwot of the matter of privatization, adding: 'But there are still some issues that we have not agreed on.'
(August 11, 2020) The East African

Germany

The communications regulator opened a consultation on the future use of spectrum allocated at its 4G auction in 2010, ahead of licenses for the frequencies entering their last five years of validity. In its Frequency Compass 2020 document, Bundesnetzagentur said it wanted to ensure there was not a "standstill in network expansion" caused by licenses allocated in 2010 for blocks in the 800MHz, 1800MHz and 2.6GHz bands expiring at the end of 2025. It added addressing the issue early should ensure holders were given the greatest level of legal security to allow future planning. The initial consultation closes on 23 October with interested parties invited to submit comments on future use of the frequencies. To make its final decision on the fate of the assets the regulator will assess comments, interests of third parties, and rules set out in the country's upcoming amended telecommunications act. In a statement, Bundesnetzagentur President Jochen Homann said: "Mobile communications are developing

dynamically and suitable frequencies are a crucial resource for further development. We are therefore starting to clarify questions about the provision of frequencies for mobile communications from 2026 onwards. We also keep an eye on the interests of other user groups". Between Vodafone Germany, Telefonica Deutschland, Deutsche Telekom and the now defunct E-Plus, operators spent a total of €4.4 billion in the 2010 spectrum auction. Five years later operators splashed a further €5 billion on new allocations as 4G build-out continued. Licenses for these blocks expire at the end of 2033. (August 20, 2020) mobileworldlive.com

The German Federal Network Agency has published a draft catalogue of security requirements for the operation of telecommunications and data processing systems for personal data. The catalogue was drafted in cooperation with the Federal Office for Information Security and the Federal Commissioner for Data

Protection and Freedom of Information. The measures include the certification of critical components, trust certificates from manufacturers and system suppliers, integrity of product safety monitoring, and the employment of trained specialists in safety-relevant areas, among others. The catalogue will be submitted for notification to the European Commission. At the same time, the Federal Network Agency has started a consultation on a draft list of critical functions for key infrastructures with increased risks. These functions will be listed in a document prepared jointly with the Federal Office for Information Security. The functions currently considered critical include subscriber administration and cryptographic mechanisms (if part of the network), cross-network interfaces, network services, and network functions virtualization Management and Network Orchestration (MANO), among others. (August 12, 2020) telecompaper.com

Germany's Federal Network Agency (FNA, known locally as the Bundesnetzagentur) has announced that Telefonica Deutschland has now met the interim goal to fulfil the coverage requirements of the 2015 multi-band spectrum auction. Telefonica initially failed to cover at least 40% of 7,600 unserved locations by 30 June 2020 and faced a penalty of EUR600,000 (USD679,000) if the areas were still not covered by the end of July. However, the FNA has now confirmed that Telefonica met this deadline, having put 3,040 LTE stations into operation, and will therefore not be fined. The firm is now required to cover a further 1,900 locations by the end of September. Meanwhile, the FNA also revealed that Telekom Deutschland (TD) was able to meet its September deadline ahead of schedule. It is now able to supply at least 97% of households with 50Mbps mobile data rates in all federal states, although it is still required to cover the main traffic routes by the end of the year. Vodafone is also obliged to meet the respective September and December coverage deadlines. According to TeleGeography's GlobalComms Database, earlier this year the FNA completed the review of reports submitted by mobile network operators (MNOs) to determine whether they met the coverage requirements of the 2015 spectrum auction. These included an obligation to provide mobile data speeds of at least 50Mbps to 98% of households nationwide and 97% of households in each federal state by 1 January 2020, as well as fully supplying the main traffic routes. All three MNOs did not fully meet the coverage requirements on time but the watchdog gave Telefonica, Vodafone and TD interim deadlines of the end of June and September in order to completely fulfil the obligations by the end of this year, or face being fined. (August 11, 2020) commsupdate.com

Ghana

Ghanaian Finance Minister Ken Ofori-Atta has announced the Communication Service Tax will be cut from 9% to 5% over the next six months, as part of a package of measures intended to lessen the economic impact of the COVID-19 pandemic on consumers. Presenting his mid-year budget review statement to parliament, the minister noted the cut would benefit consumers forced to work remotely and access online services during the health emergency. Mr. Ofori-Atta added that the government was counting on 'telcos to also match this reduction in the CST by reducing their tariffs'. A controversial rate hike from 6% to 9% in September 2019 prompted widespread criticism and accusations that telcos were transferring the cost directly to consumers.

(July 24, 2020) GhanaWeb

Hong Kong

Hong Kong's Communications Authority (CA) has opened consultations into the future auction of spectrum in the 600MHz and 700MHz bands, plus the reassignment of 850MHz licenses. A total of 155MHz of spectrum in the sub-1GHz range will be made available, including 70MHz of frequencies in each of the 600MHz and 700MHz bands, which will be freed after the switching off of analogue television services on 30 November 2020, as well as 15MHz of spectrum in the 850MHz band which is due for reassignment in November 2023. The 85MHz of spectrum in the 700MHz and the 850MHz bands can be deployed in both indoor and outdoor locations for the provision of public mobile services, while the 70MHz in the 600MHz band is designated for indoor use to improve availability in areas such as shopping malls. A CA spokesperson said: 'The superb radio propagation characteristics of the sub-1GHz band spectrum enable operators to enhance mobile coverage in both indoor and outdoor areas in a very cost-effective manner and also underpin the Internet of Things and other 5G applications.' Comments are invited by 15 September, with a decision to be made in the first quarter of 2021.
(August 20, 2020) commsupdate.com

Hong Kong has begun an industry consultation on releasing a further slice of 4.9GHz for 5G. The city last year auctioned off 380MHz of sub-6GHz 5G spectrum, including 80MHz of 4.9GHz frequencies. The first 5G commercial services began in April. One reason for deploying in 4.9GHz is that the band has already been allocated to two mainland China operators, China

Mobile and China Broadcast Network. Outside China, so far only Japan and Russia have committed to it. However, in a consultation paper issued Thursday, the Communications Authority (CA) said it believed "local and worldwide developments" in 4.9GHz adoption would ensure that network equipment and terminals would become more commonly available. An even more significant attraction of 4.9GHz is that it can be used right across the city. The mobile industry in Southeast Asia has been in conflict with satellite broadcasters over the 3.5GHz band, which overlaps with satellite broadcast services. To avoid interference, the regulator has set up an exclusion zone in northeast Hong Kong, covering approximately 10% of the population. As the CA puts it, compared to 3.3GHz and 3.5GHz, "the 4.9GHz band has the advantage of being able to support deployment of 5G services at all indoor and outdoor locations in Hong Kong." Two operators, China Mobile and HKT, paid HK$120 million (US$15.5 million) for each of the two 40MHz of 4.9GHz blocks auctioned last October. The CA said it had recently vacated 50MHz of 4.9GHz spectrum that was being used by government agencies. It proposes combining this with 30MHz of reserve spectrum to create two more 40MHz blocks. It suggests limiting each bidder to a maximum of 40MHz. The new frequencies would likely be most attractive to Hutchison and Smartone, who have the smallest spectrum holdings overall and the smallest in 5G, with just 70MHz apiece compared with the 120MHz owned by HKT and China Mobile. The CA paper proposes allocating the spectrum through an auction as with the other 5G frequencies, and requiring the successful bidders to provide at least 50% coverage within five years. (July 23, 2020) lightreading.com

India

India's Supreme Court has indicated that it may require cellcos that have used the spectrum of bankrupt providers to pay the Adjusted Gross Revenue (AGR)-related dues of those ailing companies, the Economic Times reports. In a series of hearings over the weekend the apex court reaffirmed its intention to enforce the collection of dues from its October 2019 resolution of a decade-spanning argument over AGR calculations. India's telcos pay a portion of their AGR in license fees and spectrum charges, but many of the providers named in last year's decision have long-since closed, whilst two more – Reliance Communications (RCOM) and Aircel – have been declared bankrupt and are undergoing insolvency proceedings. As it has become increasingly apparent that neither of the bankrupt cellcos nor the other defunct providers will be able to pay the dues – which include not only the outstanding license and spectrum fees but also penalties and interest – the court has begun looking for other parties to pay the dues. The Supreme Court has turned its attention to the spectrum rights of the two companies, as the insolvency process hinges on the concessions. The value of both firms is tied to their spectrum rights and any hope for creditors to recoup their expenses relies on the sale of their airwaves, but the Department of Telecommunications (DoT) has claimed the companies cannot sell their permissions on the basis that the spectrum is owned by the Indian state. Regardless of the outcome, though, the DoT is unlikely to be able to collect any dues. If it blocks the sales, the companies will be forced into liquidation but if it permits the transactions to go ahead, it will not be entitled to the proceeds from the sales due to its classification as an operational creditor As such, the court has begun looking into the use of the spectrum rights held by the bankrupt cellcos, arguing that operators that used the frequencies via sharing agreements should be made to pay the dues instead. In a similar vein, the court has looked to reclaim the dues of shuttered companies from the entities that now hold their former spectrum rights. On Friday, the court claimed that Bharti Airtel should pay the outstanding AGR dues for Aircel and Videocon Telecommunication – totaling INR123.9 billion (USD1.67 billion) and INR13.76 billion respectively – as the cellco purchased spectrum from the two companies, and neither firm had paid the dues prior to their bankruptcy and closure. Similarly, the bench claimed that Reliance Jio Infocomm (Jio) is liable to pay the AGR dues of RCOM (around INR252 billion) as it utilizes some of the company's remaining airwaves through sharing deals. The DoT has relinquished its authority to rule on the matter to the Supreme Court, as the court's current stance contradicts one of its previous rulings on the matter. Last year, the court had rejected an appeal from the DoT seeking to overturn a decision from the Telecom Disputes Settlement and Appellate Tribunal (TDSAT) which had stated that the regulator would not be allowed to collect RCOM's from Jio based on spectrum the latter had acquired from the former. The planned deal ultimately collapsed, however. (August 24, 2020) commsupdate.com

The Telecom Regulatory Authority of India (TRAI) declared an additional spectrum usage fee only applies to the specific frequencies shared by two operators and not to their entire spectrum holdings. The regulator issued its final recommendations on calculating spectrum usage charges when airwaves are shared by two operators. Based on existing guidelines, the spectrum holders must pay a 0.5 per cent usage fee of adjusted gross revenue (AGR), which is applied to the spectrum holding in the specific band in which sharing is taking place. To give operators the flexibility to manage their spectrum based on commercial needs,

TRAI also suggested government guidelines require spectrum-sharing agreements to include an exit clause allowing either party to terminate an existing arrangement. The recommendations come days after the country's Supreme Court said Reliance Jio must pay Reliance Communications' (Rcom) AGR fees since it has been using the now defunct operator's spectrum since 2016. Rcom is undergoing bankruptcy proceedings. Jio, which filed an affidavit with the court today, said it is not liable for Rcom's AGR fees, arguing the spectrum-sharing deal is not connected with AGR liability. (August 17, 2020) mobileworldlive.com

The Supreme Court has demanded that the Department of Telecommunications (DoT) explain how it expects to recover dues related to the Adjusted Gross Revenue (AGR) case from bankrupt providers Aircel and Reliance Communications (RCOM. The court had previously stated that it suspected the two companies had declared bankruptcy to avoid paying the dues, despite both doing so long before the October 2019 ruling on AGR. Nevertheless, the bench was cited as saying that it intended to look more closely at the cause of the initiation of insolvency for the companies, and their liabilities. The court highlighted the fact that RCOM had already settled its dispute with vendor partner Ericsson prior to the insolvency filing, RCOM having previously stated that its legal battle with Ericsson

was the cause for the insolvency filing. As previously reported by TeleGeography's CommsUpdate, RCOM's asset monetization plans were blocked by its dispute with Ericsson, restricting its capacity to raise funds. The company's chairman Anil Ambani only narrowly avoided a jail sentence for contempt of court for failing to pay the vendor when his brother Mukesh Ambani – the chairman of Reliance Industries Limited (RIL) and one of the world's richest men – paid the dues on his behalf in March 2019. RCOM's AGR dues were most-recently pegged at INR310 billion (USD4.1 billion), and the company owes around INR490 billion to its creditors. The apex court questioned the potential sale of the spectrum holdings by the bankrupt providers, seemingly unaware of the DoT's continued efforts to prevent such transactions. The DoT has taken the stance that the license holders do not have the right to sell the spectrum, as it is national property. Aircel and RCOM have argued that they own rights, which are transferable, and as such are authorized to sell the frequencies. The duo have also highlighted that the spectrum resources are both companies' key assets. The telcos' position was upheld by the National Company Law Tribunal (NCLT) and the National Company Law Appellate Tribunal (NCLAT), but the DoT has filed an appeal before the Supreme Court, which is currently pending.

(August 11, 2020) The Economic Times

Italy

Italy's government has green-lighted a proposal to create a single broadband network company which will now be presented in a Memorandum of Understanding (MoU) to incumbent operator Telecom Italia (TIM). State investment fund Cassa Depositi e Prestiti (CDP) has been at the heart of negotiations to merge TIM with wholesale broadband operator Open Fiber; CDP owns 50% of Open Fiber and has a minority stake in TIM. According to a report, which cites several local newspapers, the plan put forward by CDP and approved by the government will restrict TIM's control of the unit while still giving it majority ownership. TIM is known to favor retaining control of the merged unit, while Open Fiber wants an open access broadband provider which is wholly independent of TIM. Daily La Stampa said a strong state presence would be guaranteed thanks to CDP, and TIM would not be allowed a majority of board members in the future network. Meanwhile, TIM is also discussing the future of secondary, or last mile, copper and fiber networks business, which it has dubbed FiberCop. Following on from news that the government has approved plans to sell a 37.5% stake in FiberCop to US investment fund KKR, TIM has now signed a MoU with Italian ISP Tiscali which could pave the way for its participation in the project. Another broadband provider, Fastweb, is already taking a stake in FiberCop

thanks to its existing involvement in the Flash Fiber joint venture which has been deploying fiber-to-the-home (FTTH) networks across Italy.

(August 28, 2020) reuters.com

The Italian government has reportedly approved a move by Telecom Italia (TIM) to sell a stake in its last-mile networks business FiberCop to US investment firm KKR. KKR has offered EUR1.8 billion (USD2.1 billion) for a 37.5% interest in FiberCop and La Repubblica writes that, following the government green light, TIM's board is expected to vote on 31 August to push the deal through. The Rome government is still trying to help negotiate a tie-up between TIM and wholesale network operator Open Fiber, which would lead to the creation of a single national broadband network. An agreement has not yet been reached as the various parties have different views on the future ownership and governance of the business, with TIM looking to retain control but politicians favoring an independent unit. (August 27, 2020) La Repubblica

Italian cellco Iliad has been granted an eight-year extension of its 900MHz license which was due to expire at the end of 2021. Telecoms regulator AGCOM has agreed to extend its permit to end-2029 after

Iliad filed a request in April. Meanwhile, Telecom Italia (TIM), Vodafone and Wind Tre have had their 2100MHz FDD licenses extended for the same duration, though 2100MHz TDD frequency permits will not be renewed since the operators have failed to use them.

(August 3, 2020) commsupdate.com

Japan

The Ministry of Internal Affairs and Communications (MIC) is reportedly considering moves to bar mobile network operators (MNOs) from charging customers for moving to another service provider via the country's mobile number portability (MNP) regime. The Ministry will review its MNP guidelines with a view to making it easier for consumers to switch carrier and hopefully trigger a fall in mobile phone charges. Currently, Japan's established MNOs NTT DOCOMO, KDDI (au) and SoftBank Corp, as well as budget carriers/MVNOs levy a fee of JPY3,000 (USD28) on requests to switch service provider, but the MIC believes there is no justification for the fee which acts as a bar to stop users from porting their number. It plans to draw up its recommendations to amend the MNP regime – first introduced in October 2006 – with the tentative aim of removing the fee as early as autumn 2020. With the move likely to face opposition from the incumbent MNOs, it is noted that MNP requests currently languish at less than five million per annum – or just 2.7% of the total wireless subscriber base.

(July 21, 2020) The Japan Times

Kyrgyzstan

The State Communications Agency (SCA) has launched an auction for wireless spectrum licenses in the 2300MHz-2400MHz TDD band in all regions across the country except the capital Bishkek and second largest city Osh. Concessions are valid for ten years, with combined starting bids valued at KGS60.92 million (USD784,000).

The SCA's website shows that the spectrum on offer is split into three lots as follows:

- Lot one: 1×40MHz (2300MHz-2340MHz) in all regions except Bishkek and Osh; starting price KGS82.450 million
- Lot two: 1×20MHz (2380MHz-2400MHz) in all regions except Bishkek and Osh; starting price KGS41.225 million
- Lot three: 1×40MHz (2340MHz-2380MHz) in Batken, Talas and Naryn regions only; starting price KGS19.691 million.

The SCA – a subordinate agency of the State Committee for Information Technology & Communications – confirmed that registration for the auction is open until the following dates: 3 September (lot one); 4 September (lot two); 7 September (lot three). The auctions themselves will take place on: 4 September (lot one); 7 September (lot two); and 8 September (lot three). Applicants must pay a guarantee deposit of 5% of the starting price for each lot. Separately, news site Tazabek reported that Kyrgyzstan's government has approved new regulations to tighten up the network interconnection framework. Under the new rules operators designated as dominant market position holders must accept interconnection requests on a non-discriminatory basis and may only reject such requests if technically impossible.

(August 21, 2020) commsupdate.com

Luxembourg

Luxembourg's Department of Media, Telecommunications and Digital Policy (Services des Medias et des Communications, SMC) has announced that four bidders have secured 5G frequencies in the recent 700MHz and 3600MHz spectrum auction, paying a total of EUR41.3 million (USD47.8 million). In the 700MHz band (703MHz-733MHz/758MHz-788MHz), Orange, Post and Proximus were each awarded one of the three available lots of 2×10MHz. In the 3600MHz band (3420MHz-3750MHz), where a total of 330MHz was up for auction, Orange and Post each secured 110MHz of frequencies, Proximus 100MHz and Luxembourg Online 10MHz. Eltrona, the fifth qualified bidder, participated in the auction but failed to win any spectrum. The auction began on 13 July and ended five days later after 38 rounds of bidding, according to the Luxembourg Institute of Regulation (Institut Luxembourgeois de Regulation, ILR). The 15-year licenses, which are renewable at least once for a period of five years, are subject to a number of coverage obligations which aim to ensure 5G services are available in the Luxembourg municipality by the end of 2020 and nationwide no later than 2025.

(July 23, 2020) commsupdate.com

Madagascar

The Agency for Regulation of Technology and Communication (Autorite de Regulation des Technologies de Communications, ARTEC) has announced it ordered Telecom Malagasy (Telma) to suspend its 5G services and place all antennas under seal with effect from 20 July. The regulator said in a press statement that 'Telma went ahead with a commercial launch of 5G despite being aware the temporary authorization – which is valid for just a month – granted by the regulatory authority in no way authorizes services to be marketed'. Noting that

5G services in Madagascar are still in the testing stage, ARTEC stressed that it was a condition of the authorization that all tests were to be conducted within an enclosed building, 'whereas the operator performed trials on more than ten outdoor sites without prior notification'. As previously reported by TeleGeography's CommsUpdate, Telma switched on a commercial 5G network supplied by Ericsson in the capital Antananarivo and the city of Toamasina on 26 June.

(July 27, 2020) commsupdate.com

The Netherlands

Operators spent a combined €1.2 billion in the Netherlands' first 5G auction, with KPN and T-Mobile Netherlands poised to join rival VodafoneZiggo in offering services on the new network technology. In separate statements, KPN and VodafoneZiggo revealed they spent €416 million apiece and were both satisfied with the result. T-Mobile splashed €400 million and, although also pleased with its allocation, complained the starting price set by the government had been too high. KPN and VodafoneZiggo were both allocated 20MHz of 700MHz; 15MHz of 1400MHz; and 40MHz in the 2100MHz band. VodafoneZiggo, which launched 5G in April using its existing spectrum assets, noted the allocation would enhance its current offer, while KPN said it planned to "immediately increase mobile data speeds" for its 4G customers in addition to a next-generation launch. KPN CEO

Joost Farwerck added it had acquired an "attractive combination of frequency licenses" at "a reasonable price, considering the minimum price set by the government". T-Mobile won 20MHz of 700MHz and 10MHz in the 1400 MHz band. It also retained 40MHz of 2100MHz already held. Although the operator bemoaned the high starting price, it noted it paid "a considerable amount, but considerably less than the competition". The operator plans to launch 5G services as soon as the licenses are received, while KPN said its network was "soon to launch". As part of the terms of the auction, the operators have been set a number of conditions, including covering 98 per cent of each municipality, along with minimum speed requirements for businesses and consumers. All licenses are valid until 2041. A second Dutch 5G auction is planned for early 2022. (July 22, 2020) mobileworldlive.com

New Zealand

The New Zealand government has announced that high speed fiber networks built under the Ultra-Fast Broadband (UFB) program now pass more than one million households and businesses. 'This milestone has been ten years in the making and demonstrates the popularity of the UFB network,' Broadcasting, Communications and Digital Media Minister Kris Faafoi said, adding: 'Uptake on the network is now at 58.9%, which significantly exceeds expectations back when the UFB program was first developed.' The Ministry noted that UFB networks were available to 83% of the population at end-June. In related news, the government has announced that NZD50 million (USD33 million) has been allocated for further rural broadband connectivity from the NZD3 billion earmarked for infrastructure in the country's COVID Response and Recovery Fund. The investment in 'shovel ready' projects, which is in addition to the NZD15 million announced in late April to upgrade rural mobile towers, is intended to boost broadband access and capacity across most regions of New Zealand, with an emphasis on Te Tai Tokerau (Northland), Bay of Plenty, Waikato, Top of South and Canterbury, secondly, Gisborne,

Manawatu-Wanganui, Auckland rural areas and Otago, and thirdly Hawkes Bay, West Coast, Taranaki, Wellington (rural), and Southland. In particular it aims to increase availability in high density rural and urban fringe areas that experienced congestion and capacity constraints during the COVID-19 lockdown.

(August 6, 2020) commsupdate.com

New Zealand's Commerce Commission is inviting feedback on its consultation package for the development of input methodologies for the regulation of fiber fixed line access services. The Commission published its draft decisions late last year and has decided to consult further on a limited number of issues after reviewing submissions and cross-submissions. The Commission is also publishing a separate, second consultation paper on changes it is considering to its approach to valuing the financial loss asset. Any changes would involve adopting a discounted cash flow approach to valuation and different treatment of investments that pre-date the government's Ultra-Fast Broadband initiative that aims to provide fiber connectivity to 87% of

the population by 2022. The government's Crown Infrastructure Partners contracted four companies to build these fiber networks: wholesale fixed line provider Chorus, and three local fiber companies (LFCs) – Northpower Fiber, Ultrafast Fiber and Enable Networks. Under the new regulatory regime in Part 6 of the Telecommunications Act 2001, the Commission will set the maximum revenue that Chorus can earn from its customers and the minimum quality standards it must meet. Additionally, all four LFCs will be required to publicly disclose information on their performance,

such as on their profitability, revenue, and capital expenditure. The regime first requires the Commission to determine input methodologies which set out the rules, requirements and processes for how the price-quality and information disclosure regulation will apply to the fiber network providers. Interested parties can submit their comments on the main consultation paper and updated input methodologies by 13 August, with cross-submissions due on 3 September. The second consultation paper on the financial loss asset will be published on 13 August. (July 24, 2020) commsupdate.com

Nigeria

The Nigerian Communications Commission (NCC), has promised to ensure improvement in the Quality of Service (QoS), and Quality of Experience (QoE), for the nation's 190 million telecommunication subscribers. It disclosed that within 15 months – from January 2019 to April 2020, subscribers lodged 26,169 complaints against service providers ranging from billing issues, drop calls, data depletion, network freezing, to sales promotion and unsolicited messages, among others. NCC's Director of Public Affairs, Dr. Ikechukwu Adinde, in a report, said 98 per cent of the total complaints received were successfully resolved. "In the period under review, 26,169 complaints were received and managed to the satisfaction of telecom consumers. Of that number, 25,575, representing 98 per cent of them were resolved. "Many of the consumers reverted to either acknowledge the resolution of their complaints or to thank the Commission for its intervention in service-related issues between them and their service providers," Adinde stated. He said the complaints were received through NCC's official channels of communication, adding that these include 24,481 complaints received through its contact centers, 1,007 through the consumer portal, and 296 others received as written complaints submitted at the NCC Headquarters in Abuja, and at its five zonal offices

in Lagos, Enugu, Port Harcourt, Kano, and Ibadan. He informed that 19 complaints were also referred to the Commission during the period through the Twitter account of the Minister of Communications and Digital Economy, Dr. Isa Pantami. The Executive Vice Chairman (EVC) of NCC, Prof. Umar Danbatta, said: "The Commission is pleased that consumers are increasingly accessing the complaint channels to resolve second level complaints brought to its attention." The EVC noted that the NCC had empowered all its channels to enable consumers to escalate complaints earlier reported to their service providers that were not addressed promptly and satisfactorily. "It is important to note that the Commission's actions in this regard tally with NCC's mandate to protect and defend the rights of consumers, and to express faith in the consumer as the lifeblood of the telecoms sector, and therefore deserving of priority attention as enshrined in the Nigerian Communications Act (NCA) 2003," Danbatta said. He reiterated NCC's commitment to taking appropriate steps, in collaboration with stakeholders, to continuously improve QoS for voice and data services, adding that such responsibility has become more imperative, in view of the COVID-19 pandemic and efforts to effectively contain it.

(July 21, 2020) guardian.ng

Philippines

The Philippines' House of Representatives yesterday (24 August) approved the renewal of DITO Telecommunity Corp's operating franchise for another 25 years. The Dennis Uy-led group, formerly known as Mislatel, secured its franchise with 240 votes to seven, with no abstentions, allowing it to continue to 'construct, install, establish, operate, and maintain wired and/or wireless telecommunications systems' across the country. The so-called 'New Major Player' (NMP), which was anointed as the Philippines' third telco in July 2019, is backed by Chelsea Logistics and Infrastructure Holdings Corp, Udenna Corp and China Telecom. Now renamed DITO Telecommunity, the NMP aims to begin commercial operations in March 2021.

(August 25, 2020) commsupdate.com

The Philippines' upper house, the Senate, is looking to pass legislation that would set the minimum standard for internet connection speeds in the country, the Manila Bulletin writes. In an interview this week, Senator Grace Poe explained that Senate Bill No. 471 is designed to direct the Department of Information and Communications Technology (DICT) and the National Telecommunications Commission (NTC) to 'put in place a certain standard for the internet services offered by telecommunication companies and internet service providers'. The senator confirmed the opinion that the two regulatory bodies should be responsible for setting the 'proper' internet speeds, adding that Senate Bill No. 471 had been discussed during the hearing of the Senate public service committee, which

Poe chairs, on 1 July 2019. At that meeting, Senate President Pro Tempore Ralph Recto had reportedly proposed a minimum internet download speed of 10Mbps for mobile broadband/internet access, and 20Mbps for fixed and fixed-wireless platforms. Further, the Bill noted that service providers should also 'work towards providing an average internet connection speed above global average', although Poe now acknowledges that those minimums are low compared to many seen in other countries across the globe. Nonetheless, she pointed out the urgent need to legislate for new minimum internet service speeds, pointing out the exigent need for improvement due to 'the shift to online transactions and learning amid the coronavirus pandemic', among other things.

(July 31, 2020) commsupdate.com

Poland

The Polish government is expecting to hold its auction of 5G-capable spectrum in the 3.4GHz-3.8GHz band in early 2021, having cancelled the awards process earlier this year due to the COVID-19 pandemic. Deputy Minister of Digitization Wanda Buk said in an interview with Dziennik Gazeta Prawna: 'I believe that the allocation of the C-band block to operators will take place in the first quarter of 2021.' She added that the auction cancellation was the best option; if the original process had simply been paused then restarted, she said it could have led to legal action from one of the potential bidders, which would have delayed the award of spectrum even longer. 'It was a difficult decision – we chose the lesser evil,' she said. Telecoms regulator UKE has said it plans to open a new consultation on the awards process ahead of the new auction.

(July 30, 2020) commsupdate.com

Slovenia

Slovenia's Agency for Communications Networks & Services (Agencija za komunikacijska omrezja in storitve, AKOS) has laid out a number of requirements for winning bidders in its long-awaited auction of 5G spectrum, which is expected to take place later this year. The regulator is planning to sell 5G-capable spectrum in the 700MHz, 3.6GHz and 26GHz ranges, as well as complementary frequencies at 1500MHz and 2.3GHz, while at the same time offering up spectrum in the 2100MHz band which is currently included in licenses due to expire in September 2021. Winning bidders are required to have 5G services in at least one major city within one year of the license awards, and be using all acquired frequencies within five years to provide coverage of all major cities. The 700MHz band carries additional coverage requirements, including 99% of motorways and 60% of all train lines and main roads by December 2025. In an effort to promote competition in the market, AKOS has also set spectrum caps as part of the sale which include new and existing licenses. Each bidder will be limited to: 2×35MHz across the 700MHz, 800MHz and 900MHz bands; 190MHz of unpaired frequencies in the 2.3GHz and 3.6GHz bands; 800MHz unpaired at 26GHz; and 425MHz combined in the 700MHz, 2100MHz, 2.3GHz and 3.6GHz ranges, including pre-existing rights of use in the 800MHz, 900MHz, 1800MHz and 2.6GHz bands. Operators with less than 2×30MHz spectrum below 1GHz will be required to provide bit rates of at least 10Mbps downstream and 2Mbps upstream, while licensees with more than 2×30MHz below 1GHz will need to offer rates of at least 30Mbps/3Mbps (down/up). All licenses will be technology neutral. State-backed fixed and mobile operator Telekom Slovenije recently launched the country's first commercial 5G network using its existing 2600MHz spectrum.

(August 4, 2020) commsupdate.com

Spain

The Ministry of Economic Affairs and Digital Transformation (Ministerio de Asuntos Economicos y Transformacion Digital) has approved a Ministerial Order modifying the National Table of Attribution of Frequencies (Cuadro Nacional de Atribucion de Frecuencias, CNAF), which imposes a cap on the amount of spectrum in the 694MHz-790MHz (700MHz) band that an operator is able to use for mobile broadband services. A limit of 2×15MHz per operator has been established for the 5G-suitable 700MHz band, which will be freed up by 31 October 2020 and auctioned in the first quarter of 2021. Running in parallel, the Ministry has imposed a maximum limit of 2×35MHz per operator for all paired spectrum blocks in the 800MHz and 900MHz bands.

(July 22, 2020) commsupdate.com

Taiwan

Taiwan Star and Asia Pacific Telecom (APT) have been awarded 5G operating licenses by the National Communications Commission (NCC), according to Focus Taiwan, meaning that five domestic operators now have permission to offer commercial 5G services. As previously reported by CommsUpdate, Chunghwa Telecom, Far EasTone and Taiwan Mobile all secured similar concessions in June 2020, and moved to commercialize the latest generation of mobile broadband technology earlier this month. In the wake of the latest licensing development, the report notes that Taiwan Star is planning to launch 5G commercially on 4 August, with it aiming to have 1,000 base stations up and running by the end of the year – the bulk of

which will be in the country's six largest cities. It was also noted that Taiwan Star is teaming with another domestic company, Askey Computer Corp, to set up small cell stations with a view to providing a better quality of service by boosting the strength of its signal indoors. For its part, meanwhile, APT is reportedly planning to introduce a commercial 5G offering in the third quarter of this year. The operator is said to have plans to launch a '5G Land' audio and video entertainment platform, and has said it will work with international partners to provide content for its 5G platform and build a 5G ecosystem.

(July 30, 2020) commsupdate.com

Thailand

The National Broadcasting and Telecommunications Commission (NBTC) has disclosed that the digital terrestrial TV (DTT) signal will be disrupted for some Thai areas from September, as DTT providers start returning portions of their 700MHz spectrum to the authority, the Bangkok Post writes. As previously noted by TeleGeography's CommsUpdate, the NBTC completed its 5G multiband spectrum auction in February this year, raising around THB100.5 billion (USD3.2 billion) from the sale of 48 concessions for spectrum in the 700MHz, 2600MHz and 26GHz bands.

The auction for the three 700MHz authorizations lasted 19 rounds, with the airwaves sold to AWN (one license) and CAT (two concessions) at THB17.15 billion apiece. NBTC Vice Chairman Natee Sukonrat said that initial disruptions to the DTT signal are expected in the Southern region from September, Bangkok and the surrounding areas (from 5 October), Northern region (October), Northeastern region (November) and Central region (December). The 700MHz range is scheduled to be used for telecoms purposes from 15 January 2021.

(August 24, 2020) commsupdate.com

United Kingdom

UK regulator Ofcom has published two documents exploring how the use of customer data is evolving and to ensure that data innovation supports the interests of communications customers. A new discussion paper presents the results of consumer research on personalized pricing. It also outlines Ofcom's initial views on the potential implications of this emerging practice, to help ensure that customers are treated fairly and have transparency about how their data is used. Interested parties can submit their views to Ofcom via e-mail at personalised.pricing@ofcom.org.uk. The second document is a consultation on a proposed new initiative called 'Open Communications'. This would allow consumers and businesses to share their own data with comparison sites and other providers to receive recommendations about the best products for their needs. This consultation closes on 10 November. Ofcom aims to publish a statement summarizing responses to the consultation and outlining how it plans to proceed in 1st-half 2021.

(August 9, 2020) telecompaper.com

UK regulator Ofcom announced plans to hold a 5G auction in January 2021, rejecting calls from some operators which had lobbied for an allocation process rather than a traditional sale. In a statement, Ofcom

stated the auction would cover the sale of 80MHz in the 700MHz band and 120MHz of spectrum in the 3.6GHz to 3.8GHz band. The UK regulator said the net result would be a nearly 20 per cent increase in mobile capacity following the auction, which was delayed by the Covid-19 (coronavirus) pandemic. Ofcom's move will likely draw criticism from the country's operators, with both Vodafone UK and O2 UK calling for a different approach to divvying up frequencies in light of recent challenges. Vodafone UK CEO Nick Jeffery told Financial Times it wanted Ofcom to abandon the auction, and instead distribute spectrum to the four major operators in the nation for a reserve price of around £1.2 billion. He argued this would be best approach, given the costs it faces to comply with a government order to replace Huawei kit in its networks by 2027. In May, O2 UK threatened a legal challenge to the rules of the auction, stating it wanted the regulator to harmonize the lots of spectrum into contiguous blocks rather than selling them as fragmented slices. Ofcom addressed the operators' concerns in its statement, arguing auctions rather than an administrative process was the best way to meet the high demand for airwaves. "Having examined this suggestion, we do not believe it would meet our duty to secure optimal use of the UK's spectrum". (August 3, 2020) mobileworldlive.com

UK regulator Ofcom has published updated advice to the Government on airwaves that be used to improve mobile broadband connectivity for rail passengers. This update outlines the best spectrum options to meet rising demand for on-board data access by providing track-to-train connections through backhaul for Wi-Fi, or mobile small cells on trains. Ofcom recommends the 66-71 GHz and 39-40 GHz bands as the best options for providing these connections. Ofcom is also examining future plans for the 26 GHz band, and will take any demand to use this band for trackside services into account when developing a future licensing strategy.

(July 27, 2020) telecompaper.com

British telecoms regulator Ofcom has proposed the creation of conditions designed to 'improve retail competition in the fixed telecoms markets in the Hull Area, through [its] wholesale regulation of KCOM'. In launching a consultation on its plans, the watchdog said that it was looking to focus its regulation on encouraging competing providers to enter the market. To that end, Ofcom's consultation has set out its proposals for regulation of the wholesale local access and wholesale leased lines access services markets in the Hull Area from April 2021, while it also sets out how it plans to deregulate the wholesale broadband access and fixed voice markets. In its consultation documents,

Ofcom said that it proposed finding that KCOM has market power in local access and leased lines access services, saying it would address that market power 'by regulating in a way that supports competition and investment, and protects customers'. Specifically, the watchdog has said it aims to encourage competition in the retail market by ensuring that competitors will continue to have access to KCOM's network on fair and reasonable terms, while also proposing to facilitate new entrants' use of KCOM's network by making improvements to the existing wholesale local access arrangements. Ofcom is also proposing that network providers should be able to lease from KCOM just the fiber element of a 'leased line'. Meanwhile, given what it said was an increased focus on regulating KCOM's fiber wholesale local access services, Ofcom aims to deregulate both the wholesale broadband access market and fixed voice telephone services. The regulator has claimed that improving access to KCOM's fiber network will mean more companies can provide such services in the Hull Area, and as such its existing regulation would no longer be required. Responses to the consultation are being sought by a 24 September deadline, following which Ofcom has said it will publish a statement setting out its final decisions before the new regulation takes effect from April 2021.

(July 20, 2020) commsupdate.com

United States

A US court largely dismissed a lawsuit challenging Federal Communications Commission (FCC) regulations intended to speed deployments of 5G small cells, drawing praise from the domestic mobile industry. At issue in the case were infrastructure rules approved by the FCC in September 2018 which, among other things, limited the amount of time allowed for local review of applications for small cell placement and capped municipal fees associated with such permits. Though the regulations aimed to eliminate hurdles to 5G rollouts, local authorities balked. In October 2018, more than a dozen cities joined a lawsuit challenging the FCC's rules on the basis the agency exceeded its legal authority and its orders were "arbitrary and capricious". In a decision issued the court upheld the FCC's rules related to fee caps and application review deadlines, but ordered it to revisit other restrictions placed on aesthetic reviews. FCC Chairman Ajit Pai in a statement called the decision a "massive victory" over "short-sighted efforts by those seeking to obstruct 5G deployment". He added the affirmation of national infrastructure policy coupled with scheduled mid-band spectrum auctions left the country "well-positioned to extend its global lead in 5G". Industry groups CTIA and the Competitive Carriers Association (CCA) also applauded the ruling, with CCA chief Steven Berry noting it will ensure "outlier regulations do not inhibit

deployment" of next-generation services.

(August 12, 2020) mobileworldlive.com

The US Administration is making 100 MHz of midband spectrum available for FCC auction by December 2021, according to the White House, and use by commercial 5G providers at full power ASAP, at least on the government timeline. The move was billed as strengthening U.S. leadership in 5G. White House and DOD officials said Monday (Aug. 10) that they had identified spectrum between 3450 and 3550 GHz currently used by DOD for key radar applications, that could be freed up quickly for sharing with commercial 5G without sacrificing national security or military uses, specifically critical radar for air defense, missile and gun control, battlefield weapon locations, air traffic control, and more. The Administration will work with industry on the sharing regime, which will require ongoing coordination. The White House and DOD worked quickly to identify the spectrum and free it up as quickly as possible, but due to statute it must be done on an 18-month time frame, though an official speaking on background pointed out that the time frame for federal spectrum to get to market can often be six or seven years, so the timeline was fast in that context. A DOD spokesperson said it worked on an unprecedented 15-week schedule to find the spectrum,

with Secretary of Defense Mark Esper leading the effort and working with the National Telecommunications & Information Administration to devise a spectrum sharing framework. Michael Kratsios, chief technology officer in the White House Office of Science and Technology and deputy assistant to the President called it the fastest transfer of spectrum from federal use to commercial in history--the White House and DoD started work on finding the spectrum back in April. He said that the "critically needed" spectrum could be available for commercial use by mid-2022. He said the decision on the 100 MHZ came after the White House and DOD "rigorously analyzed" the spectrum in what he called an "unprecedented collaboration." He said that spectrum will be for contiguous, coast-to-coast deployment at full power levels. He called it a groundbreaking achievement, but one that built on other actions, like streamlining 5G buildouts and "taking decisive action to secure domestic networks." Kratsios said the U.S. "will continue to build the best 5G networks." Winning the race to 5G has been a priority for the administration. DOD and other agencies, as well as many in Congress, have butted heads with the FCC over sharing spectrum in other parts of the band, including 24 GHz and adjacent to the GPS satellite band, where the FCC wants to allow Ligado to set up its terrestrial broadband service. White House officials had no comment on whether this new spectrum was related to its opposition to the FCC freeing up spectrum elsewhere. (August 10, 2020) multichannel.com

Zimbabwe

The government of Zimbabwe is now working with the International Finance Corporation (IFC), a unit of the World Bank, in its efforts to privatize fixed line incumbent TelOne and its mobile sister company NetOne. Zimbabwe had previously engaged PricewaterhouseCoopers (PwC) but has cancelled the contract after the failure to attract a buyer. The government is looking to merge the two telcos and sell off a 60% interest in the combined firm.

(July 27, 2020) commsupdate.com

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