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Interview

Mr. Fadi Kowar
CEO
Lebara Mobile
KSA

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INTERVIEW



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5G Usage Scenarios

Developing 5G use cases remain an exciting and important challenge area for the Industry.

When seen how the cellular market currently operates, the first primary use cases of 5G are expected to be centered on cost-effective broadband data capacity - an offering which, arguably, may actually be realized from improved versions of 4G as well. However, because reducing complexity is an important aspect of any new system design, and next-generation cellular systems are no exception, it is important that an altogether different, fifth-generation set of cellular and mobile broadband technologies are developed, instead of continuing to introduce newer versions of 4G cellular technologies - of which there have been plenty since 2010. It is time for an utterly new version of a global cellular technology, which should support Operators' need to control costs of growing data traffic due to mobile broadband, and to help maintain QoS with a competitive edge. Other use cases, such as trans-national and trans-regional connectivity requirements would also help drive deployment of 5G, which can provide a universal platform to support and adapt to applications or services that will benefit both the Industry and the currently under-development digital society.

Industry-wide discussions, anticipation, excitement, and challenges revolve around 5G promising to be a unified interface offering multi-gigabit speeds and sub-millisecond latency; supporting distributed architecture and intelligent edge; network slicing for service differentiation; and a capability to serve equally well the common man and specialized fields, such as the performing arts. 5G will not only offer ultra-high speeds for enhanced broadband, ultra-low latency for mission-critical applications, and help drive the IoT ecosystem, but will also prove to be substantially more efficient. This would translate to lower costs per bit to haul wireless

data between networks and users, and thus Operators would be able to conduct their data offerings more cost-effectively.

5G also has the potential to create a sustainable digital society. For average consumers, 5G technologies and services could speed up connections, allowing implementation and easier use of virtual reality and augmented reality. For professionals, improved connectivity and low-latency based communications would open windows of new opportunities. For businesses, 5G could help accelerate deployment of enterprise-centric technologies, including of IoT products. The low latency - rather than just faster speeds - will be a great game-changer, and would enable the creation of new business models.

Efficient use of existing (and gradually being freed and re-utilized) spectrum is among 5G's most notable features, causing the addition of new bands to be added to cellular communications. This will enable 5G to offer unprecedented user speeds and digital experience for mobile broadband applications, including for those that require congestion-free networks, reduced buffering, speedier access to content, and robustness in both urban and non-urban settings.

In any given practical and implementable scenario, new business model development in the 5G world will be centered on end-users. Building viable 5G business cases requires creativity, stakeholder co-operation building, and defining new partnership prospects that transcend traditional roles and modes of engagement. Furthermore, for parallel investments to take place and yield returns, both private-sector and governments need to collaborate and help create use-cases that have the potential to meet success in the shortest possible time, to help make initial phases of 5G deployment over the coming year successful. 📍



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Council



Mr. Fadi Kwar
CEO
Lebara Mobile KSA



Fadi Kwar has over 25 years of experience as an executive in the telecommunications industry. He was appointed CEO of Lebara Mobile in Saudi Arabia in 2014, after previously working as Senior VP Finance & Strategy and acting CFO at Mobily. Previously, he was Chairman of the Board of Commissioners and CEO of the Telecommunications Regulatory Commission in Jordan. He holds a degree in accounting and business management from the University of Jordan and obtained his MBA from the University of Hartford.

Q. How have you positioned Lebara Mobile as mobile virtual network operator (MVNO) in the telecommunication landscape?

A. The Middle Eastern mobile markets have relatively high barriers to entry for MVNOs, though we have succeeded in capturing our market share nonetheless. We found a niche with our offering and have gathered a strong subscriber base. The frequent changes in the regulations in the Saudi telecommunications have not distracted us from our focus; it encouraged us to streamline our operations. Globally, our focus is to target migrant communities and Medium Low Income nationals with pay-as-you-go SIM cards, and that is how we started in 2014. Before entering the Saudi market, Lebara has experience in building a successful MVNO in eight countries, and we have the know-how to target the underserved segment of the market that we are in. Simplicity and trust are our core values, and we have built our entire business on these values.

Q. How do you envision Lebara Mobile being part of the Kingdom's comprehensive transformation trajectory to diversify the economy?

A. Vision 2030 has opened up major opportunities for the technology sector, and we will certainly be part of this journey. Saudi Arabia is in a unique demographic position, with 50% of the population under 25 years old. The current leadership of the country is young as well, understands technology better, and wants to make a real change. With NEOM and the opening up of the entertainment industry, the Kingdom is set for a major transformation. This also means an influx of FDI into a broad range of sectors, as our economy grows more open and transparent. The total revenue of global telecommunications industry is anticipated to be almost EUR1.2 trillion by 2019, and Saudi Arabia has the highest mobile penetration, which means opportunities lie ahead. The coming years are all about offering differentiations to our

customers, and as the country opens up, we explore new tools and partnerships to provide more products and services. Vision 2030 gives unique momentum to agile and dynamic companies to grow quickly and to serve customers better, and we want to be part of that wind of change.

Vision 2030 has opened up major opportunities for the technology sector, and we will certainly be part of this journey.

Q. How has your mobile virtual network enabler (MVNE), in collaboration with Huawei, advanced since its inception in 2016?

A. This was an excellent partnership and it has been great to see how it caught on and evolved. We are able to enter certain segments and issue new products quickly and effectively. It is mostly the speed of action with this platform that allows us to be more agile and dynamic.

Q. How do you envision becoming more active in the domain of the Internet of Things (IoT)?

A. The Communications and Information Technology Commission (CITC) issued two public consultations, one related to relaxing regulations and the other on the intention to issue licenses called IoT-VNOs, which is an MVNO that specializes in the IoT business. These regulations will facilitate our IoT positioning as we already have the proper infrastructure and expertise to enter in this market.

Q. What are your expectations of the telecommunication market in the coming years, especially with regard to data?

A. The opening up of VOIP communications has had a negative impact on our voice revenue, while it positively attributed to

the data demand of our customers. The shift to data is a global, and similarly to our operations in other countries, we are building our projects and offerings around this, for example, free minutes along with data packages. IoT, along with other data-heavy mobile phone applications like video streaming and online gaming, will boost data demand in the years to come. For gaming, we are working on new partnerships

Q. What are your ambitions for the coming years?

A. We want to diversify and transform our telecoms business to align with vision 2030 requirements. The telecommunication industry is rapidly developing, and we want to be ahead of the game. Telecommunications—voice and data—will remain our bread and butter for the time being, though we will explore and materialize all the opportunities to broaden our services. We strive to create new revenue streams and change the way we approach the market. We are an international brand with a national heart. 🇸🇦

We want to diversify and transform our telecoms business to align with vision 2030 requirements. The telecommunication industry is rapidly developing, and we want to be ahead of the game. Telecommunications—voice and data—will remain our bread and butter for the time being, though we will explore and materialize all the opportunities to broaden our services.

MEMBERS NEWS



STC Inaugurates a Modern Data Centre with Global Standards

STC inaugurated the new data Centre in Riyadh, in the Presence of HRH Prince Mohammad K Al Faisal Al Saud, Chairman of the Board, and Dr. Khaled Biyari, Vice

Chairman of the Board, and Haitham Alohaly, Deputy Minister of CIT. On this occasion, Nasser AL Nasser, STC Group CEO, confirmed that this hub is one of

the most modern in terms of capabilities and technologies and will act positively in supporting STC's role in enabling digital services for private and public sectors, according to the growth strategy and digitization in line with 2030 vision. Pointing out that modern data hubs are considered a corner stone for digital transformation in the Kingdom. The Centre was built in (AlRaidah Digital City) in Riyadh according to high global standards. It is ranked in the fourth tier, which is the highest according to (Uptime Institute), and among the top ten in the world. By inaugurating this center, STC will have the largest capacity for data centers in the Middle East. In addition to, hosting the biggest iCloud Service in the region, supporting key global platforms that makes the base of infrastructure to comply with the requirements of launching modern technologies such as IOT, Smart Cities, and Cybersecurity.



Batelco Appoints New Chairman Shaikh Abdulla Bin Khalifa Al Khalifa

Bahrain Telecommunications Company (Batelco), has announced the appointment of a new Chairman, Shaikh Abdulla bin Khalifa Al Khalifa. Shaikh Abdulla will replace Shaikh Mohammed bin Khalifa Al Khalifa, who has served as Chairman since December 2016. Shaikh Mohamed has played an integral role during his term in implementing the company's strategic plan. The Board extends their appreciation to him for his efforts. Shaikh Abdulla is the Chief Executive Officer at Osool Asset Management with more than 20 years' experience in the Banking and Financial Services Industry. Shaikh Abdulla is the Chairman of SICO Investment Bank, Board Member of BBK and Board Member of Amanat Holding PJSC. He holds a Bachelor of Science in Business Administration from the George Washington University, USA.





Etisalat Offers Exclusive In-Flight Roaming Deal for Business Customers

Etisalat announced that its roaming packages (both data and voice) will now include AeroMobile in-flight coverage, which promises business users connectivity when they are airborne. UAE being an important commercial and transportation center, is a hub to some of the biggest Airlines which originate multiple long haul flights during which business users need to stay connected. With this newly enhanced feature, Etisalat users subscribed to business roaming packs are now able to stay online and talk at affordable rates in-flight on the AeroMobile network at no extra

cost. This means all packages shall remain the same; the only difference is the ability to use in-flight roaming at no extra charge to subscribers of any roaming pack. Currently, Etisalat roaming network covers almost 120 countries for preferred roaming. Salvador Anglada, Chief Business Officer, Etisalat, said: "One of the most critical communication needs of business users is uncompromised connectivity anytime anywhere. We are proud to be the first mobile network in the world to offer our customers this exclusive proposition. "With the changing market dynamics and customer requirements, it is essential to launch services that address these demands and satisfy the needs of our subscribers, particularly business travellers. With Etisalat's affordable in-flight roaming service, our customers can stay in touch with their business partners wherever they go, answer an important email, check social media, make and receive calls and more during flights." AeroMobile is a UK based mobile service provider for the aviation industry that provides mobile network for airline passengers to roam in-flight. It was the first to introduce in-flight connectivity in 2008, and currently has agreements with over 340 mobile phone operators across more than 145 countries, including full coverage in the UAE with Etisalat. For information on Etisalat's global business roaming packs, please visit etisalat.ae/globalroaming.



Tamdeed Projects Highlights Innovation in Telecom Networking & Smart Building Solutions at BICSI MEA Conference

Tamdeed Projects, a subsidiary of Etisalat Services Holding, exhibited a strong presence at the recently-concluded 2018 BICSI Middle East & Africa (MEA) Conference and Exhibition, reinforcing its commitment to support the ICT community and promoting innovation within all aspects of telecom network and smart city solutions. The two-day BICSI MEA Conference was held recently under the theme, 'A Connected World: Smart Cities, Smart Buildings, Smart Infrastructure, and More!' Tamdeed Projects, a leader in the UAE for outdoor network solutions and a key player and integrator for indoor structured networks, in-building solutions, and ICT infrastructure, was the event's exclusive diamond-level sponsor. Tareq Salman, general manager, Tamdeed Projects, opened the conference with a Keynote Presentation on 'Building a Smart Hospital...that Stays Smart Well into the Future', with the new Al Ain Hospital

as a case study. Tamdeed undertook this flagship project and implemented a standards based approach towards survey, engineering, supply, installation, commission, integration, testing the extra-low voltage package of works of this 700+-bed hospital on a turn-key basis. He cited the key learnings of the healthcare project: the importance of integrated building management and security systems; making rooms more patient-centered, and providing a fully-integrated electronic medical record system, way finding and customer feedback kiosks, location tracking devices and electronic status boards that directs patients to respective treatment rooms, display news and health care information. As part of its exclusive sponsorship, Tamdeed sponsored the conference's Opening Keynote Presentation from Limor Schafman, Director of the Smart Buildings Program at the Telecommunication Industry

Association. Her keynote, titled "Powering Digital Transformation in Smart Cities: The Role of Smart Buildings," covered the macro-challenges facing communities today, the need for a common connected platform and language for smart community development, and a technology review of smart building and smart city platform use cases. The conference was organized by Building Industry Consulting Service International (BICSI), a professional association supporting the advancement of the information and communications technology (ICT) community covering the spectrum of voice, data, electronic safety & security, extra low voltage, audio & video technologies and project management. The event featured workshops and keynote talks from international industry experts presenting on the latest advancements in the world of ICT.



Telecom Egypt Secures \$200m 4G Funding from Chinese Firms

Telecom Egypt has obtained \$200 million in funding from Chinese financial institutions to help it finance the rollout of 4G networks across the North African nation. The deal was struck



in collaboration with Chinese tech giant, Huawei, who will play a key role in the development of Egypt's mobile networks. "Telecom Egypt has several strategic long-term expansion plans to be delivered in the coming years. To achieve such plans, we have worked on attaining long-term financing at the lowest possible cost as well as the most convenient payment terms to match our cash flow generation while proceeding with our rollout plans. Our success in securing such financing agreement with the Chinese financial institutions and Huawei indicates our strong financial position and credit profile and marks the first of its kind in the telecom sector. The facility benefits Telecom Egypt by providing a simplified purchasing process through a packaged financial solution, while it allows Huawei to further expand its business in Egypt," said Eng. Ahmed El Beheiry, Managing Director and CEO of Telecom Egypt. The credit facility will last for 48 months, with a grace period of 24 months, and will allow Telecom Egypt to raise its capex for its network expansion project. "Throughout the years Huawei has been successful in building and maintaining a strong partnership with Telecom Egypt. Today, we are taking another step towards strengthening this partnership and supporting Telecom Egypt in their strategy to expand by facilitating the financing agreement," said Terry Liu, CEO of Huawei Egypt Office.

Telecom Egypt Subsidiary EISCC Buys Middle East and North Africa Submarine Cable for \$90 Million

Telecom Egypt said that Egyptian International Submarine Cables Company (EISCC), its 50% owned subsidiary, has agreed to purchase Orascom Telecom Media and Technology (OTMT) Holding S.A.E's shareholding of its subsidiary Middle East and North Africa Submarine Cable (MENA) for a total of \$90 million. The transaction should be complete in 60 days, subject to the fulfillment of customary conditions. Earlier this month, the company announced that its board of directors approved the MENA Cable acquisition by EISCC, with the deal financed through a shareholder loan from Telecom Egypt. According to the company, the MENA Cable acquisition supports its strategy to attain a short-term return from this investment, as well as maintain the undersea cable systems' revenue stream. MENA Cable is a carrier neutral cable operator with a license in Egypt and Italy to operate a submarine telecommunications system that connects Europe to the Middle East and South East Asia. "We are pleased to have concluded the Sale and Purchase Agreement (SPA) with OTMT," said Ahmed El Beheiry, Managing Director and CEO. "As earlier communicated, the decision to acquire MENA Cable is one of the most important steps towards implementing the company's strategic plan to ensure the sustainability of submarine cable revenues and reinforce the contribution of the USD revenue stream. The new cable will add to Telecom Egypt's

network of submarine cables fortifying TE's network offering to the maximum number of routes between India and Europe, as well as add a new gateway to Europe through Italy." In 2016, Telecom Egypt deployed optical mesh network capabilities across its terrestrial and submarine network infrastructure (see "Telecom Egypt deploys terrestrial, submarine optical mesh network"). The company uses its home country's access to the Red Sea, as well as the Mediterranean Sea, to provide a wide range of international telecommunications services.





VIVA the First in Kuwait to Physically Demo its 5G Services

VIVA, Kuwait's fastest-growing and most developed telecom operator, launched the fifth-generation "5G". Being the first telecom company in Kuwait to bring the unrivalled 5G to reality by physically showcasing the customers' experience with the technology, reflects its continuous commitment to its customers to deliver up-to-date technologies that meet their aspirations. This launch is the initial phase for demonstrating the capabilities and readiness to VIVA to offer the 5G services, while the full-fledged services to customers will be offered upon receiving the regulatory approvals. Eng. Zarrar Khan, Chief Technology Officer at VIVA commented: "The 5G is one of the latest technologies in the generation of communications, therefore VIVA is proud to bring this unique service that will enable customers to exchange information and communicate at high speed." He added: "We have confidence, knowledge and innovation, which will enable us to lead the 5G era, and confirm VIVA's pioneering position in providing innovative services for the customers in Kuwait." What made VIVA launch unique is that for the first time, media and public interacted with the 5G services being offered by VIVA. These services include ultra-highspeed

internet access, Virtual Reality media and gaming, ultra-low latency drone control and video streaming. The launching ceremony was accompanied by a pavilion to explain about 5G; the editors were able to review the virtual neighborhood services by themselves. In January 2017, VIVA succeeded in advanced technical experiments in its lab. This technology is the coming fifth-generation wireless

broadband technology in the telecom world after the 4th generation (LTE). 5G aims at higher capacity and better latency than current 4G (LTE) which will allow a higher density of mobile broadband users, 5G will be providing multiple gigabit speeds in cityscape areas which will allow people and machines to step into a new era of information technology and help better in implementing the internet of things (IoT).



Zain KSA Refinances its Existing Murabaha Facility for Five Years

Mobile Telecommunications Company Saudi Arabia (Zain KSA) announces that it has successfully refinanced and extended the maturity date of its existing syndicated SAR 5.9 billion (USD 1.57 billion) Murabaha facility for five years. Additionally, the agreement includes a working capital facility of SAR 647 million (USD 172 million) for two years, bringing additional liquidity to Zain KSA to fund its digitally focused growth plans. This long-term preferential extension comes

after detailed and productive discussions with the regional Islamic and conventional banking community. Over the years, with the financial support of Zain Group and due to Zain KSA's improving metrics, Zain KSA has gradually repaid SAR 3.5 billion (USD 0.9 billion) of the facility from its original 2009 borrowing of SAR 9.4 billion (USD 2.5 billion), utilizing its internal cash resources. HH Prince Naif bin Sultan bin Mohammed bin Saud Al-Kabeer, Chairman of the Board of Directors of Zain KSA commented, "The

extension of the Murabaha agreement at preferential terms underscores Zain KSA's success in adopting a policy of prudent borrowing. It also reflects an enormous vote of confidence by the Kingdom's and international Islamic and conventional banking community in the company's transformation and future growth plans. The board and management of Zain KSA are very grateful for the banking community's commitments and efforts in reaching this successful result." Bader

Nasser Al-Kharafi, Vice-Chairman of Zain Group and Zain KSA, and Zain Group CEO said, "Despite the challenging financial environment, the successful closing of this Murabaha agreement is a testament to Zain Group's and Zain KSA's strong relationships with the international banking community. We are committed to playing a key role in the development of the telecom sector in the region's largest economy and have made tremendous progress to date in our turnaround strategy." Al-Kharafi added, "This favorable refinanced Murabaha facility represents a critical stage in supporting the balance sheet restructuring roadmap of Zain KSA, following the recently announced capital reduction and subsequent increase through a rights issue that is planned to occur in the second half of 2018, a rights issue that will further deleverage the company. Accordingly, we are confident that we are well on track to becoming even more financially sustainable, supporting the company's strategic roadmap, which has a target of distributing dividends to Zain KSA shareholders in the coming years." Eng. Sultan Abdulaziz Al-Deghaither, CEO of Zain KSA commented, "The Murabaha refinancing comes at a vital stage in Zain KSA's development, enhancing the Company's ability to capture the enormous business opportunities in the fast-growing data-driven Saudi telecom market. This refinancing agreement shows the confidence of the Saudi and international banks in Zain KSA's financial strength, credit worthiness and its ability to meet its financial obligations." He added, "Having been granted a unified

license, we are set to introduce a wider range of telecommunications services, including fixed and fiber-to-the-home services. We will also further leverage our 4G and 5G-ready network to improve the monetization of data and digital services as well as focusing on higher value postpaid and enterprise customer acquisitions." Furthermore, the CEO elect noted, "Zain KSA continues to contribute and benefit substantially from the Kingdom's National Transformation Program 2020, which aims to increase the Kingdom's internet usage to 85% (up from current levels of approximately 65%) and the company is working with relevant authorities to implement initiatives that will contribute to achieving the objectives of the Kingdom's Vision 2030." Eng. Al-Deghaither concluded, "Once the financial restructuring is completed, Zain KSA will be extremely well positioned, with strong liquidity and a long-term debt profile, to take full advantage of the tremendous growth opportunities available in the Saudi telecom market. Moreover, the financial restructuring is expected to improve the financial performance, profitability and leverage ratios of the Company." The Global Coordinators and Bookrunners of the Murabaha facility are Al Rajhi Bank (ARB), Banque Saudi Fransi (BSF), Arab National Bank (ANB) and Credit Agricole CIB (CACIB). The lenders for this facility are Al Rajhi Bank (ARB), Banque Saudi Fransi (BSF), Arab National Bank (ANB), National Bank of Kuwait (NBK), Credit Agricole CIB (CACIB), Gulf Bank, Ahli Bank of Kuwait (ABK), and Boubyan Bank. The legal advisors of the transaction are

Clifford Chance acting for Zain KSA and Zain Group, with Latham & Watkins acting for the lenders. Zain KSA was the only operator in the Kingdom to witness revenue growth (up 5.5%) during 2017. Zain KSA's turnaround efforts have resulted in a 40% improvement in the company's EBITDA year-on-year, reflecting the success of the management's new business growth strategy and data monetization initiatives, as well as its parallel cost optimization and operational efficiency program. These efforts have also seen Zain KSA record its first ever profit in 2017 as the operator recorded an approximate SAR 1 billion (USD 265 million) turnaround in net profit from losses recorded a year earlier, with cash reserves accumulated as at 30 March 2018 exceeding SAR 1 billion. The quality and competitiveness of Zain KSA's network has been enhanced with over SAR 5.1 billion investment in 4.5G advanced mobile network technology over the past three years, in addition to the June 2017 acquisition of 2x10 MHz of 1800MHz spectrum and 2x10 MHz of 800 MHz spectrum in February 2018. These technology developments, in addition to holding other frequencies including 900MHz and 2100MHz, results in Zain KSA's spectrum portfolio having a significant positive impact on supporting the ever-increasing data needs of consumer and business customers and raising the quality of services and mobile experience. The company's state-of-the-art 2G, 3G and 4G network covers 97% of the Kingdom's populated areas.



Artificial Intelligence to Add US\$182 Billion to UAE Economy by 2035, Accenture Research Shows

Artificial intelligence (AI) has the potential to boost economic growth in the United Arab Emirates by 1.6 percentage points and add US\$182 billion to the national economy by 2035, according to a recent report by Accenture (NYSE: ACN). The report looked at 15 industries in the UAE and 13 in Saudi Arabia to determine the potential sector-specific impact of AI on the economies of the Middle East. The research found that in the UAE, AI will have the greatest impact on the financial services, healthcare, and transport and storage industries, with increases of US\$37 billion,

US\$22 billion and US\$19 billion, respectively, in their annual gross value added (GVA), which measures the output value of all goods and services in a sector. Even the labor-intensive sectors of education and construction will see increases of US\$6 billion and US\$8 billion, respectively, in their GVA over the same period, with AI enabling people to be more productive, thus leading to gains in profitability. The effects of AI will also be felt in Saudi Arabia, where it is expected to increase GVA by US\$215 billion. Accenture research has shown that, globally, AI could boost profitability by



an average of 38 percent, leading to an economic boost of US\$14 trillion by 2035. "The level of growth that AI stands to bring to the UAE's economy is unparalleled," said Amr El Saadani, managing director of Accenture's Financial Services practice in the Middle East and Turkey. "The nation's leaders already understand the

impact of this powerful technology, evidenced by the appointment of the first Minister of AI last year. "While AI-led growth will be felt across a wide variety of industries, the financial services sector has the most to gain – which isn't surprising, given that many of its jobs can be significantly augmented with AI and machine learning. In addition, Accenture reports have already shown that banking executives globally are taking action to transform their businesses through the use of AI." The report identifies five key strategies for policy makers to consider when looking to implement AI: growing the local talent pipeline using AI; advocating for a code of ethics for AI; becoming the global testbed for social AI; preparing the next generation of workers for the AI future; and minimizing the impact of labor market dislocation. "With governments in the region looking to break free from a decades-long dependence on oil, AI can act as a key driver to future growth," El Saadani said. "However, to overcome the social and economic challenges that can arise from a shift of this magnitude, governments will have to put in place a robust roadmap to enable their countries to fully reap the rewards of this powerful technology."



Arabsat is Honored for Assistance to Cyprus' Economy with International Investment Award

Eight international companies/organizations were honored during this year's Seventh Annual CIPA International Investment Awards ceremony, which took place at the Presidential Palace in Nicosia, Cyprus on Tuesday, June 19, 2018, and Arabsat is one of the eight international companies/organizations. The annual awards, from the Cyprus Investment Promotion Agency (CIPA), honor international investors, individuals and companies in recognition of their substantial contribution to the Cyprus economy. Since 2012, a total of 54 CIPA International Investment Awards have been given to companies, organizations and individuals as a tribute and a "thank you" for helping Cyprus to gain a reputation for excellence as an International Business Center. They include organizations that have invested directly in Cyprus and created a value-added element for the economy, or established operations and provided employment in Cyprus, or provided services to international investors and helped to attract other foreign investors in Cyprus. Arabsat has been chosen for this prestigious award due to its acquisition in 2013 of Hellas Sat, the owner and wholesaler of capacity and services of the Greek and Cypriot Hellas Sat satellites, for more than 200 million euro, and its subsequent multi-million euro investment plan for new satellites and infrastructure in Greece and Cyprus. The award was handed by the President of Cyprus to Mr. Khalid Balkheyour, President and CEO of Arabsat (see photo at right) who stated that

ARABSAT accepts with great honor the CIPA award and came to Cyprus to stay for a long time. The business environment and the strategic geographic position of Cyprus are the main factors for their successful operations. Since Hellas Sat became member of ARABSAT group they expanded their operations with the launch of HS3 satellite and the procurement HS4 which is expected to launch at the end of 2018.



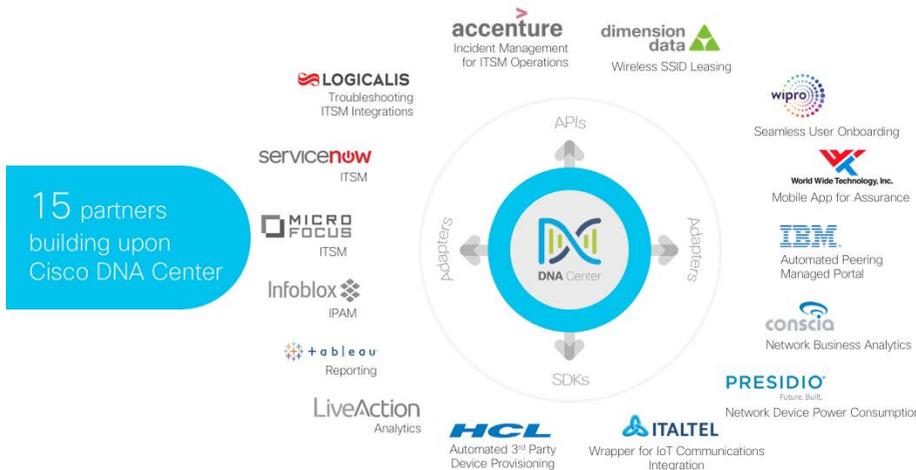


Cisco Releases New Developer Capabilities across its Intent-Based Networking Platform

Cisco announced that it has released new developer capabilities across its intent-based networking platform. These advancements underscore Cisco's continued progress in delivering an open, programmable platform that spans the entire network, from campus to data center, branch to edge. By providing an open network, Cisco is empowering 500,000 developers, 60,000 partners and three million network engineers to innovate upon the platform. Intent-based networking represents a fundamental shift in the way networks are built and managed. Moving away from the manual, time-intensive methods by which networks are traditionally managed, these modern networks capture business intent and

value from their networks in ways they thought weren't possible as recently as one year ago." Today, Cisco is releasing new developer tools and open APIs into Cisco DNA™ Center – the command and control center for campus, branch and edge intent-based networks. DNA Center turns the network from a combination of hardware devices into a single system. With the availability of network-wide APIs, Cisco now allows developers to easily program this system, tapping into all of the analytics and insight the network can provide. With a rich API catalog, DNA Center allows customers to protect and inform their business like never before. Elevating network intelligence into business operations: DNA Center

to support multi-vendor networks via a software developer kit (SDK). This allows customers to simplify the complexity of heterogeneous networks and manage them consistently, as a single system. Already, 15 Cisco partners have built innovative solutions on the DNA Center platform and are demonstrating them at Cisco Live. Cisco is also announcing that its developer community, DevNet, has surpassed 500,000 members. In building this large and active community, Cisco has introduced a new source of innovation as the network becomes increasingly programmable. Today, Cisco is announcing three new developer initiatives to fuel its innovation ecosystem: DevNet Ecosystem Exchange makes it easy to find and share an application or solution built for Cisco platforms. Business leaders and developers alike can use this online portal to discover partner solutions that span all Cisco platforms and products. It contains over 1,300 solutions. DevNet Code Exchange gives developers a place to access and share software to quickly build next-generation applications and workflow integrations. A curated list of sample code, adaptors, tools, and SDKs is available on GitHub and written by Cisco and the DevNet community. Code Exchange spans Cisco's entire portfolio and is organized according to Cisco platform and product areas. DevNet DNA Developer Center is a one-stop-shop for developers to build applications and integrations on the DNA Center platform. It provides comprehensive resources, capabilities, use cases and learning materials for developers. The new DNA Center capabilities are scheduled to be available during the summer of 2018. Customers can purchase these new capabilities from Cisco and its partners via existing subscription offers. DevNet's Ecosystem Exchange, Code Exchange, and DNA Developer Center are available now. Cisco and its partners offer a full lifecycle of services to help customers streamline the journey to truly intent-based networks.



translate it into network policies. These policies are then automatically activated across the entire infrastructure, with the assurance that the business intent was delivered as planned. "Intent-based networking represents the next generation of open, IP-based systems that we've seen can change the actual fabric of society," said David Goeckeler, executive vice president and general manager of Cisco's Networking and Security Business. "Cisco is building an open architecture that will power an ecosystem to accelerate intent-based networking innovation. Already, our customers and partners are creating

helps enable developers to program the network as a single system through intent-based APIs. Now, developers can more easily create a new generation of network-aware applications, and partners can integrate the network into business processes. Streamline IT processes across functions: DNA Center helps enable network IT administrators to exchange information to automate processes across IT systems through software adaptors. Now, IT can move resources from operation to innovation. Managing multi-vendor networks: DNA Center gives developers and partners the flexibility



Facebook in Partnership with ICTA to Empower SME's in Sri Lanka with Digital Toolkit

Continuing with its recently announced partnership with the Information and Communication Technology Agency (ICTA) of Sri Lanka to train local entrepreneurs in digital marketing skills, Facebook is bringing its globally renowned 'Boost Your Business' workshop to the southern region of Sri Lanka. 'Boost Your Business' is part of ICTA's 'Digitizing of the Southern Province of Sri Lanka' program with Matara hosting the inaugural workshop for the region. The event took place in Matara on the 19th June 2018 and was organized with the support of regional level stakeholders led by World University Service of Canada (WUSC). The 'Boost Your Business' workshop was attended by more than 200 local entrepreneurs which included the participation of 60+ female entrepreneurs and 15 differently abled business owners from Galle, Matara and Hambantota districts on the effective use of digital tools to grow and monetize their businesses online. The sessions further helped enterprises understand the advantages of digital media and guided

them on how digital marketing tools can help leverage the mobile economy to gain market access and grow their businesses. The workshop, conducted in Sinhalese, also saw the presence of nearly 40 students from local vocational training schools. Commenting on the initiative, Dr. Rohan Samarajiva - Chairman, ICTA said, "This initiative progresses our goal to create a digitally inclusive and vibrant economy. With Facebook's tools and expertise in digital marketing, we hope entrepreneurs will be able to fuel their next growth story." Elaborating on the program, Ankhi Das - Public Policy Director - India, South & Central Asia, Facebook said, "We partnered with the ICTA, earlier in the year, to build on our promise to train 10,000 Sri Lankan entrepreneurs and help them access the global economy. The Southern region of Sri Lanka is a hub of economic activity and we believe we can give local entrepreneurs a much-needed boost to their businesses. With this initiative, we are well on our way to positively impacting Sri Lankan entrepreneurs and



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becoming a net contributor to the nation's economy" There are more than 60 million businesses around the world who actively use Facebook Pages because they are free, easy to use, and they work well on mobile. Small businesses discover Facebook for their business because they know how to use it personally: setting up a Page is just as easy as setting up a profile. And Facebook is where their customers already are.



Google Takes Launchpad Accelerator Program to 18 Countries

Google has opened applications for Class 2 of its Launchpad Accelerator Africa program. Google also announced it is extending the program to include startups from a further 12 African countries. This means it is now accepting applications

from startups in 18 countries across the continent including Egypt, Tunisia, Algeria, Morocco, Zimbabwe, Rwanda, Cameroon, Botswana, Sénégal, Ethiopia, Cote d'Ivoire, Algeria and the existing six – Ghana, Kenya, Nigeria, South Africa,

Tanzania, Uganda. Applications for Class 2 will close on July 8. To qualify, startups have to be a technology startup, based in Sub-Saharan Africa, targeting the African market, and have raised seed funding. Google additionally considers the problem the startup is trying to solve, how it creates value for users, and how it addresses a real challenge for its home city, country or Africa broadly. Head of Startup Success and Services, Launchpad Accelerator Africa, Google, Folagbade Olatunji-David, said the three month program has connected the 12 participating startups with more than 20 teams from Google as well as 40 mentors from nine countries including India, the UK, USA and Jamaica. She revealed that each has received \$10 000 in an equity-free cash grant, and between them they have



raised over \$7 million. The startups have directly created 132 jobs and impacted 4.5 million users," Launchpad Accelerator Africa was announced less than a year ago by Google CEO Sundar Pichai at Google for Nigeria on July 27. In terms of his announcement, the Google Launchpad Accelerator Africa program will provide African startups with over \$3 million in equity-free support, working space, and access to expert advisers from Google, Silicon Valley, and Africa over the next three years. Participants receive travel and PR supports during each three-month

program. "We are humbled to be part of the success stories of these 12 startups, and as individuals we have learned great lessons from their dedication, focus and drive. The companies will now go on to be part of the global Launchpad Alumni network, joining over 100 companies from 40 countries across 5 continents," Olatunji-David added. Google is committed to the Sub-Saharan Africa developer ecosystem and has, since April 2016, hosted 13 Launchpad Build and Start events across Kenya, Nigeria and South Africa, featuring some 228 speakers and engaging 590 attendees

from local startups in each country. It also runs programs such as Google Developer Groups and Women Techmakers, providing training and support for developers aligned with real-life job competency requirements. Community groups engage in activities like Study Jams – study groups for developers. There are some 140 communities across 25 countries in SSA. Some 61 of these groups hosted 81 Study Jams in 10 countries reaching over 5 000 developers in the last year.

Google to Invest US\$550 Million in Chinese e-Commerce Giant JD.com

Google will invest US\$550 million in Chinese e-commerce powerhouse JD.com, part of the U.S. internet giant's efforts to expand its presence in fast-growing Asian markets and battle rivals including Amazon.com. The two companies described the investment as one piece of a broader partnership that will include the promotion of JD.com products on Google's shopping service. This could help JD.com expand beyond its base in China and Southeast Asia and establish a meaningful presence in U.S. and European markets. Company officials said the agreement initially would not involve any major new Google initiatives in China, where the company's main services are blocked over its refusal to censor search results in line with local laws. JD.com's investors include Chinese

social media powerhouse Tencent Holdings Ltd, the arch-rival of Chinese e-commerce leader Alibaba Group Holding Ltd, and Walmart Inc. Google is stepping up its investments across Asia, where a rapidly growing middle class and a lack of infrastructure in retail, finance and other areas have made it a battleground for U.S. and Chinese internet giants. Google recently took a stake in Indonesian ride-hailing firm Go-Jek, and sources have told Reuters that it may also invest in Indian e-commerce upstart Flipkart. Google declined to comment on the rumored Flipkart deal. The JD.com investment is being made by the operating unit of Google rather than one of parent company Alphabet's investment vehicles. Google will get 27.1 million newly issued JD.com Class A ordinary shares

as part of the deal. This will give them less than a 1 percent stake in JD, a spokesman for JD said. For JD.com, the Google deal shows its determination to build a set of global alliances as it seeks to counter Alibaba, which has been more focused on forging domestic retail tie-ups. Japan's SoftBank Group Corp, which is making big internet investments around the globe, is a major investor in Alibaba. "This partnership with Google opens up a broad range of possibilities to offer a superior retail experience to consumers throughout the world," said Jianwen Liao, JD.com's chief strategy officer, in a statement. Company officials said the deal would marry Google's market reach and strength in analytics with JD.com's expertise in logistics and inventory management.



Huawei Launches World's First Converged ICT Cloud



Huawei launched the world's first converged ICT cloud solution FusionCloud 6.3 during the Huawei Carrier IT Tech Forum, aiming to help carriers build a digital future with its "One Cloud" and full-stack cloud services. With the level of virtualization remaining high, most carriers do not benefit from cloudification. Only by transforming IT resources can cloud-as-a-service and an ICT infrastructure platform enable the convergence of resources, applications and data to achieve the goal of "one cloud", to ensure that its value is fully utilized. To help achieve this, based on FusionCloud 6.3, Huawei has developed a new-generation private cloud for carriers, to create the world's first converged ICT cloud. FusionCloud 6.3 supports internal IT applications, external innovative service applications, and telecom network

applications, while managing multiple resource pools in a unified manner. In addition, the platform provides the industry's largest number of full-stack cloud services, with over 40 services in the IaaS, PaaS, and DaaS layers. This greatly helps carriers to move core and heavy-load workloads to the cloud. Meanwhile, middleware services, such as message, cache, and database services that are required by application development, test, and production environments on the cloud, can be deployed within hours. In addition, leading microservice components and container capabilities enable applications to be provisioned in minutes and expanded in seconds. Huawei's ICT converged cloud solution also helps carriers integrate the data capabilities of the BOM domain and provide OLAP (online analytical processing) capabilities such as offline analysis, stream processing and analysis, real-time retrieval, converged data warehouses, and OLTP (online transaction processing)

database capabilities - including Oracle, MySQL, and SqlServer to customers in "AS a Service" mode. This functions can be invoked flexibly based on different service analysis requirements. The new PaaS services and the new cloud service catalog function support quick access to carriers' ISV applications as services, and provide a service innovation ecosystem for a carriers business departments. As the only cloud that supports multiple types of tenant-level disaster recovery solutions, FusionCloud can provide local, intra-city, and cross-region disaster recovery services, including cross-cloud backup for different service departments to ensure service continuity. By adopting the industries only unified architecture for public cloud and private cloud, FusionCloud ensures a consistent user experience and smooth evolution from carriers to hybrid clouds. Jiang Xue, VP of Huawei's Carrier Data Center Marketing & Solution Sales Department, said: "Huawei's FusionCloud solution aims to provide full-

stack cloud services covering IaaS, PaaS, and DaaS, as well as the most abundant cloud service types in the industry, helping users build their own internal public cloud. With the open distributed and hybrid cloud architecture, the unified cloud platform supports all scenario cloud transformation. "This includes telecom network services, IT support systems, innovative services, and cloud transformation of 2B services, helping customers shorten TTM, reduce TCO in the life cycle, and improve user experience." As a leading global ICT solutions provider, Huawei will help carriers to go digital by continuing to develop innovative IT products and solutions to assist them in building open and decoupled cloud architectures, integrate internal and external resources, and provide stable and agile IT cloud services for applications. The Mobile World Congress Shanghai 2018 will be held in June 26-29. Huawei will showcase the converged ICT cloud solution FusionCloud for carriers.

Huawei Unveils eLTE-DSA Solution to Help the Oil & Gas Industry Build Energy IoT

Huawei showcased its 4.5G-based, 5G-oriented eLTE-DSA Solution which leverages wireless narrowband Discrete Spectrum Aggregation (DSA) technology to help the Oil and Gas industry build an energy Internet of Things (IoT) at the 15th Moscow International Oil and Gas Exhibition (MIOGE) For the Oil and Gas industry, wireless eLTE technology has become an effective means of communication to support real-time monitoring and mobile inspection of systems and devices, especially in remote and dangerous areas. The new eLTE-DSA solution overcomes the challenge of insufficient continuous dedicated spectrum resources around the world by using 4.5G technology to aggregate traditional VHF/UHF narrowband discrete spectrum into broadband spectrum resources. The solution supports a minimum latency of 20 milliseconds and mass connections of 4,000 users per cell to enable IoT technologies within the oil and gas industry. This will help oil and gas enterprises drive operational efficiency, seamlessly add new services and help customers achieve energy savings.



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Huawei is collaborating with industry partners to demonstrate converged innovative ICT solutions such as advanced HPC systems for reservoir simulation and seismic processing, oil and gas IoT, digital pipelines, oil and gas office campuses, Big Data, and cloud computing.

Huawei Launches Middle East's First IoT Incubator

Huawei, a leading global provider of information and communications technology (ICT) infrastructure and smart devices, announced the launch of the Middle East's first Multitenant Internet of Things (IoT) Hosting Center in order to incubate the local digital ecosystem and accelerate IoT business development in the region. Based on IoT Hosting Center and ecosystem enablement, Huizhong and Hayat Communications are the first

and play deployment. The Hosting Center is deployed, maintained, and operated by Huawei Technologies. It's a one-stop solution with established ecosystem with global partners and a pre-defined services catalogue that includes technical support, marketing support, and business cooperation. This newly launched IoT Hosting Center and ecosystem strategy is aimed at accelerating digital transformation by bringing Huawei's

IoT ecosystem development locally. The Regional Experience Center provides a pre-integration testing environment for application developers, device, and module and chip manufacturers. It will also allow Huawei and local partners to explore cutting edge developments including network solution verification, new application innovation, device integration, and product compliance certification. As of now, Huizhong and Hayat Communications have already completed the Middle East IoT Hosting Center 1st NB-IoT enabled certification. "IoT Hosting Center and the Regional Experience Center follow Huawei's series of initiatives and full commitment to developing IoT in the Middle East. These initiatives will help Middle East customers to focus on quick IoT business development while leaving the technological challenges to Huawei and partners," said Su Wang, VP of Marketing, Huawei Middle East. "IoT Hosting and Regional Experience centers allowed Huizhong to quickly integrate and verify our device compatibility with Huawei IoT System according to Middle East market requirements. IoT is a very complex industry, and device and use cases adaption to local requirements are paramount initiatives to develop IoT ecosystem in the Middle East," said Bai Jie, Head of Overseas Business at Huizhong. "We are proud to be part of this revolutionary initiative, which is aimed at quickly developing IoT ecosystem in the Middle East. Together, with Huawei and other partners, we are committed to accelerating Digital transformation in the Middle East," said Narinder, Oman Country Manager of Hayat Communications. The announcement was made on the sidelines of the SAMENA Telecom Leaders' Summit held in Dubai earlier this month.



partners to obtain the Middle East IoT Hosting Center's 1st NB-IoT enabled certificate. IoT Hosting Center is Huawei's new and innovative platform as a service solution that provides OceanConnect services such as open device connectivity, device management, and application enablement to customers across the Middle East region. It is designed to quickly develop IoT business in the Middle East region with reduced initial investment cost compared to CAPEX mode while providing a fast time to market by plug

global IoT experience and partnership locally through empowered cloud. Huawei is working with over 700 global partners on 50+ use across 40 industries. The system also provides over 170 open APIs and serial agent software to promote app release, simplify device access, guarantee network connection, and achieve a seamless connection between upstream and downstream products for partners. In the Middle East, the IoT Hosting Center comes along with the IoT Regional Experience Center to speed up

Huawei Hosts Strategic Workshops in Bahrain to Accelerate the Arrival of 5G in the Kingdom

Huawei, a leading global provider of ICT infrastructure and smart devices, hosted a series of workshops gathering a lineup of industry leaders and experts in Bahrain. Held under the theme, "Empowered by Innovation, 5G is now," the workshops

were organized in partnership with local carriers and regulator. The four events were an occasion to invite leading Bahraini telco stakeholders to discuss in-depth how to bring about the 5G world where all things are connected, and the impact

5G will have on key vertical sectors in the region. The workshops took place over four days across Bahrain in April and May. During the workshops, a series of keynotes and seminars have been conducted by regional ICT experts to discuss challenges

and opportunities in 5G wireless communications and 5G-related network evolution. Key industry leaders exchanged ideas on a number of the industry's most pressing challenges, including steps to make Bahrain more network ready for 5G, how to accelerate wireless communication to enable cloud-based wireless networks, and most promising 5G use cases. In line with the Kingdom of Bahrain's Economic Vision 2030 that aims to double incomes, increase productivity, and position Bahrain as a leading competitor in the global economy, the arrival of 5G will unlock the benefits of a number of the world's most promising technologies. Earlier this year, Huawei's Wireless X Labs identified ten of the most promising fifth-generation network use cases in a white paper which demonstrated that 5G will enable

the growth of cloud VR/AR, connected automotive, smart manufacturing, wireless eHealth, and Smart Cities, among others. In order to assist Bahrain in benefitting from these technologies, Huawei's aim is to bring the digital to every person, home and organization for a fully connected, smart kingdom. John Lu Yuedong, CEO of Huawei Bahrain, remarked: "If one looks backwards in history, social transformation is often led by transformation in technologies. 2G, 3G and 4G changed the world by bringing us global voice communication and mobile internet. And 5G will lead us to a new era by taking us to an intelligent world where all things are connected and vertical sectors will be transformed by becoming more efficient and productive. At Huawei, our new vision is to bring digital to every person, home and organization for a fully

connected, smart kingdom. We are working hard to turn this vision into reality by openness and knowledge sharing, which are the key to technological progress, and we were thankful to have Bahrain's leading authorities in the ICT sector with us for these workshops in order to collaborate together to bring about 5G as rapidly as possible." Huawei has long been a strategic partner of the Kingdom's ICT agenda. Other than the industrial collaboration, Huawei has also launched a number of initiatives to support ICT talent development, such as "Huawei Middle East ICT skill competition", "Seeds for the future program", as well as internships where students engage in training under the supervision of Huawei professional mentors, and taught courses in various ICT-heavy domains.



Nokia to Modernize Mobily's IP and Optical Networks

Etihaad Etisalat (Mobily) has awarded a contract to Nokia to modernize and optimize its IP and optical networks. Nokia's next-generation routing and transport platforms will be deployed in the Central, Eastern and Northern parts of Kingdom of Saudi Arabia. Nokia's

Software Defined Networking (SDN) solution will enable Mobily to address the future bandwidth needs of upcoming technologies like 5G, Cloud RAN and front-haul technologies. Mobily will use Nokia's products in its network in the MPLS and DWDM layers to make the existing network

software controlled to reduce complexity, which in turn will allow it to enhance flexibility and agility. Mobily's CEO Ahmed Aboudoma said: 'This modernization prepares Mobily for 5G technology, quicker expansion of services, and gives our customers enhanced service quality.'

Mobily Launches Special Russia Roaming Bundle

Etihaad Etisalat "Mobily" launched the "Russia Roaming Bundle" on Beeline/Vimplecom Russian telecom operator for all prepaid and postpaid customers roaming in Russia. The package offers several features. Customers can subscribe by sending the word "Russia" as an SMS to "1100", online via www.mobily.com.sa, or via the Mobily app <http://mobily.im/App/>. Mobily has extensive coverage of international roaming data on 4G (LTE) with more than 180 operators around the world.





Nokia, in Collaboration with Orange, Applies Cloud Benefits to Radio Access in Large-Scale Trial, Preparing for Future 5G Networks

Nokia has completed a live network trial in Poland in collaboration with Orange to validate the benefits of cloud-optimized radio access networks for the smooth evolution to next-generation 5G technologies. The two companies trialed Cloud RAN technology to prepare for the eventual introduction of a distributed cloud architecture for 5G by Orange. A distributed, cloud-based radio access network architecture like Nokia's AirScale Cloud RAN provides capacity where needed and prepares the network for the deployment of new 5G access technology as part of a multi-layered architecture. The trial took place from March to the beginning of May in Poland, with radio sites in the city of Chelm and the virtualized part of the baseband running in a data center in Lublin, around 70 km away.

As a result, Nokia's AirScale Cloud Base Station provided equally strong network performance on both Nokia's reference cloud infrastructure and on Orange's own cloud environment. Nokia's architecture splits baseband processing functionality across the radio cell sites and data center using its AirScale Cloud Base Station. Time-critical functions are performed at the cell site and connected via Ethernet fronthaul - allowing the operator to use its existing transport network - while centralized software hosted at the data center cost-efficiently performs non real-time functions. Nokia AirScale Cloud RAN provides the flexibility needed for future services and requirements for 5G, Internet of Things, low latency services and end-to-end slicing. Piotr Jaworski, CTO of Orange Poland, said: "During this trial, Orange

Poland has successfully trialed virtualized RAN architectures in collaboration with Nokia and investigated the impact on network operations. The quality and performance observed during the trial give confidence on the RAN virtualization and is a critical step for us towards 5G." Arnaud Vamparys, VP Radio Access Networks and Microwaves of Orange Global, said: "For Orange, RAN virtualization is a critical enabler to deliver a better and more homogeneous customer experience on 4G and future 5G networks, allowing these multi-service networks to simultaneously handle various type of objects with different connectivity needs. The positive outcome of this trial is an important step towards the implementation of this enabler inside our networks in Europe and Africa." Alain Biston, head of Mobile Network Business Management at Nokia, said: "This successful live trial of the innovative AirScale Cloud RAN technology is a key milestone in the joint work of Orange and Nokia. Cloud RAN is a key enabler for the coming era of 4G and 5G flexible networks, low-latency services and end-to end slicing, building on a distributed cloud network architecture like our Future X. We have demonstrated that Nokia AirScale Cloud RAN is ready for commercial deployments, helping Orange and other customers to start deploying flexible and agile cloud-based networks."



Nokia, ITC Sign MoU to Start Experimenting 5G

Integrated Telecom Co. Ltd. (ITC), recently signed a memorandum of understanding with Nokia to do experimental trials to develop and measure the 5G applications. ITC is willing to contribute in a strategic vision, to develop 5G in favor of the new advanced broadband. The memorandum contains adding new technologies to ITC's towers such as LTE 4.5G, 4.9G and the fixed 5G. Ghassan Itani, ITC CEO, said: "We in ITC are working on fulfilling the goals of one of the Kingdom Vision 2030's axes which states that Saudi Arabia is working on increasing high-speed internet coverage in

all of its regions and improving the quality of connectivity. And for that, we are in the middle of signing several memoranda with Nokia and other companies with a history in launching advanced technologies in telecom towers.. Itani added: "We welcome and embrace CITC's vision in the 5G technology, and we look forward with great optimism to launch this technology in Saudi Arabia." 5G is providing high speeds which are 30 to 50 times faster than the speeds provided by the existing 4G. 5G applications and services are not limited to communication and entertainment,

they are also targeting new services such as virtual reality, enhanced reality, health care, remote surgery and much more. 5G technology will be the main enabling factor for the future communication technologies such as M2M, IoT and Smart City services. ITC is working on covering more than 640,000 households with fiber-optic broadband services. And these experiments are part of ITC's plan to develop communication services through FTTx and wireless networks.

Nokia Successfully Completes 5G New Radio Data Call with 4G and 5G Dual Connectivity in China

Nokia has successfully completed an end-to-end 5G New Radio (5G NR) data call as part of a Chinese Ministry of Industry and Information Technology (MIIT) 5G Technology R&D trial. The 3GPP-compliant dual connectivity call was conducted using a 5G NR system over-the-air on the 3.5GHz frequency band and LTE in the 2.1 GHz frequency band, supported by a 5G user equipment simulator provided by PRISMA Telecom Testing. For existing 4G operators, dual connectivity will allow them to more rapidly create 5G coverage and services by connecting 5G NR to a 4G radio that is connected to an existing Cloud Packet Core. The successful 5G NR data call is an important step toward the verification of 5G in the sub-6 GHz frequency bands, which is required for wide-area coverage and massive IoT connectivity, in preparation for commercial deployment in China in 2020. China, the world's most populous country, will be one of the first adopters of 5G and a leader in the technology, which will deliver new possibilities for consumers and industries alike. For example, consumer entertainment will be enhanced by super-fast downloads of HD videos in seconds, and new virtual reality experiences will be made possible. 5G will also enable connectivity for billions of IoT

devices, driving new levels of automation and the ability to leverage artificial intelligence to transform industries and economies. The end-to-end data call used the Nokia AirScale Cloud RAN, Nokia AirScale baseband unit, Nokia 5G Massive MIMO Active Antenna, Nokia Cloud Packet Core and Nokia home subscriber service together with a 5G end user equipment simulator provided by PRISMA Telecom Testing. The Nokia AirFrame data center solution was used to control the Cloud RAN. Nokia will continue to work with MIIT through 2018 trialing 5G in the 4.9 GHz frequency bands. Marc Rouanne, president of Mobile Networks at Nokia, said: "We are pleased to showcase our end-to-end capabilities in 5G in this successful call and trial with MIIT. Nokia is ready to support dual connectivity with the AirScale

radio access portfolio as it is upgradeable via software to 5G and provides single RAN support for 4G, 4.5G Pro and 4.9G as well as legacy technologies. As a result we can help our customers meet their early 5G deployment schedules and initial coverage demands." Enrico Bendinelli, President of PRISMA Telecom Testing, said: "We are excited about this successful collaboration with Nokia, which lays a fundamental stepping stone in the evolution of 5G. PRISMA Telecom Testing is a key global player in the Radio Access Network testing arena, capable of supporting all 3GPP mobile technologies. With our activities currently spanning from R&D to technology integration and field trials we support our customers through all development stages of the new 5G standard."



Nokia and T-Mobile Achieve Nation's First 3GPP-Compliant Bi-Directional 5G New Radio Data Transmission

Nokia and T-Mobile (NASDAQ: TMUS) announced a major milestone in delivering true mobile 5G with the successful completion of the nation's first bi-directional over-the-air 5G data session on a 3GPP-compliant 5G New Radio (NR) system in T-Mobile's Bellevue lab. The test was successfully conducted with a user equipment simulator and Nokia's 3GPP-compliant high-capacity 5G solution in the 28 GHz band. "This test is a big step forward in building REAL 5G that will work on actual smartphones," said Neville Ray, Chief Technology Officer at T-Mobile. "We're excited to continue our work with

Nokia to move the future of wireless forward and bring 5G to customers!" The 5G data transmission was conducted with the Nokia AirScale baseband and radio, AirFrame server, and AirScale Cloud RAN running 5G NR 3GPP-compliant software. This same solution has been fully proven in T-Mobile's environment through ongoing lab and field trials, such as T-Mobile's deployment of its first inter-vendor 5G test platform. "This successful 3GPP compliant over-the-air data transmission represents an important step for T-Mobile and the commercialization of 5G," said Marc Rouanne, President of

Mobile Networks, Nokia. "By building on the tests Nokia has previously conducted with T-Mobile, T-Mobile is well on its way to 5G commercial deployment." Real 5G promises to enable faster speeds, massive connectivity, decade long battery life for sensors and super responsive and reliable networks for customers. This will unleash VR and AR experiences on-demand, driverless vehicles, medical monitoring, advanced industrial automation services, and so much more - all requiring ubiquitous low latency connectivity.

Creating the Technology to Connect the World Sustainably and Responsibly - Nokia Publishes its 2017 People & Planet Report

Nokia published its annual sustainability report, covering the company's sustainability performance in 2017 and focusing on four priority areas: improving people's lives with technology, protecting the environment, conducting our business with integrity, and respecting our people. In our reporting, we are committed to expanding our transparency and our coverage. The People & Planet report is prepared in accordance with the Global Reporting Initiative GRI Standards, and it is also compliant with the advanced level of the UN Global Compact. Furthermore, selected key sustainability indicators have been assured by an independent auditor. The full Nokia People & Planet Report 2017 is now available at www.nokia.com/people&planet. "We are optimistic about the future and the potential of digital technologies to ignite a new era that will not only bring greater business opportunities for our company and others in our industry, but also personal, social and

economic benefits for people everywhere," Nokia's President and CEO Rajeev Suri stated in the report. Our key sustainability achievements for 2017 included. We continued to help our customers reduce their energy use and emissions, with modernized customer base station sites using, on average, 44% less energy. We reduced our total energy consumption by 3% and water consumption by more than 14%. We also recycled 80% of waste from our buildings. Nokia's corporate community investment programs such as new UNICEF programs on digital learning in Kenya and mHealth in Indonesia, and a continuation of the Myanmar early education program with Save the Children, reached approximately 254 100 people during the year, improving lives across the globe. We were honored by the Ethisphere Institute as one of World's Most Ethical Companies, and we were again included in the Dow Jones Sustainability Indices (World and Europe) as a sector leader

in the CMT Communications Equipment sector. As part of our engagement on human rights, we joined the board of the Global Network Initiative (GNI) as a full member and as the first and only telecommunications equipment provider. As always, we strive to do even better. We have set ambitious targets, and there is still work ahead of us. In 2017, Nokia became the first telecoms vendor to set and have accepted its science-based targets with the Science Based Targets Initiative. Consequently, we now target to reduce emissions from our operations by 41% by 2030, and to reduce scope-3 emissions - emissions from customer use of our products - by 75% by 2030, with both targets measured against the 2014 baseline year. "We recognize that we have the opportunity as well as responsibility to apply technology in ways that enhance people's lives and, more broadly, advance humanity," Suri said.

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GCC Must Make the Right Decisions to Harness the Potential of Renewable Energy

The Gulf Cooperation Council (GCC) states show great promise for renewable energy deployment, according to a recent study by management consultancy Strategy& Middle East (formerly Booz & Company), part of the PwC network. To unlock this potential, GCC governments must develop a carefully planned framework and make careful decisions. The transition to a modern, renewables-based energy system is fraught with risk if governments take an ad hoc approach. Instead, they must act quickly and deliberately. The study shows that renewable energy continues to attract an increasing share of global investment, with annual investments expected to grow by \$130 billion, compared to 2016 figures, reaching around \$370 billion in 2020. The global investment cumulative total is estimated at \$1.5 trillion between

2016 and 2020. GCC countries thus far have made little investment in renewables technology – less than \$1 billion in 2016 – and are at risk of falling further behind other countries if they do not create a supportive, coherent policy framework to facilitate renewables investment. While several factors in the GCC make rapid deployment of renewables attractive, there are major structural and institutional factors behind current underinvestment in renewable energy. These include:

- generous fuel subsidies
- a mindset that prefers building very large conventional plants to meet rapidly growing demand rather than many smaller renewables projects
- the danger that existing capacity will be underutilized if renewables enter the energy mix in the wrong way

- concerns over transmission and distribution networks
- and, most significantly, unclear regulatory and policy frameworks that discourage the development of renewables.

Dr. Raed Kombargi, Partner with Strategy& Middle East, said: "The case for rapid deployment of renewable energy in the GCC is compelling. The GCC has ample solar and wind resources, a regional gas shortage along with growing domestic demand for hydrocarbons as fuel and feedstock, and an affordable means of financing renewable energy. With the right policies and decisions an increasing number of utilities in the GCC could add renewables to their energy supply mix." Located in the heart of the global Sunbelt, the GCC countries have some of

the highest solar exposures in the world; solar power plants in the region can expect 1,750 to 1,930 hours of full-load operation a year, compared to 940 hours in Germany. The region also has the independent power plant (IPP) model, a commercial credit mechanism that makes cheap long-term financing affordable and available through private and foreign investors. Dr. Shihab Elborai, Principal with Strategy& Middle East, said: "The speed of transition to a new energy mix across the GCC is accelerating, with international investors showing considerable interest in renewables. To further take advantage of the renewables opportunities will require considerable funds and commitment, along with a careful approach that minimizes risk." In the report, Strategy& has outlined six critical actions for GCC governments to take. Together these actions create a supportive policy framework and can be adapted to the specific circumstances of each of the GCC states. These six steps are:

- Set ambitious and realistic targets: These provide critical signals to private developers and investors, allowing them to plan for the long-term and arrange the necessary financing well in advance.
- Define institutional roles and accountabilities: There must be a clear separation between the government's functions as an asset owner, policymaker, and regulator. This will make decision-making processes transparent, participatory, and accountable.
- Reform fossil fuel and energy subsidies and reallocate financial resources: Fossil-fuel subsidies cost the GCC around \$30 billion in 2016, matching Germany's renewable energy subsidies in the same year. Reallocating merely a fraction of that subsidy to support private-sector-led developments of renewable energy with the grid could create tremendous value for governments, investors and electricity consumers.
- Broaden the range of financing instruments available: Credit product innovations can help meet the requirements of the renewables market and increase the liquidity and competitive financing available for new projects. Public utilities and private developers need improved access to corporate bond and sukuk markets (Islamic law compliant bonds).
- Unify regional standards: The lack of unified renewables creates unnecessary trade and investment barriers. Establishing clear standards for wind and, to a lesser degree, solar would reduce these barriers among GCC countries and the broader Middle East region.
- Build policymaking and regulatory capabilities: The large-scale deployment of renewable energy through privately led initiatives requires capabilities that are beyond those currently possessed by most ministries. To work together effectively, policymakers, regulators, owners, and operators can upgrade their capabilities in areas like technical and economic analysis, forecasting, simulations, communication, and management.

Commenting on the policy framework, Dr. Yahya Anouti, principal with Strategy& Middle East, said: "The GCC states are in favorable positions to introduce more renewable energy. GCC governments can influence the timing and trajectory of this change, and can quickly get on the path to optimal renewable energy infrastructure development to minimize costs while helping achieve their national economic development objectives with the correct policies and decisions."



VIVA Data Center, First in Bahrain to Achieve International Tier III Certification

Staying ahead of the curve, VIVA Data Center has become the first Uptime Institute Tier III certified facility in Bahrain, listing itself among the most sophisticated data centers from around the world. This achievement followed a thorough performance-based evaluation of the data center's specific infrastructure. Validated by the certification, VIVA Data Center ensures 24/7 readiness and high-quality operations, allowing for any planned maintenance activity of power and cooling systems to take place without disrupting data center operations. Other key areas

reviewed and authenticated include staffing and organization qualifications and skill mix, training and professional development assessment, preventative maintenance program and processes, operating conditions and housekeeping, as well as planning, management, and coordination practices and resources. Mr. Ulayyan Al Wetaid, VIVA CEO said, "The value of Uptime Institute's Tier Certification is that it provides our customers a surety that our Data Center is ideal from a critical business data perspective. Not only is it equipped with state-of-the-art hardware,

it is managed by a highly specialized team of dedicated professionals, all of whom consider complete customer satisfaction to be one of their core priorities." VIVA's Data Center solutions are customized for each business to deliver their desired IT scalability in a cost-effective manner. The facility is also backed up with fiber-optic cables, which connects the Data Center with international cables to help businesses benefit from VIVA's international accessibility.

VIVA gears up for 5G roll-out

VIVA Bahrain will be geared up for fifth generation or 5G telecom services by the year-end or early next year when the kingdom's telecom regulator makes spectrum available, according to the company's chief executive Ulaiyan Al Wetaid. On the sidelines of VIVA Bahrain's Ramadan media ghabga at the Ritz-Carlton, he told the GDN that 5G services are considered a significant leap forward in customer experience. "VIVA Bahrain has started the testing process on the fifth generation technologies and the company will be proactive in providing the service." "The Telecommunications Regulatory Authority has a plan to offer the frequencies required to provide the fifth generation services to operators as

part of the National Telecommunications Plan and that the necessary frequencies will be made available by the end of this year or early 2019 to provide the services in Bahrain," he said. "The provision of the fifth generation services will be in multiple stages," he said. "Since the beginning of 2018, the company has begun to develop the appropriate technologies to provide the fifth generation services and to be pioneers in information and communication technology." According to a report on Howtogeek.com, while 4G tops out at a theoretical 100 megabits per second (Mbps), 5G tops out at 10 gigabits per second (Gbps). That means 5G is a hundred times faster than the current 4G technology – at its theoretical maximum

speed. The Consumer Technology Association has said that, at this speed, a two-hour movie can be downloaded in just 3.6 seconds on 5G, versus six minutes on 4G or 26 hours on 3G. A report by Ericsson says 5G has the potential to create new opportunities worth \$600 million for 5G players in Bahrain. On the acquisition of Bahraini Internet service provider Menatelecom completed earlier this year, the chief executive said the acquisition will significantly enhance VIVA's position in both the consumer broadband and enterprise markets. "It will help us complement our offering by leveraging the strong capabilities of Menatelecom in the broadband segment. In addition, it will allow VIVA to enhance key technical capabilities and foster further product and service innovation," he added. Mr. Al Wetaid said Menatelecom would continue as a separate entity for now. "Significant investments are being made to develop its infrastructure and for network expansions to provide better services to Menatelecom customers," he said. The projects are characterized by a high level of quality of services, speeds introduced and product diversification. Customers at MenaTelecom have seen a major improvement in experience."



Yahsat Announces Successful Al Yah 3 Mission Completion

Abu Dhabi-based satellite operator Yahsat has announced that its third satellite Al Yah 3 has successfully completed its in-orbit testing, and is ready to support the launch of commercial services. The satellite will expand Yahsat's Ka-band coverage to 19 additional markets across Africa covering 60 percent of the population and marks Yahsat's first entry into Brazil, the company said in a statement. Masood M Sharif Mahmood, CEO at Yahsat, said: "Access to the internet is a key facilitator of social

and economic progress. Today, broadband connectivity is playing an important role in creating new opportunities and in accelerating innovation. "We are excited by the opportunity Al Yah 3 brings in our ability to deliver reliable and affordable satellite broadband services to parts of the world that need it the most, building upon our previous achievements as pioneers of such services across Africa, the Middle East and south-west Asia." The successful mission is the culmination of a project

which has seen Al Yah 3 designed and built with Emirati engineers. "It has been an incredible journey for us and a very proud moment for both Yahsat and for the UAE. Our engineers have been heavily involved in managing all aspects of the project, including design, development and launch. We are now focusing on the commercial launch of our services using Al Yah 3 over the coming weeks," Mahmood added. Al Yah 3 was launched on an Ariane 5 rocket by Arianespace on January 26. 📍

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ARTICLE

IoT and 5G - Opportunities for Tomorrow's Service Providers

The confluence of 5G and IoT represents an opportunity for service providers to break free from their present-day reality of stagnating revenues and declining margins into tomorrow's digital transformed era, explains Ali Amer, Managing Director, Global Service Provider Sales of Cisco Middle East and Africa.

Since the invention of industrial electrical engineering, no manufactured electronic device has overshadowed the cellular mobile phones in terms of popularity. According to the International Telecommunications Union (ITU), 6.8 billion people had access to cell phones in 2013. This is more than those who had access to toilets, according to the United Nations.

Significant growth rates in shipments of connected mobile devices including smartphones and tablets is continuing to drive the usage of video as a preferred content. This is fueling the growth of mobile data transfer rates. Mobile video traffic already accounts for 60% of total mobile data traffic. By 2021, 78% of the world's mobile data traffic will be video, and this will be further accelerated by 5G mobile technologies.

Along with video traffic, the volume of mobile data traffic will expand by another seven times, reaching nearly 12 billion mobile devices and connections and generating 49 Exabytes of mobile traffic by 2021. At this point of inflexion, we will see the industry transitioning to 5G mobile technologies.

However, at the present rates of mobile video usage and adoption, a new digital infrastructure will need to be created to support high definition video, ultra-high definition video and rich media telecom. Supporting infrastructures of cloud based applications, storage, and the next generation of the Internet are also required. Other than consumer demand for mobile video content, it also has benefits in



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based applications, storage, and the next generation of the Internet are also required. Other than consumer demand for mobile video content, it also has benefits in multiple and diverse business to business use case scenarios.

However, service providers investing in such large-scale compute infrastructures to support mobile video content need to be able to build viable business and monetization models to generate returns on their investments. This is especially pertinent given that as global internet bandwidth has been growing over the past few years, global telecommunication revenues continue to face downward pressures.

Fast growing demands for mobile connectivity and broadband content are challenging service providers on all fronts. On one hand they are seeing digital and IP based services cannibalizing topline growth from legacy revenue streams, pushing the legacy services to enter flat mature phases and then starting to decline. On the other hand, service providers are being compelled to invest in next generation technologies to deliver fast growing and scalable, mobile connectivity and broadband content services, using very early stage business and revenue models.

ITU latest report reveals that mobile broadband subscriptions have grown more than 20% annually in the last five years and are expected to reach 4.3 billion globally by end 2017. The report also indicates that, in most developing countries, mobile broadband is more affordable than fixed-broadband services.

While growth is being driven by mobility, Internet access and video content, for many service providers it is insufficient to compensate for declining legacy revenues. Digital and IP based services have much lower prices points than their legacy counterparts, due to technology efficiencies. And while their volumes continue to scale impressively, their associated top line revenues remain depressed compared to legacy revenue streams

Service providers therefore need to build innovative revenue models to generate sufficient returns on the compute investments they are making to replace legacy revenue streams. For service providers the biggest challenge remains the viability of their current business model and the task of discovering, building, and migrating to a transformed and more relevant one.

The confluence of Internet of Things (IoT) and 5G mobile technology by 2020 represents an opportunity for service providers to start afresh with radically transformed business models. The development of 5G and IoT ecosystems will fuel each other and drive their adoption forward. While the global drivers for 4G mobile adoption have been fast growing connected device shipments and mobile content access, for 5G, it will be IoT and awareness of user, location and content across the network.

By 2019, connections into the Internet of Things will surpass smartphones, tablets and PCs combined, and by 2021, account for 638 million modules compared to 381 million for all other devices. The IoT will add an expected 50 billion connected devices to the Internet by 2020. This will include sensors and devices in every type of consumer, industrial, urban and rural environment.

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In addition, smartphones will grow from 29% of mobile devices globally in 2014 to 40% by 2019, while the total number of devices and connections will grow from 7.4 billion in 2014 to 11.5 billion by 2019. This unprecedented growth rate in the number of connected devices will require high levels of reliability, performance, scalability and security, built into the supporting service provider networks.

The IoT uses virtual and cloud infrastructure, intelligent edge services and distributed computing model, to generate data insights into these billions of devices. By successfully integrating IoT into 5G mobile technology networks, service providers can commercially exploit the availability of data insights from each of these billions of devices.

5G mobile technology represents an opportunity for service providers to provide innovative services by combining different types of connectivity platforms into a unified delivery network service.

The confluence of 5G and IoT therefore represents an opportunity for service providers to build new and more relevant business models and generate additional returns on their digital and compute investments. In reality, 5G mobile technology represents the next step in the digital transformation journey for service providers and their installed base of subscribers and users.

5G mobile technology represents an opportunity for service providers to

provide innovative services by combining different types of connectivity platforms into a unified delivery network service. 5G is therefore not just about higher speeds or new technology platforms, but also ability to integrate these new platforms more cohesively while delivering innovative services based on data insights.

Since the launch of mobile virtual network operators and mobile Internet access, there has not been much innovation in the business models of service providers. While there have been attempts to build new models around content and Wifi-only access, these have been insufficient to veer dramatically from the existing models of Wifi-at-home and Wifi-at-office access, as well as mobile video content services. Future possibilities lie in the integration of virtual and augmented reality content and gaming services into 5G networks, and 5G based Internet access.

5G mobile technology is expected to drive an exponential growth in data traffic. Development of 5G mobile technology standards is being driven by use cases that require higher scalability, mobility, wider coverage, capacity, performance, lower latency, affordability, and vertical market specialization. This is required since the average traffic per 5G connection is expected to be higher by 5x relative to a 4G connection.

On the flip side, the biggest inhibitor for the roll out of 5G mobile technology based networks remains the absence of use cases and innovative business models for service providers, that cannot be supported on existing, advanced 4G mobile technology based networks. According to Groupe Speciale Mobile Association (GSMA), another setback for service providers in the adoption of 5G mobile technology, will be the continuous drop in the average revenue per user, as the roll out happens.

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This will happen due to the wide spread usage of mesh-based, low power, wide area networks to support IoT. Mesh-based networks complete most of the transactions at the edge of the network in an automated fashion, rather than hopping across the network or between multiple service provider networks, thereby reducing the opportunity to increase the revenue per transaction.

Notwithstanding the pros and cons of 5G mobile technologies and the IoT, service providers as an industry will need to come together to ensure that the next generation of platforms still under development, can interoperate and deliver the expected level of innovative services to move forward from the present-day reality. 📍



REGIONAL NEWS

Pact to Empower UAE's Future Leaders in Artificial Intelligence

Mr. Omar Sultan Al Olama, Minister of State for Artificial Intelligence, member of the Board of Trustees of Dubai Future Foundation and deputy managing director and Dr Ali Sebaa Al Marri, executive president of Mohammed Bin Rashid School of Government, have signed a memorandum of understanding (MoU) to enhance cooperation and empower young Emiratis. This MoU helps in preparing a generation of leaders by honing their leadership skills, developing their practical experience and enhancing their knowledge in employing Artificial Intelligence (AI) technology in government work through training, educational courses and workshops, a press release said. The MoU

is part of the UAE Artificial Intelligence Summer Camp initiative. It provides an opportunity for specialized individuals in the public and private sectors, and school and university students to learn about effective implementation mechanisms for the UAE strategy for Artificial Intelligence. "Preparing young Emiratis for Artificial Intelligence and the use of its techniques to create innovative solutions to future challenges, supports the vision and directives of our leadership, to strengthen the UAE's position as a global hub in the use of Artificial Intelligence to shape the future," said Al Olama. "The creation of government services, programmes and initiatives that enhance the quality of life

in the community and support having a competitive knowledgeable economy requires tools, skills and future potentials. These tools have been commonly used worldwide and will have a major role in shaping the future," he added. Al Marri said the MoU aims at honing the skills of young Emiratis and unleashing their creative potential to transform their innovative ideas into realistic work practices and models and to employ Artificial Intelligence to advance the pace of construction, progress and governmental efforts. This works to develop future work methods that contribute to enhancing the quality of life in the community and strengthen the UAE's position. Under the MoU, the Mohammed bin Rashid School of Government offers the executive education program 'Governance of Artificial Intelligence' to leaders and government decision-makers. The members will learn about the benefits of the Fourth Industrial Revolution and the development of AI technology as well as the benefits of employing Artificial Intelligence tools and techniques in vital areas such as health care, transportation, education, security, agriculture, retail, trade, finance, insurance, banking, etc. The intensive training program is offered by Nicolas Miaillhe, co-founder and president of The Future Society at Harvard Kennedy School of Government.



Iran's TCI Plans USD900M Fiber Spend

Iran's state-backed fixed line operator Telecommunication Company of Iran (TCI) says it plans to invest IRR38 trillion (USD900 million) in the current financial year (beginning in March) to expand its fiber-optic access networks. A report from the Financial Tribune says that the firm is looking to sign up two million fiber-based

subscribers by March next year. According to TeleGeography's GlobalComms Database, in May 2017 TCI launched its TANOMA project to deploy the country's first fiber-to-the-home (FTTH) connections in Tehran and seven other cities. The initial phase of the rollout has seen 580,000 lines installed, including 245,000 in Tehran,

85,000 in Isfahan, 80,000 in Mashhad, 61,000 in Shiraz, 61,000 in Ahvaz, 28,000 in Karaj and 20,000 in Kermanshah. The FTTH links offer connectivity both to Iran's National Information Network (NIN), which is a closed system of state-approved sites, or to the wider internet.

UAE Leads Region in Digital Competitiveness



The UAE is one of the most advanced digital economies in the world, landing in the top 20 globally and first in the Arab world, according to the latest report. The new edition of IMD World Digital

Competitiveness Ranking 2018 released on Tuesday, showed the UAE moving up in the overall list to reach the 17th place, ahead of Germany, New Zealand, Ireland, France and Japan, among many

other developed economies. The ranking covers 63 economies. It seeks to assess the extent to which a country adopts and explores digital technologies leading to transformation in government practices, business models and society in general. The UAE's improved ranking in digital competitiveness comes as a result of the country's continued developments and increase adoption of digital strategies in various projects and initiatives implemented across UAE. The country ranks first globally in business agility, third globally in regulatory framework and fourth globally in terms of talent. "The UAE improves its overall digital ranking in 2018, to reach 17th place. Although this is a slight increase, we see some good performance in various sub-factors included in the report," said professor Arturo Bris, Director of the IMD World Competitiveness Centre.

Saudi Al Khobar Becomes First Recipient of 5G Network in MENA

Al Khobar city in the Eastern Province of Saudi Arabia has become the first city in the MENA region to benefit from a pilot project on the fifth-generation wireless network, or 5G network. The project was implemented on the first week of Ramadan, a move welcomed by a specialized agency of the United Nations responsible for addressing issues concerning information and communications technology worldwide. A report released by the International Telecommunication Union (ITU) praised the Kingdom for adopting the latest technology, saying that the project was launched soon after Saudi Arabia's national ICT regulator, Communications and Information Technology Commission (CITC), issued licenses for testing the 5G mobile network using 100 MHz channels in the bandwidth of 3.6GHz - 3.8GHz. The statement highlighted the project surpassed the limits of previous wireless technologies with a data-transmission speed of more than 1Gbps. "Because the capabilities of this technology are very high, it will pave the way for the development of other technologies such as the Internet of Things (IoT), virtual reality and robots." The CITC plans to

convert the test-and-trial licenses to full and exclusive 5G spectrum awards in 3.4-3.8 GHz by mid-2019. The awards of mm-wave spectrum could follow by the beginning of 2020. The Saudi government has long recognized the importance of broadband communications, and the potential benefits of 5G technologies now fit well into the country's plans to build a leading modern economy as outlined in its Vision 2030, the report noted. Abdullah Alsawaha, the Minister of Communications and Information Technology, said: "Saudi Arabia is determined to be a world leader in 5G to take early advantage of its benefits." To aid the development of 5G and prepare the necessary administrative foundations,

the National 5G Task Force was established earlier this year. The task force is led by a steering committee that sets the general strategy directions and oversees progress. It unites all stakeholders with an interest in 5G, such as government, operators, equipment vendors and potential user groups. Specialized work is carried out in three subcommittees that deal respectively with "5G Spectrum", "5G Development" and "5G verticals". All the necessary national 5G policies and supporting administrative provisions are planned to be in place before the end of 2019, along with the award of initial batches of spectrum to support the full commercial deployment of 5G technologies.



Number of Mobile and Internet Banking Users Grow in Pakistan

Growing levels of digital literacy and availability of technology are generating sustainable positive outcomes as the use of banking services has been on the rise among masses. About 6 million bank customers in Pakistan are now using advanced means to do fund transfers via laptops, desktop computers and mobile phones. Self-banking services are not only providing convenience for customers but it is also helping banks and organizations in reducing their cost of doing business through a gradual spread of electronic payment systems in Pakistan. Internet and mobile banking has resulted in massive time savings. Furthermore, it has also reduced the use of cash or paper currency in the country. A significant number of customers now connect their bank accounts online and make transactions electronically in a few minutes.

Internet Banking

In Pakistan, 26 banks are offering Internet Banking Services. There are 2.9 million Internet banking users registered with banks, according to statistics provided by the State Bank of Pakistan



(SBP). During January to March, about 8.4 million transactions valued at Rs.332.8 billion were processed through Internet Banking services. These transactions showed a growth of 13.4% and 13.7% in volume and value of transactions respectively.

Mobile Banking

In Pakistan, 19 banks are providing Mobile Phone Banking facilities to their customers, with the number of registered Mobile Phone Banking users reaching 3.1 million by the end of March 2018. These users processed 5.9 million transactions valued at Rs.112.8 billion via Mobile Phone Banking apps. These transactions depicted a quarterly growth of 12.2% and 23.0 % in volume and value of transactions respectively.

Outcomes of Internet & Mobile Banking

Due to the rapid increase in Internet and Mobile Phone Banking users in the country, traditional call centers/ IVR banking services have witnessed a downward trend. During the quarter from January to March, about 68000 transactions valued at Rs.2.1 billion were processed by Call Centers/ IVR Banking services. These transactions showed a quarterly decline of 12.1% and 7.1% in volume and value of transactions respectively. With the expansion of high-speed broadband internet services, the use of internet and mobile banking is on the rise in Pakistan. However, there is a need to create awareness among customers to use these banking modes through incentives and minimal service charges. Besides, the online banking system should be strengthened and secured to make sure that customers' data and money will be protected from any losses. Online payment solutions should be provided to customers to meet their financial needs, such as the recently launched online tax payment option by FBR and SBP.

Algerian Mobile Phone Market Begins Recovery in Q1

Algeria's mobile phone market recovered from an extremely turbulent 2017 and had strong growth in the first three months of 2018, according to International Data Corporation (IDC). The research and consulting firm's Quarterly Mobile Phone Tracker shows that device shipments in the country increased 18.3 percent quarter on quarter (QoQ) in Q1 2018. The market suffered three consecutive quarterly declines in 2017, after the government's new quota system constrained the ability of vendors to import devices. Total shipments fell to 8.2 million units in 2017, down 14.6 percent from the 9.6 million units shipped in 2016. Condor was the first large local company to enter the mobile phone sector, and it has since been followed by IRIS and Stream System. More recently, a new wave of local vendors have started to penetrate the market, including ENIE, Kiowa, Starlight, and Benzo. IDC's research shows that in Q1 2018, local brands accounted for 91.1 percent of the feature phone market and 83.6 percent of

the smartphone market, up from 58.9 percent and 45.6 percent respectively in Q1 2017. The vendor landscape continues to be dominated by Condor, which garnered 58.2 percent of the overall Algerian mobile phone market in Q1 2018 in terms of units sold. IRIS ranked second overall with 13.1 percent, displacing Samsung after the Korean vendor was hit by import restrictions.



Digital Disruption Top of Mind for African Telcos

Accelerating digital transformation strategies, investing in new wireless and fixed network infrastructure, and embracing emerging technologies such as AI and IoT are among the top priorities for African telecom operators for the year ahead. This is according to global telecom, media and technology news and events company, TMT Finance. "Like many telecom operators globally, the major African operators are having to juggle several pressing priorities. It is well documented that traditional voice and messaging service revenues are decreasing, while pressure to plough big capex spend into new network infrastructure is weighing on balance sheets," says Ben Nice, Managing Editor and

Events Director at TMT Finance. "Furthermore, what a core telco business model looks like is up for debate, and those at the helm must make crucial decisions on where to place their bets in terms of future earnings and relevant technologies, while also asses how to undergo hugely complex digital transformation projects." Topics such as network infrastructure business models, B2B and B2C convergence, M&A, digital transformation and partnerships, are among the key topics to be debated at TMT Finance Africa 2018, a leadership conference gathering Africa's key telecom, media and technology senior executives, regulators, private equity firms, investment banks and advisers. CxOs from Orange, Econet Wireless, IHS Towers and Millicom will join the Future Africa Telco Panel – Leadership strategies for regional growth, which will open the conference. Other Leadership Panel Debates, Visionary Keynote Speeches and Breakout Sessions on topics such as Broadband Leadership, M&A, Enterprise Cloud and Datacenters, Digital Africa, Mobile Payments and Fintech, Regulation and Spectrum, Media and Content and Powering Africa's Mobile Towers, will all also feature at the event. Over 70 speakers will be announced for TMT Finance Africa 2018, with other companies already confirmed, including: Liquid Telecom, Dark Fiber Africa, IFC World Bank, Standard Bank, Helios Investment Partners, The Carlyle Group, Letshego, Citi, Credit Suisse, Tata Communications Transformation Services (TCTS), Intelsat, Rack Centre, Uber, Jumia, Energy Vision, Investec Asset Management, Ethos Private Equity, Econet Media, RIngier Africa, Nokia, Huawei Global Finance, Rand Merchant Bank, Nedbank, East Africa Data Centre, WorldRemit, TLCom Capital and many more.



Pakistan e-Commerce Sales Set to Cross \$1 Billion by 2020

Pakistan's e-commerce sales are projected to cross the one billion dollars mark by 2020 as compared to \$622 million recorded in 2017, an industry official said. Jawad Farid, Head of Corporate Innovation at tech firm Excellence Delivered (ExD) said e-commerce market is experiencing an annual growth of 72 percent. The country has one of the highest rates of mobile and internet penetrations in South Asia with 40 million Internet subscribers and 20 million Facebook users. Farid said this visible growth has encouraged many retailers to operate their own websites or use online marketplaces to sell products. The number of registered e-commerce merchants rose more than 2.6 times in the last couple of years amid advent of 3G/4G services

and availability of cheaper smartphones. "Nevertheless, there is still much room to grow." Alone Amazon recorded more than \$54.47 billion in online sales in 2017. ExD executive said some of the factors that have served as a catalyst to e-commerce growth include ease of purchasing while sitting at home, availability of cash on delivery option in which you only pay when you get a product, variety of products to choose from and customer reviews and feedback on social media. Farid said there has been a significant demand for e-commerce services in big as well as small cities. "Though it is a fairly new trend in business for Pakistan the online shopping trend is spreading quickly." He said cash on delivery is a popular payment

method, accounting for 90 percent of all transactions. An interesting trend to note is that around 35 percent of the monthly 70,000 shipments are delivered outside Karachi, Lahore and Islamabad, he said. "This shows that despite online shoppers are largely from the urban areas, rural shoppers are also willing to go online to make purchases for goods they cannot find in local markets," he added. "High growth in terms of sales and consumer preference has encouraged brands to rethink their strategy with regards to conventional retail channels and try alternate e-commerce methodologies." ExD is currently managing e-commerce and digital presence of several major brands.

Morocco in African Digital Development's Top Ten

Morocco is among the top ten African nations in terms of digital development, according to Moulay Hafid Elalamy, the Minister of Industry, Investment, Trade and Digital Economy. Elalamy was in Paris this Friday to speak about the development of the digital economy in Morocco during an event titled "Morocco: A Gateway to Innovation in Digital Africa." The event was organized under the umbrella of the Viva Tech Show, which draws thousands of attendees from across the globe. This year's edition celebrated African startups and featured participants from Morocco, Rwanda, South Africa, Tunisia and Nigeria. Morocco has a real digital strategy, according to Elalamy, who emphasized the strategy's African dimensions during a roundtable discussion. Explaining Morocco's role as a gateway to innovation for digital Africa, the minister cited the nation's strategic geographical position at the crossroads between two continents, the free trade agreements signed by nearly 60 countries and the country's outstanding infrastructure. He also emphasized King Mohammed VI's leadership role in the African continent. In addition, Elalamy insisted on the necessity of collaborating with Viva Tech, which he praised as an important platform for hosting meetings and exchanges between startup companies. Salou Karkri-Belkeziz, the president of the Federation of Information Technologies (APEBI) was also in attendance to speak about Morocco's startup ecosystem. She described a favorable environment for the encouragement of both national and pan-African innovation. Mohamed Laklalech, OCP's (Office chérifien des phosphates) Chief Digital Officer, discussed the role of increasing digitalization in the industrial sector. Hicham Serghini, the CEO of Central Guarantee, joined



the roundtable to outline the mechanisms that provide funding for startups. Serghini noted that such funding involves several parties, such as seed and venture capital companies. Morocco's first-ever official Viva Tech event was co-organized by the Ministry of Industry, Investment, Trade, and Digital Economy, the Digital Development Agency and the National Telecommunications Regulatory Agency. In addition to the roundtable discussion, 16 Moroccan startups were selected to take part in the show. They presented their innovations, interacted with industry stakeholders and established relationships with investors and other major players. The event sought to introduce investors and major global contractors to Morocco's tech ecosystem while positioning it on the international chessboard of technological innovation.

Turkey's Citizens Turn to VPN Technology to Overcome Widespread Censorship Ahead of Election, BestVPN.com Reports

On June 24, President Recep Tayyip Erdogan hopes to secure a second term in what has become a widely contested election. Voting will be held in the midst of an ongoing state of emergency. With the ruling AKP party controlling 90 percent of Turkey's news distribution channels, online platforms have become one of the few ways to express political dissent and to organize opposition. They have also become invaluable tools for circulating news suppressed by the mainstream media, and for providing alternative narratives to the pro-government news which is reported. In March, Erdogan's AKP government passed a new law which requires all online streaming and digital

TV services to register with Turkey's RTUK media watchdog and to obey the same restrictive rules that apply to terrestrial TV broadcasters. Five of RTUK's nine governing council members are direct government appointees, resulting in accusations that the AKP is attempting to silence online opposition in advance of the elections. The law applies to both foreign and domestic news services, which can be blocked and fined if they do not register. Turkey has shown no compunction against ordering ISPs to block international web platforms such as Facebook, YouTube, and Twitter or shutting the Internet down in the lead up to politically sensitive accounts. As a result, political opposition parties, journalists and

citizens are increasingly turning to VPN technology to bypass Internet censorship. BestVPN.com has seen a 131% increase in traffic to its VPN guides for Turkish citizens in the past 24 hours. "Erdogan is a famous strongman who is not the kind to take any chances," commented Douglas Crawford, cyberprivacy expert at BestVPN.com. "Winning this election will give him unprecedented authority to tighten his grip on power for the foreseeable future. As his current blatant attempts to silence all criticism in the press shows, Turkey's future as a democratic nation hangs in the balance."



For illustration purposes only

Proving scientific predictions can take centuries of trial and error



Exploration never stops at failure

Perseverance enables the commitment to build
the foundation for future technology



ARTICLE

Transport Networks are the First Step Towards 5G

Huawei's X-Haul Solution to lead 5G Networks

5G transport networks are the foundation of 5G E2E systems and vital to scaled deployments of diverse applications across vertical sectors. To fulfill future service demands, transport networks must provide strong support for the assorted business demands of the 5G industry. For operators, the biggest concern is how to achieve long-term evolution based on existing architecture while ensuring maximized investment returns in as short as possible ROI periods for early 5G pilot deployments. Building a cost-effective 5G transport network within the shortest possible period to address both short- and long-term challenges has proved a difficult task for global operators.

Requirements and Challenges Operators Must Address

In 5G, eMBB services are expected to be first to be commercially launched. These require 5G networks to provide a transmission capability of 10GE to sites and 50GE or even 100GE to access rings. In the Middle East, major operators from countries in the Gulf Cooperation Council (GCC) proposed the going-for-fiber initiative in 2016, with the aim to gradually increase the proportion of fiber-optical sites, particularly in metropolitan cities. With centralized baseband deployments, an enormous transmission capability of up to 100Gbps is required between sites and equipment rooms, creating challenges for transport networks.

Based on the current situation, going for optical fiber cannot be described as a simple or smooth process. The overall proportion of fiber-optical usage is below 20% in the Middle East. Even in GCC countries, this figure still stands below 40%.

Based on the current situation, going for optical fiber cannot be described as a simple or smooth process. The overall proportion of fiber-optical usage is below 20% in the Middle East. Even in GCC countries, this figure still stands below 40%. Operators are struggling to tackle many issues, including difficult ROW acquirement and costly and time-consuming network constructions. The need to discover multi-scenario and multi-media 5G transport solutions is a top priority among operators.



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President, Carrier Network Business Group
Huawei Middle East



Strikingly similar business pressure but vastly different network status among global operators have created diverse 5G transport scenarios, making the task of finding appropriate transport solutions extremely difficult. Huawei launched the X-Haul solution to fulfill differentiated transport demands. This solution embodies a combination of multi-scenario, multi-media, and multi-form 5G transport products to assist operators in constructing E2E 5G networks.

In the Middle East, there are still 60% to 70% of sites with no fiber optical coverage. Operators thus expect microwave solutions to support evolution to 5G networks.

Long-term evolution towards future network architecture

At the access layer of transport networks, Huawei introduces innovative and cost-efficient 50GE flexible Ethernet ports, which allows for a smooth upgrade to 100GE. Such products allow operators to achieve 10GE access and 50GE/100GE convergence by replacing service boards to maximally alleviate the investment pressure for service demands in early 5G pilot deployments. To satisfy phased on-demand constructions, operators can implement E2E slicing to support differentiated demands in low-latency services and vertical innovations. Tier-1 operators in the Middle East have advantages in optical fiber resources to promote the smooth transition of fiber-optical sites at the convergence access layer.

Maximizing existing network value to protect investment

In the Middle East, there are still 60% to 70% of sites with no fiber optical coverage. Operators thus expect microwave solutions to support evolution to 5G networks. With Huawei's X-Haul solution, huge bandwidth (10Gbps) and low latency (25µs) can be

achieved based on traditional microwave bands. Both CA and MIMO are also supported to further increase spectral efficiency.

This means that operators can fulfill huge 5G transport bandwidth without using a new spectrum. Technological complexity and dependence on tower resources can be markedly reduced. In the meantime, existing investments can be fully reused for 5G-oriented microwave solutions. For example, modular antennas can be used to achieve flexible upgrade at legacy sites without replacing reflectors and performing a secondary alignment. Also, subbracks can be reused to house new boards when upgrading to 10G-platform indoor units (IDUs).

Premium Transport Assurance for Major Events

In areas with a high user density, for example in international exhibitions, sporting events, and large shopping malls, 5G sites can be deployed in CRAN mode and use full-outdoor (FO) OTN fronthaul solutions to save fiber-optical resources. Such a deployment mode also allows for comprehensive service access to SMEs, helping reduce network construction time and costs and maximizing the value of existing networks. With 4G fronthaul technological verification in 2016 in the UAE and soon-to-complete testing of 5G CRAN networking and fronthaul transport solutions in Saudi Arabia, rich experience can be acquired in fronthaul transmission for international exhibitions, such as Dubai Expo 2020.

5G innovative services create high expectations for smart networks in increasingly dominant commercial scenarios. User-centric network operations are calling for transport networks to transform to a smart architecture. Huawei has launched intent-driven network solutions that feature intelligence, simplicity, ultra-broadband, security, and openness. Empowered by these solutions, operators are able to build experience-centric networks to help redefine 5G business landscapes.

Joint Innovation with Operators to Accelerate Commercialization

Huawei's 5G transport solutions are gaining trust and support from a growing number of world-leading operators.

In the Middle East Huawei is planning further verification tests in cooperation with major operators in Saudi Arabia based on various microwave transport solutions. These include microwave E-bands, CA + MIMO on traditional bands, and 5Gbps to 10Gbps to sites in various complex backhaul scenarios. The verification will also include co-channel interference cancellation (CCIC) that help increase microwave spectral efficiency in 5G.

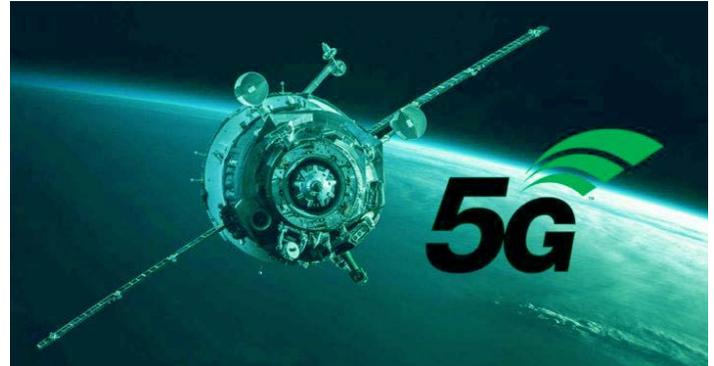
Embracing the era of 5G, Huawei will focus on helping operators in the Middle East achieve a smooth evolution from 4G transport networks. Huawei will continue to strengthen technological and business innovations through cooperation with operators and industry partners to increase the confidence of vertical industries in seeking high-speed development. Huawei will help operators and vertical industries develop healthy 5G ecosystems and pursue new heights of business success. 📍

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SATELLITE NEWS

SaT5G Hit Milestone with Satellite-5G Integration Demonstration

iDirect, SES, Broadpeak, i2CAT and the University of Surrey, all members of the SaT5G consortium, have demonstrated a major milestone in the research, development and validation of key principles for satellite integration with 5G architecture, the consortium announced. Taking place at the EuCNC2018 conference in Ljubljana, Slovenia, the live test demonstrated the integration of satellite into a 3rd Generation Partnership Project (3GPP) network architecture, comprising a Software-defined Networking (SDN) / Network Functions Virtualization (NFV) / Mobile Edge Computing (MEC)-enabled pre-5G construction testbed, with a geostationary satellite. It also showcased satellite backhauling features and efficient edge delivery of multimedia content in pre-5G networks, which act as proof-of-concepts for integration of those features into a full 5G network. The SaT5G project is funded by the European Commission and its consortium



brings together industry leaders across the ecosystem to promote the cost-effective “plug-and-play” integration of satellite technology into 5G networks.

Successful Test by C-COM Satellite Systems of Ka-Band Phased Array Mobile Satellite Antenna

C-COM Satellite Systems Inc. (TSXV: CMI) has successfully tested their 16x16 subarray phased array antenna using 4x4 Transmit and Receive building blockmodules – the panels were developed and tested at the Center for Intelligent Antenna and Radio Systems (CIARS) at the University of Waterloo. The primary goal of the research project is to focus on the development of a new modular, low-cost, intelligent and conformal Ka-band antenna for the next generation mobile satellite communications. The now proven modular approach allows antenna designers to develop any size and shape of phased array panels using the smallest intelligent active 4x4 subarray. The developed antenna system uses a unique technique to adaptively control the antenna polarization in such a way that a prescribed quality of polarization can be guaranteed over the entire scan range. Furthermore, the beam-processing unit and the antenna intelligent module can

generate more than one radiation beam simultaneously and support multi-beam-tracking, a highly desired functionality in emerging LEO mobile networks. By using a unique blend of low-cost but flexible/reconfigurable hardware and highly intelligent software, the modular technology platform developed at CIARS provides the most cost-effective evolution path towards any antenna system configuration with prescribed performance for a wide range of low-end to high-end applications. The developed technology platform can be easily extended to the rapidly emerging millimeter-wave 5G and complex radar systems. Bilal Awada, the CTO at C-COM Satellite Systems Inc., said that the company is pleased to have reached this important milestone in the firm’s development of a fully electronically steered Phased Array Mobile Satellite Antenna operating in Ka-band. The antenna will be able to track multiple satellites simultaneously

and operate on the latest LEO, MEO and GEO constellations. Professor Ali Safavi-Naeini, Director of CIARS, is in charge of the research team at the University of Waterloo responsible for this project. He said that measured lab results have demonstrated the high performance of the small modular scalable intelligent Transmit and Receive antenna modules and validated the simulation model for larger panels. Additionally, good beam steering up to 70 degrees from boresight was achieved, a significant achievement. Dr. Leslie Klein, President and CEO of C-COM Satellite Systems Inc., added that the company is now a step closer to achieving the objective of developing and manufacturing an affordable, intelligent, antenna system capable of supporting the latest constellation of satellites, which will play a significant role in delivering high speed broadband solutions to mobile satellite communication markets.

MEASAT's Agreement with Nepal Digital Services Delivers Programming and Digitized Services

Nepal is undergoing broadcast changes with the assistance of MEASAT Satellite Systems Sdn. Bhd. ("MEASAT") which is providing four digitized free-to-air video channels as the result of an agreement with Nepal Digital Services Pvt. Ltd via the MEASAT-3 satellite located at 91.5 degrees E. The four channels, which have already begun transmission are AP1HD, BTV Business, TV Today and TV Filmy. Additionally Nepal is transitioning its broadcast services in accordance with the initiative by the Nepalese government. The 91.5 degrees E prime video hot slot is

home to the MEASAT-3, MEASAT-3a and MEASAT-3b satellites, forming the region's strongest video neighborhood. From 91.5 degrees E, MEASAT supports broadcasters and DTH operators to distribute UHD, HD and SD channels to audiences across Asia, Australia, East Africa and South-Eastern Europe. Laxmi Prasad Paudyal, Managing Director of Nepal Digital Services Pvt. Ltd. said that AP1TV is excited to work with MEASAT and bring newly digitalized content to Nepal. Currently their channels are broadcast across only Nepal but with MEASAT-3's global beam, they can

take their content to Nepalese diaspora across the Asia Pacific and Middle East. In MEASAT they have found a partner that clearly understands their goals and has a very strong support system that works well with their team to find solutions across the ecosystem that they operate in. Raj Malik, Senior Vice President of Sales, MEASAT added that MEASAT looks forward to playing a key role in Nepal's digital transformation by supporting the local broadcast industry with their expertise and customized solutions. MEASAT will be at booth 1T3-01 at CommunicAsia.

U.S.A.F. Awards SpaceX with EELV Launch Contract for the AFSPC-52 Classified Satellite

SpaceX, the Elon Musk-helmed company which earlier this year saw its partially reusable Falcon Heavy officially become the most powerful rocket in the world, has won its first contract to use that system to deliver a classified payload. Per the Verge, the Air Force announced this week the \$130 million contract to deliver its AFSPC-52 satellite to orbit in 2020 will go to SpaceX, beating out joint Boeing-Lockheed Martin venture and sole competitor United Launch Alliance's bid to use a Delta 4 rocket. According to Space News, the average cost of a Delta 4 launch is around \$350 million, which may explain why the Air Force is going for the relatively untested Falcon Heavy—it is a hell of a lot cheaper. As the Verge noted, that far lower price point probably eased the Air Force's decision even after SpaceX struggled to get the Falcon 9 approved for military use: The willingness of the United States Air Force (USAF) to tap the new rocket so soon is a departure from the protracted process SpaceX went through to get its Falcon 9 rocket certified for military missions. SpaceX spent two years, at least \$60 million, and filed a lawsuit against the USAF to gain military certification for the Falcon 9. (The lawsuit was dropped a few months before certification.) This is the

fifth mission that will be added to the Falcon Heavy's manifest, per CNN Money. Those include an Air Force STP-2 demonstration mission and an Arabsat commercial launch both planned for some time this year, while fleet operators Intelsat, Viasat and Inmarsat all have launch options they have not yet committed to. So SpaceX will likely have some time to continue working on the Falcon Heavy before it has the chance to launch the Air Force's secret cargo. A lot is on the line, with Musk saying the system cost around half a billion dollars to develop. A previous Falcon 9 mission to launch the classified, multi-billion Zuma

satellite for the Air Force went wrong, with the cargo lost, though subsequent investigations revealed that sloppy work from Northrop Grumman and one of its subcontractors was to blame. Two Falcon 9s have also exploded. "SpaceX is honored by the Air Force's selection of Falcon Heavy to launch the competitively-awarded AFSPC-52 mission," SpaceX President and Chief Operating Officer Gwynne Shotwell told CNN Money in a statement. "SpaceX is pleased to continue offering the American taxpayer the most cost-effective, reliable launch services for vital national security space missions."



Satellite Vu Takes ESA's Ocean x Space Award for Tracking Maritime Plastic Garbage from Space

European Space Agency's (ESA) Ocean x Space competition awarded Satellite Vu, a NewSpace company, with the first prize for leading the charge in space-based technology to overcome the challenge of plastic pollution. Satellite Vu received the first prize in the Ocean x Space competition. During the eighth edition of ESA's annual Business Applications Conference, held in Stavanger from May 22-24, the organization brought together companies, users, experts, entrepreneurs and investors to foster partnerships and new ideas. The Ocean x Space competition invited small companies of 50 employees or less, to submit ideas for innovative, space-enabled services in the maritime sector. Other criteria the judges were looking for was clarity of value proposition, the problem to be tackled, the use of space assets, technical feasibility and the maturity of the idea. Anthony Baker, CEO, Satellite Vu said that space has long been an important resource for the maritime industry, but today it can play a different and even more crucial role in preserving the maritime environment. The situation with maritime litter has reached crisis point. They are delighted to have had their technology and business application recognized by ESA. Satellite Vu is offering an affordable, sustainable, dual-use solution to enable governments to track and monitor where this plastic is coming from and where is it ending up, using a constant stream of data provided by their satellites. This actionable information will enable them to make informed decisions on how to tackle this threat that affects everyone. In the last decade, we have produced

more plastic than in the entire twentieth century and plastic constitutes approximately 90 percent of all waste floating on the ocean surface. By 2050, there could be more plastic in the world's waters than fish, measured by weight. Plastic bags and other plastic products are routinely being discovered in the stomachs of birds and marine life. A major concern for environmentalists, naturalists and marine biologists is that floating plastic breaks down in sunlight, resulting in countless tiny pieces called 'microplastics'. It is these fragments that end up in our food chain and that endanger thousands of species that live in or around our waters. Today, microplastics are appearing everywhere from the deep sea to Arctic ice or amassing in large islands or gyres in every ocean. According to the United Nations, microplastics cause annual damage of \$13 billion to economies worldwide. Governments and other organizations invested in the conservation of our maritime environment must be able to effectively track these harmful plastics that are circulating in our oceans, seas, rivers and streams. Satellite Vu provides direct multispectral measurement of the plastic contamination providing actual, rather than simulated data, allowing the true scale of the problem to be uncovered. Earth Observation (EO) has always been a hugely valuable asset from an environmental perspective as it provides a detailed 'eye in the sky' and gives a view of our planet that is unrivaled. Over the past five years in particular, through the advent of NewSpace innovations, the rise of small satellite technology has been at the center of a paradigm shift in the EO market which has lowered the cost and time taken to manufacture spacecraft. Today, a small EO satellite can equal the capability of its much larger predecessors, yet can be orbited at a fraction of the cost and mass. This transformation is significant because it is making space accessible to all and is giving less developed countries the opportunity to tackle some of their greatest problems. Baker continued that the capabilities offered by Satellite Vu will literally cut the time in which it takes to measure the plastics problem from years to weeks. Who is offending? Where are the problem areas? Can the plastic be contained? They can answer the burning questions so that action can be taken. The technology is available now and they are ready to provide it.



Oman to Put Two Satellites into Orbit

Oman will launch two medium-sized satellites into orbit, according to the Minister of Transport and Communications. His Excellency Dr. Ahmed bin Mohammed Al-Futaisi confirmed that the intent to launch an Omani satellite has been on the horizon for some time. He pointed out that there are many parties in the country

that currently rely on renting space from abroad. The next phase will witness the establishment of a specialized company to manage, finance and operate the project to launch two medium-sized satellites to serve the Sultanate's needs. Al-Futaisi said that a third mobile operator is on its way. Initially, the plan was to find a global

operator. However, they are now looking into establishing an Omani company as a third operator, using international expertise, which will be established through investment funds. Al-Futaisi added that with the advanced infrastructure in the Sultanate, Oman should be focusing on maximizing the utilization of airports.

French Southern and Antarctic Lands to Obtain Airbus Supplied SATCOM Connectivity

Airbus has won a three-year contract to supply satellite communications in the French Southern and Antarctic Lands (TAAF) – as satellite communication meta-operator, Airbus will supply, install and maintain the system and ensure access to satellite resources for those living and working in this extremely remote area. The contract covers satellite communication systems deployed in the Crozet islands, Kerguelen Islands and Amsterdam Island. These Sub-Antarctic islands, located between the 37th and 50th parallel, where the Indian and Antarctic oceans meet, are ideal locations for observing climate change and biodiversity. The islands' sole inhabitants are researchers who study the wildlife, plants and climate, technical

teams who handle logistical support (infrastructure, energy, communications, etc.) and military garrisons. They usually spend between three months and a year on site, and on these extremely isolated islands, the telecommunications system provides a vital link with the rest of the world. Airbus will provide internet access and a telephone network for their professional and private communications. To guarantee reliable communications in this region where the weather conditions are harsh, the satellite system operates in C-band. This frequency band offers particularly good propagation capacities, even in heavy rain, which is why it is also used in tropical regions. The French Southern and Antarctic Lands consist

of the Crozet Islands, Kerguelen Islands, Saint-Paul and Amsterdam islands in the Sub-Antarctic, Adélie Land in the Antarctic and the Scattered Islands (îles Eparses) in the Mozambique Channel and north of Reunion Island. The Crozet Islands, Kerguelen Islands, and Saint-Paul and Amsterdam islands have been classified as a national nature reserve. Spanning 672,969 km², it is France's largest nature reserve and one of the largest marine protected areas in the world. By preserving these exceptional land and marine ecosystems, researchers are able to carry out vital studies for furthering knowledge of biodiversity and its protection.

Mytel to Deploy Satellite Backhaul Solution

Vietnamese-backed cellco Mytel has selected Communication & Commerce (Com & Com) to provide a satellite backhaul solution to support its network expansion. Com & Com's system will use Newtec's Cross-Dimensional Multiple Access (Mx-DMA) dynamic bandwidth allocation technology, which the vendor claims combines the efficiency of a single channel per carrier (SCPC) system with the bandwidth allocation of multi-frequency time division multiple access (MF-TDMA) to provide best-cost performance, bandwidth efficiency and reliability. Commenting on the rollout, Com & Com's MD Theingi Lin explained: 'Satellite communication is the most cost-effective, fastest and reliable way of bridging the digital divide in Myanmar as it can be deployed in even the most rural areas in a very short time. By blending Newtec's innovative technologies and Com & Com's fully managed satellite services, we are confident that we can enhance Mytel's offering and meet the growing demand for connectivity while ensuring optimal end-user experience.'

Mytel's Deputy CEO Nguyen The Nghia added: 'As a rapidly growing mobile operator, increasing our coverage and making our product offering as competitive as possible is very important. Newtec's and Com & Com's solution will help us achieve this goal by lowering our OpEx thanks to the efficiency provided by Newtec's mobile backhaul technologies including

Mx-DMA, which is already a success for a number of operators across Asia.' The most recent entrant in Myanmar's mobile market, Mytel is a joint venture of Star High Public Company (owned by the Myanmar military), Myanmar National Telecom Holding (a consortium of eleven local companies) and Vietnam's Viettel



Eight Navigation Receivers for the Next Eight Sentinel Satellites to be Built by RUAG Space

The next eight Sentinel environmental satellites of the European Earth Observation Program Copernicus will be equipped with 16 navigation receivers from RUAG Space. Image is courtesy of RUAG Space. These navigation receivers determine the current position of the satellite with an accuracy of just a few centimeters. Only in this way is a highly precise evaluation of the measurement data recorded by the instruments on board a satellite possible. Six Sentinel environmental monitoring satellites of the European Earth Observation (EO) program Copernicus are already using RUAG Space navigation receivers to determine

their current position in space with high precision. The next eight Sentinel satellites will also be equipped with a total of 16 space-compatible receivers from RUAG Space. The first two receivers for Sentinel satellites have already been delivered and an additional 14 will be gradually delivered by summer 2019. Sentinel-3 is arguably the most comprehensive of all the Sentinel missions for Europe's Copernicus programme. Carrying a suite of state-of-the-art instruments, it provides systematic measurements of Earth's oceans, land, ice and atmosphere to monitor and understand large-scale global dynamics and provide critical information for ocean and weather

forecasting. The EU Sentinel satellites (managed by the European Commission, developed under the aegis of the European Space Agency) are part of the Copernicus satellite fleet, which is to establish an environmental monitoring program by 2030 with 20 satellites at the end of the year that are unique in quality and quantity worldwide. With more than 1,400 staff across six countries, RUAG Space develops and manufactures products for satellites and launch vehicles – playing a key role both in the institutional and commercial space market. RUAG Space is a division of the international technology Group RUAG.

OPT, SES Networks to Further Connect French Polynesia

Growing demand for broadband has prompted The Office des Postes et Telecommunications of French Polynesia (OPT) to deliver enhanced mobile broadband and internet services to residents across the French Polynesian territory through a new partnership with SES Networks. Under the new agreement, OPT will access the NSS-9 satellite's C-band coverage to reach the Polynesian archipelago of 118 islands in the South Pacific and beyond. This will enable OPT and its fully-owned subsidiary, VINI, to grow their network to meet consumers' and businesses' fast-growing connectivity needs, and provide new and enhanced user experiences and services. "Today, mobile broadband and internet connectivity demands from residents and businesses are growing faster than ever. NSS-9 offers reliable coverage and a wide footprint spanning the Pacific Ocean – a perfect complement to our terrestrial infrastructure, as we expand our network to provide new and enhanced services that people need," said Tehina Thuret, telecommunications chief executive at OPT.



New Connectivity Company Combines Iridium Next with Cellular

Satellite-cellular start-up, Everywhere Communications has been launched to provide connections for users and assets that require global connectivity for safety, security and productivity. Everywhere's solution uses the newly launched Iridium Next satellite constellation and cellular networks to provide always-on connectivity everywhere on Earth. The company's leadership team consists of industry professionals, each with more

than 30 years of experience, responsible for creating more than \$2 billion in connected services with companies including Motorola, Nextel, Verizon, SiriusXM, Iridium, SkyBitz and DeLorme. The lead investment partner in Everywhere is Gemini Capital, founded by Dan Colussy, former chairman of Iridium Satellite. Additional capital has come from other industry leaders and experts. Everywhere will enable global dual-mode communications,

worker safety and global Internet of Things (IoT) via a solution based on patented technology that has been deployed and used in mission-critical operations for the last 10 years, according to the company. The product portfolio includes personal communication devices, asset tracking devices, smartphone apps and a central management platform.

The U.S. Air Force Has Announced the Award of an Evolved Expendable Launch Vehicle (EELV) Launch Service Contract

Space Exploration Technologies Corporation (SpaceX) has been awarded a \$130 million firm-fixed price contract for launch services to deliver U.S. Air Force Space Command (AFSPC)-52 satellite to the intended orbit. The contract provides the Government with a total launch solution for this mission, which includes launch vehicle production, mission integration and launch operations. This mission is planned to be launched from Kennedy Space Center, Florida. Artistic rendition of an Advanced

Extremely High Frequency (AEHF) System satellite. This is the fifth competitive procurement under the current Phase 1A strategy. These launch service contract awards strike a balance between meeting operational needs and lowering launch costs through reintroducing competition for National Security Space missions. AFSPC-52 is a classified mission projected to launch in late Fiscal Year 2020. Lt. Gen. John F. Thompson, U.S. Air Force program executive officer for Space and SMC, said

that the competitive award of this EELV launch service contract directly supports Space and Missile Systems Center's (SMC) mission of delivering resilient and affordable space capabilities to our Nation while maintaining assured access to space. The Air Force Space Command's Space and Missile Systems Center, located at the Los Angeles Air Force Base, California, is the U.S. Air Force's center of excellence for acquiring and developing military space systems.

Telstra to Bridge Coverage Gap in Australia with New Mobile Satellite Small Cell

Telstra has launched the Telstra 4GX-lite Mobile Satellite Small Cell, a new solution to help people living and working in some of Australia's most remote places purchase their own coverage extension of the Telstra 4GX mobile service. According to the



company, the first customer is already on board, with a heads of agreement in place with Queensland's Winton Shire Council to install two Satellite Small Cells to improve coverage at a tourism hotspot and a remote town. The Telstra 4GX-lite Mobile Satellite Small Cell is a smaller, lower cost version of a standard mobile base station, giving customers access to Telstra's 4GX-lite service which delivers voice calls, text, email, messaging, social media posts, browsing and basic data. The Satellite Small Cell has been designed to meet the needs of remote communities and customers from rural farmers and mining companies to local councils who want to bring mobile coverage to new areas. Telstra aims to deliver up to 500 Satellite Small Cells over the next three years, and is discussing the opportunity to deploy this technology with a number of organizations and customers. The Satellite Small Cell is funded by co-contributions from Telstra and the customer, where the customer pays an initial amount to cover the cost of installation and Telstra builds and maintains the small cell.

Satellite Company to Get License in Bangladesh

Bangladesh Communication Satellite Company Ltd, which is operating Bangabandhu Satellite-1—will get a license from the telecom regulator to provide satellite services to local and foreign companies for 15 years. "We have decided to award a license to the satellite company. We will send our recommendation to the government within one week," Md Jahurul Haque, acting chairman of the commission, told The Daily Star yesterday. In a meeting on Monday, the officials of Bangladesh Telecommunication Regulatory Commission took the decision after the new state-owned company applied to the regulator last month. Bangladesh's first commercial satellite Bangabandhu Satellite-1 was launched from Florida in the US on May 11 and it has successfully reached

its orbit. However, it will take three months for the satellite to complete some technical procedures and start offering services. The Telecommunication Act makes it mandatory for any entity to avail license if it wants to provide telecom services in Bangladesh. BTRC officials said they are yet to finalize the conditions of the license, fees and charges. As the commission does not have any experience in this regard, it needs to consult with the government about it, Haque said. After the license is handed, the BTRC will move to formulate a guideline on satellite services as there is no such license in the country at the moment, officials said. The move will be taken to create scopes for prospective satellite companies to deliver satellite services, they said.

Pakistan Planning to Establish Satellite Development Facility

Pakistan has planned to establish an indigenous facility for development of satellites in accordance with international space standards under its annual development plan for 2018-19. The facility - Pakistan Space Centre will have capability to carry out manufacturing, testing, system level assembly, integration, launch and operations of various types of satellites. As per Information and Communication Technology Annual Plan 2018-19, major thrust includes that Pakistan Multi-Mission Satellite (PakSat-MM1) will cater to demand of Direct-To-Home (DTH), High-Throughput Services (HTS)/Broadband Internet and Strategic SatCom. The PC-II has already been approved and during next year, PC-I will be submitted for approval and subsequent execution of the project. Moreover, feasibility study of Pakistan's 2nd Optical Remote Sensing Satellite (PRSS-02) will be completed. PRSS-02 aims to launch a sub-meter resolution remote sensing

satellite. Feasibility and System Definition Study (FSDS) of Pakistan Navigation Satellite System (PakNav) will also be carried out. PakNav will enable Pakistan to have independent satellite navigation for both civilian and strategic purposes. The government would focus on competing in international arena, and accelerating pace of e-government to facilitate citizens to avail public services. The document said Rs 6,535 million have been earmarked for ICT sector under Public Sector Development Program (PSDP) 2018-19 which is aimed at improving capacity of IT industry by further providing infrastructure and facilities for startups and small IT businesses. The other objective of allocation in ICT sector is to increase quality of skills and capacity of organizations to consistently deliver high quality services and products and raising their standard. The other thrust include Cross-Border OFC system between China and Pakistan for international connectivity of voice and data traffic under aegis

of China Pakistan Economic Corridor (CPEC) which will enable alternative route for international internet connectivity. Development of Technology Parks to facilitate rapidly growing entrepreneurial ecosystem in the country, participation in 15 major international exhibitions to generate export business, and training of 3,500 professional and 500 executives from IT and ITeS industry in latest technologies in demand and business development/international marketing respectively would also be focused. Some other domains include 70 more companies will be provided consultancy to attain certification of CMMI level-2, CMMI level-3, CMMI level-5 and ISO 27,001/ 20,000 international standards through Ministry of Information Technology's project entitled "Enhancing IT Exports through Industry Support Programmes," and placement of 3,000 ICT graduates in public and private sector organizations under Prime Minister's ICT Internship Program.

China's Satellite to Explore Moon's Dark Side Successfully Brakes for Entry into Orbit

China's relay satellite, on an ambitious lunar exploration mission, has successfully braked near the Moon, completing a vital

step before entering a desired orbit, space officials said. Queqiao, the 400-kg satellite which has a designed life of three years,

was launched on Monday to enable a rover to communicate with the Earth from the Moon's mysterious far side, as part of the Communist giant's ambitious goal of being the first country to send such a probe. It braked 100 km above the surface of the Moon in line with instructions from a ground control center in Beijing, and then entered a transfer orbit from the moon to the second Lagrangian (L2) point of the Earth-Moon system, the China National Space Administration said. "There was only a short window for the braking. And Queqiao had only one chance due to limited fuel," Zhang Lihua, project manager of the mission was quoted by state-run Xinhua news agency as saying. 🇨🇳



WHOLESALE NEWS

Ofcom Publishes Draft Statements on Wholesale Market Reviews

UK telecoms regulator Ofcom has published a draft statement setting out its assessment of competition within the wholesale broadband access (WBA) market, excluding the Hull Area. This draft statement covers Ofcom's analysis of competition within these markets, and focuses on determining whether any telecoms provider has 'a position strong enough to influence market outcomes'. It

also sets out the regulatory instruments that the watchdog is introducing to protect competition in those areas where it has determined that wholesale competition is not effective. Separately, Ofcom has also published a draft statement after undertaking a review of the regulation of the wholesale local access (WLA) market and the WBA market in the Hull Area. In this, it said it had concluded that KCOM

continues to have significant market power (SMP) in both markets, and as such it will impose a package of remedies to address this SMP and promote competition in retail and wholesale fixed telecoms services in the Hull Area. Both of the regulator's draft statements have been submitted to the European Commission (EC) for comment, and Ofcom has said it expects to publish final statements next month.

Chile, Peru to End Roaming Charges; Chile Looks to Tax OTT Firms

Chile and Peru have signed an agreement to work towards the elimination of international roaming charges for travelers moving between the two countries by 2020, *Diario Financiero* reports. Pamela Gidi and Rafael Eduardo Munte, the heads of the two nations' telecoms watchdogs – Chile's Department of Telecommunications (Subsecretaria de Telecomunicaciones, Subtel) and Peru's Supervisory Agency for Private Investment in Telecommunications (Organismo Supervisor de Inversion Privada en Telecomunicaciones, Osipitel), respectively – signed a memorandum of understanding (MoU) expressing their intention to strengthen cooperation, with the intention of facilitation economic and social development in both countries.

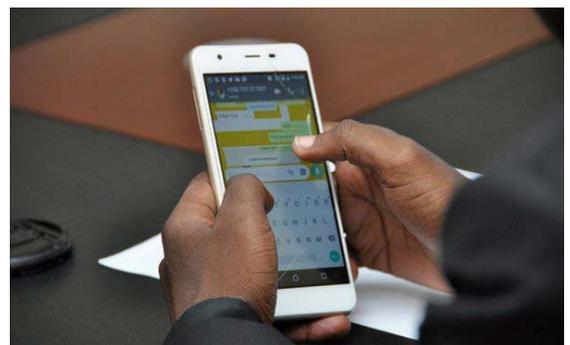
Undersecretary Gidi noted that the move would provide a direct benefit to some 300,000 users that travel between Chile and Peru each month, adding: 'The elimination of roaming [charges] contributes to the development of an ecosystem that, through communications, promotes economic activity, social and cultural integration and tourism [that] both countries need to boost and increase their digital economy.' As previously reported by *TeleGeography's CommsUpdate*, Subtel also entered talks with Argentina's authorities in May this year with the aim of eliminating roaming charges by the end of 2019. Meanwhile, Chilean lawmakers are considering introducing legislation to levy taxes on digital service providers that

have no physical presence in the country. Finance Minister Felipe Larraín was quoted as saying that online companies – such as over-the-top (OTT) firms – would have to pay VAT and tax on their earnings in Chile unless their country of origin has a free trade agreement with Chile. 'We are not trying to resist modernity ... but we can try and ensure that everyone competes on a level playing field,' the official explained. The move targets companies such as Uber, Netflix and Spotify but the minister acknowledged that it was a 'challenge' to find a way to tax such companies, with potential methods including an indirect transaction tax or a surtax charged to credit cards used for their services.

Zimbabwe Slashes Mobile Data Charges

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) is pushing through a cut in mobile data rates. From 1 July out-of-bundle mobile internet access will be charged at USD0.05 per MB, down from USD0.125 per MB currently. According to a report from *ITWeb Africa*, POTRAZ says the exercise

is aimed at updating the Long Run Incremental Costing (LRIC) model implemented in 2014 to factor in 'changing consumer behavior which is moving from being voice-centric to being data-centric', as well as technological advancements. Mobile data accounts for approximately 90% of internet access in Zimbabwe.



NCC Slashes Call Termination Rate By 20%

Telecom consumers in Nigeria may soon enjoy lower call tariffs across the networks of MTN, Globacom, Airtel and Etisalat, New Telegraph has learnt. This came as the industry regulator, Nigerian Communications Commission (NCC) slashed call termination rates between the operators by 20 per cent. The new Mobile Termination Rate (MTR) takes effect from July 1, 2018, according to a document posted on the regulator's website. Under the new rate regime, mobile operators are to charge N3.90 per minute for calls within the country terminating on their networks. This represents a 20 per cent drop compared with the 2013 rate currently in operation, which was fixed at N4.90 by the regulator. The new MTR applies the asymmetric interconnect rate method whereby new mobile operators



enjoy higher termination rates than the older operators as a result of the study that show that such operators expend higher cost of termination in their networks. Under the new rate, new entrant operators are to charge N4.90 for calls terminating on their network, compared with N6.40 in 2013. Interconnect rate is the price that telecommunications operators pay

each other for calls terminating on their networks. If a call originates from network A, for instance, and ends on network B, what A pays B for terminating the call is the interconnect rate. The rate is considered crucial in the telecommunications industry as it is one of the factors that determine what an operator charges the subscriber and no operator can charge less than the interconnect rate, no matter how cost-efficient the operator is. According to PricewaterhouseCoopers (PwC), the regulator's consultant, which conducted a study on cost-based interconnect rates both in the country and across the world, since NCC moved towards cost-based interconnection rates in 2009 and its review in 2013, the market has seen strong growth, prices have fallen and the asymmetry between on-net and off-net calls has decreased. PwC added that the Nigeria telecoms market has been growing since 2013 with a cumulative average growth rate (CAGR) of around 10 per cent in subscriber terms. Prior to the review of the 2013 rate, the Commission, in its usual consultative approach, held series of forums where it sought stakeholders' inputs to determine the new rate. During one of the fora, the operators had expressed concerns that increasing the MTR would lead to an increase in the retail tariffs in the short to medium term and negatively impact on the growth of the industry. Thus, the operators advised the regulator to either keep the MTR at the 2013 or decrease it so as to avoid exacerbating the cost differential already in place between large and small operators. Speaking on the new rate, Executive Vice

Chairman of NCC, Prof. Umar Danbatta, said the Commission carefully considered the information provided by stakeholders and has taken a view on parameters and regulatory measures in the light of that and other information – such as international experience, cost model results, the state of competition in the sector and the Nigeria macroeconomic environment. "The process of arriving at a new MTR has been conducted in a climate of openness and with a view to providing maximum transparency to all parties without compromising the confidentiality of commercially sensitive information. The Commission is confident that the results will make a significant contribution to the development of a thriving telecoms sector in Nigeria and hence benefit both consumers and the industry," he said. To arrive at the new rates, the EVC said the Commission also took cognizance of the concerns expressed by the operators on the impact that an increase in MTR may have on retail tariffs, especially in consideration of the current economic situation in the country and the pivotal role that access to telecommunications services plays in overall national socio-economic development. "These concerns as well as the steps being taken by the Commission to reduce operating costs in the industry have been factored into the determination. Other factors pertaining to the possible impact of an increase in MTR have been addressed. Nonetheless, the Commission will continue to review the situation and will implement the necessary regulatory safeguards from time to time," the EVC said.

Cell C Inks a 3G/4G Roaming agreement With MTN

Cell C has signed a roaming agreement with MTN, under which the latter will start providing both 3G and 4G services to Cell C mainly outside of the main metropolitan areas. Cell C said that the long term roaming agreement with MTN is a multibillion-rand deal, and the migration of

the majority of 3G traffic and all 4G traffic to MTN is expected to begin next month, while the bulk of the services will be transferred within two months. Cell C will roam on MTN's network in the country's smaller cities and rural areas where MTN currently has additional capacity. Both

MTN and Cell C will maintain their own networks in the larger cities. Cell C's roaming agreement with Vodacom, which will not be terminated, will be mainly for 2G traffic and 'limited' 3G traffic.

Australians Switching to Faster Internet Retail Plans on the NBN Access Network

According to a new report issued by NBN, the company delivering the technology and infrastructure across Australia, Australians are now switching to faster internet retail plans, revealing 70 per cent of new orders on the NBN access network are now based on wholesale speeds tiers of 50 Mbps (download) or higher, driven by NBN Co's new wholesale discount options. NBN told, since December 2017, orders for wholesale speed tiers of 50 Mbps or higher have almost tripled, increasing from 16 per cent to 44 per cent, with average bandwidth network congestion reduced from more than five hours to less than 30

minutes per service, per week compared to this time last year (excluding Sky Muster satellite). The new NBN report highlights the following findings:

- There are more than 6.7 million Australian homes and businesses who are able to connect to the NBN access network – compared with 5.0 million in May 2017.
- There are 3.9 million homes and businesses connected to a plan over the NBN access network – compared with 2.3 million in May 2017.
- There are 91 percent of homes and businesses who had their NBN

equipment installed right the first time – compared with 86 percent in May 2017.

- Average bandwidth congestion across the NBN access network (excluding NBN Sky Muster) is around 18 minutes per week per premises - compared with 5 hours and 42 minutes per week in May 2017.
- There are 90 percent of faults resolved with phone and internet providers within the agreed time frames – compared to 59 percent in May 2017.

"We're pleased to see our work with industry is showing early signs of paying off with our insights indicating that new customers who connect to the network are generally more satisfied with their broadband service than before we introduced our new wholesale discount options, said Brad Whitcomb, NBN Co's Chief Customer Officer. "Our latest progress report shows in the last year we have also improved our ability to work with internet providers to restore faults on the network within our agreed time frames by 30 percent. We know there is more work to be done and will continue to collaborate with the industry as the rollout gathers pace," he further added. NBN Company's monthly progress report is designed to give Australians a clearer understanding of the ways the company is taking action to improve customer experience.



CompCom to Announce Decision on Vodacom-Rain Roaming Deal Soon

South Africa's Competition Commission (CompCom) is in the final stages of its investigation into a roaming deal between South African mobile operator Vodacom and 4G LTE operator Rain (previously Multisource/WBS Group), with a decision expected to be announced soon, TechCentral writes. The investigation was initiated following complaints from rival operators Cell C and MTN to the Independent Communications Authority

South Africa (ICASA) and the CompCom that the deal gives Vodacom 'unlawful' access to Rain's 1800MHz and 2600MHz spectrum, even in areas where Vodacom has good coverage. Rain CEO Willem Roos said his company received a letter from the CompCom last week, in which the commission expressed the opinion that the agreement 'does not in any way constitute Vodacom controlling Rain, which is fundamentally the issue at the

heart of the whole story.' The executive added that all equipment deployed is owned by Rain: 'We control that network, and Vodacom also roams on that network, but it is a well thought through agreement and we have gone through all the legalities to ensure we comply with all regulations. We were quite happy that the Competition Commission agreed with us in that respect ... From our point of view, that issue has been resolved.'

Vodafone, Telekom Sign Wholesale Fiber Access Agreement

Vodafone Romania has this week signed a wholesale agreement with Telekom Romania, allowing Vodafone to launch fixed internet and TV services using Telekom's fiber-optic network in urban areas. Vodafone Romania CEO Murielle

Lorilloux said: 'This agreement is a step forward in implementing one of our main priorities, namely the extension to households and families. In addition to our existing business offer, our customers will benefit from convergence packages,

including mobile services, fixed broadband and television services.' Vodafone stated that both companies will continue to compete independently on the market and follow their respective development plans.

EU Countries Agree to Cap Price of Intra-EU Calls at EUR 0.19/Min, Give 5G Licenses for 20 years



European Union governments and MEPs have agreed to cap the price of calling from one EU country to another as part of the proposed European Electronic Communications Code. Under the terms of the provisional deal between the European Parliament and Council, calls from one

EU state to another will be capped at 19 eurocents per minute while text messages will cost no more than 6 eurocents each. Also, 5G licenses will be awarded for at least 20 years under the new law, down from the 25 originally proposed.

Subtel Consults Operators on Elimination of Argentina Roaming Fees

Chilean watchdog the Department of Telecommunications (Subsecretaria de Telecomunicaciones, Subtel) has held a meeting with senior officials of the nation's wireless providers regarding plans to eliminate roaming charges for users travelling between Chile and Argentina. Earlier this month Subtel and its Argentinian counterpart, the National Entity for Communications (Ente Nacional de Comunicaciones, ENACOM) set out proposals to eliminate international roaming charges between their two countries in 2019. Taking the first steps towards that target, Subtel met with

representatives of Movistar, Entel and Claro to hear their opinions on the matter and discuss the necessary steps that would need to be taken to achieve the target. Following the talks, the operators are to submit their thoughts on the subject, including their proposals for the process, by June 12. Subtel noted that the executives expressed a willingness to cooperate with the authorities, quoting Entel's general manager Antonio Buchi as saying: 'It was a very interesting meeting, with the aim of promoting something that can be very beneficial for consumers, such as the progressive elimination of

roaming between Chile and Argentina. We understand that there is a lot of willingness from the authorities to provide the necessary things. There are several steps to take, but we are very expectant and willing to work together.' Claro's legal and regulatory director, Cristian Salgado, meanwhile, said of the talks: 'We are certainly available to collaborate on those policies that enhance the service to the users, delivering our experience with "Roaming Without Borders" and participating actively in everything that is required of us.'

TECHNOLOGY NEWS

3GPP Clears 5G for Take-off with Standalone NR Specs

Industry group 3GPP finalized standalone 5G New Radio (NR) standards, a development tipped to spark the “final sprint to commercialization” of the technology. A cross-industry statement signed by leading operators, vendors and standards bodies hailed the new global specification, which they said opened-up independent deployment options for the technology that would enable the development of new business models for both mobile operators and vertical industries. The standalone 5G

NR specification will operate alongside the non-standalone version of 3GPP’s Release 15 standard unveiled in December 2017. Companies involved in the development include China Mobile, AT&T, BT, Telecom Italia, Deutsche Telekom, China Unicom, Vodafone, Verizon, Orange, Huawei, ZTE, Ericsson, Nokia, Samsung, Qualcomm and SoftBank. 3GPP RAN chairman Balazs Bertenyi said: “The freeze of standalone 5G NR radio specifications represents a major milestone in the quest of the wireless

industry towards realizing the holistic 5G vision. 5G NR standalone systems not only dramatically increase the mobile broadband speeds and capacity, but also open the door for new industries beyond telecommunications that are looking to revolutionize their ecosystem through 5G.” Almost as soon as the announcement was made Ericsson, China Mobile and Intel claimed the completion of the first 3GPP-compliant multi-vendor standalone 5G NR call at Ericsson’s lab in Beijing.

SFR Achieves 1.6Gbps Speeds in a 5G Trial

French telecoms operator SFR (Altice France) claims to be ‘the first operator in the country’ to conduct a 5G New Radio (NR) experiment in a real-life situation at its lab in Velizy. The company achieved peak bitrate of 1.6Gbps via a pre-commercial terminal using frequencies in the 3.5GHz band. The 5G active antenna uses Massive MIMO technology and is composed of

64 transmitters and 64 receivers. The radio infrastructure and the terminal were provided by Huawei. SFR is preparing to deploy 5G in a number of cities in 2019, before a commercial launch in 2020. Christophe Delaye, Executive Vice President of Networks and Information Systems at SFR, said: ‘With this new 5G test, SFR has taken a major step in preparing its network

for future 5G commercial deployments and confirms its position at the forefront of innovation. Thanks to 5G, SFR will benefit from the ultra-high speed and low latency that will transform the mobile experience of its subscribers and propose new ways of broadcasting our media content.’

Globe Telecom to Launch 5G in the Philippines by Q2 2019

Filipino telco Globe Telecom has announced that it will launch its commercial 5G networks in the second quarter of 2019, according to the company’s CEO, Ernest Cu. Cu said that the need for 5G in The Philippines is being driven by surging demand for online content, specifically HD TV streaming services. “People are watching more and more video. As video traffic goes up, we have to deliver higher speeds, not only to one screen but multiple screens in a household,” Cu told reporters from Filipino media outlet, The Inquirer. President Duterte has said that The Philippines’ telecoms sector desperately needs a third player in order to break up the stale duopoly of Globe and Smart Telecom, and inject some urgency into the sector. The proposed third telco will be 51 per cent Filipino owned joint venture with a foreign player, widely rumored to be China Telecom. Despite President Duterte’s high profile assurances to the media that launching the third telco is a matter of national urgency, China Telecom has remained tight lipped about any potential involvement. It appears that the mere threat of competition may have been enough to spur Globe into life, as it looks to win the race to be first for 5G in the country.

As it stands, Globe Telecom will be the first operator to roll out 5G across The Philippines. However, the country’s long awaited third telco, will surely look to challenge that, when it arrives on the scene later this year.



Vivo & Qualcomm Collaborate On Breakthrough 5G Antenna Technology

Vivo has detailed its collaboration with Qualcomm to address a critical 5G development milestone with their ground-breaking 5G antenna technology. This collaboration has resulted in the successful design and integration of new 5G mm-Wave (millimeter wave) antenna arrays into a Vivo commercial form factor as well as the measurement of system-level OTA (over-the-air) performance. Two mobile pioneers accelerate 5G development by integrating new 5G millimeter wave technologies with sub-6 GHz into a single commercial form factor. Vivo has collaborated with Qualcomm to address 5G Development with their 5G antenna technology. This milestone is significant as the arrival of 5G is creating major design challenges for smartphone manufacturers and network operators. To fully support the rollout of 5G services, even greater complexity and tougher requirements have been added to antenna designs and technologies. For end users, mm-Wave technology can attain higher data rates to enable the 5G peak data rate of around 10-20 times higher than that of existing 4G LTE technology, providing a better wireless experience especially with AR, VR, AI, and UHD (ultra-high definition) video applications. Dr. Huan-Chu Huang, Antenna Technical Director/ Principal Antenna Expert at Vivo said: "Through this landmark cooperation between Vivo and Qualcomm, Vivo's industry leadership and innovation on 5G mm-Wave antenna

design will contribute to creating optimal devices for end users," "After this successful completion of 5G mm-Wave antenna design and measurement based on a Vivo commercial form factor, consumers will soon see the next round of new device designs offering superior performance benefits and a taste of the next generation mobile experience." It is expected that both 5G sub-6 GHz and mm-Wave antenna technology will be deployed in every major market around the world, with some markets by 2019 and others to follow in 2020. Beyond this collaboration, according to Dr. Huan-Chu Huang, Vivo is also proactively applying for patents

and publishing international research papers on mm-Wave antenna designs to prepare for the arrival of 5G age. This latest innovation is another example of Vivo's dedication to break new ground and to lead in critical industry initiatives such as 5G development. From the early days of WiGig (Wireless Gigabit Alliance) to 5G mm-Wave today, Vivo has been focused on deep studies and solid works on mm-Wave antenna designs and technologies. This successful development of 5G mm-Wave antenna array technology for smartphones denotes a further progression of Vivo's accumulation of industry-leading technology breakthroughs and capabilities.



M1, Huawei Hold 5G Trials in Singapore

Singapore fixed and mobile operator M1 and Chinese equipment maker Huawei say they will continue joint tests of 5G technology for the remainder of this year, including working to complete an end-to-end live broadcast of virtual reality content over a next generation mobile network. The joint trial will use the 28GHz millimeter-wave (mmWave) spectrum band, the pair said, and will take place at the end of this month in M1's MiWorld building in Jurong, in what they claim will be the first live end-to-end 5G trial of Huawei's equipment in the city-state in the 28GHz band.

Furthermore, Huawei and M1 say they are planning to conduct a non-standalone 5G field trial by the end of 2018 using the 3.5GHz band, and then a standalone 3GPP standards-compliant trial using both 28GHz and 3.5GHz bands in mid-2019. Previously, the two companies claimed to have attained speeds of 35Gbps during a trial of 5G network technology in January 2017, at that time using mmWave spectrum in the 73GHz E-band. As another strand, M1 and Huawei say they have also been working together on improving 4G speeds since the start of 2016, reportedly attaining

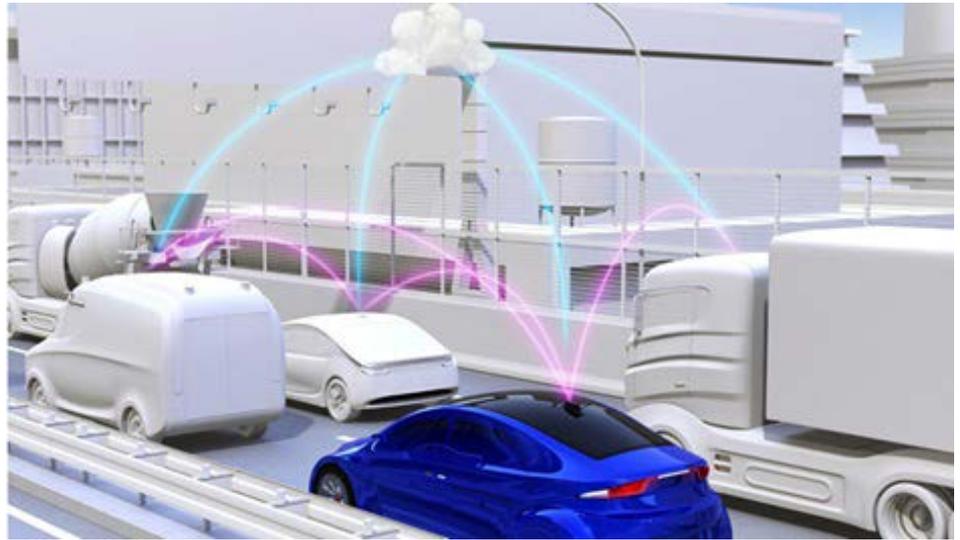
1Gbps/130Mbps download/upload speeds across M1's 4G mobile network using a CAT14 Huawei device for the trial. The 4G trial was also conducted within the confines of M1's LTE-A test facility, using a combination of four network technologies: 4x4 Multiple-Input Multiple-Output (MIMO); two-component carrier (2CC) uplink carrier aggregation; tri-band downlink carrier aggregation (3CC); and Higher Order Modulation 256 Quadrature Amplitude Modulation (256 QAM).

Huawei Launches Internet of Vehicles Platform

Huawei has launched a new Internet of Vehicles (IoV) platform designed to allow the development of intelligent and connected vehicles. The OceanConnect IoV Platform is designed to support hundreds of millions of connections and millions of simultaneous connections to support the evolution of intelligent transportation. The platform will help automotive manufacturers pursue digital transformation by introducing capabilities including cloud-based data analytics. Specifically, the platform analyzes vehicle big data such as vehicle conditions and driving behaviors to enable the intelligent distribution of content as well as service recommendations based on an analysis of driving behaviors and travel scenarios. The IoV platform will also be developed in tandem with vehicle-to-everything (V2X) connectivity to enable vehicles to communicate with each other and their environment, helping to pave the way for the development of intelligent and safe transport systems of the future. "The Internet of Vehicles (IoV) leads to in-depth

convergence of ICT and the automobile industry. The IoV empowers connected vehicles and intelligent services which enables faster digital transformation for the automobile industry," Huawei president of cloud core network products Ma Haixu said. "During this important transition, Huawei is dedicated to building a fully

connected, intelligent world that connects people, vehicles, roads, and other things. Huawei is proud to become a preferred strategic partner of global automobile manufacturers." The first vehicle developed on the OceanConnect platform, the DS 7 CROSSBACK, has been launched in China and Europe, the company said.



Macom Launches New Mixers, Power Detector, RF Switches

Macom Technology Solutions has launched a new portfolio of wideband double-balanced mixers, and introduced a power detector featuring wide-input bandwidth and dynamic range, as well as new broadband, high-speed Single Pole Double Throw (SPDT) switches. The wideband double-balanced mixers, covering the 8-43GHz and 18-46 GHz frequency ranges, deliver low conversion loss, high linearity and a wide Intermediate Frequency (IF) bandwidth, to meet the performance requirements for next-generation Test and Measurement (T&M), microwave radio and radar applications. The double-balanced circuit configuration of the new MAMX Series mixers provides robust port isolation, while internal 50-ohm matching simplifies the application. In addition, the class 1B (500V – 1000V) Electrostatic Discharge (ESD) rating ensures high

levels of ruggedness and reliability. Both the MAMX-011036 and MAMX-011054 devices are available in compact 3mm, 12 lead Quad-Flat No-Leads (QFN) plastic packaging as well as bare die formats for flexible integration. Macom's new MADT-011000 power detector is for microwave radios, T&M equipment and radar systems applications. Operating from 5-44GHz and supporting high dynamic range of 30 dB (-15 to +15 dBm), the MADT-011000 power detector features wide-input bandwidth and device performance to enable optimal power control. The single-ended, internally-matched MADT-011000 consumes 70 μ A from a 4.5V supply, while the matched detector and reference diodes provide temperature compensation in differential operation. The MADT-011000 is offered in both a 3mm 16-lead QFN package and in bare die format, with

ESD protection for reliability and ease of handling. Macom's newest entries in its high-performance Radio Frequency (RF) switch portfolio are optimized for use in SatCom, 5G wireless, T&M, EW and microwave radio applications, the new Gallium Arsenide (GaAs) based SPDT MASW Series switches provide broadband frequency coverage and high-speed switching capability. The MASW-011105 SPDT reflective switch covers the 17.7-31GHz frequency range, with low insertion loss of 1.6dB, high isolation at 30dB and switching speed of 12ns, offered in a lead-free 3mm, 14-lead QFN surface mount plastic package. The MASW-011107 SPDT non-reflective switch, offered in bare die format, covers the DC – 26.5GHz frequency range, with low insertion loss of 1.3dB and high isolation at 46dB when operating at 20GHz.

Ericsson: The US Will Be First For 5G and will Hit 50% Coverage by 2023

In its recently published Mobility Report, Ericsson claimed that 5G will claim 20 per cent of the global mobile market by 2023. The US could pip its rivals in Asia to the title of "first for 5G", as it looks to rollout its first network offerings later this year, according to kit manufacturing giant, Ericsson. Speaking exclusively to Total Telecom at the 5G World event in London this week, Peo Lehto, head of product line packet core and Frederik Engstromer, head of 5G marketing, said that they expected to see the US take the lead on 5G and then rapidly expand its coverage levels. "I think we have already had the public

announcements from operators in the US about them launching 5G there by the end of 2018 and we have no reason to doubt that. We are also seeing some aggressive plans happening in Eastern Asia," said Lehto. While the US is likely to rollout the first 5G networks, it will also boast some impressive stats for total coverage. "We will start to see more happening in 2019 but then of course you have to ask when will we see the large uptake? As we said in our Mobility Report, we are going to see 1 billion 5G subscribers across the world by 2023. Also by that time we would expect to see roughly half of mobile users in North

America being 5G enabled. Despite the US' impressive projections for 5G coverage, the vast majority of 5G users by 2023 will be based in Asia, as Engstromer explains. "It's worth considering that by 2023, we predict that 20 per cent of global mobile traffic will be over 5G networks. We are expecting an eight-fold increase in data consumption between now and 2023. Ultimately by 2023, most of the total volume of 5G users will be in Asia, just purely as a result of the population sizes of those Asian nations," he added.

A1 and Nokia 5G Trial Achieves Speeds of 1.4Gbps

A1 Telekom Austria has carried out a live 5G trial together with Finnish technology partner Nokia. The trial, which achieved data transfer speeds of more than 1.4Gbps, used a complete 5G network consisting of a 5G radio cell and a 5G core. The base station used for the demonstration is based on already commercially available hardware connected to MIMO active antennas. 'We are pleased to be working with A1 to make an important contribution to the rapid rollout of 5G in Austria. Together with A1, we presented 5G in Austria in a real-world setting for the first time,' commented Marc Rouanne, Head of Mobile Communications at Nokia. Peter Wukowits, CEO of Nokia in Austria, added: 'We were able to gain important experience with frequencies that have not been used in mobile radio to date, which will play an important role for 5G.'



EE to Launch 5G Trial Network in October 2018

EE will switch on the UK's first live 5G trial network in London, this October, according to the company's CEO, Marc Allera. The move will mark the first time that domestic and business customers in the UK will be able to access the power of 5G. "This live trial is a big step forward in making the benefits of 5G a reality for our customers, and in making sure that the UK is at the front of the pack for 5G technology. We're focusing our resource and experience across EE and BT to ensure that we continue to lead the UK market with a mobile network that keeps giving our customers the best speeds and the best coverage. 5G

is a fundamental part of our work to build a converged, smart network that keeps our customers connected to the things that matter most," said Marc Allera, CEO of BT's Consumer business. BT has committed to launching a fully commercialized 5G network in the UK, before the end of Q4 2019 – significantly sooner than many of its European neighbors. The early rollout of 5G is a key step in the UK government's pledge to kick start the evolution of the country's digital economy. "We want the UK to be a global leader in 5G as part of our ambition to create a world-leading digital economy that works for everyone. Together

with the Government's own test beds and trials program, industry initiatives like this will help deliver the benefits of this new revolutionary technology to businesses and consumers across the UK," said the UK's minister for digital, Margot James. As part of the trial, EE will switch on 10 sites around London's Tech City. As part of the launch, 5 small businesses and 5 homes will win the chance to get connected to the prototype 5G network. The live trials will seek to showcase the high speed and ultra-low latency of the mobile networks of the future.

Huawei Releases World's First 3GPP R14-Based Commercial NB-IoT Solution

Huawei recently released the world's first 3GPP R14-based commercial NB-IoT solution in eRAN13.1. This latest NB-IoT solution can provide much better performance than its predecessors. It effectively increases the data rates by a factor of seven, offers double cell capacity and coverage, and introduces new improvements in location services. With this solution, we can expect to witness a revolutionary development from GPRS-based IoT into NB-IoT. NB-IoT boasts a number of favorable features, such as large capacity, low power consumption, and deep coverage. Since the NB-IoT standards were frozen, NB-IoT has quickly prevailed in Low Power Wide Area (LPWA) markets. As of May 2018, 45 commercial NB-IoT networks had been globally deployed and more than 500,000 NB-IoT base stations had been established. Currently, a total of 40 use cases (such as wireless meter reading, connected cows, smart manhole covers, wireless smoke detectors, and smart door locks) have benefited from batch deployment. More than 10 million NB-IoT connections have been widely used in urban management and people's lives. NB-IoT has been recognized by 3GPP and GSMA as a 5G-oriented IoT technology. It will experience long-term evolution in LPWA markets. However, the first-generation NB-IoT solution in compliance with 3GPP R13 cannot meet

the high requirements of a number of IoT applications in fast-growing IoT markets. For example, asset or pet tracking requires a positioning function with low power consumption to reduce equipment costs and charging frequency. In addition, GPRS provides low spectral efficiency. Operators are in urgent need of a new IoT technology that can support high-data-rate communications to accelerate GSM spectrum refarming. NB-IoT has been further developed to deliver enhanced features in 3GPP R14. Huawei's eRAN13.1 provides the world's first 3GPP R14-based commercial NB-IoT solution, which has the following highlights:

x7 data rates: The uplink peak rate and downlink single-user peak rate can reach 157 kbit/s and 102 kbit/s, respectively. The single-user data rates enable NB-IoT applications to serve as the perfect replacement for the GPRS-based examples.

x2 cell capacity: The maximum number of users in a single cell can reach over 80,000, almost doubling the cell capacity of the previous release. This will effectively help towards providing large capacity to promote the realization of a fully connected world.

x2 cell coverage: Huawei proprietary uplink channel estimation enhancement

technologies improve the deep coverage capability of cells and reduce network construction costs.

GPS-free location services: NB-IoT terminals can deliver a positioning accuracy of 50 meters without the integration of GPS modules. Such terminals boast a power consumption and positioning delay that is only half of that provided by a GPS-based solution. GPS-free location services are ideally suited for applications such as asset tracking, logistics, and pet tracking. Chen Chuanfei, Vice President of Huawei LTE Product Line, said: "Global operators have reached a consensus that networks providing a full range of services will be developed over the next upcoming years. IoT will become the best practice for operators pursuing the development of vertical industries. The newly released 3GPP R14-based commercial NB-IoT solution can improve the performance of NB-IoT networks in data rates, cell capacity and cell coverage, expand the potential scope of application for NB-IoT through location services. In 2018, Huawei promises to improve network performance, build ecosystems, and explore businesses with the help of NB-IoT open labs and local industry alliances. Together with operators and partners, we will unveil a glorious golden era of large-scale commercial deployment of IoT."

Nordic Nations Unite to Fast Track 5G

The Prime Ministers of the 5 Nordic nations have signed a letter of cooperation, pledging their commitment to leading Europe on 5G. The Prime Ministers of Denmark, Finland, Iceland, Norway and Sweden have signed a letter of cooperation calling on the Nordic nations to lead the world in the rollout of fifth generation (5G) mobile services. The Ministers pledged to priorities investment in 5G across the region, as well as encouraging closer collaboration between the Nordic nations. "The deployment of 5G

will require substantial investments as well as the appropriate regulatory framework. At political level, we commit to creating the conditions in the public sector for digitalization and 5G to flourish. As Nordic prime ministers, we have agreed to the common vision of being the first and most integrated 5G region in the world. We want to create a common Nordic 5G space," the letter said. Speaking at the signing ceremony, the prime ministers were united in their desire to make the region first

for 5G. "5G will revolutionize our daily lives," says Stefan Löfven, the Swedish Prime Minister and host for the meeting. The Ministers unanimously stressed the importance of a broad approach, working fast and working together. "Nordic co-operation will be absolutely crucial to reaching our goals for the development and roll out of 5G," says the Prime Minister of Iceland, Katrín Jakobsdóttir.

Qualcomm Designed New Snapdragon Chip for AR & VR Headsets

Qualcomm has revealed the world's first dedicated Extended Reality (XR) platform XR1. Qualcomm Designed New Snapdragon Chip for AR & VR Headsets Alex Katouzian, Senior Vice President and General Manager, Mobile Business Unit, Qualcomm Technologies, said: As technology evolves and consumer demand grows, we envision XR devices playing a wider variety of roles in consumers and workers daily lives. By integrating powerful visuals, high fidelity audio, and rich interactive experiences, XR1 will help create a new era of high quality, mainstream XR devices for consumers. The new chip contain the custom Kryo CPU and the Adreno GPU together in a cluster. Furthermore, it has an A.I engine for better built in processors of commands rather than relying on the cloud. Furthermore,

Snapdragon XR1 will enable 4K video playback at 60 frames per seconds. With visual inertial odometer, anyone can interact with objects in AR environment.

Additionally, the chip will accompanied with snapdragon XR software development kit for development of associated content.



NCC Grants APT Permission to Begin 5G Network Trials

Taiwan's Asia Pacific Telecom (APT) has announced that it has received approval from the National Communications Commission (NCC) to build a trial 5G network as it looks to begin preparing for a commercial launch in 2020. According to the Taipei Times the development makes

the operator the first to obtain permission from the regulator to conduct a trial of 5G technology. APT expects to fully deploy its trial infrastructure in less than six months, likely covering Taipei's Neihu District, New Taipei City's Tucheng District and the Hsinchu campus of National Chiao Tung

University. Although the official standards for 5G have yet to be ratified by the International Telecommunication Union (ITU), APT has said that the trial network would test the technology so it is ready for commercial launch once the standards are confirmed.

NEC, DOCOMO Achieve 'World First' in 5G Throughput Trial

NTT DOCOMO of Japan and vendor partner NEC have announced what they claim is the world's first successful use of 5.5Gbps throughput in eight mobile stations using beamforming with inter-base station coordination between two base stations in the same area, using the 4.5GHz band for 5G communications. In the trial, the pair confirmed they utilized 'beamforming

coordinated between two base stations consisting of signal processors and massive-element antennas through digital signal processing and conducted a simultaneous communication experiment with eight users (i.e. mobile stations) in Kawasaki City'. Their press release goes on to note that the tests demonstrated 5.5Gbps throughput by using the eight

mobile stations and beamforming through small base stations that connect antennas with a total of 128 elements with signal processing via optical fiber. 'The experiment verified beamforming with inter-base station coordination where base stations located in two different places coordinated to control the beam.'

REGULATORY NEWS

Digital Transformation Spending to Pass \$1 Trillion in 2018 Smart Manufacturing will Lead Investment in DX Technologies and Services, says IDC

Worldwide spending on digital transformation technologies will pass the \$1 trillion mark in 2018, IDC predicts. The analyst company says that spending technologies and services that enable the digital transformation (DX) of business practices, products, and organizations is forecast to be more than \$1.1 trillion in 2018, an increase of 16.8% over the \$958 billion spent in 2017. DX spending will be led by the discrete and process manufacturing industries, which will not only spend the most on DX solutions but also set the agenda for many DX priorities, programs, and use cases. In the newly expanded Worldwide Semiannual Digital Transformation Spending Guide, IDC examines current and future spending levels for more than 130 DX use cases across 19 industries in eight geographic regions. The results provide new insights into where DX funding is being spent as well as what DX priorities are being pursued. Discrete manufacturing and process manufacturing are expected to spend more than \$333 billion combined on DX solutions in 2018. This represents nearly 30% of all DX spending worldwide this year. From a technology perspective, the largest categories of spending will be applications, connectivity services, and IT services as manufacturers build out their digital platforms to compete in the digital economy. The main objective and top spending priority of DX in both industries is smart manufacturing, which

includes programs that focus on material optimization, smart asset management, and autonomic operations. IDC expects the two industries to invest more than \$115 billion in smart manufacturing initiatives this year. Both industries will also invest heavily in innovation acceleration (\$33 billion) and digital supply chain optimization (\$28 billion). Driven in part by investments from the manufacturing industries, smart manufacturing (\$161 billion) and digital supply chain optimization (\$101 billion) are the DX strategic priorities that will see the most spending in 2018. Other strategic priorities that will receive significant funding this year include digital grid, omni-experience engagement, omnichannel commerce, and innovation acceleration. The strategic priorities that are forecast to see the fastest spending growth over the 2016-2021 forecast period are omni-experience engagement (38.1% compound annual growth rate (CAGR)), financial and clinical risk management (31.8% CAGR), and smart construction (25.4% CAGR). "Some of the strategic priority areas with lower levels of spending this year include building cognitive capabilities, data-driven services and benefits, operationalizing data and information, and digital trust and stewardship," said Craig Simpson, research manager of IDC's Customer Insights & Analysis Group. "This suggests that many organizations are still in the early stages of their DX journey, internally focused on improving existing processes and efficiency. As they move into the later stages of development, we expect to see these priorities, and spending, shift toward the use of digital information to further improve operations and to create new products and services." To achieve its DX strategic priorities, every business will develop programs that represent a long-term plan of action toward these goals, IDC says. The DX programs that will

receive the most funding in 2018 are digital supply chain and logistics automation (\$93 billion) and smart asset management (\$91 billion), followed by predictive grid and manufacturing operations (each more than \$40 billion). The programs that IDC expects will see the most spending growth over the five-year forecast are construction operations (38.4% CAGR), connected automated vehicles (37.6% CAGR), and clinical outcomes management (30.7% CAGR). IDC also said that each strategic priority includes a number of programs which are then comprised of use cases. These use cases are discretely funded efforts that support a program objective, and the overall strategic goals of an organization. Use cases can be thought of as specific projects that employ line-of-business and IT resources, including hardware, software, and IT services. The use cases that will receive the most funding this year include freight management (\$56 billion), robotic manufacturing (\$43 billion), asset instrumentation (\$43 billion), and autonomic operations (\$35 billion). The use cases that will see the fastest spending growth over the forecast period include robotic construction (38.4% CAGR), autonomous vehicles, mining (37.6% CAGR), and robotic process automation-based claims processing (35.5% CAGR) within the insurance industry. "While the influence of the manufacturing industries is apparent in the program and use case spending, it's clear that other industries, such as retail and construction, will also be spending aggressively to meet their own DX objectives," said Eileen Smith, Program Director, Customer Insights & Analysis. "In the construction industry, DX spending is expected to grow at a compound annual rate of 31.4% while retail, the third largest industry overall, is forecast to grow its DX spending at a faster pace (20.2% CAGR) than overall DX spending (18.1% CAGR)."



EU Parliament Committee Approves Copyright Reforms for Internet Platforms

The EU's proposed copyright reform has passed a key hurdle with the European Parliament's Legal Affairs Committee approving the draft legislation. The committee also agreed to open negotiations with the European Commission and Council of the EU on a final version of the new law that aims to update copyright law for the growing consumption of online media. Key changes will include a right for publishers to claim compensation for snippets of their news and content being published by aggregators such as Google. In addition, online platforms such as YouTube will be subject to increased requirements for screening and blocking illegally uploaded content protected by copyright. The text approved by the committee limits what elements of a news article news aggregators can share without needing to pay the rights holder a license fee. The position earlier approved by the Council gave more room to EU member states to determine how much of a news article requires payment. The parliament's position also requires sharing platforms either to pay fees to right holders whose content is uploaded on these platforms or to ensure that an upload containing copyrighted material is blocked if the platform will pay no fee. The committee attempted to curb fears the increased screening of uploaded content could result in censorship, saying

"the measures put in place by upload platforms to control that uploads do not breach copyright, must also be designed in such a way so as not to catch 'non-infringing works'". These platforms will moreover be required to establish easy redress systems through which a person can request the reinstatement of an upload if s/he considers that it was wrongly taken down due to an alleged breach of copyright. The committee text also specifies that uploading to online encyclopaedias in a non-commercial way, such as Wikipedia, or open source software platforms, such as GitHub, will automatically be excluded from the requirement to comply with copyright rules. The committee also strengthens the negotiating rights of authors and performers, enabling them to claim additional remuneration from the party exploiting their rights when the remuneration originally agreed is "disproportionately" low compared to the benefits derived from the exploitation of the work. This should also include remuneration from any indirect revenues generated from exploiting the copyrighted signal. In addition, the committee grants authors and performers a right to revoke or terminate the exclusivity of an exploitation license for their work if the party holding the rights is not exercising this right. The decision to start tripartite negotiations will be announced at the opening of the Parliament's July plenary session. Until then, MEPs can challenge this decision and request that a vote by the full Parliament be taken on whether to launch negotiations. Industry groups such as EuroISPA and CCIA urged MEPs to oppose the committee's decision and call for a full vote. They have helped lead a campaign against the legislation, drawing in public emails, statements from academics and other internet rights groups. EuroISPA said in a statement that the new content filter requirements "would damage the competitiveness of the vast majority of the Internet ecosystem, mostly comprised of small and medium size providers". The requirement for internet platforms to install "unaffordable upload filters" to assess the legality of content "will lead to over-blocking and censorship of lawful content, thus endangering European users' fundamental freedoms", the industry group said.



Cogeco Gains More 2500MHz Spectrum via Purchase from Kian

Cogeco Communications has acquired ten spectrum licenses in the 2500MHz paired band from Kian Telecom, for CAD8 million (USD6 million). The licenses cover a population of over 1.5 million in non-metropolitan areas of Ontario. The transfer was approved by Innovation, Science & Economic Development (ISED) Canada on June 21. Luc Noiseux, CTO at Cogeco, said:

'This acquisition marks another step in a disciplined approach to providing wireless services to our customers. These holdings offer a nice addition to those recently won in our footprint from ISED's residual [spectrum] auction. We are also pleased to have Amir Bigloo, President of Kian Telecom, joining us as advisor to the office of the CTO.' Mr. Bigloo added: 'I look forward

to assisting Cogeco Communications in bringing more competition to Canada's mobile wireless market.' Last month in ISED's auction for 'residual spectrum, Cogeco paid CAD24.3 million for 23 licenses comprising 2300MHz and 2500MHz spectrum, covering 5.415 million people, primarily in its Ontario and Quebec cable network footprint.

FCC Proposes to Free Up 3.7GHz-4.2GHz Band for 5G

Federal Communications Commission (FCC) Chairman Ajit Pai has confirmed that a plan to utilize 500MHz of spectrum in the 3.7GHz-4.2GHz band for 5G purposes will be included in the watchdog's open meeting agenda in July. Speaking at the Wireless Infrastructure Association Connectivity

Expo in Charlotte, North Carolina, Pai commented: 'I intend to put up for a vote a proposal to make more intensive use of that 500MHz of spectrum, including seeking additional input on making it available for commercial terrestrial use.' According to Fierce Wireless, the

3.7GHz-4.2GHz C-band is currently seen as 'a critical link in video distribution for national and regional cable programmers'. It is understood that the band is used for downlink from satellites, while the 6GHz band is used for uplink to satellites.

DoT Extends RoW Rules to Towercos

The Department of Telecommunication (DoT) has issued a notice clarifying that tower companies are covered by the Right of Way (RoW) rules introduced in November 2016. The rules simplified the process for operators to secure permissions to install infrastructure or purchase land from state governments by establishing a nationwide, standardized framework of procedures for granting approvals and settling disputes within a specific time-frame. The framework initially excluded dedicated infrastructure providers, but a

notification from the DoT this week stated that: 'it is clarified that under clause 2(d) of the [Telegraph Right of Way Rules, 2016], "licensee" includes Infrastructure Provider Category 1 (IP-1)'. Responding to the decision, the Economic Times quotes the director general of the Tower and Infrastructure Providers Association (TAIPA), Tilak Raj Dua, as saying: 'The clarification was long pending and much needed and timely, which will expedite the provisioning of telecom infrastructure in every nook and corner of the nation.' In a

related development, the TAIPA official told the Business Standard that India needed approximately 100,000 new mobile towers in the near future to accommodate the growing demand for data. At present, India is home to around 461,000 mobile towers, supporting 1.8 million base transceiver stations (BTS) and serving more than a billion consumers, Mr. Dua added, noting that around 90% of India's towers are shared between service providers.

Legal Challenge Could Delay Italian 5G Sale

The Italian broadcaster Mediaset and media group Cairo Communication have filed a pre-emptive appeal against the terms of the Italian government's planned 5G spectrum auction. According to a report from Reuters which cites an unnamed legal source, some of the frequencies scheduled

to be sold are currently utilised by Mediaset and Cairo as part of their broadcasting operations and will have to be freed up prior to being transferred to telecoms operators. The 5G spectrum sale, which is planned for later this year, is expected to rake in at least EUR2.5 billion (USD2.9

billion) for the government. Legal action by the two broadcasters could cause a delay to the auction and have knock-on effects for the rollout and launch of 5G networks. Spectrum for 5G is being made available in the 694MHz-790MHz, 3.6GHz-3.8GHz and 26.5GHz-27.5GHz bands.

NBTC May Reschedule 1800MHz Tender

The National Broadcasting and Telecommunications Commission (NBTC) is planning to reschedule the auction for spectrum in the 850MHz and 1800MHz bands before the expiry of DTAC's concessions in September this year, thus giving the operator a chance to avoid the shutdown of the 2G networks, The

Bangkok Post writes. The move comes after the regulator cancelled the tender earlier this week as none of the country's three largest mobile network operators (MNOs) submitted bid documents. True Move, Thailand's second largest wireless operator by subscribers, confirmed in May that it would not participate in the auction,

claiming that it had sufficient bandwidth in a number of spectrum bands to provide its services. Total Access Communication (DTAC) and AIS followed suit with their respective announcements on 16 June. The NBTC board is expected to discuss the rescheduling of the tender on 27 June.

GSMA Maintains Stance on GDPR

The GSMA renewed its call for a level playing field for mobile operators amid implementation of the European Commission's General Data Protection Regulation (GDPR). In a keynote here, GSMA director general Mats Granryd (pictured) explained GDPR adds another layer of regulation to the list of requirements operators must meet, noting operators in Europe must continue to comply with the requirements of the e-privacy directive. "Consumers should rightfully celebrate the new protections the GDPR brings them," Granryd said, explaining the GSMA is not against the latest regulation. GDPR "strikes a balance between enabling industry to flourish and protecting the rights of individuals," he noted, reiterating a stance outlined by the association last week. However, it also risks hindering innovation from the mobile industry by failing to resolve "the current regulatory imbalance between the telecommunications industry and other players in the digital world." "Data privacy regulation is essential, but we must also ensure consistency and fair competition," Granryd argued. There is much to be gained for consumers by ensuring such balance. The GSMA head said greater compatibility between various data privacy laws will speed the shift to a "world where countries allow personal data to flow relatively freely between them." Easing the flow of information will enable consumers to benefit from the full potential offered by next-generation technologies including 5G, the IoT, artificial intelligence and big data, he said. Granryd painted a picture of the real-world benefits such technologies could ultimately offer, enabling holographic visits to relatives, or putting people at the centre of expeditions and key events around the world. Big data can be used to address issues including "epidemics or environmental pollution", while industry stands to benefit from real-time access to data on "practically all aspects of an operation or a manufacturing flow." However, "big data can

also be used in negative ways, such as interfering in democratic processes," Granryd warned, adding the recent high profile Cambridge Analytica incident highlights the need to protect data at a global, rather than just regional, level. The director general also unveiled the association's latest contribution to global security efforts. Named Warning, Advice and Reporting Point (WARP), the scheme "will be the official point of coordination for the mobile industry to provide critical support around security challenges", based on the input of operators, vendors and security experts. "WARP collects and disseminates important information and advice on security incidents within the mobile community," enabling it to take whatever action is necessary. "The mobile industry has built its reputation on the foundation of trust that we keep communications and personal data secure and confidential," Granryd explained.



Digital Takes Off in Bangladesh

Adspend is moving towards digital in Bangladesh and e-commerce is growing fast as half of the country's young population use the internet and most of them do so via mobile. According to Campaign Asia-Pacific, the share of marketing budgets going into digital, social and search has leapt from 1% to 10% over the past three years. "Initially it was foraging into display only," explained Rabeth Khan, CEO of MediaAxis. "Then it was page likes and engagements on Facebook, and that has evolved into in-stream ads." The shift is being driven by consumer behavior, with 83m people now using the internet – 93% via mobile devices – and 70% of the visitors to leading platforms like Facebook, Google and YouTube falling into the 16-30

year-old age group. Agencies, publishers and broadcasters are responding accordingly. During last year's Eid celebrations, for example, publishers and broadcasters made a significant amount of content available online and found that consumption rivalled traditional channels, Khan said. This year's Eid has signaled a surge in e-commerce, as the occasion of Eid-ul-Fitr co-coincides with the start of the FIFA World Cup, The Daily Star reported, with the usual few thousand orders daily mushrooming into tens of thousands. "Customers from rural areas are also purchasing huge volumes of products, which is a new phenomenon for this kind of business," said Razib Ahmed, former president of the e-Commerce Association

of Bangladesh (e-CAB). Improved delivery networks and incentives offered by banks and mobile financial service providers are also helping to attract more consumers to e-commerce, which is reported to be growing at 40% to 50% a year. Khan added that over the next seven years, some 40m people are expected to move up the earnings ladder and qualify as middle class. But while consumers are taking to the digital life, the advertising industry lacks sufficient talent to keep pace, he suggested. "The digital agency ecosystem in Dhaka is still quite low in terms of knowledge," said Khan. "Everybody has the basic knowledge, but it's time to embrace the advancements. Whoever does that faster will go ahead."

Ofcom Prices Complete UK Coverage at £6B



The head of UK regulator Ofcom argued the high cost of expanding mobile coverage to the entire land mass of the country means the task would be best handled by a single operator. Speaking at Connected Britain event in London today (19 June), Ofcom CEO Sharon White (pictured) said technical recommendations delivered by the regulator to the government revealed the cost of expanding mobile coverage to current “not spots” stood at around \$6 billion. “As we get beyond 92 per cent coverage and potentially towards 100 per cent, extending coverage means building mobile masts in areas where there are no mobile signals,” she said. “Our view is some form of cross-subsidy would be needed to achieve this. To keep costs down, we also believe there is a strong case to contracting a single operator to build and operate masts where there currently are none.” During the session she added to reach the “ambitious goal” of comprehensive coverage would also require further easing of planning regulations. In addition to providing advice to the government on achieving complete coverage for the UK’s land mass, White added the regulator aimed to improve the percentage of the UK able to get “comprehensive” mobile coverage from every mobile operator. She added a quarter of the UK’s mass still lacked this ability, including across much of the country’s road network. In a thinly disguised barb at Vodafone Group’s announcement it was going to supply a 4G network on the Lunar surface, she added: “I don’t want to discourage some of the current plans to get a 4G signal on the moon, but at the same time I was very conscious one can’t get a decent 4G signal on the A70”, a road running across central Scotland.

Ofcom: UK Has Golden Opportunity to Provide Nationwide Mobile Coverage

The UK’s regulatory body, Ofcom will hold an auction for mobile spectrum in the 700MHz range next year, providing a genuine opportunity to radically boost mobile coverage in the UK, according to the regulator’s chief executive, Sharon White. Speaking at the Connected Britain event on Tuesday, White said that by the time the spectrum goes on sale, Ofcom estimates that there will still be around 200,000 homes and businesses in the UK that cannot receive a decent broadband signal. “We are about to auction spectrum in the 700MHz band next year, which will be ideal for covering wide areas, and we plan to place obligations on winning bidders,”

White said. Currently one quarter of the UK lacks comprehensive coverage (i.e. the ability to receive a signal from all four UK mobile network operators simultaneously), including the vast majority of the UK’s roads. “I don’t want to discourage some of the current plans that are in place to get a 4G signal on the moon, but at the same time we have to be cognizant that you currently can’t get one on the A70,” White joked. Ofcom plans to place strict obligations on operators who win spectrum at next year’s auction, as White explains: As a regulator, we must set some strong rules to boost signal as we make new airwaves available for mobile users. “We have

consulted on plans for one successful bidder to introduce good, indoor reception for most of these [200,000] premises. “To improve reception for people on the move, we have plans that will require at least two operators to reach 92 per cent coverage of the land mass of the UK with a signal good enough to make calls, watch videos and browse the internet. “We also have plans in place to bring better connectivity to the home nations in the UK – where coverage is currently poor. We estimate that coverage would rise by 12 per cent in Scotland and 8 per cent in Wales,” she concluded.

Ethiopian PM Outlines Plans to Split Ethio Telecom in Two, Sell Shares in Both Companies

Ethiopia's government is planning to break state-run monopoly provider Ethio Telecom in two and then sell a 30%-40% stake in both of the companies created by this move, with a view to spurring competition in the local telecoms sector. According to Reuters, the plan was outlined by Prime Minister Abiy Ahmed yesterday (18 June) during a question and answer session in parliament, where he noted: 'There will be two telecom corporations and shares will be sold in both ... Somalia, with a population of twelve million, has four telecommunications firms. Ethiopia – with 100 million people – has one. There needs to be competition in the

country.' Further, the PM also specified that he wants the holdings offered in the two telcos to be sold to high-profile companies, adding: 'The stakes in Ethio Telecom will be allocated to firms that are ranked top ten in the industry globally.' As previously reported by CommsUpdate, earlier this month Ethiopia's ruling EPRDF coalition confirmed its intention to open Ethio Telecom to investors, and the news saw two of Africa's more notable telecoms groups express an interest in taking up a position in Ethiopia. South Africa's MTN Group said it was excited by the potential opening up of the Ethiopian market, noting that it would be 'a natural fit for [the

company's] existing pan African footprint,' and adding: 'Ethiopia presents many exciting telecommunication opportunities and we look forward to further discussions with that nation's authorities on potential partnerships and opportunities.' Meanwhile, another South Africa-based company, Vodacom Group – itself majority owned by the UK's Vodafone Group – said of the development: 'Vodacom has said on many occasions that Ethiopia is an attractive market so it follows that there would be interest. Naturally this is dependent on what might become available and if it fits within our investment parameters.'

Nigeria to Hold Public inquiry on MTN's Acquisition of Visafone Spectrum

The Nigerian Communications Commission (NCC) has announced plans to hold a public inquiry on an application by Visafone Communications to transfer its licence and resources, including spectrum in the 800MHz band, to MTN Nigeria. Interested stakeholders have been invited to make written submissions on the matter and participate in the public inquiry,

which will be held on June 25. According to TeleGeography's GlobalComms Database, in December 2015 MTN completed the acquisition of Visafone Communications for ZAR3.43 billion (USD219 million), with a view to utilizing Visafone's 2x10MHz of 800MHz spectrum to roll out 4G LTE services. Later in 2016, however, the NCC questioned whether the 800MHz

frequencies should be included in MTN's takeover of Visafone, as it would increase the market leader's dominance. In October 2016 the NCC approved a request by Visafone to transfer 100% of its shares and subscriber base to MTN, although an application to transfer its spectrum license to the market leader remains pending.

Serbia Aims for 5G Launch in 2018

5G technology should be launched in Serbia by the end of the year, Minister of Innovation and Technology Nenad Popovic said in a cabinet statement following a meeting with Swedish vendor Ericsson, eKapija reports. 'The fourth generation of mobile networks has made significant changes in telecommunications and 5G technology is transforming the entire global society. The fifth generation will have much greater capacity and will be able to provide larger amounts of data for much less time than existing networks,' the official was quoted as saying. In terms of progress towards 5G, Serbia adopted its Development Strategy for New Generation Networks in April this year – which aims to promote the development of cloud computing, IoT and 5G technologies in the country – whilst Telekom Srbija (MTS) conducted a demonstration of 5G in partnership with Ericsson the same month. The regulator has not yet moved to make available

the spectrum resources required for 5G, however, casting doubt on the possibility of achieving the minister's goal of a 2018 commercial launch.



India to Release Spectrum Soon, or Risk Falling Behind in the Race for 5G

India's Department of Telecoms must release spectrum soon, to ensure that the country does not fall behind in 5G research and development, according to a new report. Commissioned by the Indian government, the report suggests that spectrum in the 700MHz, 3.5GHz, 24GHz and 28GHz range should be made available for R&D as a matter of national priority. "In the past, India's spectrum release has always been small, especially compared

to the US. For 5G, our spectrum release will be more than many countries which will bring long-term benefits. Making available spectrum early will also enable the growth of manufacturing capability here," said A. Paulraj, chairman of the steering committee on 5G deployment. India is currently undergoing a smartphone renaissance, brought about by the provision of ultra-low-cost data tariffs from all of the country's major network operators. India's

big 3 telcos have recently announced plans to recruit over 2,000 content specialists to help cultivate data consumption among Indian users. As the country looks to roll out 5G by 2020, its network operators will be keen to devise strategies to adequately monetize the deluge of data that will flow across their networks once the 5G floodgates have been open.

The Iraqi Cabinet Approves the Launch of the Fourth Licence for Mobile Networks

On Tuesday 5th June 2018, the Council of Ministers approved the launch of the fourth licence for mobile networks. The council decided to form a committee headed by the Prime Minister, the Minister of Finance, Dr. Haidar Al-Abadi, the membership of the Communications and Media Commission (CMC), the Ministry of Communications, the Ministry of Higher Education and the Financial Control Bureau. The committee will manage the public auction process to

ensure the transparency of the procedures and the selection of the most suitable applicant. The Communications and Media Commission (CMC), has already embarked on strategic steps to implement this crucial task. It has contracted with one of the four major international companies (PWC) to prepare for the bidding process, including developing a study of the Iraqi market. This will consider how to improve services, increase the penetration rate

and increase competition. This would ultimately benefit the consumer in terms of quality of communications and prices by creating new investment opportunities and increasing employment opportunities. PwC will also support the Communications and Media Commission (CMC) with further pre-qualification and tendering activities to support the new licence process

AT&T - Time Warner Deal Approved

A federal judge has approved the long-running merger between AT&T Inc and Time Warner Inc – rebuffing the government's effort to stop the USD85 billion deal. In handing down his ruling, Judge Richard J. Leon of United States District Court in Washington took the unusual step of warning the government not to try to seek a stay, saying it would hurt the defendants, which had already gone through an 18-month regulatory and legal battle for their review. Industry observers believe that the decision is expected to pave the way for a wave of high-profile corporate

takeovers. David McAtee, AT&T General Counsel, commented: 'We are pleased that, after conducting a full and fair trial on the merits, the Court has categorically rejected the government's lawsuit to block our merger with Time Warner ... We look forward to closing the merger on or before 20 June so we can begin to give consumers video entertainment that is more affordable, mobile, and innovative.' In October 2016 AT&T diversified its traditional telecoms-focused strategy when it agreed to pay USD85 billion for media and entertainment conglomerate



Time Warner. The deal seeks to combine Time Warner's vast library of content – it owns HBO, Warner Bros and Turner – with AT&T's extensive customer base.

NCC May Set Up Regulatory Framework for OTT Services

The Nigerian Communications Commission (NCC), the telecoms industry regulator, may likely set up a regulatory framework for the control of over-the-top (OTT) technology services. This will however be made possible if the NCC eventually validates the findings of a study carried out by the Commonwealth Telecommunications Organization (CTO) on the benefits and challenges of OTT services in Nigeria. The CTO report, which was presented recently to the Nigerian ICT industry, will be published on June 19, 2018, and it will present key issues and recommendations on OTT services. The CTO report was sequel to a stakeholders' consultation session that was organized by the NCC on May 30. It was expected to provide the industry with an opportunity to discuss and validate the findings. The Secretary-General of CTO, Mr. Shola Taylor, underlined the need for regulatory responses to OTT services that are tailored to the context of each Commonwealth country. "Following the widespread use of OTTs and ICTs, and the emergence of data security issues, some of which are not limited by physical jurisdictions and cross-national borders, it is vital that Nigeria

establishes legislation on data protection and privacy which ensures the protection of personal data in Nigeria," Taylor said. Participants at the event discussed the findings of the study, underlining specific issues and recommendations which are relevant to the Nigerian context. The Executive Commissioner, Stakeholders Management at NCC, Mr. Sunday Dare said: "It has now become vital for Nigeria to come up with regulatory approaches that not only address the peculiarities of the Nigerian 'OTT' context but also ensure positive outcomes for consumers, traditional service providers, OTTs, and the federal government. The CTO's OTT report is an excellent start to doing just that." The OTT services are rendered by social network providers who ride on the infrastructure of Mobile Network Operators (MNOs) like MTN, Globacom, Airtel, among other GSM operators, to offer free voice and instant messaging services such as: WhatsApp, WeChat, Skype, Facebook, Viber, Imo, at no cost to the subscribers. The Chairman of the Association of Licensed Telecoms Operators of Nigeria (ALTON), Mr. Gbenga Adebayo, had raised concern that social network operators do

not invest in infrastructure, but ride on the infrastructure of MNOs to provide free services to customers at the detriment of MNOs who have invested so much to build their infrastructure and are still investing in the maintenance of such telecoms infrastructure. He said the new development was causing MNOs to lose revenue strings hitherto coming from their voice and data services, because subscribers now prefer to patronize the social network operators who provide the services at no cost to the subscriber. Adebayo had last year, called on NCC to consider the regulation of OTT services but NCC made it clear at that time that it was not ready to regulate the OTT technology in order to avoid a process that would lead to the stifling of technology advancement in Nigeria. CTO is the oldest and largest Commonwealth intergovernmental organization in the field of information and communication technologies. With a diverse membership spanning developed and least developed countries, the CTO aims to become a trusted partner for sustainable development for all through ICTs.

RCOM Returns 1800MHz Spectrum to DoT

Reliance Communications (RCOM) has returned 70 units of spectrum in the 1800MHz band to the Department of Telecommunications (DoT), having failed to find a buyer for the airwaves, the Economic

Times reports. The frequencies were non-liberalized – i.e. they were not purchased through a competitive auction – and as such, the purchaser would have needed to also pay the government a liberalization

fee of around INR15 billion (USD220 million), representing the difference in cost between their current market value and the amount originally paid by RCOM for the allocation.

Ukraine Sets Final Digital TV Switchover Date

The Cabinet of Ministers of Ukraine has extended the deadline for switching off analogue TV broadcasting for another two months, with the final cut-off date now

set at 1 September 2018, reports Liga.net. In Kiev and the Kirovograd region the digital switchover will happen on August 1, with the rest of Ukraine following one

month later, freeing up 'digital dividend' frequencies for other purposes including mobile broadband services. 

A SNAPSHOT OF REGULATORY ACTIVITIES IN SAMENA REGION



Dr. Mohammad Najeeb Azizi, ATRA Chairman and the authority senior officials met with Mr. Salah Zarqueras, Etisalat CEO and his accompanying delegate. Comprehensive discussions were made in the meeting regarding implementation of SIM registration

procedure, provision of good quality and transparent services, expansion of the company services to remote areas of the country, employment opportunities and finding solutions to the existing problems. (June 6, 2018) atra.gov.af

Afghanistan



The Telecoms Minister Houda Imane Faraoun has confirmed that Mobilis, the cellular division of state-backed Algerie Telecom, has lodged an application to compete for the fourth mobile operator license in Mali. The Minister said in an interview that Mobilis' international expansion plans were initiated after approval by the State Participation Council, adding that the company's ambitions are supported by the Algerian government as it possesses the necessary technical and managerial capabilities as well as the financial resources to invest abroad. She stated: 'We made an offer, the best we could do, to get the license. We have the means ... and we are very optimistic.' Algerie Telecom has an existing foothold in Mali via its satellite communications subsidiary, ATS. In March 2018 Mali's government announced plans to proceed with the award of its fourth mobile network operator license; a provisional date of 22 May 2018 was set as a deadline for the

submission of bids, while the finalizing of the license sale procedure was expected 'by end-June 2018', CommsUpdate reported at the time of the announcement. (June 25, 2018) Agence Ecofin

Algeria

The incumbent PSTN operator Algerie Telecom (AT) is now legally mandated to provide rivals with access to its fixed broadband network via local loop unbundling (LLU) following the entry into force of the new Post and Telecommunications Code on 6 June 2018. Under the new law, AT must offer access under transparent and non-discriminatory terms upon request from a licensed operator. Alternative operators have long argued for the enforcement of LLU obligations on AT, a move which Telecoms Minister Houda Imane Faraoun has been attempting to push through since 2016, with the aims of reducing broadband tariffs and expanding high speed internet access. (June 13, 2018) Agence Ecofin



Bahrain's Telecommunications Regulatory Authority (TRA) has announced that the due date for registration of postpaid SIM-cards has been extended by three months to September 2. TRA further clarified that failing to register within the specified period will result in suspension of the service on a temporary basis; failing to register again during the suspension period will result

in final deactivation by the December 2. This initiative is part of the Authority's on-ongoing efforts to protect and safeguard subscribers from fraud and identity theft. TRA has advised subscribers to visit their service providers and present verification documents to complete registration and avoid deactivation.

(June 3, 2018) trade Arabia.com

Bahrain



Bangladesh

The Bangladesh Telecommunication Regulatory Commission will set up an integrated telecom monitoring system in its office for getting live data to measure the quality of service and calculate revenue-related data of mobile phone companies. The integrated monitoring system will be called Telecom Monitoring System, which will be comprised of two separate segments, BTRC officials told New Age last week. The monitoring station installed at the BTRC will be a monitoring and data management system that will be treated as a telecom monitoring center. The TMS will act as the interface to monitor networks, data management and report generation. The other part of the system, Compliance Monitoring System, will be installed on the mobile phone operators' premises. The CMS will collect required network, traffic and billing data from the operators' nodes and analyses those data to generate summarized report on indicators and compliance. About the need for setting up such a monitoring system, the BTRC officials said that the commission needed an integrated network monitoring system to monitor telecom networks and services properly. The system will provide the BTRC with regular, live and effective telecom indicators, they said. Additionally, the emerging, trustworthy and sustainable strategy for quality of service measurement is based on CDR (call detail record) analysis in real time, they said. But, non-availability of any such CDR monitoring and analyzing system was the main bottleneck in developing a modern and widely acceptable QoS measurement technique for the commission, the officials said. As the commission is responsible for security, monitoring and revenue collection of the telecom sector, it also conducts information system audit of telecom operators. The current system of audit is manual, based on papers and past data records, which is inadequate most of the times. Conducting information system audit under such haphazard documentations creates complexity for both the BTRC and the operators concerned. It is also a hindrance to developing further trustable relation between the BTRC and the operators. The Digital Bangladesh initiative encourages the BTRC to develop an automated system for effective monitoring of traffic and auditing of telecom operators, the officials said. Besides, mobile phone operators are supposed to provide such system to the BTRC as per the licensing conditions. To this end, the commission issued a directive to all the mobile phone operators to facilitate establishment of such a monitoring system. It asked the operators to provide all required data to the online monitoring system. Besides, the commission instructed operators to provide connectivity to all required data and network nodes, including all types of call detail record (CDR), event data records (EDR) and transaction detail record (TDR), intelligent network interconnection, recharging gateway, service nodes, mobile network portability gateway, HLR dump, provisioning gateway for subscribers, NodeB, RNC, eNodeB and value-added service usage logs. Mobile phone operators were also asked to provide connectivity with all types of price plan configurations dump, rated CDR, itemized bills, billing records and account balance dump, the BTRC instruction said. The BTRC directive, to be effective

immediately, issued by its engineering and operations division director general Brigadier General Md Mustafa Kamal asked the operators to assist in integrating, modifying or enhancing the provision for the system at any time decided by the BTRC.

(June 20, 2018) newagebd.net

The telecom regulator received eight applications for tower company licenses, including one from state-owned Bangladesh Telecommunication Company Ltd, as the deadline to apply ended. A total of 19 applications were sold but AB High Tech Consortium, BTCL, BD Tower Business Company Consortium, edotco, FTA Bangladesh Ltd, iSONECT Tower, Jamuna Tower, and TASC Summit Towers Ltd finally applied. Among the applicants, some are joint ventures set up by local and foreign firms. Some local companies have also applied individually, said an official who is dealing with the issue. "We have received a good number of applications and we will begin the evaluation process," said Md Jahurul Haque, acting chairman of the Bangladesh Telecommunication Regulatory Commission (BTRC). The commission will soon send its recommendation to the government seeking approval, Haque said. He, however, declined to say when the licenses will be awarded. The BTRC will award four licenses to run the tower business with a view to separating the network business from telecom services -- a move that is expected to rationalize the number of towers in the country and reduce the use of land needed to set up towers. No auction will take place to choose the licensees, said an official of the BTRC. Instead, the BTRC will use its criteria to evaluate the applications before recommending names to the government, said the official. Under this category, edotco, a sister concern of edotco Group which is a partner of Robi's parent company Axiata, has applied. Edotco is running its tower-sharing business after getting a no-objection certificate from the regulator. Recently, it has formed a partnership with local company Getco Group to run the business. License acquisition fee and annual fee have been set at Tk 25 crore and Tk 5 crore respectively. Besides, licensees will have to share 5.5 percent of their revenue with the government and contribute another 1 percent to the social obligation fund from the second year after getting licenses. Licensees will also have to give a performance bank guarantee worth Tk 20 crore to the BTRC and the telecom regulator would encash up to 50 percent of the amount in phases if the licensees fail to fulfill the rollout obligations. The tenure of the license would be 15 years initially and would be extended gradually by five years. Mobile phone operators have more than 30,000 towers in Bangladesh, according to BTRC data. But the number may decline in future, but they will still be able to cover the targeted areas riding on increased efficiency, officials said.

(June 12, 2018) thedailystar.net

Bangladesh Telecommunication Regulatory Commission extended the deadline for the launch of much-awaited mobile number portability service by two months. The deadline extension decision was made at a commission meeting held on

Monday, presided over by its acting chairman Md Jahurul Haque, a BTRC official told New Age after the meeting. The MNP service will allow the mobile phone users to change operator without changing their existing number by paying Tk 30 as charge for the service. Due to the deadline extension, the commercial launch of MNP service would now begin on July 31 this year. The previous deadline was May 30, 2018. The commission made the decision following an instruction from the prime minister's ICT affairs adviser, Sajeeb Wazed Joy. As per the MNP licensing guidelines, Infozillion Teletech BD was supposed to launch the service within 180 days of getting license. The telecom regulator has already submitted to the posts and telecommunications ministry a proposal of an amendment to the guidelines allowing Infozillion to launch the service after 241 days of getting the license. The BTRC handed over MNP license to the BD-Slovenian entity in

November 30, 2017. On November 7, 2017, Infozillion managing director Mabroor Hossain, while speaking at a press conference, said that the service might become available between March and April this year. Although Infozillion had planned to move in line with the BTRC-set deadline, the launch was delayed mainly due to opposition of the mobile phone operators. At a meeting held at the Gana Bhaban in Dhaka, where prime minister's ICT affairs adviser Sajeeb Wazed Joy, posts, telecommunications and information technology minister Mustafa Jabbar and senior BTRC officials were present, the deadline was extended for two months following a proposal for time extension of 6-8 months. Earlier, in March this year, the BTRC turned down a two-month time extension proposal of the Association of Mobile Telecom Operators of Bangladesh as the regulator found the request contradictory with the MNP licensing guidelines. (May 29, 2018) newagebd.net



Egypt

Amr Talaat was sworn in as the Minister of Communications and Information Technology in Mostafa Madbouly's cabinet, before President Abdel Fattah el-Sisi. Khaled El Attar, the ICT Infrastructure Director at the Ministry of Communications and Information Technology, is appointed as the Deputy Minister. Talaat possesses over 30 years of experience in the field of communications and information technology. He joined IBM in 1988 and held various managerial positions. Since 2010, he held the position of the General Manager of IBM Egypt, and served as IBM Egypt Territory Manager since 2005. He held other positions within IBM Egypt including Business Partner Organization (BPO) Manager and Systems and Technology Group Manager. Talaat graduated in 1983 from the Faculty of Engineering, Cairo University, completing his undergraduate studies in Electrical Engineering at Cairo University. He earned his Doctorate of Business Administration (DBA) from the University of Paris - Paris School of Business (PSB) and a Master of Science degree in Information Technology from Illinois Institute of Technology; in addition to the Master of Business Administration (MBA) from ESLSA University, France. (June 15, 2018) tra.gov.eg

Telecom Egypt, the largest fixed line operator in Africa and the Middle East, will provide mobile phone services in another country outside Egypt by the end of this year, Telecom Minister Yasser al-Qadi said. The Egyptian government owns 80 percent of Telecom Egypt. "Telecom Egypt has achieved strong successes in the past period ... Before the end of the year, Telecom Egypt will operate outside the country as a mobile operator in another country," the judge told reporters at a suhoor event. The judge refused to reveal the name of the country to be entered by Telecom Egypt and attributed why the announcement at the moment to "corporate competitiveness." Telecom Egypt began providing mobile services in Egypt, the largest Arab country by population, in late September 2017. Ahmed El Beheiry, CEO of Telecom Egypt, said that the number of the company's subscribers in mobile services has now reached 3 million subscribers. Telecom Egypt offers mobile services through Egypt Telecom's network after having signed commercial agreements with it in the area of domestic roaming and international voice services for a period of five years.

(June 1, 2018) iktisatnc.com



Iran

Mobile internet users in Iran reached 53.2 million by March 31. The latest data from the Ministry of Communications indicate that the active mobile phone penetration rate in the country has reached 110.53 percent, an increase of over 6 percent from the same period in 2017. In 2008, the active mobile phone penetration rate in the country was 39.5 percent. Over 169.5 million SIM cards have been assigned to Iranians, of which 88 million are currently active. The penetration rate of assigned SIMs in Iran in 2008 was 46.8 percent and in 2018, it reached 212.12 percent, up by over 18 percent from the previous year. In 2017, the country's international internet bandwidth was 743 Gbps but by March

this year, it had reached to 1500 Gbps. This compares with 6.05 Gbps in 2008. The local internet bandwidth reached 6,968 Gbps while in 2017 this number was 6,800 Gbps. The ministry says over 11.7 million Iranians use ADSL or fibre optic or TD-LTE services. Previous statistics from September 2017 were 47.3 million mobile internet and 10.4 million fixed line internet subscribers. Landline telephony has had almost no major changes since 2017. Currently, there are 30.9 million wired phones, with a penetration rate of 38.71 percent. Also, 49,240 villages have access to fixed line phones. (June 21, 2018) telecompaper.com



Jordan

The Board of Commissioners of the Telecommunications Regulatory Authority (TRA) has taken its decision No. (14-6 / 2018) dated 31/5/2018, which includes the adoption of an "Additional Notice to Request Observations on Modification of the National Numbering Plan" and approval of its offer for public consultation for thirty days (7/6/2018), to make any observations, suggestions or recommendations regarding the contents of the attachment and send them to the Authority in writing during the working hours in printed form accompanied by a cover letter, in addition to an electronic copy of the email nnp@trc.gov.jo, all the responses must be signed by the entity that submits them, within (30) days from (7/6/2018). (June 7, 2018) trc.gov.jo

Jordan's Information and Communications Technology Association int@j is set to launch the first electronic platform that includes a full database on entrepreneurship in Jordan, according to an int@j statement. Bashar Hawamdeh, Chairman of the ICT Association of Jordan, said: "The platform, which is the first of its kind in Jordan, seeks to enhance the business environment scientifically and practically based on accurate data." He noted that the platform will support business start-ups by connecting investors – both institutions and individuals – with entrepreneurs. Initiated in cooperation with Vardot, the platform will be launched in two phases: the first including a full database on business start-ups in Jordan as well as investors and funding parties, while the second phase will entail creating connections between entrepreneurs and investors so as to exchange ideas and interests in order to eventually stimulate entrepreneurship and economic growth in Jordan, according to the statement. Hawamdeh said that int@j efforts are in line with His Majesty King Abdullah's vision Reach 2025, which seeks to make Jordan an ICT hub in the region, to digitize its economy, and to attract more investments and business start-ups from all over the world. [Int@j](mailto:int@j)'s Chairman conveyed his gratitude to Vardot for supporting the national initiative by developing the e-platform which will be titled "StartupsJo". For his part, Vardot CEO Mohammed Razem

expressed his pride for taking part in the project which he said "will contribute to achieving the royal vision Reach 2025". "We look forward to enriching the ICT sector and creating more investment opportunities through the new platform, which creates an interactive environment that fosters communication among the various involved parties," Razem commented. (June 4, 2018) jordantimes.com

The Telecommunications Regulatory Authority (TRC) has begun implementing a training plan for its employees on cyber security and in collaboration with a specialized technical and training consultancy. The first level will cover the general awareness of cyber security issues for all employees of the TRA. The second level will be for engineers and technicians. The staff will be responsible for cyber security. The Chairman of the Board of Commissioners, Eng. Ghazi Jabour said that the contract comes from the Authority's keenness to raise the level of awareness among its employees on the basics of cyber security and enhance their ability to deal with any threats or cyber-attacks that may lead to disruption of financial systems, health and education and service work in general. He pointed out that the plan includes several topics such as the global challenge of cyber security, understanding the political, economic and legal issues related to the global strategy for cyber security, and the impact of cyber security on the strategy of national cyber security and attack T Cyber software used in the attacks, and the powers of entry and control software and how to face cyber-attacks, in addition to addressing the various encryption systems and how to deal with it and other topics. Jabour stressed that the Authority will continue to hold these specialized awareness programs to ensure the dissemination and dissemination of knowledge and awareness. The TRA is committed to raising the level of knowledge and enhancing the skills and abilities of all employees at all levels of their careers to be qualified and able to deal with all developments in the ICT sector. Jordan becomes a regional and international leader in this field. (May 27, 2018) trc.gov.jo



Kuwait

Smart phone users and the local telecommunications industry would soon reap the benefits of the fifth-generation data wireless technology (5G), said a Kuwait official. The 5G Wireless Systems, with the ability to transmit 10 or more gigabytes per second in its initial stages of use, represent an epoch in the history of technology, Salem Al- Ozainah, the Chairman of Kuwait's Information Technology Regulatory Authority (CITRA), said in a

statement. He revealed that 5G will use additional spectrum in the existing LTE frequency range and new Millimeter wave bands (24-86 GHz), which can support data rates of up to 20 gigabits per second. Al-Ozainah went on to say that CITRA welcomes such cutting- edge technology that would prove instrumental in transforming Kuwait into an ultimate tech hub.

(June 5, 2018) citra.gov.kw



Nepal

Following rising concerns regarding internet service providers (ISPs) and telecom companies prioritizing particular sites or services in their network, the government is preparing to define 'net neutrality' while issuing license to ISPs soon. Nepal Telecommunications Authority (NTA) – the telecom sector regulator – is currently developing regulatory provisions on 'net neutrality' that sets limitations for ISPs and telecom companies over prioritizing certain contents, thereby ensuring that net neutrality principles are not breached in Nepal. This is the first time that the government is developing a legal framework on net neutrality. Adopted by many countries, net neutrality is a principle as per which ISPs must provide equal access to all contents and applications for customers without favoring or blocking particular products or websites. "We have prepared a draft that guides the principle of net neutrality. It includes what net neutrality issues that ISPs must comply with in their network," informed Min Prasad Aryal, spokesperson for NTA. NTA is preparing the regulatory framework on net neutrality following instances of ISPs favoring a particular content in their networks. As per Aryal, the new regulatory framework on net neutrality intends to ensure user protection and also unbiased flow of contents in the telecommunication network. NTA is finalizing the regulatory framework on net neutrality through consultations with the Telecom Regulatory Authority of India (TRAI) and other experts. An independent committee has been formed at NTA to look into the issue of net neutrality. The draft of the regulatory framework is expected to be endorsed by the NTA board soon. Net neutrality is still debatable in the global market. India had banned telecom companies from introducing differential pricing strategies for data services last year by launching a new regulation on net neutrality. Similarly, Facebook was prohibited to deliver free access to a selected number of web services through Facebook's 'Free Basics' service in India following wide criticism from net

neutrality proponents.

(June 20, 2018) thehimalayantimes.com

The Inclusive Internet Index, commissioned by Facebook and conducted by The Economist Intelligence Unit, recently released The Inclusive Internet Index 2018. This index covers 91% of the world population. The index provides a rigorous benchmark of national-level Internet inclusion across four categories: Availability, An Ordability, Relevance and Readiness. It was launched in 2017 and it aims to determine the progress in closing the digital divide as well as the relevant criteria that enable success and Internet growth. According to the report, Internet connectivity grew 8.3% over the past year, with a 65.1% increase in low-income countries. Progress was fastest in low-income countries, where the proportion of households with Internet access grew from 8.0% to 13.2%, a 65.1% improvement. The mobile Internet gap between the rich and poor is shrinking while the gender gap in Internet inclusion is still far too pervasive. Nepal had a 138.1% increase in internet connection, which is the second highest increment among low-income countries. One of the largest contributions to this increase is the development of national e-inclusion policies, as mentioned in the report. Nepal ranked 3rd among 12 low-income countries for inclusivity after Tanzania, and Senegal. It ranks 1st among the 12 low-income countries for Availability and Readiness. However, in overall i.e. when compared with all the countries, Nepal ranks in 70th position out of 86. In Asia, Nepal has the second-lowest overall score ahead of only Cambodia. The report also mentioned some progressive plans in place. Along with Nepal, Senegal, Tanzania, and Uganda have plans to provide digital skill training for women and girls. While Malawi and Mozambique are focusing on STEM (Science, Technology, Engineering and Mathematics) education.

(May 27, 2018) techlekh.com



Pakistan

The Pakistan Telecom Authority (PTA) announced that Number of Mobile Subscribers in Pakistan reached 150.3 Million. PTA Chairman Muhammad Naveed had delivered directions for the preparation of the report which highlights the authority's performance over the years. According to the report, Number of Mobile Subscribers in Pakistan rose by 10.5 million during the first quarter of 2018. The given reports are like this.

- 2011-2012: The number of cellular subscribers reached 120.2 million
- 2012-2013: The Figures further rose to 127.7 million
- 2013-2014: Subscribers hit the 140 million mark
- 2014-2015: Due to the introduction of biometric verification, the number of subscribers dropped to 114.7 million

- 2015-2016: The trend saw an increase in subscribers climbing to 133.2 million
- 2016-2017: The number of subscribers continued to increase, reaching 139.8 million
- 2017-May 2018: As on May 2018, there were 150.3 million cellular service subscribers in Pakistan

The report further shows that as on May 2018, there were 55.5 million mobile broadband/internet subscribers and 57.74 million broadband subscribers in Pakistan. On an average, the number of mobile internet subscriptions stood at 976,600 per month compared to mobile subscriptions at 703,617 per month in the past 10 months, according to PTA. (June 22, 2018) phoneworld.com.pk

Pakistan is the country where people are quickly adopting internet services to remain connected with family members and friends via social networks like Facebook and WhatsApp. As per the new report of Pakistan Telecommunication Authority (PTA), the number of mobile internet subscribers reached a record 40.56 million by the end of April 2017. So now Growth in Mobile Internet Users set New Record. The total number of mobile phone subscribers stood at 139.61 million at the end of April 2017 compared to 139.10 million in the previous month. According to the PTA data, over 29% of mobile phone users are now internet users as well. Whereas at the end of previous fiscal year in June 2016, they were standing at 22%. Data analysts suggested that the growth in mobile broadband subscription had outpaced the growth in mobile phone subscription. Information and Communications Technology (ICT) experts Parvez Iftikhar and Noman Said pointed out that anecdotal evidence suggested majority of the people were using internet to remain connected on social networks in Pakistan. "Anecdotal evidence suggests majority of the people are using internet to share video clips on WhatsApp and visit YouTube. The second highest usage of internet is watching drama serials, mostly by women," Iftikhar said. "They should speed up e-government services and financial inclusion via branchless banking to do away with long queues at government offices and banks," he said. He called for declaring smartphone and other internet-related things tax-free in a bid to step up the pace of digitalization and documentation of the economy. On an average, the number of mobile internet subscriptions stood at 976,600 per month compared to mobile subscriptions at 703,617 per month in the past 10 months, according to PTA.

(June 11, 2018) phoneworld.com.pk

Pakistan ended April with 150.1 million mobile subscribers, up from 144.53 million in December 2017, according to a report from the Pakistan Telecommunications Authority (PTA). Pakistan added around 2 million mobile broadband service subscribers in April, ending the month with 55 million users, out of a total 57 million broadband users at end-April. Mobile operator Jazz led the Pakistani mobile market with over 55.43 million mobile customers at end-April, followed by Telenor (43.48 million), Zong (31.07 million) and Ufone (20.20 million). According to

the report, there are 55 million subscribers of 3G/4G services in the country showing a penetration of 27.01%. The penetration of internet users in the country remains low by international standards, however, it has grown considerably over the past five years. The revenues of the cellular sector have also shown an increase from last year from 345537 million Rs to 369118 million Rs showing an increase of 6%. However, there has been a decline in investment in the telecom sector. In 2015-16, the investment in telecom sector was 659.4 mn Rs which decreased to 486.1 million Rupees in 2016-17. Meanwhile, the Senate Standing Committee on Telecommunications and Information Technology decided to discuss different issues related to the telecom companies in Pakistan.

Senate Standing Committee would follow up on these issues:

- Cybercrime laws and its implications in Pakistan.
- The up till progress of Pakistan Telecommunication Authority (PTA)
- Collection of taxes from telecom companies by the government.

The advisory group met under the Chairmanship of Senator Rubina Khalid here. A meeting to discuss new ideas was held to examine issues. FBR had made an assessment request of Rs 287 million against a cellphone organization for its inability to legitimize conclusion of expense worth Rs 267 million. The Cellphone organizations asked for settling the duty related issues through elective debate determination systems (ADRCs), rather than courts. Be that as it may, FBR rejected the proposition while saying it isn't permitted to do as such according to the law. As per the reports, the growth rate of Pakistan's telecommunication sector has been impressively fast-paced during the last four years. The Ministry of Information Technology and Telecommunication has indeed contributed a lot by bringing Mobile Broadband services – 3G, 4G, LTE, to the country. Having the fourth most heavily taxed telecom markets in the world, Pakistan managed to collect Rs 1,499.81 billion from the sector in various taxes in 15-years. The telecom sector has become a veritable gold mine for the Pakistani government, attracting millions of new users every month and generating staggering amounts of money from tax revenue. Since 2002-03, the government has pocketed almost Rs 1500 billion from the sector till December 2017.

(May 30, 2018) globalvillagespace.com



The Saudi Communications and Information Technology Commission (CITC) plans to convert the test-and-trial licenses to full and exclusive 5G spectrum awards in 3.4-3.8 GHz by mid-2019. The Saudi government has long recognized the importance of broadband communications, with the recent unbanning for VoIP services, and the potential benefits of 5G technologies now fit well into the country's plans to build a leading modern economy as outlined in its Vision 2030, the report noted. Abdullah Al-Sawaha, the Minister of Communications and Information Technology, said: "Saudi Arabia is determined to be a world leader in 5G to take early advantage of its benefits." Dr. Abdulaziz

Al-Ruwais, the Governor of CITC, said "Now Saudi Arabia has become one of the first countries to provide and activate it so it can take early advantage of the gains from it," he said. Al-Ruwais, however, emphasized that to achieve a connected society, 5G services require access to spectrum in a variety of bands to support the multitude of use cases, including the need to improve the quality of the services offered, and to accommodate much wider channels than those in use today. Specialized work is carried out in three subcommittees that deal respectively with "5G Spectrum", "5G Development" and "5G verticals". Over the past 12 months, CITC awarded 160 MHz of additional IMT spectrum

Saudi Arabia

in 700 MHz, 800 MHz, and 1800 MHz bands to mobile operators Mobily, Saudi Telecommunications Company (STC) and Zain. This makes Saudi Arabia a regional leader in terms of awarded International Mobile Telecommunications (IMT) spectrum in sub-GHz IMT bands and should help support the organic growth of domestic mobile network capacities, from 3G and 4G to 5G, according to officials. All the necessary national 5G policies and supporting administrative provisions are planned to be in place before the end of 2019, along with the award of initial batches of the spectrum to support the full commercial deployment of 5G technologies. (May 27, 2018) ameinfo.com

According to a report Saudi Arabia entered 2018 on a positive note with the government announcement of its largest financial budget ever which will support the country's expansion and diversification plans as part of its Vision 2030 program. Generally speaking; the strategy will implement changes relating to improving the kingdom's economy through increases in taxes and fuel prices as well as encouraging investment and diversification away from its reliance on oil. It will also support the use of digital technologies for such uses as cloud computing and e-commerce as well as encouraging ICT development, including investments in

broadband infrastructure. Broadband is widely available in Saudi Arabia via ADSL, fiber, and wireless. In 2018 ADSL subscriptions still account for the largest proportion of fixed broadband subscriptions. Internet penetration in Saudi Arabia has reached over 76%, well above the average for the Middle East. The program is now over three quarters completed with thousands of localities provided access where it was not considered commercially viable for operators to do so. The mobile operators have faced recent changes and challenges with the introduction of the biometric fingerprint law which saw subscriber numbers drop, as well as a shift away from pre-paid accounts. A major competitive shake-up for the Saudi telecoms sector also began in late 2016 when the Saudi government announced plans to award unified licenses to Zain Saudi Arabia and Mobily, which would allow the operators to offer fixed line telephony and Internet services. In the past only STC was permitted to do so. In 2018 Go Telecom's request for the unified license was rejected however. Further increasing competition in the mobile market was the recent lifting of OTT VoIP and messaging services bans, allowing providers such as Skype, Viber, Whatsapp and so forth to begin operations again.

(May 25, 2018) budde.com.au



Sri Lanka's Minister of International Trade and Investment Malik Samarawickreme has informed parliament that the government's Board of Investment of Sri Lanka has formally approved USD1.3 billion-worth of investment up to April 2018, over USD200 million of which is for network expansion and upgrade work on 4G mobile and fixed broadband services. Economynext reports that Sri Lanka Telecom (SLT, incl. Sky Network) – a fixed access provider which also owns a fibre-optic backbone network – has been approved to invest USD79 million to expand its network. Meanwhile, SLT's mobile arm Mobitel has been given the go ahead to invest USD80 million on its 4G LTE mobile broadband coverage, and mobile operator Hutchison Telecommunications Lanka (Hutch) – which is expected to merge with Etisalat Lanka – has also been approved to invest USD57 million. In April 2018 it was revealed that Etisalat Lanka (a unit of UAE-based Etisalat) and CK Hutchison of Hong Kong's Sri Lankan subsidiary had

announced a deal to merge their mobile operations. The merger, which forms part of the Abu Dhabi-based telecom operator's strategy of portfolio optimization, was confirmed via the Abu Dhabi Securities Exchange and revealed the aim that it would leave both Hutch and Etisalat Lanka 'better positioned to serve their Sri Lankan customers'. Upon completion, CK Hutchison will have the majority and controlling stake in the combined entity, although the Securities Exchange filing noted that the merger is subject to several conditions, not least of which are the mandatory competition and regulatory approvals in Sri Lanka. If ratified, the takeover would see the Sri Lankan mobile market – currently led by Dialog Axiata and Mobitel – reduced from five operators to four. Etisalat Lanka currently holds a ten-year license from the Telecommunications Regulatory Commission Sri Lanka (TRCSL) to operate mobile services, but the concession expires in September 2018. (May 25, 2018) Economynext

Sri Lanka



Information and Communication Technologies Authority, PMI Chapters from Turkey hosted the Istanbul Summit. In the program, the importance of project management was discussed. The PMI Project Management Summit, which has been held in Ankara since 2010, was organized this year under the theme of "Learning Organizations". Information Technologies and the Communication Authority hosted an interest in the event.

President of the ICTA, who made the opening speech of the program as host. Ömer Fatih Sayan said that high performance institutions are organizations that put out the right projects and manage these projects in the right way. As an institution with high national and international targets, Sayan emphasized that the role of project management in achieving these goals cannot be ignored, and the work of BTK made sense in this sense. BTK,

Turkey

in order to regulate and control the electronic communications sector Founded in 2000 as Turkey's first recalled that the sectoral regulator Sayan, "our institution electronic communications, and many tasks on the postal sector, there is a responsibility. BTK Turkey's first sectoral regulatory agency. This is our main center. Thousands are holding the electronic communications sector in Turkey with our 300 runs. Our affiliates have 117 billion accounts. We are about to host 970 cybercrime intervention team. There is a company licensed to close to it and all the regulative operations related to electronic, communication, internet and mail are done by our institution with licenses close to 450 firms. We actually set up our project management office last year. After setting up the project management office, nothing looked like the old one. Thus, weekly reports, project management office reports and follow-ups, we have achieved very serious achievements in project performance." Sayan talked about 5G work. Sayan reiterated that all kinds of regulations related to the internet are also done in ICTA. "We have licensed over 450 companies that we have mentioned recently, mainly Turk Telekom, Vodafone and Turkcell, which are the 3 major mobile and fixed operators that we call" Telco regulation ". There are a few feet here. We are making coordination at the safety point of cyber security from the duty given to our institution, to ensure proper competition from the preservation of the consumer and to manage all of them with our own internal dynamics with our organizations of 300 people and to provide human resources. The telecommunications sector is a sector that facilitates the work of all sectors. When we were

talking about proximity to the transportation networks, it was almost impossible for us all to see if there was a fiber connection in the house, other tasks carried out by the ICTA include: "We have international studies. 5G, cyber security. And I just talked about coordination in the country. The full coordination of 970 institutions and organizations and the safety of the cyberspace is done by us. President Sayan also mentioned the characteristics of a good project manager. Underlining the need for project managers to have the leadership feature, Sayan said, "Innovative, mediating, accountable project managers are more appropriate for these tasks. We also want to work with project managers who do not have individual ambitions, have success with teamwork, have energetic and sufficient technical experience. A good and successful project manager must first set realistic goals for their own career and work within a plan to achieve these goals." Sayan said, "Today, successful project managers, technical knowledge and leadership skills, as well as project managers who have a desire for continuous learning and who prioritize the organizations that they work with are at the same time, are in fact very familiar with current information technologies. Artificial intelligence, learning programs, learning organizations, artificial intelligence, at one point, also mean that people apply to their own life and organization of institutions" He said. Following the opening speech, Süleyman Çavuşoğlu and Buğ Bayazıt Yıldırım made presentations from PMI members. The summit, which will host various competitions and panels, will host its guests in the ICTA for two days. (June 22, 2018) btk.gov.tr



The number of telecommunication services subscriptions, including mobile phone and internet, grew by 531,000 to over 24.026 million at the end of April 2018, compared to around 23.495 million subscriptions at the end of December 2017. Mobile phone subscriptions increased by 574,480 to 20.4 million during the first four months of this year, versus 19.826 subscriptions by the end of 2017, Al Bayan newspaper reported, citing statistics released by the Telecommunications Regulatory Authority (TRA). Prepaid subscriptions for Emirates Telecommunication Group

Company (Etisalat) and Emirates Integrated Telecommunications Company (du) stood at 17.046 million at the end of April, while bill payment subscriptions reached 3.35 million, data showed. Internet subscriptions at Etisalat and du recorded 1.34 million during the four-month period, as broadband internet made up 1.34 million of total internet subscriptions. Meanwhile, landline internet subscriptions fell at the end of last April, reaching only 67 subscriptions. (June 12, 2018) zawya.com

United Arab Emirates

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION



Belgium

The Deputy Prime Minister Alexander de Croo revealed his aim to reserve an allocation of 5G-suitable spectrum for a fourth mobile player in a bid to reduce consumer prices and boost competition. In a statement on his official website, de Croo – who is also minister for telecoms – said the 2019 auction for frequencies earmarked for 5G in the 700MHz, 1400MHz and 3600MHz bands should include an allocation to open the door to a new player. He added the fact a newcomer would have immediate access to 5G-suitable spectrum would encourage the country's existing operators to rollout the new technology quickly to compete. "By creating space for a new, fourth mobile network, we ensure extra investments, stronger price competition

and lower prices for the consumer," de Croo said. "It is now or never for a fourth player on the Belgian mobile market." Designing the auction rules to encourage and facilitate a new entrant would be the Belgian authorities' second major attempt to expand the number of operators in the country to provide competition to Proximus, Orange and Telenet-owned Base. In 2014, cable companies Telenet and Voo abandoned a joint venture formed to launch mobile services using 3G spectrum acquired from the country's communications regulator BIPT, stating the launch of services was not possible under current regulations. The spectrum was returned and eventually Telenet acquired Base from KPN. (June 13, 2018) telegeography.com



Brazil

Brazil's National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, Anatel) has reportedly granted prior consent to the sale of a 25% stake in regional operator Algar Telecom, to Archy LLC – an affiliate of Singapore's GIC sovereign wealth fund. According to TeleSintese, the two parties must now agree to meet a number of conditions relating to the control of the company within the next 90 days. Previously, in March this year, the Administrative Council for Economic Defence (Conselho Administrativo de Defesa Economica, CADE) gave the deal the all-clear. The stake sale, which is valued at around BRL1 billion (USD306.2 million), was unveiled in January this year, and prompted Algar to cancel its planned initial public offering (IPO).

(June 22, 2018) telegeography.com

A total of 14 companies have registered their interest in bidding for the CEMIG Telecom assets recently put up for sale by Brazilian state-run utility Companhia Energetica de Minas Gerais (CEMIG), Estadao reports. The news site says that the list of potential bidders includes domestic telcos TIM Brasil, Telefonica Brasil (Vivo), Oi, Claro Brasil and Algar Telecom. Other interested parties include Vogel Telecom, which was formed by Patria Investimentos in April 2015, following the merger of five regional fibre-optic operators, Avvio Telecom, Smart Brasil, SouthTech Telecom and Rede Otica Bahia; regional submarine cable operator GlobeNet Cabos Submarinos; infrastructure firm American Tower; utility group Enel; and domestic ICT firm Grupo Cimcorp. For the purpose of the divestment, the company's communications assets have been

divided into two lots: Lot 1 comprises assets in Minas Gerais, Sao Paulo and Rio de Janeiro, while Lot 2 will include infrastructure in Ceara, Bahia, Pernambuco, Goias and Belo Horizonte. Bidding for the first lot will start at BRL335.07 million (USD90.9 million), while a minimum price-tag of BRL32.47 million has been applied to the second batch of networks. Bidding will take place between July 16 and July 20, and the results will be revealed on July 27. In order for the auction process to conclude, the winning bidder must submit an offer that is at least 10% higher than the next largest offer.

(June 20, 2018) telegeography.com

State-run utility Companhia Energetica de Minas Gerais (CEMIG) has put its CEMIG Telecom arm up for sale, TeleSintese reports. For the purpose of the divestment, the company's communications assets have been divided into two lots: Lot 1 comprises assets in Minas Gerais, Sao Paulo and Rio de Janeiro, while Lot 2 will include infrastructure in Ceara, Bahia, Pernambuco, Goias and Belo Horizonte. Bidding for the first lot will start at BRL335.07 million (USD90.9 million), while a minimum price-tag of BRL32.47 million has been applied to the second batch of networks. Interested parties are required to register their interest with CEMIG by 8 June, after which the utility firm will be open to clarification requests until 9 July. Bidding will take place between 16 July and 20 July, and the results will be revealed on 27 July. In order for the auction process to conclude, the winning bidder must submit an offer that is at least 10% higher than the next largest offer.

(May 29, 2018) telegeography.com



Canada

Navdeep Bains, Minister of Innovation, Science and Economic Development (ISED) for Canada, has announced initiatives aimed at improving quality, coverage and price of telecoms services for all Canadians, including a five-year 5G wireless spectrum release program. The 'Spectrum Outlook 2018 to 2022' (see weblink below for full details) encompasses the following bands, among others:

- 600MHz (614MHz-698MHz); as previously announced, an auction of 70MHz of spectrum in the 600MHz band mobile, fixed or broadcasting services is scheduled for March 2019, with 43% of these frequencies set aside for regional competitors (i.e. existing cellcos other than the nationwide 'big three' Bell, Rogers and Telus) and potential new market entrants
- 3500MHz/3800MHz (3450MHz-3650MHz/3650MHz-4200MHz); identified by ISED as a key priority for 5G, an auction of 3500MHz licenses for mobile and/or fixed services is anticipated in late 2020; ISED considers the 3800MHz band as medium priority, and has begun a preliminary review of this band
- bands above 20GHz (e.g. 24GHz/28GHz mmWave); in late 2021 ISED expects to release the 28GHz (27.5GHz-28.35GHz) and 37GHz-40GHz bands for 'flexible fixed and mobile use' alongside the 64GHz-71GHz band for license-exempt use, having identified these ranges as a key priority for supporting 5G deployments; other bands above 20GHz remain under consideration for potential release
- L-band (1427MHz-1518MHz); ISED's recent consultation indicated that portions of this band could be released for fixed/mobile use; Bell and Rogers proposed that it should be high priority and Bell suggested that ISED should release it in 2020
- 800MHz; parts of this band are up for review regarding potential mobile services in the next five years.
- In his keynote address to the 2018 Canadian Telecom Summit, Minister Bains announced other

measures, including:

- the launch of Connecting Families, an initiative to provide hundreds of thousands of Canadians with low-cost internet in partnership with Bell, Cogeco, Rogers, SaskTel, Shaw, Telus and Videotron, plus up to 50,000 computers to eligible households through the federal government's existing Computers for Schools program; Connecting Families services will provide 10Mbps-plus download speeds (or the fastest available if less than 10Mbps in the region) and no less than 100GB of monthly data usage at a discounted rate; no equipment or installation fees will be applied
- a CAD100 million 2018 budget for improving coverage and connectivity in rural areas with low-Earth-orbit (LEO) satellites. (June 8, 2018) telegeography.com

The national broadcast regulator says online giants like Netflix and Spotify should be forced to open their wallets to pay to create local content before Canadians see losses of jobs, services and content. The Canadian Radio-television and Telecommunications Commission says in a new report the federal government should consider regulating any online video or music service, no matter where they are located. The report says the proposed system would generate new revenue to save things like local news and reduce the pressures on federal coffers that would be financially unsustainable under the current model, which wasn't designed for the digital age. The CRTC says deregulation, or applying the existing regulatory system to online services, wouldn't help navigate the digital disruption shaking the broadcasting and production industries. Consumers aren't expected to see major changes on their bills, but internet service providers and companies like Netflix might find themselves facing a new levy if the government adopted all the recommendations in the report. The Liberals asked the CRTC for the report as it prepares to review federal laws overseeing television, radio and online services.

(June 3, 2018) huffingtonpost.com



Chad

The Chadian government has launched a tender for the award of a fourth mobile license, and has invited interested parties to submit offers to the Ministry of Post and New Information Technologies (Ministere des Postes et des Nouvelles Technologies de l'Information, MPNTIC) by 5 July 2018. The license will cover the establishment and operation of 2G, 3G and 4G mobile networks, but further details were not disclosed. Potential bidders may purchase the full tender documents from the regulator for XAF1 million (USD1, 793), whilst submitted tenders must be accompanied

by a bid bond of XAF100 million. Around 99% of Chad's mobile market is served by Tigo Chad – part of Luxembourg-based Millicom International Cellular (MIC) – and Airtel Chad, the local unit of Indian telecoms group Bharti Airtel. A state-owned operator, Groupe Sotel Tchad, was estimated to represent the remaining 1%. With roughly six million wireless subscribers at the end of March 2018, cellular penetration in Chad is less than 50% – compared to an average of more than 80% for the region – leaving plenty of room for expansion.

(June 11, 2018) telegeography.com



Chile

The sector watchdog the Department of Telecommunications (Subsecretaria de Telecomunicaciones, Subtel) has ordered Claro, Entel, Grupo GTD, Movistar and VTR to halt commercial use of the 3.5GHz band after its inspection department found that the spectrum was not being used efficiently by the operators. In a statement, the regulator explained that it had monitored 60 locations and found that 73% had no signal, whilst other 'anomalous situations' were also detected. These included the companies operating at a higher power than is permitted by their concession and exploiting the spectrum commercially in an 'irregular' manner. Subtel added that it also needed to carry out an in-depth study of the band and its potential use for the development of 5G technology in Chile. Subtel found that Movistar, VTR, and Grupo GTD – which hold concessions that cover two regions apiece – were not using the spectrum band, whilst Entel and Claro were underutilizing their nationwide licenses. The regulator criticized the latter duo for spectrum hoarding, pointing out that the pair had not

used the spectrum but had announced products that would operate in a 5G network, despite the fact that a standard for the technology had not yet been accepted by the Chilean authorities. As no framework for 5G has been established by Subtel, the regulator warned that it could not be commercialized without sanctions being imposed. The watchdog went on to point that the current distribution of frequencies in the 3400MHz-3800MHz band would provide Claro and Entel with a 'privileged position' allowing them to 'monopolize spectrum to the detriment of free competition that allows multiple offers and lower prices to users.' As part of its ruling, Subtel instructed Entel and Claro provide operational continuity by migrating customers currently using the 3.5GHz band to other technologies and bands. Diario Financiero reports that Entel has rejected the regulator's order, stating that it has not received any official direction and that 'press communications do not account for any formal legal action.' The provider said it would exercise all legal actions to fight the ruling, which called 'incomprehensible' and 'arbitrary'.
(June 21, 2018) telegeography.com



China

A spokesperson for China's telecoms watchdog the Ministry of Industry and Information Technology (MIIT) has confirmed that the regulator is planning to accelerate the commercialization of 5G technology, and is working on radio frequency plans and 5G licenses. China Daily cites Vice Minister of Industry and IT Chen Zhaoxiong as saying that the MIIT is stepping up its efforts to promote the maturity of 5G technologies and is aiming to create a complete

industrial chain to create a strong foundation for the commercial exploitation of 5G. 'We will unveil a radio frequency spectrum map and grant licenses to telecom carriers in time, so as to meet the demand for 5G network construction and increasing efforts to widen applications,' the official added. Although the minister stopped short of providing a specific timetable for 5G licensing. The MIIT has previously said that it expects to issue 5G licenses in the second half of 2019.
(June 22, 2018) China Daily



Colombia

The Colombian government has formally withdrawn an October 2017 bill seeking to merge two of the country's regulatory bodies, Prensario Internacional reports. It is understood that while a converged regulatory landscape is still seen as a priority, the bill itself included a number of divisive clauses relating to the funding of the public television sector, prompting its withdrawal by Juanita Rodriguez Kattah, the Vice-Minister of Digital Economy. In October last year the Ministry of Information Technology and Communications (Ministerio de Tecnologías

de la Información y las Comunicaciones, MinTIC) declared its intention to transform the Commission for the Regulation of Communications (Comision de Regulacion de Comunicaciones, CRC) and the National Television Authority (Autoridad Nacional de Television, ANTV) into a new, enlarged regulatory body, which would have been named the Communications Commission (Comision de Comunicaciones). The move was conceived as a way to better equip the watchdog as the pace of convergence within the telecoms and broadcasting sectors gathers pace.
(June 14, 2018) telegeography.com



Czech Republic

The Czech Telecommunication Office (Cesky telekomunikacni urad, CTU) is reported to be seeking to attract a fourth mobile operator in the Republic, in its latest bid to drive down end user mobile data charges which remain amongst the highest in the EU area. The Hospodarske Noviny newspaper yesterday (11 June)

reported the head of the CTU, Jaromir Novak, as saying that he will use the auction of 5G mobile frequencies next year as a vehicle to help realize this plan. Mr. Novak understands that despite imposing tougher rules on mobile internet prices in 2017 – the government amended the telecoms act, fast-tracking changes

designed to reduce mobile phone bills, and specifically mobile data charges – the country has a long way to go to level the playing field. According to Novak, the CTU will therefore look to attract a fourth big operator to challenge the dominance of the three incumbents – O2, Vodafone and T-Mobile – and will openly court both local and European firms ahead of the 5G tender to do so. The auction is scheduled to take place in the second half of 2019 and a new operator could launch in 2020, he said. In July-August last year the CTU concluded its 3.7GHz band (3600MHz-3800MHz)

and announced the allocation of spectrum blocks to four winning bidders. Nordic Telecom 5G was assigned two 40MHz blocks in the 3720MHz-3760MHz and 3760MHz-3800MHz range, O2 Czech Republic secured one block at 3680MHz-3720MHz, PODA now holds 3640MHz-3680MHz frequencies and Vodafone Czech Republic was assigned one block in the 3600MHz-3640MHz range. Each 40MHz block sold for CZK203 million (USD9.2 million), generating a total of CZK1.015 billion.

(June 12, 2018) telegeography.com



France

The telecoms regulator Arcep has ruled in favor of domestic operator Iliad (Free) in its dispute with market leader Orange over access to fiber-to-the-home (FTTH) infrastructure in medium density areas. Iliad signed a co-financing deal with Orange France in July 2011, under which close to 60 agglomerations – including a total of some 1,300 municipalities or five million homes – will be covered by 2020. In November 2017, however, Iliad filed a complaint with Arcep over the duration of the rights of use over the co-financed network, looking to extend the 20-year period granted by Orange. The regulator ruled that Orange should give Iliad access rights for a period of at least 40

years, under transparent and predictable conditions. Further, Arcep ordered Orange to allow Free Mobile to connect its mobile base stations to supernumerary fibers of the FTTH network, subject to availability, and to gain information from Orange regarding how the different tariffs relating to the co-financed networks are established. (June 25, 2018) telegeography.com

French regulator Arcep announced that Covage subsidiary Sem@fibre77 is the first operator to be allocated spectrum in the 3.5 GHz band following the decision to issue regional licenses for fixed LTE services offering speeds of at least 30 Mbps.

(May 25, 2018) telecompaper.com



Finland

The Ministry of Transport and Communications (Liikenne- ja viestintäministerio, MoTC) has launched a consultation on plans to make available 5G-suitable spectrum in the 3.5GHz band. As per the state's proposals, the auction will be arranged by the Finnish Communications Regulatory Authority (Viestintävirasto, FICORA) in autumn 2018, with the licensing period for any new concessions to be issued expected to begin on January 1, 2019. Concurrently, the FICORA has published drafts of the proposed auction process, including its rules and preferred model, as well as a draft of the technical conditions for the radio licenses that it expects to offer up. Submissions to both consultations can be made

by interested parties up until a deadline of June 25, 2018. Alongside the consultations which specifically relate to the proposed 5G auction, the MoTC is also seeking feedback on a draft Digital Infrastructure Strategy, which outlines the measures and goals for developing the country's telecoms networks. As well as the assignment of the first frequencies which would enable the development of 5G infrastructure, the main measures proposed by the strategy are the promotion of fiber-optic network construction, which may be facilitated by the simplification and development of licensing procedures. Again, comments regarding the MoTC's proposals can be made up to June 25, 2018.

(May 24, 2018) telegeography.com



Greece

The Greek government is set to launch a scheme later this month to provide subsidized fiber-to-the-home (FTTH) connectivity for low-income households. A report from Ekathimerini says that the Athens areas of Palaio Faliro and Vyronas, plus Kalamata in the southern Peloponnese will be the first to receive the offer. The areas of Moschato in Athens, Kalamaria in Thessaloniki and Larissa in Thessaly will follow in September. The state will provide a EUR13 (USD15) subsidy towards the estimated monthly cost of EUR40-EUR46, as well as a one-off EUR48 payment to cover initial equipment costs. Service connection is being

supported by any of the country's three main FTTH providers – Cosmote, Vodafone and Wind – regardless of which firm deploys the actual fiber network past the customer premises. The government has set aside EUR700 million to improve broadband connectivity across Greece, with EUR250 million specifically targeting high speed FTTH services. Authorities are hoping the scheme will attract up to 140,000 new users in its first year of operation. FTTH network coverage in Greece is currently extremely limited, with most broadband services provided over fiber-to-the-cabinet (FTTC)/VDSL networks. (June 20, 2018) telegeography.com



Hong Kong

Telecoms regulator allocated additional spectrum for the provision of public mobile services, a move it said would put the market at the forefront of adoption of advanced technologies including Licensed Assisted Access (LAA). The Communications Authority (CA) officially allocated 580MHz of spectrum in the 5GHz band. The move represents a significant addition to the existing total capacity of the 552MHz of spectrum in the sub-3GHz bands already assigned to mobile operators, CA said in a statement. Extending the capacity will enable Hong Kong to become one of the first economies in the world to adopt advanced mobile technologies such as LAA in the 5GHz shared band for the provision of higher-speed public mobile services, CA added. "With immediate effect, MNOs may apply to the CA for the use of the concerned band on a shared basis to provide public mobile services through necessary amendments to their unified carrier licenses," a CA representative said. "The CA has been actively exploring ways to make available additional spectrum for the provision of public mobile services.

The CA will continue to closely monitor the market and technology developments and will make available other suitable spectrum in a timely manner to further enhance the development of the mobile industry," the representative added. In February, the CA conducted a public consultation on making the 5GHz shared band available for public mobile services. The proposal received general support from the industry. Hong Kong mobile operator SmarTone and Sweden-based equipment vendor Ericsson in August 2017 conducted a trial of LAA technology using 10MHz of licensed LTE spectrum and three 20MHz bands of unlicensed 5GHz spectrum to achieve peak download speeds of up to 800Mb/s. Unlicensed spectrum such as the 5GHz band is generally used for Wi-Fi. LTE-LAA combines licensed 4G spectrum with unlicensed frequencies in the 5GHz band to deliver higher speeds. LAA is a key technology as operators evolve their networks to achieve gigabit LTE speeds, which requires more spectrum than most operators have access to.

(June 4, 2017) mobileworldlive.com



India

Indian mobile industry group the Cellular Operators' Association of India (COAI) has said that the auction of 5G spectrum should take place in the second half of 2019 to give operators a better opportunity to assess the potential revenue streams from the new technology. A later auction would allow the dust to settle from the current string of mergers and exits from the sector, whilst also potentially providing an opportunity for the industry's financial health to improve, COAI head, Rajan Matthews argued. The official acknowledged the opportunities that 5G technology provides, but highlighted the Indian authorities' tendency to overcharge for frequencies, saying that it was important to 'get a clearer picture of what is the emerging revenue stream that attaches to the use of the spectrum,' so that operators could properly determine the value of the airwaves before they go to auction. Mr. Matthews went on: 'You also have to address the financial health of the industry to be able to allow operators to afford investments in spectrum. Unless you allow industry to get back on their feet ... who is going to lend to the industry for spectrum?' The statement follows reports earlier this week that the Department of Telecommunications (DoT) is becoming increasingly frustrated by operators' apparent disinterest in 5G, as the government aims to position India at the forefront of the new technology standard. Indeed, the DoT this week signed memoranda of understanding (MoUs) with three UK universities to collaborate on exploring 5G use cases and early exploitation of the technology.

(June 22, 2018) [The Economic Times](http://TheEconomicTimes.com)

The Telecom Regulatory Authority of India (TRAI) has published its recommendations on the establishment

of a next generation emergency network that would support a wide range of additional applications, as the current analogue and digital systems are currently only able to provide narrowband voice and data communications. The TRAI recommends that the government establish a pan-India Broadband Public Protection and Disaster Relief Network (to be dubbed the 'National BB-PPDR Network') based on the Public Safety-LTE (PS-LTE) technology standard. To that end, the government should set up a special purpose vehicle (SPV) under the Ministry of Home Affairs (MHA) to plan and coordinate the implementation of the BB-PPDR and handle its subsequent operation; the TRAI's recommendations also set out a framework for the SPV to work alongside the Department of Telecommunications (DoT) and existing PPDR agencies. For the rollout, the regulator suggested that the deployment in areas such as the metro cities, border districts, disaster-prone areas and other sensitive areas like Jammu and Kashmir (J&K) and the North East should be funded by the government and carried out by state-owned firms Mahanagar Telephone Nigam Limited (MTNL) and Bharat Sanchar Nigam Limited (BSNL). Elsewhere, the TRAI recommended that existing commercial networks could be leveraged through any telecom service provider, though 'stringent' service level agreements (SLAs) should be put in place to ensure that operators provide mobile base transceiver stations and backpack devices in cases where the terrestrial network is made unusable. The TRAI recommended that a 2x10MHz block of dedicated spectrum – specifically the 814MHz-824MHz/859MHz-869MHz block – should be allocated nationwide to the SPV on a no-cost

basis for the network, whilst a further 20MHz in the 440MHz-470MHz range should be set aside for future development of the network. The TRAI's preference for the latter allocation was the 450MHz-470MHz block. (June 6, 2018) [telegeography.com](#)

The total number of mobile subscribers in India has reached 1.2 billion, according to a report by the country's telecoms regulator, Trai. Indian telcos added 26 million customers in March 2018 alone, giving a staggering insight into the sheer scale of the Indian market. "The number of telephone subscribers in India increased from 1,179.83 million at the end of February 2018 to 1,206.22 million at the end of March 2018, thereby showing a monthly growth rate of 2.24 per cent," the report said. Growth in India's mobile telecoms market has been spurred by a price war between the country's main players Bharti Airtel and Reliance Jio.

According to a report in the Asia Times, Bharti Airtel added 8.4 million subscribers to its books in March this year, bringing its total number of subscribers to 304.2 million. Its main competitor, Reliance Jio, added 9.14 million subscribers in the same period, bringing its total number of subscribers to 186.56 million. The forthcoming merger between Vodafone India and Idea Cellular is expected to create India's third biggest telco, which will be capable of challenging Reliance Jio and eventually Bharti Airtel in terms of scale and market penetration. Despite the synergies afforded to Indian telcos by these unparalleled levels of scale, India remains one of the most competitive markets in the world with operators reporting huge drops in profitability and trying desperately to raise funds in order to weather the current market conditions.

(May 24, 2018) [totaltele.com](#)



Italy

Italy's Communications Regulatory Authority (Autorita per le Garanzie nelle Comunicazioni, Agcom) is set to auction spectrum for 5G wireless services by the end of September this year. The regulator said the government hopes to raise at least EUR2.5 billion (USD2.9 billion) from the sale, though only half of the total raised would come this year. Agcom added that it is the first European regulator to define the terms for a 5G spectrum sale. Spectrum will be made available in the 694MHz-790MHz, 3.6GHz-3.8GHz and 26.5GHz-

27.5GHz bands. Two blocks of 80MHz spectrum and two of 20MHz will be sold in the 3.6GHz-3.8GHz band, with a spectrum cap of 100MHz per operator. In the 700MHz band six paired 5MHz blocks will be on offer, with two paired blocks (2x10MHz) reserved for a new entrant. The 26.5GHz-27.5GHz spectrum will be split into five lots of 200MHz. Licenses will be valid until 2037, though the 700MHz frequencies will not be opened up until mid-2022.

(May 24, 2018) [telegeography.com](#)



Kosovo

The Regulatory Authority for Post and Electronic Communications (Autoriteti Rregullator i Komunikimeve Elektronike dhe Postare, ARKEP) has published a consultation paper regarding plans to auction spectrum in the 800MHz, 900MHz, 1800MHz, 2100MHz, 2600MHz and 3400MHz-3800MHz bands. The regulator is planning to harmonise the nation's spectrum allocations and usage with the EU, whilst also providing operators sufficient resources to serve burgeoning demand, adopt new technologies and develop new services. In its document, ARKEP noted the following frequencies are currently unassigned and could be auctioned: 2x30MHz in the 800MHz band (1x8MHz at 790MHz-798MHz is being used by TV Most, but the license is due to expire in March 2020);

2x10.6MHz in the 900MHz range – 2x2.12MHz is being used by the armed forces whilst 2x23.2MHz have been allocated to the nation's cellcos; 2x15MHz in the 1800MHz range; 2x50MHz in the 2100MHz (FDD) band (2x10MHz is in use); 1x35MHz in the 2100MHz (TDD) band; 2x40MHz in the 2600MHz (FDD) range – 2x30MHz is currently being used by the armed forces; 1x15MHz in the 2600MHz (TDD) range – 1x35MHz has been assigned to the armed forces; the entire 2x80MHz (3410MHz-3490MHz/3510MHz-3590MHz) in the 3400MHz-3600MHz band; and 180MHz in the 3600MHz-3800MHz range. The regulator added that spectrum in the 700MHz band (2x30MHz plus 1x20MHz), 1427MHz-1517MHz, 2300MHz-2400MHz and 26GHz bands could be made available in the future.

(May 25, 2018) [telegeography.com](#)



Lithuania

The national telecommunications regulator RRT has joined a cooperation memorandum signed earlier by telecom regulators of the Baltic States and Nordic States. The regulators plan to establish a Nordic-Baltic

Regulators Network (NB Reg). The national regulators of Lithuania, Latvia, Estonia, Finland, Iceland, Norway, Sweden and Denmark have signed the memorandum.

(May 29, 2018) [telecompaper.com](#)



Mexico

Mexico is set to complete the liberalization of spectrum in the 614MHz to 698MHz ('600MHz') spectrum band by the first quarter of 2019, according to BNamericas, citing information from the Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT). In March this year the IFT approved the relocation of 48

digital television channels in the 614MHz to 698MHz band to pave the way for a 'second digital dividend' in the country. The Mexican watchdog has claimed that its proposed migration timeline will make it the first country in the world to fully release the 600MHz band for mobile broadband use. (June 13, 2018) [telegeography.com](#)



Myanmar

The draft Telecommunication Tariff Directive 2018, published by the transport ministry's telecommunications department, is currently in public consultation process until June 30. The Posts and Telecommunications Department (PTD) published the directive for telecom services, which, upon implementation, will provide more guidance to licensees on PTD's requirements of tariffs setting and promotion activities with consumers. According to law firm VDB Loi, the directive is intended for telecom services provided to individual and small and medium-sized enterprise (SME) end users, which also includes consumer protection measures. It does not apply to wholesale services or individualized services to large enterprises. Licensees have a general transition period of 90 days to implement this directive once it comes into effect. The PTD developed in 2017 based on requests of industry stakeholders and approved by the ministry the 2017 Pricing and Tariff Regulatory Framework. In 2017, the department did not have sufficient costing data which would have supported the development of a more general tariff framework, and is hence currently developing in the context of 2018 Interconnection Rates Review a cost model which can partly provide necessary cost data usable in the context of retail Tariff regulation. Already with issuing the '2017 Pricing and Tariff Regulatory Framework', the department announced its intention to review the framework on a timely basis. The 2017 framework was planned to be updated and evolved

once costing data are available. "This [review] is required to address competition; harness transparency in tariff approval process; provide regulatory certainty in price regulation; complement growth by creating a level playing field; and, create a win-win situation for operators and subscribers. The framework is adopted as a medium-term plan [six to 12 months]," the 2017 framework stated. The PTD prepared a comprehensive 2018 Draft Telecommunication Tariff Directive which is planned to replace the existing 2017 framework. The PTD now invites all stakeholders to submit their views on the questions and issues raised in the Public Discussion Report (PDR) initiating the replacement of the 2017 framework. The Department developed for this purpose the 2018 draft Telecommunication Tariff Directive, which provides a more holistic Tariff Framework including components which are missing in the current directive. This PDR is the first of two public consultations. This PDR provides the proposal for the legal framework, while the subsequent public consultation will contain more details. Therefore, the public and industry stakeholders shall have twice the possibility to provide feedback on the 2018 Telecommunication Tariff Directive in the framework of public consultations, according to the draft directive. Further details of the guidelines, the questions and issues available for comment and how to comment by the June-30 deadline can be found on Ministry of Transport and Communications' website.

(June 4, 2018) [mmtimes.com](#)



Netherlands

An upcoming auction of new mobile spectrum suitable for 5G network development in the Netherlands is now likely to take place in 2020 rather than a previously mooted date of autumn 2019, according to a letter from the Ministry with responsibility for telecoms – the Ministry of Economic Affairs & Climate Policy – to Parliament, reported by Dutch-based Telecompaper. The reason for the delay is the ongoing European

Commission assessment process regarding the proposed merger between the country's third and fourth largest mobile network operators T-Mobile and Tele2. In November 2017 the Ministry indicated that it expected a widespread rollout of 5G mobile network technology following the auction of new spectrum including the 700MHz band earmarked for 2019 at the time. (June 6, 2018) [telegeography.com](#)



New Zealand

The government has announced an accelerated timetable for the rollout of new rural broadband and mobile networks to help bridge the country's digital divide. Clare Curran, the Broadcasting, Communications and Digital Media Minister, has confirmed that the

Rural Broadband Initiative Phase Two (RBI2) and the Mobile Black Spot Fund (MBSF) build-outs will now be 'substantially finished' by the end 2021 – a full year ahead of schedule. Curran commented: 'New Zealanders must have access to technology as a right,

regardless of income or geography and we have to close the gap between the digital “haves” and “have nots” to ensure people and communities benefit from the jobs, access and participation that a digital future brings. We are listening to feedback from businesses and from people who live in and travel to our most rural and remote areas, and they want more clarity around

when their connectivity will improve. I want people to know they don't have to wait until the end of 2022.' Funding for the RBI2/MBSF programmes comes chiefly from the Telecommunications Development Levy (TDL), a tax paid by domestic telcos, although some of the rollouts are funded privately by the country's three mobile operators Spark, Vodafone and 2degrees.

(May 30, 2018) telegeography.com



Nigeria

The federal government has directed operators in the nation's telecommunication industry to begin data rollover from June 26. This means that telecom operators must henceforth add a subscriber's unused or unfinished data to his/her new or next data subscription. Before this new directive from the Nigeria Communications Commission, NCC, subscribers' unfinished or unused data subscription automatically became useless as soon as it hit the expiry date. However, speaking yesterday, the NCC's Executive Vice Chairman, Prof Garba Umar Danbatta, said telecom operators must begin the implementation of the data rollover directive from June 26, 2018. Prof. Danbatta gave the marching order at the 95th Consumers Outreach Programme in Dutse, Jigawa State. The NCC boss, who was represented by the Head of Information and Reference Unit of the commission, Alhaji Ismail Adedigba, said failure by the operators to

start implementing the directive would attract N5m fine on each subscriber which they failed to roll over. "The NCC has directed the telecom service providers in the country to begin the implementation of data rollover on June 26, 2018. They have been duly informed about this and they have also been given adequate time to prepare their networks for it. "Failure to implement this will attract N5m fine on the first of failure on each SIM card and N500,000 on each day that follows the first default date. "All these are to ensure that the consumers' rights, privileges and interests are adequately protected," he said. The Governor of Jigawa State, Abubakar Badaru, said the NCC should work on closing the access gaps in the state. Represented at the occasion by his Deputy, Barrister Ibrahim Hassan Hadeija, he said the NCC and the operators should do more to make e-learning popular among students by crashing the prices of data subscription.

(June 10, 2018) today.ng



Philippines

The Philippine Daily Inquirer reports that the prospects for the country's third telecoms player – a key pledge of President Duterte to address the Philippines' poor record on delivering telecoms services – faded even further this week amid a further delay. Eliseo Rio Jr, Acting Secretary of the Department of Information and Communications Technology (DICT), confirmed via text that the draft rules to select the third telco have yet to be approved by the government-led oversight committee appointed in April 2018. The terms and conditions on how the government will provide 3G, 4G and potentially 5G mobile frequencies to the so-called 'third telco' were expected to be approved on Monday 28 May. However, that failed to happen – marking yet

another delay in the would-be operator's gestation process – and Rio declined to provide any details on the nature of the latest setback or indeed set a new deadline, sparking frustration among prospective auction participants. Mel Velarde, CEO of NOW Corp (NOW Telecom), for example, said his company would look to 'assert its rights' over mobile frequencies that should have been awarded years ago. 'We will no longer allow ourselves to wait any longer. We demand our 2G, 3G and 4G frequencies,' the CEO is quoted as saying via Facebook. 'We will exhaust all legal and moral means to accomplish these goals for our public owners,' he added.

(May 30, 2018) telegeography.com



Romania

The National Authority for Management & Regulations (ANCOM) has announced that it plans to hold a 5G auction by the end of next year. The regulator has also launched a public consultation for the allocation of the 470MHz-790MHz frequency band, which it intends to use for the future 5G auction. ANCOM states that the 700MHz spectrum band can be used to improve 4G mobile services, as well as to deploy 5G services in future. ANCOM proposes to allot 2x30MHz from the

700MHz frequency band (703MHz-733MHz paired with 758MHz-788MHz) for the provision of technologically neutral mobile/fixed (MFCN) networks using FDD operation mode and 15MHz (738MHz-753MHz sub-band) for SDL MFCN through a competitive selection procedure for awarding frequency use rights, to ensure the use of those bands starting from 30 June 2020. Interested parties have until 22 June 2018 to submit their responses to ANCOM.

(May 24, 2018) telegeography.com



Rwanda

The government of Rwanda has launched a new RWF25.4 billion (USD30 million) National Research and Innovation Fund aimed at boosting the country's ICT sector. The fund is being made possible thanks to a loan granted to Rwanda by the African Development Bank (AfDB), through its African Development Fund (ADF). The fund is part of the national transformation

strategy 2017-2024. Rwandan Prime Minister Edouard Ngirente is quoted as saying: 'Year after year, we are committed to increasing our budget allocation to this innovation fund. We will continue to support research and technology, with a special focus on the link between our young innovators and the job market.'

(June 20, 2018) Agence Ecofin



Slovakia

The regulator RU has cancelled the auction for frequencies in the 1,800 MHz band, arguing a significant change in circumstances since the call for tenders was announced. The invitation was published on 06 April and the applications were accepted until May

9. On May 10, RU cancelled the auction, informed the participants about the cancellation, returned their bids in unopened envelopes and returned the paid vadiums to their accounts.

(May 31, 2018) Telecompaper.com



South Africa

The high court in Johannesburg has ordered telecoms regulator ICASA to halt the implementation of the new consumer protection regulations dealing with data expiry and rollover, until judgment is handed down on the matter. Cell C challenged the South African regulator's deadline for the implementation of new

data expiry rules in an urgent application with the court last week, arguing that the deadline was too tight and it would take the operator at least six months to comply. Cell C was subsequently joined by MTN South Africa in its legal challenge, with Telkom and Vodacom also said to be considering lining up behind Cell C's lawsuit.

(June 11, 2018) TechCentral



South Korea

The frequency auction of the fifth-generation (5G) network failed to produce a buyer due to the fierce competition of Korea's three mobile carriers, the Ministry of Science and ICT said. The Ministry began a frequency auction of the 5G network beginning at 9:30 a.m. at the Telecommunications Technology Association in Seongnam, Gyeonggi Province. With the opening price at 3.3 trillion won (about \$3 billion), the country's three mobile carriers -- SK Telecom, KT and LG Uplus -- competed for 28 blocks in the 3.5-gigahertz spectrum and 24 blocks in the 28-gigahertz spectrum. The auction is comprised of two stages. During the first stage, the mobile carriers were supposed to decide the number of blocks assigned to each of them while they were scheduled to decide the locations of the blocks in the second stage. Given that the first stage was not completed by 3 p.m., the ministry announced it decided to hold the second stage of the auction on Monday. The ministry added the first stage will also be postponed if it fails to meet the conclusion by 5 p.m. There have been great expectations for the 5G frequency as it marks a major step forward for the goal of beginning the world's first commercial 5G services next March. Mobile carriers are required to secure sufficient frequency bands to supply stable services. The three telecommunication companies have their eyes on the 3.5-gigahertz frequency band. Dubbed the "golden frequency band," the 3.5-gigahertz band has high scalability while avoiding the interference phenomenon. Using the 3.5-gigahertz band, companies can provide

better services at longer distances. Compared with the 3.5-gigahertz spectrum, mobile carriers can offer faster speed in the 28-gigahertz spectrum. As the band has shorter reach, however, companies have to put up more money to build signal stations. The 3.5-gigahertz band will be sold in 10-megahertz blocks. The minimum bid is 2.65 trillion won with a period of use for 10 years. The 280-gigahertz will be sold in 100-megahertz blocks. The starting bid is 621.6 billion won with a period of use for five years. In the auction, one mobile carrier is allowed to take up to 100-megahertz of the 280-megahertz bandwidth of 3.5-gigahertz. Industry insiders presume SK Telecom is likely to make a bid for 100-megahertz of the 3.5-gigahertz frequency band. SK Telecom originally wanted to secure at least 120-megahertz of bandwidth before the ministry limited the maximum amount to 100-megahertz. To offer all companies the opportunity to attempt 5G business under similar conditions, the ministry earlier set the limit on the maximum amount of bandwidth that can be assigned to one mobile carrier. KT is also expected to make a bid for 100-megahertz of bandwidth. The country's second largest mobile carrier has been keen to promote 5G services. The No. 3 player LG Uplus is expected to use a flexible strategy reacting to the moves of the others. If the bid stays strong, there is the possibility for KT to make a concession and lower its goal to 90-megahertz of bandwidth.

(June 25, 2018) koreatimes.co.kr

South Korea's Ministry of Science and ICT (MSIT) has revealed the details of the winning bids for its sale of spectrum suitable for the planned deployment of 5G technology, with all three of the nation's incumbent mobile network operators (MNOs) walking away with new frequencies. The regulator noted that, with the auction having been conducted in two phases, the first of these determined the quantity of frequencies each operator would get, with the second determining the position of the spectrum. SKT emerged as the biggest spender overall, bidding a total of KRW1.222 trillion (USD1.10 billion) for 100MHz in the 3.5GHz band (3600MHz-3700MHz), while it paid a further KRW207.3 billion for 800MHz of bandwidth in the 28GHz band (28.1GHz-28.9GHz). For its part, KT Corp offered a total of KRW968 billion for its 3.5GHz spectrum (3500MHz-3600MHz), although it spent the most of any operator on its 28GHz frequencies, claiming the 26.5GHz-27.3GHz block with a KRW207.8 billion bid. Rounding out the nation's cellcos, LG Uplus spent KRW809.5 billion on an 80MHz block in the 3.5GHz band (3420MHz-3500MHz), and committed a further KRW207.2 billion for its 28GHz allocation (27.3GHz-

28.1GHz).

(June 19, 2018) telegeography.com

South Korea's three mobile network operators (MNOs) have applied to take part in the country's upcoming auction of 5G-suitable spectrum, the Ministry of Science and ICT (MSIT) has confirmed. According to the Yonhap News Agency, SK Telecom, KT Corp and LG Uplus have now submitted their applications ahead of the start of the sale process on 15 June, following which the MSIT will now review their documents and announce whether they have passed the evaluation process this Friday (8 June). Last month the MSIT confirmed it will offer up frequencies in the 3.5GHz and 28GHz bands, with 280MHz of spectrum to be made available in the former and 2,400MHz in the latter. A minimum bid price of KRW2.65 trillion (USD2.5 billion) has been set for the 3.5GHz frequencies, which are being offered for use for an initial ten-year period, while a block in the 28GHz band will cost KRW621.6 billion for a five-year license; all new spectrum will be available for use from December 2018.

(June 5, 2018) telegeography.com



Spain

Spanish alternative operator Grupo MASMOVIL has completed the acquisition of Neutra Network Services, after receiving the required authorization from the Ministry of Energy, Tourism and Digital Agenda (Ministerio de Energia, Turismo y Agenda Digital, MINETAD). MASMOVIL notes that the transaction includes a 40MHz block of nationwide spectrum in the 3.4GHz-3.6GHz band, as well as regional 2.6GHz licenses covering Catalonia, Castilla-La Mancha and Andalusia. The deal was priced at EUR15.5 million (USD18.3 million) and includes the B2B player's fixed-wireless assets, alongside around 100 antennas. Going forward, MASMOVIL hopes to use the spectrum for 5G wireless services, and notes that the financial commitment is less than it would have to pay for similar spectrum in the government's planned spectrum auction (see below). TeleGeography notes that MINETAD plans to hold an auction of 5G-suitable 3.6GHz-3.8GHz spectrum in Spain in July this year. The spectrum will be divided into 40 5MHz blocks, each of which will have a starting price of EUR2.5 million. Vodafone's Spanish unit staged what it claimed was the 'first 5G call in the world' with Huawei in February 2018, using 3.7GHz spectrum, while rival Orange Espana has disclosed plans to launch commercial 5G services in four markets in 2019, using a 40MHz block of 3.5GHz spectrum. (June 8, 2018) telegeography.com

Spain has announced that it is ready to begin auctioning spectrum for 5G in the coming months. The

country's Ministry of Energy, Tourism and Digital has said that it will place 200 MHz of spectrum up for sale in the 3.6-3.8 GHz band. The spectrum will be divided into 40 separate blocks of 5GHz, and priced at €2.5 million per block. The Spanish regulator anticipates that the auction will raise €100 million. The registration deadline for interested parties is 29th June 2018, with bidding expected to be complete by the 20th April 2018. The spectrum licenses will be valid for 20 years. Bidders will be subject to a 120MHz cap at the auction. Orange Espana currently own 40 MHz of 3.5GHz spectrum that it purchased in 2016, so will be restricted to an additional 80MHz at this summer's auction. Telefonica has recently stated that it will not have a commercial 5G offering in the market before 2020, and that those who do risk rushing out an inferior 5G-light style product. Telefonica is pressing ahead with 5G research in Spain, transforming two Spanish cities into living 5G labs. Telefonica will deploy the scheme in the cities of Segovia and Talavera de la Reina, in partnership with Nokia and Ericsson. Nokia will work with Telefonica in Segovia and Ericsson will partner Telefonica in Talavera de la Reina. "With the 5G Technological Cities project, Telefónica is turning the technology of the future into reality and providing a constant service for people. This is why we will perform the technological deployment and use cases in parallel, so that we will serve people with the new technologies, one of Telefónica's clear objectives," said Luis Miguel Gilpérez, CEO of Telefónica Spain. (May 29, 2018) totaltele.com



Taiwan

Taiwan's Asia Pacific Telecom (APT) has announced that it has received approval from the National Communications Commission (NCC) to build a trial 5G network as it looks to begin preparing for a commercial launch in 2020. The development makes the operator the first to obtain permission from the regulator to conduct a trial of 5G technology. APT expects to fully deploy its trial infrastructure in less than six months, likely covering Taipei's Neihu District, New Taipei City's Tucheng District and the Hsinchu campus of National Chiao Tung University. Although the official standards for 5G have yet to be ratified by the International Telecommunication Union (ITU), APT has said that the trial network would test the technology so it is ready for commercial launch once the standards are confirmed.

(May 29, 2018) Taipei Times

The government is to release the operational licenses for the 5G telecom service toward the end of next year according to the National Communications Commission (NCC) Chairwoman Nicole Chan. Chan made the statement at a meeting of the legislature's Transportation Committee, which was scheduled to review three commissioner nominees: NCC Vice Chairman and spokesperson Wong Po-tsung, National Taiwan University of Science and Technology professor Teng Wei-chung and National Taiwan University professor Sunny Sun. Wong was nominated to serve as vice chairman for a second term. Democratic Progressive Party legislators Lee Kun-tse and Lin Chun-hsien and New Power Party Legislator Hung Tzu-yung asked Chan about the nation's progress in developing 5G services. The US and South Korea are

schedule to hold auctions for 5G licenses this year, while Japan aims to begin commercial 5G operations in 2020, Lee said. Taiwan is likely to be behind other nations if it does not step up efforts to develop 5G, he said. Chan said the government would soon determine the frequency bands and bandwidth that it would use for 5G, adding that the commission has begun to conduct tests to ascertain if 5G would interfere with other service. "If it is determined that the frequency bands between 3.4MHz and 3.6MHz are to be used by 5G, then we might have to relocate other services to different frequency bands," Chan said. The government is to auction 5G licenses next year, Chan said, adding that it is aiming to begin commercial 5G operations in 2020 as well. The frequency bands between 3.4MHz and 3.6MHz are used by Chunghwa Telecom and the military. The telecom needs the frequency to transmit signals between its ST-2 satellite and its Earth terminal. In related news, several lawmakers have voiced their concern over the dispute between Formosa TV and Taiwan Broadband Communications (TBC) over content authorization fees, which at one point meant the network's news channel was inaccessible to about 750,000 TBC cable subscribers. Chan said that the commission is scheduled to present within a month amendments to three media acts — the Radio and Television Act, the Satellite Broadcasting Act and the Cable Radio and Television Act. The amendments would include implementing a tiered pricing scheme for cable service subscribers, preventing media monopolization and ensuring that all television channels are treated fairly and equally by cable system operators.

(May 23, 2018) taipeitimes.com



Tanzania

Tanzania has raised US\$20 million from a local subsidiary of South Africa's Vodacom Group and another telecoms firm in the country's first broadband spectrum auction that will help operators meet growing demand for high-speed networks. Like elsewhere on the continent, mobile phone use has surged in the East African nation over the past decade, driven by the launch of cheaper smartphones and data services. Market leader Vodacom Tanzania and a newcomer in Tanzania's fast-growing communications sector, Azam Telecom (T) Limited, were picked as winners of the spectrum auction in the 700 MHz band. "Vodacom Tanzania Plc acquired 2 x 10 MHz for a total price of \$10.005 million and Azam Telecom (T) Ltd acquired 2 x 10 MHz for a total price of \$10 million. The total auction proceeds is \$20.005 million," the state-run Tanzania Communications Regulatory Authority (TCRA) said in a statement on Saturday. Around 19 million internet users in Tanzania accessed the World Wide Web last year through their mobile phones, up from 18 million in 2016, according to data from TCRA. Internet penetration in the nation of around 52 million people ticked up to 45 percent in 2017 from 40 percent a year before,

according to the regulator. Tanzania had 40.08 million mobile phone subscribers last year, slightly down from 40.17 million a year earlier. The regulator said Vodacom and Azam were given conditions after being awarded the new spectrum to ensure their mobile broadband services reach 60 percent of the population by 2021, rising to 90 percent by 2024. Vodacom Tanzania said last month it plans to use the 700 MHz spectrum to roll out fourth generation (4G) services to more towns and cities in the country. The Tanzanian government is seeking to generate more revenue from the telecoms sector by enforcing mandatory listing rules, hiking taxes on mobile money transfers and tightening monitoring of companies. President John Magufuli sacked the head of the telecoms regulator in 2016, saying the watchdog failed to monitor the industry, resulting in the loss of potential tax revenues of over \$180 million a year since 2013. Prosecutors charged chief executives of telecoms operators Halotel Tanzania, owned by Vietnam-based telecoms operator Viettel, and Zantel with fraud on June 6 as part of a crackdown against tax evasion in the sector. The executives were released after paying a fine. (June 24, 2018) reuters.com



Thailand

Thailand's auction for spectrum in the 1800MHz band has been cancelled after the country's three largest mobile operators did not submit bid documents. True Move, Thailand's second largest wireless operator by subscribers, confirmed in May that it would not participate in the auction scheduled for August, claiming that it had sufficient bandwidth in a number of spectrum bands to provide its services. Total Access Communication (DTAC) and AIS followed suit with their respective announcements on 16 June, with DTAC CEO Lars Norling saying: 'We considered the auction carefully and decided DTAC has enough high band spectrum to handle the growth of data services ... The auction conditions did not allow for long-term value creation for our customers and shareholders.' The National Broadcasting and Telecommunications Commission (NBTC) will now ask the government to scrap the existing remedy measures planned to mitigate the impact of DTAC's concession expiry on 15 September, with all 470,000 subscribers on DTAC's 1800MHz and 850MHz networks set to be migrated to other providers before the networks' shutdown.

(June 18, 2018) The Bangkok Post

The National Broadcasting and Telecommunications Commission (NBTC) will allow the winner of the 1800MHz spectrum auction to reshuffle the acquired frequencies with other operators' slots. Takorn Tantasith, secretary-general of the NBTC, said: 'Spectrum allocated on the same frequency over different periods bring advantages and disadvantages to operators. The NBTC is allowing the winner of August's 1800MHz license to negotiate with other operators to change their spectrum slots.' The official added that the NBTC initially planned to award three blocks adjacent to the two 2x15MHz blocks awarded in 2015 to True Move (1710MHz-1725MHz/1805MHz-1820MHz) and AIS (1725MHz-1740MHz/1820MHz-1835MHz). However, the regulator received a letter from True that it planned to sit out the auction, with Mr. Takorn Tantasith saying: 'Under the N-1 rule in the auction's conditions, the NBTC can auction only one license because there are not more than two prospective bidders for the auction.' The official revealed that the concession will be for the 1740MHz-1755MHz/1830MHz-1850MHz block.

(June 12, 2018) telegeography.com



Togo

The Authority of Posts & Telecommunications Regulation (ART&P) in Togo has issued 4G mobile licenses to the country's two incumbent mobile network operators (MNOs), Togo Cellulaire (Togocel) and Moov Togo, allowing them to offer ultra-fast mobile internet and kick start the availability of financial services within the framework of the 2018 Finance Act. According to local newspaper Togo First, the award ceremony – which followed an announcement from Togo's Minister of Posts & Digital Economy Cina Lawson on May 8 confirming the plan to issue 4G licenses – took place on June 11 and also included 2G and 3G license renewals for both cellcos. Under the terms of the

license awards, the recipients are required to provide 4G coverage to at least 40% of the population by 2022. All existing and new 2G/3G/4G licenses now run until 2032. In October 2016 the Minister of Posts & Digital Economy began official talks with Togocel and Moov concerning the award of 4G licenses with the aims of driving down prices, improving service quality and boosting the availability of broadband internet on the national level. At one time it was speculated that the government would also look to open the field to an oft-mooted third mobile player, but seemingly the Togocel-Moov duopoly is set to continue.

(June 13, 2018) telegeography.com



Uganda

Authorities in Uganda have given their conditional approval to a request by the country's largest cellco by subscribers, MTN Uganda, to renew its license which expires in October. The operator is looking to extend its concession for a further ten years, and the Uganda Communications Commission (UCC) has said it has no objections to the move, but stipulated that the cellco will be subject to a number of new conditions. According to a report from Agence Ecofin, these include an obligation to cover all urban areas with 4G and all other areas with 3G, obligatory network sharing (including masts and base stations), and an agreement to list part of the company on the Uganda Securities Exchange (USE) in Kampala. Earlier this week, Uganda's Finance Minister Matia Kasaija has published a policy

paper calling for all telcos and other major private companies to offer shares to local investors. MTN did face some objections to its renewal request. In January a group of operators under the umbrella of the Wireless Applications and Service Providers Association of Uganda (WASPA-U) accused the mobile market leader of violations of regulations. They filed a petition which raised a number of charges against MTN, ranging from the under-declaring of revenues, to unethical business practices, anti-competitive behavior, the illegal takeover of their businesses, violation of laws, and withholding of payments to local companies.

(June 7, 2018) telegeography.com

The government has rejected all seven offers it has so

far received in its efforts to find an investor for struggling state-owned telco Uganda Telecom Ltd (UTL). PML Daily writes that the Financial Intelligence Authority (FIA), which was tasked by President Museveni to assess the potential investors, has disqualified bids

from Bayliss Consortium, Afrinet Kenya, Mauritius Telecom, Teleology Holding, Neubacher Montage, Hamilton Telecom and Telecel Global.

(June 6, 2018) [telegeography.com](#)



United Kingdom

The telecoms regulator Ofcom has called on interested parties to register their interest in serving as a Universal Service Provider (USP) for broadband, after the government earlier this year passed legislation for a broadband universal service obligation (USO). Ofcom which is responsible for the implementation of the USO, has published a document setting out its objectives and explaining how it plans to designate USPs to deliver broadband connectivity. The watchdog believes the most effective way to deliver the USO as quickly as possible is for operators to express their interest in delivering the scheme, either on a national or regional basis, following which it will designate provider(s) that are best placed to deliver the USO. While it had considered running an auction to determine USPs, it said that after discussions with providers it had deemed there to be insufficient interest to run an 'effective' competitive process. A closing date of 20 August 2018 has been set for submissions, while Ofcom aims to consult on procedural regulations setting out how its propos to designate USPs in September – after considering the responses. Following this, Ofcom aims to finalize the designation regulations later in 2018, while also putting forward proposals for who should be designated as a USP and indeed, the Universal Service Conditions which with they will need to comply, again within the same timeframe. The final decisions are expected by 'summer 2019'. In March 2018 the Department for Digital, Culture, Media and Sport (DCMS) published its chosen design for the broadband USO. At that date the DCMS said it would move ahead with implementing the USO by 2020, with the core elements of it including: a minimum download speed of 10Mbps; additional quality parameters which include a 1Mbps upload speed, minimum standards for latency, a maximum contention ratio of 50:1, and a minimum data cap of 100GB per month; uniform pricing, so as to ensure that people connected under the USO do not pay more for their broadband than others pay for comparable services in non-USO areas; and a cost threshold of GBP3,400 (USD4,488) per premise. In addition, while fiber-to-the-premises (FTTP), fiber-to-the-cabinet (FTTC), fixed-wireless and mobile technologies can all be utilized to deliver

universal broadband services, the DCMS has specified that satellite technology may not, 'based on its current capabilities'. (June 20, 2018) [telegeography.com](#)

The UK's Minister for Digital, Margot James, has re-emphasized the importance of providing connectivity to Britain's rural communities, particularly as the country gears up to roll out 5G next year. Speaking at the Connected Britain event in London on Tuesday, the Minister said that Britain's agricultural sector could not afford to miss out on the transformative potential of 5G. "If you look at that last 5 per cent of people who cannot receive superfast broadband, a lot of them live in rural communities. 5G has the potential to completely revolutionize the agricultural sector which is clearly based in rural areas, so I don't think that it is particularly good enough for us to take the same approach that we have taken to superfast where we roll it out in the cities and urban areas first and then worry about the rural areas later. I don't think that is acceptable and with the coming revelation that is 5G, it would represent an enormous opportunity missed," she said. The Minister said that the UK should be proud of the fact that it has achieved 95 per cent coverage for superfast broadband, but that it was crucial that the remaining 5 per cent were not left behind as the UK looks to fast track its digital economy. "Currently there are 1.5 million people and businesses in the UK who are struggling to compete in the modern world because they can't get access to superfast broadband," she said. While investment in the UK's digital infrastructure is at an all-time high, James said that she wanted to see the rate of investment increase further. "The recent announcements by BT, CityFibre and others are proof of the strong global interest in the sector – but we want the pace of that investment to increase. "The government recognizes that we have a role to play here and is working to create a favorable investment climate. We know the scale of the challenge ahead, as this country looks to move from a superfast to a full fiber future. That's why we are increasing access to finance through the £400m digital infrastructure fund," she said. (June 19, 2018) [totaltele.com](#)



United States

The Federal Communications Commission (FCC) today announced steps to make additional spectrum available for 5G wireless services. The announcement will assist wireless operators such as Verizon, AT&T, T-Mobile US, Sprint and others. Since widespread 5G roll out is expected from 2019-2020 onward, availability of spectrum will determine the telecom operators Capex plans towards spectrum and mobile network equipment. UK has already conducted the 5G spectrum auction. Italy said it would gear up for selling 5G spectrum shortly. India is yet to finalize its policy on 5G. China has big 5G plans and China Mobile is eager to take the lead in 5G deployments in Asia. FCC aims to create rules for the use of millimeter wave spectrum bands for 5G. Adopting an operability requirement for the entire 24 GHz band, a sharing framework to allow use of a portion of the 24 GHz band for terrestrial wireless operations and fixed satellite service (FSS) earth stations, a band plan for the lower 37 GHz band are the new points for discussion at FCC. In addition, the Commission denies petitions for reconsideration asking for geographic area licensing in the lower 37 GHz band and asking to allocate the 42 GHz band for satellite use in order to provide additional certainty in moving forward with other innovative uses for these bands. FCC is also seeking comment on making 2.75 GHz of additional spectrum in the 26 GHz and 42 GHz bands available for 5G, mechanisms to facilitate shared use of the Lower 37 GHz band between Federal and non-Federal users, and among non-Federal users, and rules for FSS use of the 50 GHz band for a limited number of earth stations. FCC said it will take steps to facilitate access to additional low-band, mid-band, and high-band spectrum, including holding spectrum auctions, beginning with the 28 GHz band auction scheduled to begin in November. FCC meanwhile said it took steps to eliminate unnecessary regulatory hurdles for carriers seeking to move to the networks of tomorrow. FCC said the current FCC rules entail

burdensome requirements that carriers must meet in order to replace legacy voice and lower speed data services. The Commission's action helps to reduce these burdensome requirements while maintaining protections for consumers and providing incentives for deploying better networks.

(June 10, 2018) [telecomlead.com](#)

US President Donald Trump has nominated Geoffrey Starks to serve as a Commissioner of the FCC, following the departure of Mignon Clyburn. Starks' appointment to the position is subject to approval from the US Senate and would see him take up one of the most senior positions at the agency. "I congratulate Geoffrey Starks on his forthcoming nomination to serve as a Commissioner on the Federal Communications Commission. He has a distinguished record of public service, including in the FCC's Enforcement Bureau, and I wish him all the best during the confirmation process," said FCC chairman Ajit Pai. Starks has previously worked as the assistant bureau chief in the FCC's Enforcement Bureau, which focuses on protecting consumer rights. Starks' predecessor, Mignon Clyburn, was a vocal advocate for net neutrality, whose term in office officially ended in June 2017. However, Clyburn has continued in the position until her successor could be named. Starks' as worked closely with US telcos throughout his career and his prospective appointment has been welcomed by the industry. "We congratulate Geoffrey Starks on his nomination as an FCC Commissioner. His record of public service—in the agency's Enforcement Bureau and at the Department of Justice—and his deep expertise in communications policy are just the right ingredients for a distinguished tenure as a Commissioner. I urge the Senate to confirm him quickly, and all of us at USTelecom look forward to working closely with him," said Jonathan Spalter, president and CEO of USTelecom.

(June 5, 2018) [totaltele.com](#)



Zimbabwe

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) has reduced local mobile data and Internet charges after concluding a cost modelling exercise for telecommunication network services in the country covering mobile, fixed and Internet access networks. POTRAZ said the costing exercise was done by a German company, Detecon International. The new tariffs show out-of-mobile data charges have been reduced to 5 cents per megabyte from 12,5 cents, while the national interconnection rate goes down from 4 cents per minute to 2 cents with effect from July 1. Addressing a Press conference in Harare yesterday, Information Communication Technology and Cyber Security Minister Supa Mandiwanzira said the costing exercise by Detecon was based on the

long-run-incremental costing (LRIC) models set in 2014 by the same company. "The authority re-engaged Detecon in 2017 to update the LRIC cost models to account for emerging market trends in terms of changing consumer behaviour which is moving from being voice-centric to being data-centric as well as technological evolution, in particular the impact of over-the-top services on voice traffic as well as the roll out of the new technologies like long term evolution (LTE)," he said. He said pursuant to extensive consultations with telecommunication operators and other stakeholders in 2017, the authority had formulated an implementation roadmap for the LRIC models results. "In doing so, the authority took into account the prevailing economic environment as well

as the competing needs to ensure operator viability and service affordability for the consumers. "These need to be balanced to ensure the delivery of high quality innovative services and applications which are critical in enhancing consumer welfare, business continuity and the country's overall business competitiveness," Minister Mandiwanzira said. He said out-of-bundle mobile data charges threshold would be reduced from the current average rate of 12.5 cents per megabyte to 5 cents per megabyte exclusive of all taxes. "This applies to internet/data that is used outside the WhatsApp, Facebook and Twitter bundles, among others," he said. Minister Mandiwanzira said USSD (unstructured supplementary service data) charges threshold would be reduced from the current 12.5 cents per session to 5 cents. "This is meant to address the high transaction cost of e-payments and increase financial inclusion. To ensure that this reduction benefits the transacting public, the authority has engaged the Reserve Bank of Zimbabwe who will engage financial service providers so that the reduction is passed on to the transacting public," he said. He said the national interconnection rate would be reduced from the current 4 cents per minute to 2 cents exclusive of all taxes and that this applies across all interconnection operators. "The threshold for mobile voice and SMS shall be reviewed in due course. Fixed voice charges shall be left to market forces subject to regulatory approval. Internet/data charges for Internet Access Providers (IAPs) services shall be left to market forces subject to regulatory approval. "POTRAZ shall review the thresholds for charges for telecommunication services on an annual basis in line with market developments," Minister Mandiwanzira said. In June last year, POTRAZ started evaluating local data charges and major cost drivers amid indications the cost of data was too high. POTRAZ Director General D. Gift Machengete said in an interview that the ongoing assessment was part

of regular exercises by the regulator to ascertain the state of the industry. A research done by Research ICT Africa in 2016 and submitted to the Parliament of South Africa, established that Zimbabwe had the third most expensive mobile data in Africa with the cheapest monthly 1GB data package at \$30. Reports indicated that the two most expensive monthly bundles in Africa were South Sudan at \$90,83 and Swaziland \$30,33. The cheapest 1GB of data was available in Tanzania \$0,89, Egypt \$2,82 and Mozambique \$2,87. The price for Zimbabwe was for standard packages and excluded bundled service telecoms operators offered to entice their consumers. Data has become a key source of revenue for telecom companies in the face of falling revenue from traditional major contributors such as voice and SMS, which have suffered from growth in alternative options provided by over-the-top services. Zimbabwe's biggest mobile phone operator Econet Wireless, with over 10 million subscribers, said data and mobile money now made up 32 percent of revenue.

(June 22, 2018) nehandaradio.com

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) has revealed that it has received contributions totaling more than USD120 million to the country's Universal Service Fund (USF) since 2009. The interest on investments has pushed the total above USD130 million. POTRAZ says that while the USF was first established in 1998, contributions made prior to the switch to a multi-currency system in 2009 are now virtually worthless. All telcos are required to pay 1.5% of their annual gross revenues into the fund, which is then used to fund projects such as telemedicine, e-learning schemes and the construction of Community Information Centers (CICs), which offer ICT services to the local population. 80 CICs have been built so far, with more in the pipeline.📍

(June 5, 2018) TechZim

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